From Inquiry to Consultation:
Contested Spaces of Public Engagement with Nuclear Power

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Signature: ……………………………………………………………

Abstract

This doctoral thesis examines the political and democratic implications of transformations in nuclear power policy, with a focus on the formalised spaces of public engagement situated in three 'eras' of nuclear power development. The research is particularly focussed upon the Planning Act 2008, designed to speed up the planning process around large-scale infrastructure including nuclear power. To date the political consequences of the Act have received little academic attention. Building upon key debates in Geography and Planning situated around notions of 'post-politics' as well as other conceptualisations of 'contentious' political and democratic interventions including STS and state-theoretical perspectives, this thesis examines the consequences for political contestation around nuclear power, in relation to spaces of consultation. These new forms of public engagement are based around a 'rescaled and segmented' policy framework created by the Planning Act. A central argument of this is thesis is that the Planning Act cannot be viewed in isolation however. Rather it should be understood in relation to tensions regarding the spatial politics and political opportunities present in previous forms of public engagement around nuclear power, as well as the contradictions created between particular ideological underpinnings of government, and simultaneous commitments to certain 'objects of governance', in this instance, nuclear power.

Three eras of nuclear power development form the foci of the research. Firstly, an examination of the 'forgotten inquiry' between 1988-1989 into the construction of Hinkley C nuclear power station, which was never built due to the collapse of the economic case for nuclear due to privatisation. Through archival research and interviews, this chapter traces empirically how 'political opportunities' were enacted and created by campaign groups within the inquiry setting, and how various spatial strategies were utilised to politicise the inquiry. The second empirical chapter addresses the participatory era of New Labour, where new collaborative experiments were developed to negotiate nuclear issues. Through analysis of policy documents and interview data, the ways in which the enthusiasm towards participatory governance was problematised through the return of new nuclear power onto the policy agenda is explored, with particular attention to 'object-focussed' state theory. Thirdly, the effects of the 'rescaled' consultative framework of the Planning Act are explored through interviews, policy documents, and ethnographic research. Situated within the context of the second attempt to construct Hinkley C, this chapter provides fertile ground for comparative analysis with the 1980's Inquiry.

I argue that the Act attempts to solve some of the key tensions of previous policy, attempting to speed up the planning process whilst maintaining commitments to collaborative forms of public engagement through consensus-based decision-making. The spatial framing of the Act is seen as key to processes of post-politicisation however, where substantial concerns regarding the profound uncertainties of the UK nuclear revival are displaced to other forms of engagement beyond planning. This attempt to 'solve political dissensus through space' has 'unintended consequences' however which are explored in the conclusion. This thesis brings empirical attention to the' where' of politics in different policy settings. Theoretical discussions regarding the relationship between spatial politics, and more nuanced understandings of post-politics and the political are developed through this thesis.

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List of Acronyms

ANT	Actor Network Theory
BBC	British Broadcasting Corporation
BERR	Business Enterprise and Regulatory Reform
BNFL	British Nuclear Fuels Limited
CCS	Carbon Capture and Storage
CEGB	Central Energy Generating Board
CNA	Cornish Nuclear Alliance
CND	Campaign for Nuclear Disarmament
COP	Conference of Parties
CO_2	Carbon Dioxide
CoWRM	Committee on Radioactive Waste
CST	Committee for Science and Technology
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DoE	Department of Energy
DTI	Department of Trade and Industry
EDF	Électricité de France
FoE	Friends of the Earth
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GM	Genetically Modified
HLW	High-Level Waste
HMGov	Her Majesty's Government
IPC	Infrastructure and Planning Commission
IPCC	Intergovernmental Panel on Climate Change
MIPU	Major Infrastructure Planning Unit
NFFO	Non-Fossil Fuels Obligation

NGO	Non-Governmental Organisation
NIA	Nuclear Industry Association
NIMBY	Not In My Back Yard
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NUCM	National Union of Coal Miners
PWR	Pressurised Water Reactor
RTPI	Royal Town Planning Institute
SDC	Sustainable Development Commission
SHE	Stop Hinkley Expansion
SNP	Scottish National Party
THORP	Thermal Oxide Reprocessing Plant
TMI	Three Mile Island
TNSP	Territories Network Place Scale (Jessop et al 2008)
UNFCC	United Nations Framework on Climate Change

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Chapter One: Introduction

"Nuclear power is back with a vengeance"

(Tony Blair, quoted in BBC News, 2007)

"There is no plan B."

(Vincent De Rivaz CEO of Électricité De France (EDF), quoted in Mcghie, 2012)

"Parliament is no use in a conflict. As soon as there is real conflict...the two front benches bunch together like anything...basically, Parliament is a place for consensus and not for confrontation." (Tony Benn, 2002: 5)

This thesis explores the political and democratic implications of nuclear development under the Planning Act 2008. It is inspired by the idea that in order to understand the nuclear politics of our present, we must understand the nuclear politics of the past, giving rise to the tensions which the Planning Act is, in part, a response to. This develops recent debates within geography around the 'political'.

The first section of this chapter outlines the policy context surrounding new nuclear power development in the UK, including the parliamentary consensus on nuclear, and the development of the Planning Act 2008. The notion of this consensus is troubled, and it is argued that there is a need for empirical attention towards the political and democratic implications of the Planning Act. It is outlined that in order to do this, the Planning Act must not be seen in isolation, but more dynamically, as a response to tensions existing within previous public engagements with nuclear power and planning. Secondly, the three contextual settings identified in order to develop such a dynamic understanding of the politics surrounding nuclear power are outlined; the public inquiry into Hinkley C in the 1980's, the participatory nuclear politics of New Labour, and the post-Planning Act 2008 consultative framework. Thirdly, the conceptual framework for developing a dynamic understanding of the contested politics of nuclear power is discussed, introducing recent debates around politics, democracy and spatial theory in Geography, including post-political literature, STS-based accounts of politics, and state theory.

A Nuclear-Powered Post-Political Consensus?

Critical research into the governance of nuclear power development in the UK is timely. In late 2009, plans for ten nuclear power stations to be built in a decade, were announced by Ed Miliband (then Labour Party Secretary of State for Energy and Climate Change). This was the most ambitious proposed nuclear development in Europe (Vaughan, 2009), no nuclear power station had been ordered in Britain since the construction of Sizewell B in 1985. The nuclear option had largely been ruled out due to cost and issues associated with nuclear waste production, and other social and economic burdens of its legacy. For these reasons, it was declared to be unviable in a UK Energy Paper in 2003 (UKGov, 2003). Some within Parliament had stronger views however; Chris Huhne, the Liberal Democrat MP, argued that nuclear was a "tried, tested, and failed technology", and that if nuclear was chosen then "future generations may rue the day" (Huhne, 2006).

In 2010 it was also Chris Huhne who, as the Head of the Department of Energy and Climate Change (DECC), was forwarding the UK nuclear programme. Now he was explaining that "we need nuclear", his stance had been 'misunderstood' and that "[industry] mistakes of the past had been learnt" (Huhne, quoted in Groves, 2011). Liberal Democrat opposition towards nuclear power, a key point of separation from the other two main parties (with the Green party also taking an anti-nuclear stance), was in effect abandoned when the Coalition Government formed.

The Conservative Party had stated in 2006, that due to the expense of nuclear, the technology was considered to be a "last resort" (BBC News, 2006a). This position changed to full support once in power in 2010 however. It was the Labour Party in 2006 who took the first steps towards the UK's 'nuclear renaissance'; a term referring to the apparent resurgence of the technology in recent years in relation to the challenges of energy security and climate change (Nuttal, 2006). Thus by 2010, a cross-party consensus (minus a few back benchers) had been reached by the three main parties, signalled by such events as the large majority voting in favour of the 'regulatory justification' decision for new reactors (Utility Week, 2011). As stated by John Hutton, who was Government Minister for Business Enterprise and Regulatory Reform (BERR) at the time new nuclear was announced, and is currently the Chairman of the Nuclear Industry Association (NIA), "we've now got a consensus about civil nuclear power…This consensus will be vital for investment" (Ibid.).

More so than any other technology, nuclear divides. There is disagreement over wind energy, coal, gas, hydro-electric power, wave power, biomass, and geothermal energy for a variety of reasons, however disagreement is not synonymous with those technologies; the act of informing people that you are researching these topics would not so readily be greeted with the response that I have encountered almost without fail: '*So, are you for or against then*?' The atom was split, and so too, the public; nuclear is famously politicised, and widely recognised as being the most "iconically controversial" of modern technologies (Wynne, 2011: 1). The narrative of contemporary nuclear power policy depicts something altogether different. Due to the imminent threats of climate change and energy insecurity, nuclear power has been shunted beyond divisive politics, to a scenario where, due to its low carbon status, there is an objective 'need' rather than political 'choice' for its development. Any concerns regarding risks, costs, and wider societal implications of the technology are trumped by the threat of impending catastrophic climate change.

Within this framework of imminent catastrophic climate change, there is no time to deliberate; there is no time to talk politics; there is no time to question the economy: action must be taken immediately! As Brian Wilson, at the time Non-Executive Director of AMEC Nuclear Holdings and former Labour Energy Minister, declared, "the debate about nuclear power is over" (BBC Newsnight, 2008). The recent development of nuclear power would therefore seem to correspond with the emergence of a 'post-political' environmental consensus. Within this consensus there is agreement about the need to reduce CO_2 emissions via an urgent technocratic response, replacing 'old' ideological political divisions and debates based around differing socio-economic trajectories and values (Swyngedouw, 2007).

Over-arching ideals of such a consensus in the UK are ruptured even at the point of parliamentary politics however. The Scottish Nationalist Party (SNP)-run devolved Government of Scotland have firmly resolved not to build new nuclear power stations, aiming for 100% renewables capacity by 2020 (SNP, 2011) Nuclear joined a number of objects seemingly not up for political deliberation or democratic contention South of the Border, whilst signposting an alternative political trajectory North of it. Northern Ireland is similarly not involved in the UK nuclear renaissance, a decision taken by Peter Hain, and also related to Southern Ireland's firm anti-nuclear stance. In terms of basic Political Geography, the 'UK nuclear renaissance' is in reality 'the nuclear renaissance of England and Wales'.

This emphasises the need to focus on where consensus arises, and under what conditions it is achieved. As the quote by Tony Benn at the beginning suggests, to look for political contestation in Parliament is perhaps to look in the wrong place. With respect to nuclear,

in the UK context, Parliament has never been the main place in which contestation around the technology has been staged. As Rough (2011) observes, during the first round of nuclear development in the late 1950's and 1960's, it was the forum of the Public Inquiry which enabled concerned publics the rare opportunity to encounter the often secretive and non-accountable world of atomic energy.

As nuclear emerged as a public issue in the late 1970's and 1980's, political and democratic intervention took place once again in the setting of the inquiry – a default and unintended political opportunity which was, as Wynne (2011: 75) notes "the sole forum available". The Public Inquiry offered 'the right to be heard' which had developed within the framework of the Town and Country Planning Act 1947. Through this development emerged key battle grounds over nuclear power between the Government and Central Electricity Generating Board (CEGB), and newly emerging campaign groups and concerned citizens. This would have a lasting legacy on considerations of public engagement within planning (Massey, 1988; Grove-White, 1991; Kemp et al, 1985; Wynne, 1982; Owens, 2002).

What emerged as a central point of antagonism between the government and campaign groups was a fundamentally divergent vision concerning the inquiry. For government and industry these inquiries concerned logistical details of a development, such as those pertaining to an individual power station. For campaign groups and publics critical of the development of nuclear power, public inquiries offered crucial moments to challenge broader national policy, and wider political issues relating to the development in question.

Thus 'non-instrumental' analyses of planning have viewed the inquiry as entailing significant political and democratic opportunities for providing feedback to the policy process and challenging underlying principles (Cowell and Owens, 2006; Barry, 2001; Grove-White, 1991; Owens, 2002). This however, was considered problematic by government and industry. As Owens (2002) states, during the 1980's representatives of government and industry raised concerns around conflict between policy and local opposition, where local Not-In-My-Back-Yard ('NIMBY') reactions blocked significant National Policy (Cotton and Devine-Wright, 2011). With respect to nuclear power, inquiries were not NIMBY enough; increasingly nuclear public inquiries became embroiled in lengthy and costly deliberations surrounding the substance of national policy where the perception was there was not enough focus on issues such as localised development caused by construction for example (UK Gov, 2007).

Such conflicts were viewed by many as a hindrance to timely investment, negatively effecting business interest due to the prohibitive length and costs associated with

inquiries. The public inquiry, along with many aspects of the planning framework, was deemed to hold back capital investment and constrain growth through excessive 'red tape' (Owens, 2002). Issues between national and local policy had been identified as being particularly problematic in relation to large-scale infrastructural development. This was however addressed in a ground-breaking piece of legislation, The Planning Act 2008 (HM Government, 2008), described as the "biggest shakeup to planning in 50 years" (Michael Pitt, quoted in Hetherington, 2009).

This overhaul of the planning system, sought to remove Nationally Significant Infrastructural Projects (NSIPs), from the frameworks of the Town and Country Planning Act, creating a new system designed around two key developments: the establishment of National Policy Statement's (NPSs) and a new independent planning body, the Infrastructure Planning Commission (IPC). Firstly, the formation of NPSs is intended to clearly establish matters of policy, with a 'presumption in favour' of development (HM Government, 2007). Nuclear power and aviation, examples of NSIPs are 'site specific', and thus once NPSs have been ratified, further planning decisions would relate to local site-specific issues. Thus there is a clear scalar separation between the national and the local, avoiding the entangled spatial politics associated with public inquiries.

The second key development was the creation of the Infrastructure and Planning Commission (IPC), an independent planning body of thirty-five planning experts from a variety of backgrounds including law, economics, and engineering, established to assess and make decisions on the Development Consent Order (DCO) of a particular proposal (HM Government, 2008). Due to the Localism Act (2011), designed to devolve greater power to communities and neighbourhoods (HM Government, 2011), the IPC has now become the Major Infrastructure Planning Unit (MIPU), where the final decision on a DCO now lies with the relevant Secretary of State (Ibid.). The assessment process carried out by the MIPU will be streamlined so that there will be six months for the examination stage, three months for recommendations to be made, and three months for the Secretary of State to make a decision (DCLG, 2010).

It was outlined that the hearings and examinations run by the committee would not examine evidence related to Government policy, would be mostly made in writing, and where the committee would decide which aspects of evidence would be heard in public "...to avoid the risk of objectors challenging the scope of their investigation at the meeting" (Planning, 2009: 9). The public inquiry process has thus been removed, and along with it, the right of the public to cross-examine witnesses (DCLG, 2010). This was in order to create a 'streamlined' system reducing development times, and improving 'efficiency' in order to deliver timely investment. Government has predicted that £30 million could be

saved each year (HM Government, 2009). Unquestionably, the experiences of nuclear power development were at the heart of the rationale behind these changes. As John Hutton, from the DTI stated in a speech to nuclear industry representatives:

> "I know in the past the planning process has frustrated rather than facilitated new nuclear investment in the UK. New nuclear won't happen in the UK if investors believe these delays will occur again. We mustn't let them…we [the government] are committed to establishing a new planning regime that is now geared up to meet the urgency of the challenges we face." (Hutton, 2008)

As the Act came to fruition it received widespread criticism, from environmental NGO's in particular, that the changes would signal a 'democratic deficit' (Cotton, 2011; FoE, 2008). This included concerns that local voices would be sidelined by national policy, as well as the fact that the IPC would be independent from the political process and thus unaccountable (FoE, 2008). There have also been notable concerns that the Act would lead to frustration and protest (Ellis, 2008), and a protracted 'battle against the planning system' (Vidal, 2009).

Newman (2009) identifies the change to the planning process as depoliticising decision-making. As Marshall (2009) notes however, it is pertinent that both advocates and critics utilise arguments of democratic accountability in framing their positions. It is argued that the Planning Act provides a more participatory and inclusive system for the public on the one hand (Communities and Local Government, 2009), whilst elsewhere it is viewed as sidelining public groups and oppositional voices (Ellis, 2008). Such disparate conclusions call for a thorough analysis of the political and democratic consequences of the Planning Act, in order to understand empirically its potential implications. As a byproduct of the drive for greater speed and efficiency, the act must be viewed as a means of solving the political contestation which is inextricably attached to large-scale infrastructural developments such as nuclear power.

In order to establish a critical understanding, the Planning Act must be considered as a 'moment' within a wider political and governance context. The act is a response to resolve previous points of tension between things such as 'efficiency'/ 'politics' and 'collaborative'/ 'instrumental' approaches to planning. As well this, the Planning Act relates to a central tension between 'Third Way' ideals of 'horizontal' and 'participatory' governance, and the constraints that desires for the development of certain objects of governance – in this case nuclear, place on such ideals. The act also emerged as a response to the thorny issue of the public inquiry and the possibilities for political intervention, or what Cowell and Owens (2006) refer to as 'political opportunities', to be enacted, and as a consequence interfere with the efficiency of a particular policy development. Viewing

planning reform in this way is an important foundation of this thesis. As Haughton et al (2009: 905) state:

> "The scales and practices of planning are dynamic and contested. Any approach is a compromise between irreconcilable characteristics found in any planning system…there is no 'ideal' end-point planning system which manages to reconcile, for example speed of decision-making with comprehensiveness of decisions. Nor is there at any one moment a planning system that will meet the aspirations of all".

Thus the Planning Act is an attempt to solve certain political tensions around particular 'objects of governance' (Jessop, 2002). Seeing planning reform as situated within a wider governance context, and as being contested by different interests and motives, brings attention towards the political dimension of planning, raising questions such as who wins and who loses through particular reforms? Who is excluded and what arguments gain primacy?

The Planning Act also encompasses an important spatial dimension. Policy has been 'rescaled', where scale is understood to not be ontologically pre-given but produced through social and political processes including planning reform (Brenner, 2009; Jessop, 2008). Similarly, public engagement around nuclear power – public engagement here connoting the formalised mechanisms through which the public participate in the policy process – is now segmented around multiple scales and issues; National consultation on NPSs, localised consultations run by EDF, hearings run by the IPC/MIPU, as well as a host of other issue-based consultations related to nuclear power, which is radically different from the 1980's public inquiries where multiple discussions around differing issues and scales took place in the same setting.

This difference is central to the thesis; the Planning Act is viewed as a response to the politics of the Public Inquiry. Therefore in an analysis of the spatial dimensions and political consequences of the Planning Act, how these aspects were articulated within the public inquiry is a consideration of vital importance. Empirically, this thesis traces the politics of nuclear power development, and the sites and processes through which this politics has been enacted through three different nuclear 'eras': the 1980's public inquiry, the participatory era of New Labour, and the post-Planning Act 2008 framework. It is argued that this perspective is necessary to fully understand the political consequences of the Planning Act. Furthermore, the tensions identified in these areas are crucial aspects to the story of the Planning Act.

In so doing recent theoretical discussions on 'politics' and 'the political' in Human Geography and beyond are explored. The consensual situation surrounding nuclear

power, both in Parliament as well as the aims of the Planning Act based around consensual decision-making justified through 'sustainable development', would appear to represent a 'post-political' condition identified by Swyngedouw (2007). As the Chairman of the IPC announced in relation to the Planning Act, "[we] were moving away from an adversarial system" (Pitt, quoted in Hetherington, 2009). I develop discussions on post-politics through exploring the generative potential of recent discussions between STS and political theory, as well as reconsidering the state and spatial theory within the context of discussions of post-politics.

With similarities to the 'nuanced' approach of Allmendinger and Haughton (2012) this thesis moves towards a more empirically grounded understanding of the *where* of the political in which post-politics is partial and contested, achieved through specific policy reforms. This thesis examines the centrality of spatial politics enacted by both government policy makers, and campaign groups critical of nuclear development, and the role such groups play in the development of politics around nuclear power, through the different 'eras' of development. This focuses particularly on the relation between the spatial and the argumentative, developing understandings of the spatial dimensions of post-politicisation. I will expand on the policy and empirical context of this research. Using political and spatial theory, the central question relating to the Planning Act is this: do the transformations in the Act solve the 'problems' of political agonism and conflict around nuclear power, which undoubtedly were inspiration for these reforms?

Research Aims and Questions

The following research aims and questions form the basis of this project.

Research Aims:

RA1: To understand the spatial politics of nuclear public inquiries

RA2: To assess the democratic and political implications of the Planning Act 2008

RA3: To evaluate the transformations of nuclear politics in the UK

RA4: To develop recent discussions around spatial politics and the political

Research Questions

RQ1: What are the spatial politics of the three eras of nuclear power development? (RA1)

RQ2: What are the mechanisms by which 'political opportunities' were enacted during these eras? (RA1, RA2)

RQ3: What are the political consequences of the changes brought about in the Planning Act 2008? (RA2. RA3)

RQ4: What is the relationship between spatiality and processes of politicisation and post-politicisation? (RA1, RA2, RA4)

RQ5: How can nuclear power be considered within the wider context of governance and state theory? (RA2, RA3, RA4)

Having demonstrated the ways in which particular research questions fulfill the broader aims of this thesis, attention now turns to the structure. I will now outline the thesis structure, outlining how the aims and research questions will be met and the form the argumentation of this thesis takes.

Chapter Two: The Awkward Object; nuclear power, climate change, and economics

This section sets out key background discussions related to nuclear power. This information is important in understanding the myriad issues which are frequently discussed in empirical material later on in the thesis. In this chapter it is also highlighted that, against the 'new environmentalist' position, based around a 'pure' focus on the numbers, an apparent 'non-ideological' stance, and one based around an embrace of capitalism a policy turn towards markets, rubs up against the simultaneous vociferous support of nuclear power. Working through these contradictions functions to expose the limitations of the nuclear 'debate' which has become fairly ubiquitous in the UK. It emphasises that at a very basic level, nuclear is bound to be an arena of contestation and competing view points.

Firstly the historical narrative of nuclear power's short but eventful history is discussed, displaying the multitude of complex issues stemming from the technology's historical legacy. Then the contemporary debates of nuclear power are explored, in relation to climate change and recent events. The limitations of the new environmentalism are explored through a discussion of nuclear power in relation to climate change mitigation, and how 'looking at the numbers' is not as simple and 'objective' as is often proposed. Secondly, economics and nuclear power are explored, where the key contradiction and challenge, between market-oriented energy policy and new nuclear power development are discussed. This moves the discussion towards politics and public engagement around nuclear, as well as providing an important background to the technology, which can be referred back to when these debates reemerge in the empirical chapters.

Chapter Three: Research Context

This chapter sets out the research context of the empirical investigation and discusses literature related to this context. Firstly, social science research on nuclear power is discussed. Whilst valuable work has been done around public perceptions and nuclear, as well as public engagement with plans for nuclear waste disposal, a gap in the literature is identified in relation to public engagement with nuclear power within the new policy framework of the Planning Act 2008. After a brief discussion of notions of public engagement, the three areas and debates within these which relate to the empirical chapters are discussed. Firstly, literature related to public inquiries in the 1980's, of which there is considerable amount on the 'big' nuclear inquiries. Secondly, discussions around 'collaborative' and 'communicative' planning are discussed, which relate to empirical investigations on the participatory nuclear power policy of the New Labour era. Thirdly, the Planning Act is discussed in the context of transformations in planning in general, as well as recent attention towards the possible implications of the Planning Act in terms of democracy and politics. Identified in this chapter are key tensions which relate to our nuclear present; the legacy of public inquiries in terms of the 'political opportunities' and issues of efficiency and timeliness, the dynamic between collaborative approaches and political power in terms of communicative planning, and the Planning Act which can be seen in part, as a response to several of the tensions between the differing approaches of planning over the past two decades.

Chapter Four: Theoretical Framework

This chapter discusses recent approaches to politics and democracy, including 'post-politics, STS-issue based accounts, emergent publics, state theoretical perspectives and recent discussions around spatial politics. The aim of this chapter is to work through these recent conceptions to build a framework for understanding the dynamic unfolding of contestatory politics around nuclear development through the three eras forming the basis of the empirical investigation. This discusses the limitations and 'blind spots' of certain approaches, and develops a more dynamic of post-politics as understood in relation to processes of politicization, where spatial politics plays a crucial role. This theoretical framework is introduced further in the final section of this introduction.

Chapter Five: Researching Nuclear Power

The methodological approaches utilised to answer the research questions, and the issues surrounding these methods are explored in this chapter. Archival data, semi-structured interviews, documentary analysis and participation observation are all discussed, in the

overall context of research on dynamic policy environments within Planning and Geography.

Introducing the Empirical Chapters: The Nuclear Phoenix, and the Spatial Politics of Nuclear Power Through Three 'Eras' of Development

The development of the policy framework surrounding nuclear power offers a unique opportunity to assess the changes between different policy frameworks, given its remarkable journey: In the 1980's it was 'an essential' (Conservative Party, 1987); in the 1990's it was ruled out (Labour Party, 1997); in 2003 it was not necessary to the fight against climate change being left out of an Energy White Paper (DTI, 2003); by 2008 it was 'urgently needed' (BERR, 2008). These changing discourses should not be assumed to be natural outcomes of objective necessity, but rather as signs of political struggles and 'backstage' quarrels between competing discourses and different interest groups surrounding particular policy arenas (Rydin, 2004). Public engagement around nuclear power has always been a contentious issue, and has transformed remarkably over the past thirty years. Three different 'eras' of engagement with nuclear power are identified forming the empirical chapters of this thesis.

At this point it is worth outlining what is understood by the often 'slippery' term of 'public engagement'. The term has become common within all sectors of society, as a necessary stage in conducting policy or engaging in a new business activity. It is important to separate out 'engagement' from 'communication'. Communication implies a one way process where information is imparted onto the public. 'engagement' refers, as government guidelines outline, to the public "contributing" and "improving" policy outcomes (COI, 2008:1). Literature form Science Studies points towards meaningful engagement as entailing a two way process whereby publics take an active role in 'shaping' the direction of policy through processes of deliberation exploring a variety of pathways, rather than being an 'add on' to a pre-conceived commitment to a particular policy direction (Stirling, 2008). Various forms of policy engagement on the part of government, in terms of inquiries, citizens juries, consultations, deliberative polls – have all been attempts – at least rhetorically, to involve the public in the formation of government policy.

What also must be distinguished however, is that these spaces represent what will be referred to throughout as the *formalised* spaces of public engagement. This refers to the official lines of public engagement which have been established by government for the public to be involved in the policy process, such as citizens juries, deliberative events such as 'GM nation', public inquiries, or consultations on National Energy infrastructure set up

in the wake of the Planning Act. This is differentiated with other 'unofficial' forms of engagement of which there are multiple potential forms. Writing in newspapers, distributing leaflets, writing to MP's, participating in online forums, and taking part in direct action protest could all be classified as forms of 'engagement' however these are separate from the official channels set up by Government for publics to engage with a specific policy development. However, this thesis is attentive to the locations of political contestation around nuclear development, and the dynamics between the forms of public engagement taking place in a particular policy setting, and whether political opposition is enacted through 'official' or 'unofficial' channels of public engagement.

The diagram below outlines the policy transformation around nuclear power, highlighting the changing modes of public engagement studied in this thesis.

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┌─────────────────────────────────────────────┐
│                  1980's                     │
│                                             │
│  The Big Public Inquiry: Sizewell B 1982-1984, │
│     Dounreay 1987, Hinkley C 1988-1989      │
└─────────────────────────────────────────────┘
                     │
                     ▼
╭─────────────────────────────────────────────╮
│ Major criticisms of public inquiries from both sides. Organisations such as the │
│ CBI identifying inquiries as costly to industry. NGOs and academic attention │
│ focuses on inquires as technocratic. Development in the 1990s of collaborative │
│ approaches to planning, as well as the shift from government to governance │
│                  influencing change.        │
╰─────────────────────────────────────────────╯
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┌─────────────────────────────────────────────┐
│                 2003-2008                   │
│                                             │
│    New Labour and a new participatory approach │
│       to nuclear power: 2003 Energy Review, BNFL │
│       Consultations, CoWRM, Nuclear Power   │
│                  Consultations              │
└─────────────────────────────────────────────┘
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                     ▼
╭─────────────────────────────────────────────╮
│ Increasing calls made by organisations such as the CBI, reviews of planning │
│ such as the Barker Review (2006), the return of new nuclear calls for national │
│ planning for large-scale infrastructure and abolishment of the public inquiry. │
│ The Planning Act 2008 streamlines development of large-scale infrastructure, │
│    replaces public inquiries with consultative framework │
╰─────────────────────────────────────────────╯
                     │
                     ▼
┌─────────────────────────────────────────────┐
│            The Planning Act 2008            │
│                                             │
│    Creation of the IPC/MIPU, National Policy │
│      Statements and consultations on NPSs,  │
│    Consultations at Hinkley by EDF, MIPU Public │
│        Hearings and Recommendations         │
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Figure One: The three eras of nuclear development

It is certainly true that other 'eras' and forms of nuclear development could be defined. The early development of nuclear power in the late 1950's and 1960's for example, the exploration for nuclear waste disposal facilities in the 1980's, the continued work of Nirex in the 1990's, public engagement around decommissioning process of sites such as Dounreay, Chapelcross, or Hinkley A, in the late 1990's and 2000's, to name a few. The three 'eras' were arrived at during the course of the research for several reasons.

Firstly, an aim of this thesis, as will be discussed in more detail below, is to understand the democratic and political implications of the new consultative framework of contemporary nuclear power policy. It became clear however, that an understanding of a particular policy development cannot be studied in isolation. The Planning Act was a specific response to tensions posed in previous policy environments. Policy documents are clear (as discussed above and in Chapter three) that the new forms of public engagement are in part, a response to perceived failings of the public inquiry. The new consultative framework is said to be more transparent, accountable and efficient. However, as I began to speak to members of campaign groups who had taken part in both forms of public engagement, concerns were raised that the consultative framework may in fact reduce the ability of publics to influence government policy. Thus, it was clear that there was perhaps a more nuanced story to analyse rather than the automatic assumption that the new system was more accountable and transparent.

As the research progressed, it was also clear as I interviewed long-term campaigners on nuclear issues that key events within the New Labour governments had been incredibly important in terms of their understandings of a time where new more collaborative approaches to public engagement with nuclear power were attempted. These events including the Energy Review 2003, as well as the Committee on Radioactive Waste (CoRWM), were cited as operating in a more 'participatory' manner, including a plurality of voices in decision making, and representing a substantial improvement from the technocratic means of decision making which had been associated with nuclear development, previously. The language of the Planning Act 2008, also sought to continue with the traditions of collaboration and participation, whilst creating more 'efficient', 'streamlined' policy. Thus, there is an inherent tension in the Planning Act which relates to both the Public Inquiry system, and the participatory approaches towards nuclear issues attempted under New Labour: how to reconcile the desire to create more efficient policy in response to the public inquiry, whilst also attempting to remain committed to the participatory ideals which had emerged during the 'third way' new Labour approach.

The demarcations of these eras are also historically justified. It is clear, for example that the public inquiry of the 1980's as shall be discussed, is a completely different policy

framework and form of public engagement than the consultative framework of the Planning Act. 2003-2008. The era of New Labour, was also a period of substantial step-change in nuclear power policy – including CoRWM, the 2003 Energy Review and the notions of 'in principle' consultations. They demarcate an attempt 'to do things differently' in terms of public engagement with nuclear power (MacKerron, 2010), in comparison to both previous public inquiries and previous negotiations around the disposals of waste.

These three moments of nuclear power policy, in differing ways have been working through a central tension in relation to the balance between the efficiency of policy, or how to 'get things done', and democratic legitimacy and accountability. At the heart of this lies the issue of how to deal with the agonistic political dimension of the nuclear power debate, which this introduction highlights as being endemic and inescapable in relation to nuclear technology. All three 'eras' are thus differing approaches of how to manage political contestation around nuclear development, and must be understood dynamically, rather than in isolation, if they are to be understood at all.

Chapter Six: Hinkley C 1988-1989; From Protest to Inquiry

In 1979 the inquiry into the construction of Torness nuclear power station in Scotland lasted three days; it was also the site of the largest piece of direct action against nuclear power in the UK's history involving protests of over ten thousand people (Aubrey, 1991). This would be the last protest of this size however, as the debate about nuclear technology moved into the planning system. In the 1980's the development of nuclear power became synonymous with the 'big' public inquiry. One inquiry would stand out from all the others: Sizewell B. The inquiry lasted for two years, was extremely expensive and to this day continues to haunt the pages of policy documents around planning reform (UK Government, 2007). Similarly, there was a notable inquiry into the Thermal Oxide Reprocessing Plant (THORP) at Windscale, now known as Sellafield (Wynne, 2011). The legacy of Sizewell B was used as part of the reasoning for the changes developed in the Planning Act to 'streamline' the development of new nuclear as well as other large scale infrastructure. As John Hutton stated in his nuclear power statement in 2008, "We can't repeat the Sizewell B planning process".

Sizewell was built on the Suffolk Coast, with construction beginning in 1987 and finishing in 1995. Elsewhere in 1988, there was another public inquiry into the development of a proposed reactor at Hinkley C in Somerset, South-West England. This however was the inquiry into the power station that was never built. It is the contention of this chapter that

a close study of an inquiry into a power station that was never built is possibly of more importance than an investigation into the one that was; the experience of Hinkley C reveals some of the key tensions which is part of the legacy for the changes in planning witnessed today. Hinkley C was also the first proposed power station to be built as part of the UK's 'nuclear renaissance'.

Drawing on data from archival analysis of the inquiry, as well as and interviews with inquiry participants, this chapter addresses the contested spatial politics that emerged between campaign groups, the CEGB and the government. Cowell and Owens (2006) have drawn attention to the 'political opportunities' available within inquiries, however there remains a need for further empirical research to address the processes by which these opportunities are created. This chapter does so by tracing key points of contention within the inquiry, addressing the ways in which campaign groups broadened out and extended the scale and scope of the inquiry, altering the spatial boundaries of the nuclear issue, returning it towards 'in principle' discussion and substantial issues around national policy. The focus is on the 'tools' used to do this, and the external factors driving the contested tactics of the CEGB and campaign groups. In particular, whilst the CEGB were attempting to insulate the Hinkley C inquiry from wider policy concerns, campaign groups and objectors were seeking to expose the inquiry to the turbulence of the rapidly changing economic conditions and national policy.

Adversarial politics was also enacted through technical means, challenging many of the assumptions of the CEGB, enabling lay participants to stage overtly political statements against the development during the inquiry. Through such processes the inquiry was extended, and thus the decision on Hinkley overlapped with the Privatisation Act 1990. Nuclear power had traditionally been reliant on government subsidy which the Act eradicated, thus the simultaneous preference for a privatised electricity network and nuclear power were incompatible. Hinkley C was never built. Thus key tensions essential in understanding our nuclear present are drawn out; for example, the spatial politics around defining the boundaries of the Hinkley C inquiry, between containment at the local level on the part of the CEGB, and 'upscaling' as well as horizontally-based strategies on the part of campaign groups which led to the politicisation of the inquiry. As well as this, the crucial dilemma for the nuclear industry and government, who were committed to both privatisation and nuclear power which new nuclear power policy, is the following: how can nuclear work within a market-led system? Addressing these two tensions would be an integral part of policy developments which would occur twenty years later.

Chapter Seven: Nuclear Returns; New Labour and a New Participatory Nuclear Policy?

The second period of consideration, which is part of our 'nuclear present' and is vital in understanding the tensions implicit in the Planning Act, is the period of 2003-2008. The tension which developed was between the preferences of New Labour for more horizontal, participatory and collaborative governance arrangements on the one hand, and the need to speed up policy and create certainty as a response to the return of nuclear power. The general move from 'government' to 'governance' (Rhodes, 1997), and the 'third way' ethos of 'reflexive modernity' (Giddens, 2000), as well as a more 'collaborative' approach to planning (Healey, 1997) entailed in the first term of New Labour, produced important and progressive commitments to more participatory forms of government.

This was clearly visible in relation to environmental issues, with the creation of the Sustainable Development Commission (SDC), and the landmark White Paper on Energy (2003) A broad range of stakeholders were involved in its formation, and the paper made an important recommendation for a step change to renewables and energy efficiency, whilst leaving out nuclear altogether. In addition to this, the setting up of CoRWM was hailed as a new era of nuclear decision-making, due to its independence, interdisciplinary nature, and dedication to thorough and deliberative forms of public engagement (McKerron, 2010).

Significantly, such participatory moves related to nuclear decision-making were made by the Blair Government when there was no new build agenda. In 2006, an energy review formally restarted discussions around nuclear in the context of climate change, which became dogged by legal challenges and controversy (BBC News, 2006b). This involved confinement of the terms of debate around nuclear through recourse to a globalised, disarming, and carbon-centric form of sustainability which reduced the myriad concerns of nuclear technology into one single yard-stick, a crucial dimension to processes of post-politicisation of the environmental debate (Swyngedouw, 2007). This was also a decisive move away from the mode of thinking around sustainability which the 2003 White Paper pointed towards, including more distributed concerns of energy efficiency, improving the housing stock, increased attention towards sustainable transport, and decentralised energy. As shall be discussed, the appropriation of CoRWM's recommendation on waste disposal for legacy waste into the justification for new build, proved particularly controversial.

Nuclear power proved to be a particular awkward object of governance for the Blair Government, caught between principles of decentralisation and horizontal governance, and the desire for a technology which has traditionally relied on the opposite terms of centralised and vertically-integrated institutional framework. Ideas of the state and notions of the distributed decision are rethought in this chapter.

Chapter Eight: The Planning Act; From Inquiry to Consultation

Chapter Eight focuses on the Planning Act, providing the background to the development of policy leading up to its implementation. Following this, the rescaled spaces of public engagement around nuclear power, such as the NPS and 'local' consultations, as well as public engagement with the MIPU, are analysed in terms of their political effects. This involves an examination of the political opportunities available within this new framework, with particular attention to NGO and activist groups. In addition to 'rescaling' of the Act, it aims to move from an 'adversarial' to a 'consensual' form of decision-making and consultation (Pitt, quoted in Hetherington, 2009). The Planning Act was also designed to be more transparent and to offer far more opportunities for communities and the public to engage with the planning process. I critically explore these claims through an empirical examination of the effects on the opportunities and responses of campaign groups critical of nuclear power. The implications of consensual forms of negotiation upon the politics of nuclear power are considered, and specifically the relationship between spatial change entailed in the Planning Act and forms of politics are discussed.

Chapter Nine: From Consultation to Where?

this chapter focuses on the potential political effects of the Planning Act, building on the theme of the 'where' of politics. This draws attention towards the returns of the political, in response to processes of post-politicisation through the Planning Act. This has seen increasing use of legal action as well as direct action protest in response to the Planning Act had lack of political opportunity. In this chapter the official justification for the Planning Act in terms of increased 'speed of development' and 'efficiency' in relation to nuclear power is critically examined. The theoretical themes discussed throughout the thesis are also reflected upon.

Chapter Ten: Conclusion

In the concluding chapter, the Research Aims are returned to and it is discussed how they were met through the course of this thesis. Attention is given to the conceptual debates arising from the debates taking place in this thesis, reflections on the research process, as well as considering possible future lines of research.

Theoretical and Conceptual Framework, Politics: 'Everywhere', 'Nowhere' or 'Somewhere Else?

In the 1980's and 1990's extensive social science research analysed various social and political aspects of nuclear technology (Blowers and Pepper, 1987; Byrne and Hoffman, 1996; Hecht, 1996; Kemp et al, 1985; Massey, 1988; Morone and Woodhouse, 1989; O'Riordan, 1988; O'Riordan et al, 1985; Shrader-Frechette, 1984; Wynne, 2010). The new 'nuclear renaissance' has not received extensive attention from a political perspective and, given the importance of the issue, there is a lack of social science research related to its development more generally (Sovacool, 2012). The political and democratic implications of new energy infrastructure in the UK have however been addressed in relation to the development of renewable energy and public engagement (Barnett et al, 2012; Cass et al, 2010; Cotton and Devine-Wright, 2012; Devine-Wright, 2010; Walker et al, 2010). Issues surrounding public engagement with nuclear waste disposal have similarly been a point of significant focus studied (Blowers, 2010; Bickerstaff and Simmons, 2009; Chilvers and Burgess, 2008;). Public engagement related to nuclear power development under the new Planning Act remains understudied however.

In order to understand the political implications of public engagement with the development of new nuclear power under the Planning Act 2008, as opposed to previous policy frameworks, this thesis is situated within recent debates in Human Geography and beyond related to understandings of the 'democratic' and 'the political' (Barnett, 2012; Braun and Whatmore, 2010; Dikeç, 2005, 2012; Marres, 2012; Staheli, 2009; Stokke, 2005; Swyngedouw, 2010). What is emerging, it is argued in Chapter Four, is an 'either or' choice; On the one hand notions of the understandings of an established 'post-political condition' where politics proper has been foreclosed through a consensual order replacing antagonism and ideological struggle (Swyngedouw, 2007), and on the other, notions informed by Science and Technology Studies (STS), and pragmatist philosophies where political contestation is a much more 'ordinary thing' (Barnett, 2012). The debate often becomes stuck between these two opposing positions where the political is viewed as an 'event' (Badiou, 2005; Rancière , 2004; Swyngedouw, 2007; Žižek, 1999), or one based around the political emerging more frequently through a variety of issues (Callon, 2010; Latour, 2005; Stengers, 2010). But as Rancière (2010) writes, "if politics is everywhere, then it is nowhere"

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<u>Tensions within post-politics approaches</u>

a) 'over-arching' (Larner, forthcoming)

b) Is not attentive to empirical cases (Barnett, 2011)

c) Not attentive to issues and emergence (Marres, 2010)

d) misses many ongoing political struggles (Dean, 2009)

<u>Tensions within STS-based approaches</u>

a) Politics is everywhere, therefore what is actually political? (Rancière , 2010)

b) Does not account for the political as closure (Mouffe, 2005)

c) Anti-historical, does not focus on context (Asdal, 2012)

d) The state is static or not considered at all (Jessop, 2008)

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Table One: A summary of the key tensions with post-politics and STS approaches

This divide is further exemplified when the concept of 'single issues' is considered for example. For post-political theorists the foreclosure of the political, is replaced by ineffective deliberation around single issues, a particular technological choice for example, or identity politics as another, which has come to replace antagonistic politics around more substantial questions of political economy (Žižek, 1999). Thus single issue politics is symptomatic of the post-political condition, where disagreement is enthusiastically encouraged within a range of topics, however questions regarding redistributive justice and alternatives to neoliberalism are excluded. For others however, "the issues deserve more credit" (Marres, 2007). Here, it is 'issues' which are the generative cause of passionate political engagement and should not be seen as a form of inauthentic or 'bad' politics (Marres, 2010).

For theorists associated with post-politics, contemporary political configurations represent an anti-democratic or 'post-democratic' technocracy (Swyngedouw, 2010), whilst 'issue-based' accounts often discuss the displacement of politics in terms which at times depict an optimistic view of democratic extension as a consequence of the displacement of politics (Marres, 2007). There is an implicit assumption in such accounts of an 'opening up' of more issues to democratic accountability without considering ways in which issues can be 'closed down'.

However, an alternative is to consider that single issues are not necessarily in fact single issues at all, but rather may be best thought of as sites through which a 'short circuit' to a multiplicity of other issues, and indeed, broader political struggles can be articulated

(Barry, 2010). On the other hand however, following Asdal (2012: 1) a 'side effect' of such focus on emergence is that "not enough attention is given to that which enables certain situations to occur". Recent research on public engagement with energy, and much work with STS, focuses on specific instances of public engagement and misses the ways in which political power, state choreography, and foreclosure of debate, can all impinge on the legitimacy of a particular participatory exercise.

Recent work on 'emergent publics' (Mahony et al, 2010) is more attentive to these concerns, navigating a way through the pitfalls of both approaches identified above. The focus here is on the processual manner through which 'multiple publics' emerge politically, which is more attentive to comprehending empirically how political contestation unfolds. What is also emphasised is the notion that 'de-publicisation' as well as processes of 'publicisation' occur in relation to emergent publics (Mahony et al, 2010), however this has not been emphasised or developed sufficiently. Discussion of the state remains limited and insufficient consideration is given to simultaneous processes of depublicisation' or 'de-politicisation'.

Elsewhere, more nuanced approaches to 'post politics' have focussed upon the contextual and partial ways through which it is achieved in particular policy settings (Allmendinger and Haughton, 2012). Within these accounts state strategy is once again linked to the political landscape, but not in a manner where a certain political constellation is explained away by state power. Rather, there is greater empirical focus on how specific reforms impinge on, and close down, politics in certain settings. This puts emphasis on the *where* of politics in relation to particular policy landscapes and policy reforms. Allmendinger and Haughton (2012) use the notion of the 'displacement' of politics, emphasising that post-politics is never an over-arching or completed project. Similarly, Cowell and Owens (2006), with specific reference to public inquiries, focus on the 'political opportunities' for activist groups in relation to state restructuring through planning.

This notion of 'displacement' (Allmendinger and Haughton, 2012; Metzger, 2010) lends itself towards a more empirical focus on how the locations and political methods utilised by different groups relate to particular policy reforms and state restructuring processes. Whilst STS-inspired approaches focus on 'emergence', the state and the contextual politics of this emergence are rarely considered. As Asdal writes, the focus of STS has been on contemporary 'live' processes, and whilst many insights have been gained from such an approach, "the effects of this *forward looking move* is that not enough attention is given to that which enables issues and situations to emerge in the first place" (2012:1 Original emphasis).

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The thesis also draws on state-theoretical perspectives in order to develop understandings of the transformations entailed in the Planning Act. Here, a body of work related to spatial change through state restricting and 'rescaling' processes is discussed (Brenner, 2010; Jessop, 2008; Permberton and Goodwin, 2010; Swyngedouw, 2005). Whilst Jessop's (2008) 'discursive-material' approach describes the particular importance of focussing on the 'objects' of governance, it is argued that the theory does not pay enough attention to the importance of the particular 'objects' in question. Latour (2005) for example discusses the ways in which it is not just 'publics' which emerge through particular issues and concerns, but that the state is made 'visible' as it responds to the governance challenges a particular object provokes. This moves beyond an approach where the state is ignored, denied, or represented in an un-dynamic, monolithic form.

This 'object-centred' theory of the state is developed in Chapters Four and Seven. It is theorised in the context of the period 2003-2008, where it is argued that nuclear power contributed to contradictions within the Blair Government, between preferences for decentralised, 'participatory' forms of policy implementation, and the need to 'get things done' on nuclear. The state once again becomes crucial in setting and controlling the policy agenda. Here, even the most well intentioned deliberative experiments regarding aspects of the nuclear fuel cycle are transformed through an urgency to enable new nuclear power for climate change mitigation and energy security. Participative events must be viewed in relation to the wider decision-making landscape, where attention is directed towards how they impact policy-making, and how the conclusions reached within these particular settings travel and impact on wider policy.

This brings us back to the work of Kristin Asdal, who has been attentive to the dynamic between the emergence and re-formation of the state around a particular issue, as well as the public. As Asdal (2007: 318 Original emphasis) writes:

> "...it is not a question of acting *on,* but rather a relation. My argument here is that as an issue grows, the logic of contestation is being shaped in certain ways – and not others. While some room is made for *some* links and relations, *some* forms of contestation and critique, others are excluded or simply missed out. Not all forms of contestation have an equal role in shaping the issues at stake. Resistance and contestation are also shaped by their encounter with 'the centre'. Moreover, a *lack* of links, and relations, may also shape issues and objects, and the state, in certain ways."

This moves towards a more dynamic understanding of a policy landscape in which both state strategy and oppositional publics are considered in relation to one another, as part of the context forming around a particular issue. Drawing on this, the research focuses on the partial and uneven emergence of contestatory politics, and the varied locations and

channels through which the spatial politics of nuclear power has developed. Through this a more empirical and detailed understanding of the politics, tensions and challenges related to the Planning Act 2008 are revealed, and conclusions are drawn around both the efficacy and potential consequences of the Act.

2

Chapter Two: The Awkward Object; Nuclear Power, Climate Change and Economics

Introduction

This chapter outlines and discusses recent debates surrounding nuclear power development. This information is necessary due to the fact that many of these issues emerge from the empirical material that is presented in chapters six, seven, and eight. Similarly, an argument is specifically constructed to enable discussion related to the politics surrounding nuclear power in the following chapter. Firstly, the chapter outlines a very brief history of nuclear power to display why it has proved to be such a contentious issue. Following this the new approach to nuclear power, where it is viewed as an 'apolitical' object to implement, due to the urgent need to mitigate against catastrophic climate change, is discussed. Paul Kingsnorth (2012) the trend of the 'new environmentalism', based around 'rational', technocratic appraisals to climate change, an insistence on the 'objectivity' of their claims, that they are being made simply by 'looking at the numbers', and related to this, and assertions that their claims are 'apolitical' and 'non-ideological'. This discourse is fairly prevalent in the UK context, and contains the idea that nuclear power is no longer a matter of politics. It is found however, that by using the approaches of the 'new environmentalists' reveals inconsistencies and contradictions and returns nuclear power back to the site of political and democratic struggle. Nuclear power does not seem to do or achieve what the textbooks say it should. This is not a pro or anti standpoint but rather, a more 'rational' one than that of the new environmentalists. This then leads on to the importance of studying the dimensions of public engagement with nuclear power, discussed in the following chapter.

A Very Brief History of Nuclear Power

In order to understand the reasons why nuclear power is such a politicised topic it is necessary to situate the technology historically. Here, following Wulforst (2007), three 'Nuclear doctrines' are identified. A 'nuclear doctrine' is defined as "a set of political, social and cultural conditions combining several factors, each of the factors in some way reveals a part to the story that has become our historical legacy and context, as well as actions of today and tomorrow related to nuclear power." (2007: 2).

These different historical periods are firstly, the beginnings of nuclear power, in the 1940's and 1950's, where both nuclear utopias and dystopias were espoused. The beginnings of nuclear power were found in the Manhattan project and weapons programme however, an era of optimism about the limitless potential of nuclear fission, followed. Secondly, focussing specifically on the UK, an era of controversy emerged, due to increasing public awareness of connections between civilian nuclear power and the Cold War Military establishment, as well as high profile nuclear accidents leading towards

opposition to the technology. Thirdly, the 'nuclear renaissance' is focussed on, which refers to nuclear's resurgence as a realistic policy option, and increased framing as a climate change mitigating technology. These are now explored.

Nuclear beginnings: fissile dreams and nightmares

The history of nuclear power development is a short one, but it seems almost endless in terms of the extent of controversies surrounding the technology. The period between roughly 1895-1945 saw the development of the science of atomic radiation and nuclear fission. The first 'splitting of the atom' under completely controlled circumstances was carried out in 1932 by Ernest Walton and John Cockroft under the guidance of Ernest Rutherford who is considered as the 'father' of nuclear physics due to his pioneering research (Cooke, 2009). The initial attitude of almost unreserved enthusiasm for the potential benefits of nuclear fission, which would come to dominate the period widely referred to as the 'Atomic Age' (Ibid.), was set in motion during this period prior to first atom-splitting.

Weart (1988) highlights how the discovery of radioactivity contained in elements such as radium was accompanied by hubristic levels of belief in the potential for nuclear fission to transform the world into a utopia freed from the finite material constraints of previous historical epochs. Such a perspective is exemplified by the writings of Frederick Soddy (1908) in the infamous text 'The Interpretation of Radium'. He described a utopian atomic future in which the world would be transformed into "...One smiling Garden of Eden" (Quoted in The Economist, 2012). Importantly, Soddy also described the devastating effects of an atomic bomb and the terror wrought through the immense power produced through the process of nuclear fission. Other fictional works such as H.G Wells (1914) 'The World Set Free' further contributed to the promise of atomic power providing a 'limitlessness' source of energy whilst also discussing the prospect of the destruction of humanity through atomic warfare.

These 'nuclear imaginations' are integral to building an understanding of the divisive history of the technology, as well as nuclear becoming symbolic of the difficult relationship between scientific expertise and the public. It is a necessary starting point for a political study of the nuclear issue to acknowledge two key points. Firstly, before the fission process was actually carried out, the technology had been infused with both technocratic dreams and dystopian nightmares – the same imagery which has continually been drawn upon whilst deliberating the nuclear issue. Secondly, following on from this, a social constructivist argument can be made that there has never been an objective and neutral appraisal of nuclear power separate from the emotions of both advocates and detractors

of the technology – ideology is present on both sides of the argument and does not simply rest with those who oppose nuclear power (Elliot, 2008). This is significant given that within current nuclear discourse there has been a 'renaissance' in the kind of thinking which lambasts 'ideological wishful thinking' (see Lynas, 2011), which dares to question the efficacy of nuclear as a climate change mitigating technology.

These initial 'nuclear dreams' were not to be found from the evidence of established scientific results, but rather, as Weart (1988: 8) argues, were developed through a process where "associations already in the mind can creep into the picture which people think they perceive". Wynne (2010: 8) similarly points out that contrary to understandings of an 'objective' science as opposed to 'emotional' lay knowledge, these initial descriptions of the potential of nuclear energy represented a "deeply internalised emotionalism on the part of science and scientists which is continually denied and instead blamed exclusively on media and publics". This point is worth bearing in mind; the understanding of an unemotional science as the counterpoint to the emotionally-laden views of those who continue to have significant concerns regarding nuclear power, is central to the rhetoric which can be found in an exploration of the argumentative conditions of the 'nuclear renaissance' today (see Lynas, 2012; Mackay, 2009). The effect of this has been to create an incredibly one-dimensional, constrained, and often counter-productive 'debate' around nuclear power, as Monbiot (2012) himself now recognises.

After nuclear fission was achieved, its powers were initially utilised not for the creation of utopias dominated by infinite amounts of atomic energy, but rather for the apocalyptic opposite which Soddy had also written about in 1912; the devastating and epoch-defining effects of the atomic bomb. On August the 6th 1945, the first and only time that an Atomic bomb has been used during military conflict, the city of Hiroshima was reduced to rubble in a matter of minutes resulting in 70,000 fatalities. This was followed by the bombing of Nagasaki resulting in 40,000 deaths (Cooke, 2009). The 'Manhattan Project' was the military research program associated with Atomic weaponry under which most research on nuclear fission was carried out, thus a consistent concern has been the links between 'civilian' and 'military' nuclear power (Ibid.).

An era of nuclear optimism was however fostered once again, through President Eisenhower's 'Atoms for Peace' program in 1953 at the UN. Such optimism was predominant until the late 1960's (Walker and Lonnroth, 1983). Eisenhower outlined how 'swords would be transformed into ploughshares' with the peaceful use of nuclear power, which saw a return to what Herring (2007: 35) refers to as the idea of a "nuclear utopia". The hubristic belief in nuclear power's supposed infinite capabilities was most famously exemplified in the statement made by Lewis Strauss, Chairman of the U.S Atomic Energy

Commission, that nuclear would provide electricity to future generations that would be 'too cheap to meter' (Ibid.). This statement would later be used as a key reference point by those opposed to nuclear power, to exemplify the disparity between the projected costs and timings of the technology's development on the part of the nuclear industry, and the reality of significant cost-overruns and continual reliance on government subsidy (Sovacool, 2011).

Though the electricity produced was by no means 'too cheap to meter', the period of the 1950's and 1960's saw rapid development of nuclear power in the UK context. The first reactor to produce electricity was connected to the grid in the UK in 1956 at Calder Hall beginning an era of 'civilian' nuclear power. It was later made apparent however, that another role of these first power stations was to produce plutonium for use in the United States' nuclear arsenal (Skurlock, 2007). Ten reactors were built between 1956 and 1970, the largest period of nuclear power development in British history.

Nuclear Controversy and Opposition

Also during this time period however, with the emergence of new information regarding previous nuclear accidents such as Windscale, nuclear began to become strongly associated with secrecy and authoritarianism (Cooke, 2007). Due to military connections, information regarding activities at nuclear power stations was shrouded in secrecy, exemplified by the restriction of information surrounding the Windscale fire in 1957, an event which would have a lasting effect on public opinions towards nuclear in the UK (Arnold, 2007; Breach, 1978). Tony Benn who was energy secretary in the 1960's, and a former supporter of civilian nuclear power, later reflected that "at no stage, as a minister, could I rely on being told the truth either by the industry itself, or by my own civil servants" (Benn, 2002). Trust in the nuclear industry continues to be a major issue today (Kovacs and Gordelier, 2009).

Thus the initial optimism of the 'atomic age' in the UK, an era where nuclear power stations could be built rapidly, began to subside into an era of greater distrust of the technology as the industry became entwined with negative associations of military connections and secrecy amplified by the escalation of the Cold War. The rise of the Campaign for Nuclear Disarmament (CND) was followed by a shift in the status of environmental groups, from small-scale conservationist groups to the rise of environmental Non-Governmental Organizations (NGO's) such as Friends of the Earth (FoE), and Greenpeace. A significant oppositional movement grew out of the development of Torness power station in the 1970's. The proposal for a Thermal Oxide Reprocessing Plant (THORP) at Windscale in the late 1970's led to a public inquiry being launched,

which paved the way for subsequent notable public inquiries in the 1980's (Herring, 2007; Wynne, 2011).

Anti-nuclear sentiments were further strengthened by the partial meltdown at Three Mile Island (TMI) in the USA in 1979, an accident which effectively halted the construction of nuclear new build in the USA (Walker, 2004). The negative framings of nuclear power, along with the accident at TMI ensured that the inquiry into the proposed new reactor Sizewell B was extremely lengthy. Indeed it was the longest public inquiry in the history of the UK, lasting three years between 1982 and 1985 (O'Riordan, 1988). Subsequently, the event which would become the lasting symbol of the perceived horrors of nuclear catastrophe and negative attitudes towards nuclear power occurred in 1986, in Chernobyl in the former Soviet Union. Recorded as a Level Seven on the nuclear accident scale, it was politically devastating for the technology. The perceived hazards caused by the radioactive plume from Chernobyl which travelled across Europe illustrated the potential for nuclear to stretch beyond international borders as emergency measures were taken in several Western European countries. Orders made in Germany for the population to wear masks and remain indoors, and over one hundred Welsh farms remain controlled and monitored for radioactivity till very recently (BBC, 2011a).

Despite this, a new reactor was planned for Hinkley Point in Somerset. However, after another lengthy public inquiry lasting 186 days, it was the privatisation of the electricity market in 1989, and cheap gas which prevented nuclear new build at Hinkley (Aubrey, 1991). Sizewell B connected to the grid in 1995, and was the final nuclear power station constructed in the UK. The THORP reprocessing plant began to function in 1997. Despite this, the Energy Review Report (2003) outlined that nuclear was no longer considered a policy option in the UK due to poor economics and the unresolved 'Achilles heel' of the technology, the disposal of High Level Waste (HLW).

Nuclear renaissance?...or relapse?

The year 2003 was a crucial moment period of division between two 'eras' of nuclear power policy. Soon after the 2003 White Paper on Energy, nuclear power once again began to be considered as a legitimate policy option with the development of a series of government reviews and consultations in the UK. The conditions of its resurgence were considerably different as it had found a new 'framing' as a climate change mitigating technology (Bickerstaff et al, 2009). Thus the argumentative conditions surrounding nuclear power had altered substantially. Significant deliberation was also occurring around the issue of nuclear waste through the work of the independent CoRWM, designed to investigate potential solutions for the permanent disposal of waste (Chilvers and

Burgess, 2008). Twinned with growing concerns about climate change, public opinion was increasingly characterised by 'reluctant acceptance' of nuclear power (Pidgeon et al, 2008).

The phrase 'nuclear renaissance' has been widely used within academia and policy circles to describe the apparent resurgence of nuclear technology (Nuttal, 2006). However, despite increasingly favourable arguments concerning nuclear power, the material reality in the UK was that no new power stations had been built since Sizewell B. In addition to this, British Energy, then the main owner of Britain's nuclear power plants, had to be bailed out by the Blair Government in 2003. This prompted widespread concerns, and unresolved issues remained over the economics of nuclear power and nuclear waste management. This changed however, after two public consultations, as well as the conclusion by government that a 'solution' to the waste issue had been decided upon from the CoRWM project. This gave the then Secretary of State for Energy and Climate Change Ed Miliband the go-ahead to announce plans for a fleet of new nuclear reactors in the UK. These developments were predicated upon other substantial changes such as the 'streamlining' of the planning system for large-scale infrastructure enacted through The Planning Act 2008, and the development of the Infrastructure and Planning Commission (IPC). These were changes that the nuclear industry had outlined as necessary conditions for new build to take place (see Meek, 2005).

Just over a month before the 25th anniversary of Chernobyl however, disaster struck again. After an earthquake off the Japanese coastline, the Fukushima Daiichi nuclear power plant suffered partial meltdown in three reactors, forcing 100, 000 people to evacuate the area. The meltdown cost billions of pounds in damages, and this cost is set to increase due to the lengthy clean-up operation (BBC, 2011b). It was the only Level Seven nuclear incident since Chernobyl, and caused drastic reverberations around the global nuclear power policy landscape. This could not just be dismissed as a 'natural disaster' – a highly anticipated report declared that the accident was caused by 'human error' (BBC News, 2012a). The event had been 'unforseen', and was not anticipated by the 'risk models' often portrayed as being fool-proof, and short-cuts had been made in safety practice around the plant. Germany, the most industrially advanced country in Europe, decided to abandon any new plans for nuclear power development (Wittbenen, 2011). This was a significant move, and rapidly Italy and Several other countries followed suit with a "dramatic fall" in the number of reactors being built or proposed around the world (Harvey et al, 2012). Britain's commitment to new nuclear did not change, however if other developed European countries are making such moves, then it is not possible to draw international boundaries around the argumentative conditions in which policy formation takes place.

Concurrently, arguments around climate change mitigation and energy security are also highly pertinent, ensuring that deliberations around nuclear power are arguably more complex than ever before and remain deeply divided.

This history has shown the complexities and multiple profound issues which constellate around nuclear power, and following Bickerstaff and Simmons (2009), can be said to continue to presence the contemporary nuclear power debate. It then becomes a political battle of 'remembering' and 'forgetting' different aspects of the nuclear legacy, with certain issues rendered 'visible' or 'invisible'. This chapter now turns to the issues which are the driving force behind the current debate, and which have become the most 'visible' with regards to nuclear power development.

The Technical Issues of Nuclear Power

The revival of nuclear power in recent years has been accompanied by a significant amount of research and debate into the many technical aspects relating to appraisals of the technology, particularly in terms of climate change mitigation and energy security. As already stated, the point of departure of this thesis is the assumption, following Brian Wynne (2011: 1), that nuclear remains the most "iconically controversial" of modern day technological developments. However, recent transformations have seen the debate limited largely to considerations over nuclear's potential contribution towards climate change mitigation as well as technical debates relating to safety in relation to other technologies, and an examination of these changes provides a necessary foundation to this chapter.

The economic tension at the heart of nuclear power development is an important consideration running through this thesis, and is of particular relevance to the UK debate. The UK has a privatised electricity system, and nuclear power entails vast up-front capital investment in terms of construction costs, and problematic 'back end' costs in the form of decommissioning and the disposal of radioactive waste. The problematic nature of these issues is explored, and I argue that doing so is vital in understanding the relationship between nuclear power and public engagement. Before turning towards economic debates, nuclear power is examined in the context of climate change.

Nuclear power, Climate Change, and Energy Security

In the journal Nucleonics it was stated, albeit with humorously, that "nuclear power needs climate change more than climate change needs nuclear power" (Nucleonics, 1998, quoted in Elliot, 2010). Indeed, the 'nuclear renaissance' would most likely not have occurred

were it not for the challenges of climate change mitigation and the need to maintain security of energy supply , or what has become known as 'keeping the lights on' (BERR, 2008). The decision was made in the 2003 UK Energy White Paper, that whilst low carbon, nuclear power was not being considered an option due to issues surrounding economics and management of nuclear waste (UKGov, 2003). In the Climate Change Act however, the government committed to a legally binding 80% reduction in carbon emissions by 2050 (HM Gov, 2008), where nuclear power was to play key role.

The argument that nuclear power is a low carbon technology has been made since the connection between a warming world and the burning of fossil fuels first emerged as a policy issue (Davis and Zacharias, 1983). It also developed as an important part of the Hinkley C Inquiry, which is examined in Chapter Six. However, many of the main NGO's familiar to the public today emerged from campaigns against the nuclear industry due to publicity caused by high profile nuclear accidents, environmental contamination, strong links between civilian nuclear power and the weapons programme, and the dangers of the management of High Level radioactive Waste (HLW) (Herring, 2010). In the 1980's, the era of the last wave of enthusiasm for nuclear development in the UK, to be a 'green' and to be 'anti-nuclear' were part of the same package.

As awareness of the potential severity of climate change grew however, attitudes towards nuclear technology became increasingly complex. As Bickerstaff et al (2008) state, increasingly, nuclear power has been 'reframed' as a vital solution to the climate change problem. Discussions around nuclear power now frequently take place alongside discussions of climatic change. Indeed, many hold the belief that nuclear possesses the power "to save the world" (Cravens, 2007). It will be argued in Chapter Seven that the conflation of belief in anthropogenic climate change necessitating belief in the efficacy of nuclear power is deeply problematic for a number of reasons. The discussion will now turn to predominant concerns around nuclear power in the context of climate change mitigation.

As outlined by the IPCC in their fourth assessment report (2007), warming of the climatic system is 'unequivocal'. A significant majority of temperature increases observed during the 20th century are 'very likely' (>90%) due to observed increases in anthropogenic emissions. Global warming is caused by the substantial increases in gases such as carbon dioxide (CO_2) and methane (CH_4) in the atmosphere occurring in the past 250 years, which absorb infrared radiation thus raising temperatures. Temperatures could rise between 1.1°C and 6.4°C during the 21st century and sea levels are likely to rise between 18-59 centimetres. There is high confidence in the likelihood that there will be more warm spells, heat waves, and heavy rainfall, as well as droughts, tropical cyclones, and extreme

high tides (IPCC, 2007). The effects of this may well be extremely disruptive and costly. Addressing the consequences of climatic change potentially costing between 5-25% of global Gross Domestic Product (GDP) (Stern, 2006).

About three quarters of anthropogenic emissions are caused by the burning of fossil fuels, releasing CO_2 and other gases into the atmosphere. The remainder is caused by land use change, of which the biggest proportion is a result of deforestation (IPCC, 2007). Of the total fossil fuels burned, around 24% stems from power stations used for electricity and heat. Coal-fired power stations have been a main source of energy around the world, but emit the highest amounts of CO_2 per kilowatt hour (0.968 kg CO_2/ KWH, Department of Energy USA, 1999).

The United Nations Framework on Climate Change (UNFCC) upon targets to limit mean temperature rise to 2°C above pre-industrial levels. This is the threshold that all mitigation strategies are based around. Thus many countries under the framework of the UNFCC and the Conference Of Parties (COP) meetings, have committed to emissions reductions in an attempt to meet these targets, including the UK's ambitious 80% reduction in CO_2 emissions by 2050 (DECC, 2009).

Part of this process necessitates replacing old CO_2 emitting power plants, such as coal-fired plants, with other technological choices including renewable energy such as wind, hydroelectric, tidal, solar, as well as nuclear power and potentially 'clean coal' through Carbon Capture and Storage (CCS) technologies, in order to produce low carbon electricity. It is within this context that nuclear power has experienced an apparent 'renaissance', given that at the point of production of electricity it produces very low CO_2 emissions (Nuttal, 2006). Thus for many, nuclear power is a key solution to climate change mitigation and the need to develop low carbon economies (Adimantiades et al, 2008; BERR, 2008; Brook, 2012; Herbst and Hopley, 2007; Tucker, 2008). Nuclear power is unique in that unlike other low carbon sources of energy, it has the capability to produce 'base-load' centralised electricity and is not so obviously affected by issues of variability of natural processes as is the case of renewables. Unlike hydro-electric power, nuclear power is said to be relatively free from geographical constraints (Hultman, 2011).

Hultman (2011) also points out the unique challenges of nuclear power. It is the only technology which uses enriched uranium, the same product used to build some nuclear weapons. It also produces plutonium as a by-product, which if separated can also be used to make nuclear weaponry. HLW can remain dangerous for tens of thousands of years requiring permanent storage which as yet, is not operational anywhere in the world. There is also the issue of nuclear's embeddedness in a large-scale industrial engineering

complex, with strong links to militaries, national funding agencies, and universities. Thus, "no other energy technology ties in as many economic, environmental, and geopolitical aspects carrying the weight of historical legacy as much as nuclear power" (Ibid: 397).

The shift that has occurred within contemporary discourse, is that the second list of issues above, whilst remaining matters of concern, are 'trumped' by the potential for nuclear power to solve the more demanding problems associated with the effects of anthropogenic climate change. This has formed an attitude which Pidgeon et al (2008) have coined 'the reluctant acceptance' of nuclear power. This approach entwines the moral and ethical issues related to nuclear power development into the context of those related to anthropogenic climate change. This was an approach utilised by the UK Government to frame the consultation process, which, as will be discussed in Chapter Seven, proved deeply problematic for a number of reasons.

Despite this 'framing' however, technical appraisals of nuclear technology have been more divergent than is often portrayed certainly in the UK media. Life-cycle analyses of nuclear technology (including uranium mining, enrichment, transportation, plant construction, 'back end' energy production, decommissioning, and 'back end' costs), have indicated that whilst less CO_2 is produced through the nuclear fuel cycle in comparison to coal and gas, it is notably higher than the life-cycle of renewable energy sources (Lovins, 2005; Kleiner, 2008; Sovacool, 2008). These claims have however been contested by others who argue that the estimates for nuclear are too high, and that the technology is more comparable with renewable energy sources (NEI, 2008; Warner and Heath, 2012). Others point towards the fact that CO_2 emissions from the nuclear life-cycle are likely to rise as uranium is depleted and lower grades are mined (Fthenakis and Kim, 2007). There is unanimity however, that there is an urgent need for more life-cycle analysis of the nuclear fuel cycle (Sovacool, 2011).

Moving towards the 'back end' stage of nuclear power including decommissioning and particularly, nuclear waste, is to focus on what has long been regarded as the 'Achilles heel' of nuclear technology (Blowers and Lowry, 1987). High Level Waste (HLW) is particularly problematic. In terms of civilian nuclear power, HLW is the product of highly radioactive isotopes and elements generated in the reactor core, no longer useful for the production of energy. Other nuclear waste categories include Intermediate Level Waste (ILW), including contaminated materials, building products, nuclear fuel shielding, chemical sludge and resins, and Low Level Waste (LLW), includes material from medical technology, and clothing, papers, and other materials used by workers at nuclear reactors (Sovacool, 2011). Although HLW makes up a far smaller volume than the other types of waste, it accounts for 95% of the radioactivity of a nuclear reactor, and is often extremely

hot, cooling over hundreds of years (ibid). HLW thus requires significant technical expertise in its removal, transportation, and storage. Some HLW products remain dangerously radioactive for thousands of years, thus posing an extremely challenging policy issue in terms of the need for permanent storage of these products. In the UK, most HLW is stored at Sellafield and vitrified, or stored in spent fuel pools, which is considered an accepted storage method for the mid to long term. Given the timescales involved there is a need for the permanent safe storage of HLW, to ensure future generations are safe, as well as ensuring present day waste is managed by the generations which have benefited from its production, rather than passed on to future generations. Many methods of 'permanently' dealing with HLW have been explored, including firing HLW into space, storage beneath the sea, disposal in ice sheets, near surface disposal, burning of plutonium and uranium in new reactors, direct injection of liquid waste products into rock strata, and deep geological disposal (CoRWM, 2006).

Furthermore, in consideration of the fact that there is not yet an operational permanent storage facility for HLW, calculating the energy inputs and costs can be extremely problematic (Hultman, 2011). The power station has to be dismantled and made safe and HLW, remaining dangerous for potentially thousands of years, must either be permanently stored safely, with deep geological disposal being the preferred option, or reprocessed. Current estimates for the cost of dealing with the UK's waste from the weapons programme and old fleet of power stations at the latest count, is now likely to be between £80-100 Billion, costing DECC around £2.5 Billion a year, over 42% of DECC's budget (Clark, 2012). Most of this is for Sellafield in Cumbria, where the majority of waste is stored in the UK. This facility has been referred to as "the most hazardous site in Europe" by the Deputy Manager of Sellafield (Beveridge, quoted in McKie, 2009).

For some then, nuclear power violates the principles of sustainable development and environmental justice, due to the legacy of waste which is produced from its use, and the future generations which could be harmed (Ahearne, 2000; Shcrader-Frechette, 2011). Other issues abound; what could be considered as 'the dark side' of splitting the atom has clearly resurfaced with concerns over Iran's weapons programme. Whilst in Britain there is a clear separation between civilian and military nuclear programmes, the Iranian issue has nevertheless highlighted the often uncomfortable entanglements between military and civilian nuclear programmes as atomic states emerge. This is a factor that many have pointed towards as part of the explanation for the secrecy and authoritarianism traditionally surrounding the industry (Patrikarakos, 2012; Sovacool and Valentine, 2012).

The 'nuclear renaissance' has of course been interrupted significantly by the Fukushima accident in Japan, following the devastating Tsunami in on March the 14th 2011. This accident had widespread ramifications for the industry. Not least, the decision of the most advanced technological society in Europe, Germany, to discontinue nuclear power has received significant attention. This fundamentally *political* decision, made by former nuclear physicist Angela Merkel is an incredibly symbolic one, and whilst there is notable focus on Germany being dependent on coal-fired power plants in the place of nuclear, others have examined how this politically binding decision will enable a vast expansion of renewables (see Glaser, 2012; Mecklin, 2012; Mez, 2012). There has been notable discussion on the varied social, political and ethical dimensions of nuclear technology in the wake of Fukushima (Blowers, 2011; Schrader-Frechette, 2012; Sovacool, 2011; Taebi et al, 2012). As in the 1980's, probabilistic risk assessments used to 'guarantee' safety have again been criticised (Schrader-Frechette, 2011). Others have focussed attention on the emotive relations and impacts nuclear technology can have (Roeser, 2011). This is welcome in the face of the rather crude 'debate' which receives the majority of the air time in the UK. Here, the decisions made in Japan, Germany and Scotland are lambasted as being 'irrational' by self-proclaimed gate keepers of 'rational' environmentalism, who have the fortune against everyone else of living in a world of 'pure' technology, devoid of politics, value judgements, and of course, economics (see Lynas, 2012).

Ideas related to the social dimension of 'risk' have also been highlighted, due to the official report into the Fukushima disaster stating that the reasons behind the accident were due to 'cultural' (i.e. 'human') error (BBC News, 2012a). This was important because it contradicted the technocratic view that the accident was not simply a result of the power station being 'old', but was a convergence of intermeshing techno-political cultures affected by shortcuts in regulatory practices, poor governance, and the pursuit of profit. Thus, even the most technically complex developments are exposed to the social and cultural drives and are not immune from human error (Perin, 2005; Perrow, 1984). The function of this section has been to provide a brief overview of some of the technical debates surrounding nuclear power. Nuclear power raises unique technological challenges, and there are many unresolved issues related to safety procedures, carbon emissions, nuclear waste, and reactor design, which would suggest a highly politicised terrain. Recently however, there has been the emergence of a now dominant view point that nuclear power is not political but an absolute 'need', where decisions can be made through science and objectivity alone, implemented through the free market. This approach of the 'new environmentalists' is discussed in the following section.

Beyond 'New Environmentalism'

The 'new environmentalists' have been identified by Kingsnorth (2012). Most vocal in recent times has been the journalist Mark Lynas, and writer Stewart Brand. The new environmentalism can be defined by a focus on 'the numbers' and continual references to 'rationality' as the basis for making their decisions, an opposition to ideology and politics, combined with insistence that capitalism and markets are the best means of achieving rapid mitigation against the apocalyptic visions of climate change which new environmentalism also espouses. Also, the new environmentalists are the most vociferous advocates of nuclear power; this advocacy combined with the features listed above are potentially conflicting, as is explored below in relation to climate change and economics. The simple narrative of nuclear power as a 'magic bullet' solution to climate change, is in fact, not so simple.

At the time of writing, most policy initiatives are based around mitigating warming at 2C; The Copenhagen Accord (UNFCC, 2009) is based around this as an agreed goal.   What is more, all policy is based around various integrated assessment models constructed from collections of climate scientists and economists, that display global emissions peaking at around 2016 (Anderson, 2012). Most of these models have a substantial proportion of nuclear power (as well as CCS), making a major contribution towards global mitigation (Calvin et al, 2009; Clarke et al, 2007).

As Anderson (2012) reflects, whilst all policy is geared around stabilising temperature rise at 2C with emissions peaking in 2016, many in the scientific community do not believe such a scenario is remotely possible to achieve when current behaviour is taken into account. As the statement at the 4C warming conference outlined:

> "Despite 17 years of negotiations since the 1992 Rio Earth Summit, global greenhouse gas emissions have continued to rise. Since 2000 the rates of annual emissions growth have increased at rates at the upper end of the IPCC scenarios, presenting the global community with a stark challenge: either instigate an immediate and radical reversal in existing emission trends or accept global temperature rises well beyond 4°C. The immediacy and scale of the reductions necessary to avoid anything below 4°C, and indeed the human and ecosystem implications of living with 4°C, are beyond anything we have been prepared to countenance." (Environmental Change Institute, 2009).

In 2012, the International Energy Agency (IEA), announced that the likely course was for 4-6C rise in temperatures by the end of the century (IEA, 2012). This was also the view in a report by the World Bank (World Bank, 2012). PricewaterhouseCoopers similarly state,

"Even doubling our current rate of decarbonisation would still lead to emissions consistent with 6 degrees [C] of warming by the end of the century. To give ourselves a more than 50% chance of avoiding 2 degrees [C] will require a six-fold improvement in our rate of decarbonisation. 'Governments' ambitions to limit warming to 2C now appear highly unrealistic. " (Quoted in Confino, 2012).

The IEA recommends that the only way through which a 4C or more rise could be avoided, would be for immediate emissions cuts in the next few years (IEA, 2012). Thus focus has been placed on 2020 as a target for emissions peaks at the UNFCC framework. Thus many countries are aiming for substantial emissions reductions by 2020 (UNFCC, 2010). The UK Government have committed to a 34% reduction by 2020, building towards an 80% reduction by 205) (HM Government, 2010).

As Anderson (2009) points out however even when Britain transformed from coal to gas in the 1990's, and when France installed substantial new nuclear capacity in a particular year, these two countries have only ever managed at best, 1% reductions a year. What would be required would be 3-5% reductions in CO_2 emissions, and this would be to fall in line with one of the IPCC's 'optimistic' scenarios (Anderson, 2009). This is also without taking into account 'offshore' emissions, in terms of embedded emissions in Chinese manufacturing which our consumption is responsible for, and again, there is the in-built assumption within most of these models that global emissions will peak in a few years time when in fact, there is little sign of this, as emissions are continuing to rise.

Thus Anderson (2009) concludes that stabilization at 2C is highly unlikely. He goes on to focus on actual instances when the required 5% reductions in emissions have occurred., most notably the collapse of the Soviet Union. What all examples share in common is that they are instances of economic collapse. As Jackson (2011) has pointed out, the only instance where such a reduction in C02 emissions between years has been made, and living standards and welfare have also not fallen as a consequence, was Cuba in 1991 when the Soviet Union fell and funding from Moscow was cut.

Therefore, if we are to 'follow the science' – a principle that the 'new environmentalists' claim they stick rigidly to, then it would seem that due to cumulative emissions, it would be in the next few years that radical emissions cuts would have to be made, to "avoid dangerous climate change" (UNFCC, 2009). 2050 emissions targets are not particularly useful as Anderson (2009) in the face of cumulative emissions, as an implicit impression of such a fixed target is that everything could be remedied if every light switch and power station was shut down for a week before 2050. Thus, what follows is that if the severity of a majority of scientific assessments regarding the seriousness and timescale of climatic

change, then the question regarding technology should be, what climate change mitigating action could be rapidly deployed on a vast scale over the next few years?

This is why Anderson (2012) and others have pointed out that the consistent focus on supply-side measures is inadequate. You would have to look for technologies which could be built within a very short time frame, and other actions which could be deployed over a very short time frame. This would leave you with only renewables from the low carbon technologies, or as Helm (2012) has pointed out, the UK switching all coal-fired electricity immediately to gas which can also be built very quickly which would nearly half emissions. However, as even the IEA points out, energy efficiency measures have not been explored adequately enough as a central policy strategy, and could reduce emissions over a short time frame faster than any other policy. For Anderson (2007) a vast role out of demand-side measures would be the most effective means of substantially reducing emissions in a short time frame.

This is why it is so paradoxical that the 'new environmentalists' who routinely espouse the most apocalyptic visions of climate change and reminders that there is only a 'few years left' before the point of no return is passed, are the most vociferous advocates of nuclear power which take at least ten years to construct. In fact, again as both Pricewaterhouse Coopers and the IEA point out, given the likelihood of 4°C rise, using technologies reliant on coastal areas and located by the sea, as nuclear power stations generally are, has to be given serious thought in the context of sea level rise.

If nuclear is accepted as a major contributor to climate change mitigation as some have, then what kinds of numbers of power stations, and across what time scale would development need to take place? In a 'feasible' scenario by Calvin et al (2009) they set out a 'not to exceed' pathway that entails as part of it, the construction of 500 nuclear power plants by 2020, or an alternative low end scenario, 126 nuclear plants to be constructed. The Socolow wedges approach (Pacala and Socolow, 2004) identifies eight different wedges of 'low carbon' technologies or climate change mitigating policy options which would have to be deployed by 2050.

These wedges were designed to show that mitigation could be achieved through the 'up-scaling' of various technological options. Each wedge is considered necessary in stabilizing C02 concentrations at 350-450ppm. A 'wedge' made up of nuclear power entails the construction of 17 new nuclear power stations a year, plus 9 new power stations to replace current capacity. This therefore, requires a new nuclear power station to be built

every two weeks for the next four decades, and 'ten Yucca mountains'[1] to store the waste (Romm, 2011). Romm (2011) has also pointed out that the Socolow (2004) wedges were based around 'business-as-usual' trajectories, not taking into account potential increases in global emissions rates, as has occurred. Thus 14 wedges would in fact now be required, taking into account rate of emissions increasing.

Pielke (2011), uses nuclear as the unit of analysis to explore the approach of the Socolow wedges further, outlining that meeting the fourteen wedges through nuclear power would require the construction of one or two nuclear power plants per day for the next four decades. Of course other technologies would be playing a part would be the reaction to this analysis, however the underlying premise of the 'nuclear renaissance' is that the technology will play a lead role in climate change mitigation (Brand, 2009). So, looking at nuclear power playing such a lead role and contributing to, for example, three 'wedges' by 2050, would require 78 new power stations built a year for the next four decades, so 1.5-2 plants built per week, with a global total by 2050 of 3120 nuclear power stations. This calls for an appraisal of 'the numbers'.

The World Nuclear Status Report (2012), points out that nuclear power is in decline. The majority of reactors are aging. There are 429 reactors operating in 33 countries (Schneider and Foggart, 2012). It has been reported that 59 reactors are under construction, however this figure disguises a lot. 9 reactors have been labeled as being under construction for 20 years; four others have been labeled as under construction for ten years or more; nearly 18 of the units listed by the IAEA have encountered construction delays; three quarters of units are under construction in just three countries: Russia, China, and India, where data is very hard to ascertain, it thought half of those under construction in Russia are experiencing severe delays. It is important to note that 'under construction' includes the stage when there has been an 'order' for a power station, however this still entails the planning, construction times, lengthy licensing procedures, complex financial negotiations, and site preparation. Thus 'ordering' is not a guarantee of construction: "French atomic energy statistics through 2002 indicate 253 cancelled orders in 31 countries, many of them at an advanced construction stage" (Ibid: 11).

In short, it is extremely doubtful if anything like the total numbers of reactors included as "under construction" will actually be built. If we recall, one Socolow wedge of nuclear power, implies one being built every two weeks for the next 4 decades, or if revised emissions trends are taken into account, one power station a week for the next four decades. The report also indicates that total installed capacity of nuclear for the first time,

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[1] 'Yucca Mountain' was a proposed geological disposal facility in Nevada, which after many years of study and deliberation was abandoned in 2010 by the Obama administration.

fell behind the aggregate for wind turbines, biomass and waste-to-energy and solar power, and that whilst these technologies continue to expand and get cheaper, nuclear power is declining in number of power stations in operation, and getting more expensive, and therefore losing its market share (Ibid).

For nuclear to contribute to three out of the fourteen 'wedges', it was discussed that 3120 plants would be required by 2050, or 6.6 times the historical maximum of 470 plants in 2002. The second feature of the new environmentalists is also paradoxical at this point. The new environmentalists proudly denounce politics and ideology preferring to rely solely on 'the numbers' and 'objective science'. It is obvious however, that to build 3120 nuclear power plants would require Nation-States making strong binding political decisions, overruling opposition of the technology, funding the nuclear programme, supplying the necessary processes (massive investment in elite police units) required for the securitization of society, and being able to sort out nuclear power's manufacturing and expertise 'bottle necks' experienced at present. It would rely on political closure, and exclusion of oppositional voices from the policy process, yet as will be discussed later, the third pillar of the new environmentalists is an embrace of capitalism and markets which would contradict such an interventionist approach.

Of course, were all of these actions mentioned above deployed important societal questions would need to be asked. If 3120 nuclear power stations are built, what are the wider societal and political implications of such a development? These questions are prohibited under the 'new environmentalism' however, because thinking beyond the apocalypse, beyond the unequivocal need to reduce CO2 emissions, is to be distracted by 'uncertainty' and 'irrationality'. The problem is partly with 'targets' such as 2022 and 2050, as they are unrealistic. As Pielke (2011) points out:

> "The U.K. targets are a perfect example of what happens when symbols become disconnected from reality. To achieve a 34 percent reduction from 1990 emissions by 2022 while maintaining modest economic growth…Britain would have to achieve the equivalent of deploying about 30 new nuclear power plants in the next six years, just to get part way to its target. One does not need a degree in nuclear physics to conclude that is just not going to happen"

Pielke (2011) concedes that these targets are based on "symbolism" or "magical solutions" which are useful in politics, but do not address the issue at hand. As Žižek (2009) points often the frantic demands for 'action' at all costs, without time for deliberation is the kind of frantic activity designed to make sure 'nothing really changes' With the new environmentalists who call for at least 3120 nuclear power stations to be built, rather than being objective, this task cannot work under current circumstances and therefore requires

political action to forward an agenda at the exclusion of others – in other words it is an uncertain, unscientific, highly political task. It is not based on evidence of the purely 'practical' or 'common sense' or 'rational' assessment of the numbers, but rather, on ideological conviction. Similarly, Germany's 'turn' way from nuclear is not based on a purely rational assessment, but on a political decision which ventures into the unknown.

Žižek (2009: 25) critiques the focus on purely 'rational' claims and 'technical' solutions in relation to the environment:

> "confronting ecological problems requires making choices and decisions – about what to produce, what to consume, on what energy to rely – which ultimately concern the very way of life of a people; as such, they are not only technical but are eminently political in the most radical sense of involving fundamental social choices".

There should be honesty regarding the fact that what is really being discussed is competing visions of socio-environmental relations, which are based around values rather than merely 'objective' technical appraisals. As Žižek, again states in relation to the idea of an objective technical decision to be taken on such matters: "there is no 'objective' expert opinion waiting to be applied here; one just has to take one side or the other, politically" (Ibid: 16).

Nuclear Power and Economics, The Real Opposition?

With regards to the latest reactors under construction in Europe, new nuclear power is the 3 Billion or 6.5 Billion Euro question, depending on whether you consult the projected figures produced by economists at the beginning of the project (3 Billion), or the real unfolding costs and delays, of 6-8 Billion Euros, and 2-5 years (Bradford, 2012). The economics surrounding nuclear power are notoriously difficult to assess. Hultman (2011: 403) outlines features making it so problematic to ascertain and gain precise figures on. In comparison to other 'base-load' technologies (for example, gas), nuclear power has "very high upfront capital costs"; nuclear power is "entwined with processes that are sensitive elements of national security – the production, transportation, and reaction of fissile material"'; also because the waste from nuclear power is long lived and hazardous, "most governments are heavily involved in the process of developing, building, securing, and maintaining storage facilities".

The ratio between capital costs and operating costs is very high for nuclear power (Tolley et al, 2004). Nuclear costs can rise based on several different factors including construction, reprocessing, storage, decommissioning, fuel, security, and research costs (Sovocal, 2011). One study concluded that between 1966-1977, nuclear plants cost at least

twice as much as expected (Ramana, 2008). Elsewhere Krauss et al (1994) outline that European government assessments of nuclear costs consistently underestimate the true costs per kWh, often to a great extent. Hultman (2011) concluded that the period of 1960-1990 shows a general escalation in costs, which he notes, can be defined as a "negative learning experience" (2011: 403).

A number of factors could be said to have generated such a 'negative learning experience' however, including increasing regulatory burdens, safety procedures, as well as delays through public opposition (Nuttal, 2006). However, Grubler (2010: 5174) in an analysis of the French nuclear 'upscaling' reveals that even in this instance, it was "Characterised by a substantial escalation of real-term construction costs". This is an important point because the rapid up-scaling of the French nuclear programme is considered as the archetypal nuclear success story. The French programme however relied on

> "...a unique institutional framework that allowed for centralised decision-making, a high degree of standardisation, and regulatory stability, epitomised by comparatively short reactor construction times." (Ibid).

Despite these unique factors however, a 'negative learning experience' was still experienced. This refers to costs that actually increase despite simultaneous increases in experiences of construction. The UK nuclear programme was also defined by a 'negative learning experience' (Mitchell and Woodman, 2007). As was mentioned in the brief history of nuclear power in the introduction, the technology emerged out of a highly centralized state-led decision-making and was heavily subsidized.

The situation in Britain is now very different however. A step change to British Energy provision was instigated through the Electricity Act 1989, which sought to

> "...provide for the vesting of the property, rights and liabilities of the Electricity Boards and the Electricity Council in companies nominated by the Secretary of State and the subsequent dissolution of those Boards and that Council" (HM Government, 1989).

This was the Privatization Act, and involved the state controlled Central Electricity Generating Board (CEGB), being split into three 'upstream' companies responsible for electricity generation (then, 'PowerGen', 'National Power', and 'nuclear electric', and a company responsible for the 'downstream' activities of electricity distribution, which became the 'National Grid'. 60% of the assets of the upstream companies were privatized and the remaining 40% government share, was sold between 1995-1998 as markets were further liberalised (IEA, 2005).

A major aspect of the Hinkley C public inquiry in 1988-1989 as shall be discussed in chapter five, was a battle over how nuclear power, a traditionally heavily subsidized industry, would function under a privatized electricity system, based around a principle of 'not picking winners'. This is based around the idea that government should not choose technologies, but rather, 'the market' will choose the most cost effective and efficient forms of electricity generation.

Despite the Non-Fossil Fuels Obligation (NFFO) designed to protect nuclear power during the privatization (as it required electricity distributors to purchase a certain amount of 'non-fossil fuels' which given the infancy of renewables, means nuclear power), nuclear was considered economically unviable, and the construction of Hinkley C was abandoned. The Government was forced to choose between new nuclear power and privatised electricity system and the choice was privatisation (Hewlett, 1994).

In 1996 when government sold its shares in the UK's nuclear fleet, the new company British Energy (BE) was formed to take charge of Britain's nuclear power plants, as well as attempting to become an integrated 'generating and retail company' purchasing gas supplies in Wales, and a Coal Fired power station at Eggborough (Helm, 2004). This was an experiment in passing the full operational costs, including future backend costs usually taken up by the government and tax payer including decommissioning and waste disposal, to the responsibility of shareholders for the first time (Hewlett, 2005).

However, problems were encountered as electricity prices dropped; the problem here is that the price of nuclear power is 'fixed' and highly susceptible to changes in the market price of electricity; it is fixed because even when the power station is not running, operational costs are still incurred (Ibid). For example, the plant's safety systems still need to be operational even when no electricity is being produced. Backend costs also have to be factored in, as generators under the new privatized framework are supposed to pay 'their share' of waste disposal, therefore they will have contracts with waste management companies. In this case, British Nuclear Fuels Limited (BNFL) was contracted by British Energy.

Thus when electricity prices fell, and operational costs became higher than profit, creditors were increasingly reluctant to lend to BE, and subsequently, The Blair government were forced to bail out British Energy to a figure of £650 million (Tempest, 2003). As part of the restructuring of British Energy, controversially, the government once again took full liability for waste management costs and disposal costs from the AGR reactors, which considering the timescales involved, have been estimated to be £3 billion (Hewlett, 2005). This was a move that was in effect, passing the backend operational costs

back to the taxpayer (Hewlett, 2005), and thus the experiment to privatize the nuclear power industry had been unsuccessful.

The key question which was being asked as privatization was being worked out, related to whether nuclear power could be transformed into an 'ordinary' asset (Kahn, 1997); whether its extraordinary features, including vast upfront capital costs, safety issues, and waste disposal, cannot be prohibitive to nuclear being a 'short term' preferential technology. McKerron (2005: 1964), asked in relation to the idea of 'ordinariness':

> "the difficult question to answer is whether or not the evolution of such generic policy instruments in favour of low carbon options, as well as some small-scale possible moves to help in nuclear technology development, will outweigh the current market disadvantages of nuclear power."

This leads towards a conclusion that in order for this to occur, there would have to be substantial transformations to in government policy in terms of altering liberalised energy markets in order to make nuclear 'ordinary' (Ibid).

Such a policy of electricity market reform was proposed as part of the UK government's new nuclear plans. It was promised however, that nuclear would not be subsidized, that operators would pay for the full cost of decommissioning, and that nuclear power companies would pay 'their full share' of waste management (BERR, 2008). This was also followed by the introduction of the development of measures such as the 'Carbon Floor Price' to produce a minimum tax on carbon emissions (Harvey, 2012), thereby making low carbon industries cheaper.

This followed recommendations by Ofgem that there may need to be a turn away from liberalized energy markets (Helm, 2010). The Government has published the Electricity Market Reform (DECC, 2012), which amongst other things sets out a Contracts for Difference (CfD) for low carbon technologies including nuclear and renewables, which are long term contracts with energy generators, grid operators, and retailers, that will guarantee a supply of power at a certain price. These prices have not been established however, at the time of writing they are still under negotiation.

They are involving ongoing behind-closed-doors negotiations between EDF Energy and DECC regarding the 'strike price' for nuclear power, which is the working out of the guaranteed minimum price that EDF will be paid for electricity generated (Financial Times, 2012). The problem for Government however, is that if the 'strike price' is put too high, then this will be politically challenging, due to the fact that many would see this amounting to a nuclear subsidy. The other risk is that if it is too low, EDF could walk away from new build, or alternatively, construction would get halfway and EDF would announce

that it was not profitable to continue, and Government would have to step in to fund the remaining construction costs (Financial Times, 2012).

There has once again been notable discussion concerning the possibility that the Government would try to 'underwrite' the risks of construction. This would entail Government covering the costs of over-runs caused by delays if they rise above an agreed level during the high risk construction process. Toke (2012) analyses that the 'strike price' for new nuclear power would have to be higher than offshore wind, which would probably be unacceptable in terms of public opinion. His conclusion is therefore

> "The only way that the strike price for nuclear power is to be held down to levels that look more politically acceptable will be achieved through the Government underwriting nuclear construction costs. This may be presented as some sort of normal, technical option but would in fact represent a massive state subsidy to nuclear power that is not available for renewable energy.—The blank cheque option."

Government is therefore in a very difficult situation because underwriting construction costs could breach EU State Aid rules, and would amount to subsidies for nuclear power (Ibid). Another matter which is up for private negotiation between DECC and EDF regards an agreed price for the disposal of radioactive waste, where the nuclear generator in question is required to pay 'their full share' of disposal costs (DECC, 2011a;b). What constitutes the 'full share' is part of the ongoing negotiations. The share is a price paid for the hypothetical deep Geological Disposal Facility (GDF), to store waste sometime in the future.

The problem for the nuclear industry however, As Jackson (2009) has pointed out, is that the 'signal' market prices for the facility, have been shown to be equal to 41% of a new reactors capital cost. This would be a price which would render a nuclear new build programme completely unviable. Thus the industry requires a 'fixed' waste disposal price, which will avoid this full cost, as costs rising above this would have to be covered by the state. This again however, could involve the state contributing to the difference above this price, and being interpreted as another form of subsidy (Ibid).

Another huge problem relates to the projections of the economics of nuclear power, where DECC view it as being comparable to off shore wind and 'highly competitive' (DECC, 2011a), and the economic reality of the European 'nuclear renaissance'. The two EPR reactors under construction in Europe (the same proposed design for Hinkley C and Sizewell C), Olkiluito in Finland and Flamanville in France, are 4 years late and 2.6 Billion Euros over budget, and four years late and 2.7billion over budget respectively (Carrington, 2011). E.ON and RWE have pulled out of the UK's 'nuclear (BBC News, 2012b). Centrica,

EDF's partner at the time of writing are widely predicted to pull out of the Hinkley C project (Leftly, 2012), requiring EDF to find another partner.

The issue of nuclear power working within market-based systems have led to some conclusions that "buffeted by economic forces, new nuclear capacity cannot be expected to contribute significantly to global energy supplies or to climate policy solutions in the decades ahead" (Bradford, 2012: 151).This is what has been referred to as the 'self limiting future of nuclear power' (Romm, 2008). Insecurities based around prohibitively high and escalating capital costs, production bottlenecks in key components needed to build plants, very long construction times, concerns around uranium supplies and importation issues, unresolved problems around waste storage, large scale water use in the context of potential future water shortages, and high electricity prices for new plants, all add up to making the technology uniquely challenging (Romm, 2008: 1). Given these economic conditions some argue that the nuclear 'renaissance' may actually turn out to be more of a nuclear 'relapse' (Cooper, 2009).

This has yet to be seen, but what is clear is that policy surrounding nuclear power is still attempting to solve the central problem which emerged in the 1980's Hinkley Inquiry: how to make this 'object of governance' work, when the one rigid principle above all others - one which takes priority above any concern over climate change mitigation – must be adhered to: That it must be a market framework must decide and coordinate policy options. Nuclear power is an awkward object, and makes the state visible in an era when the state does not want to be seen. It requires political decisions to be made in the era of the 'non-decision'. It is shrouded in major uncertainties regarding the future, when increasingly 'smart policy' must be based on rigid certainty.

The point with this economic discussion, related back to 'the public' and in particular, 'public opposition'. Given the vast uncertainties related to nuclear economics, 'policy insulation' (Newman, 2009), or 'protection of external events' is necessary, so it may be worth consideration as to whether blaming public opposition is a form of collective psychological projection, where the object is held responsible for inner failings, when in fact 'public opposition' is the messenger pointing towards the external risks, and then getting the blame. As McKibben (2012) writes, "it was Wall Street, not the public which put the kibosh into nuclear power".

This relates to another contradiction of the 'new environmentalists'. The reasons stated regarding why the grand pronouncements of nuclear power have not lived up to the reality is due to various reasons, normally, 'left wing ideology', 'wishful thinking', 'irrationality', 'NGO opposition in the 1970's', and particularly 'irrational public

opposition'. The new environmentalists are very keen on 'capitalism' and 'the market' (Lynas quoted in Rustin, 2011), as the mode to bring about radical change. It has yet to be seen, but liberalised capitalist energy systems do not seem compatible with the development of nuclear power. The new environmentalists perhaps deliberately ignore the fact that when that famous question is posed, 'Nuclear power?' it is investors and capitalists who are the ones that say, 'no thanks!' Thus economics and public engagement should be considered on the same page. It could be suggested that some of the policy reforms designed to streamline consultations, are working in the wrong place; they could be seen as a false idea that removing the public could somehow remove the inherent economic problems as well.

Conclusion

This chapter has introduced and discussed the key debates and issues related to nuclear power development. Firstly, the complex history of the technology was discussed to display why it has always been a contentious form of energy production. In the UK context this relates to the 'uncomfortable' histories of nuclear's entwinement with the military establishment and the cold war weapons programme, the culture of secrecy, and unaccountable decision-making, which the extension of public inquiries in the 1980's can be seen as a reaction against. Following this, the technical issues related to nuclear power especially with regards to climate change were discussed. It was shown that these matters are far from settled, and the challenges in constructing new nuclear power are uniquely challenging, which makes its status as a 'solution' to climate change mitigation, uncertain.

The dominant framing of the 'new environmentalism' was then critically evaluated. The extent of the climate change challenge, shows that the simplistic logic espoused by the 'new environmentalists' based around 'looking at the numbers', 'scientifically informed decision making' against 'ideology' and 'politics', and using 'capitalism' and 'markets' disintegrate under the pressure of their own evaluative mechanisms. It is argued that to construct the nuclear capacity that the new environmentalists are advocating would most likely require a suspension of current political practice in the West, vast state funding, and the abolition of liberalised energy markets. The 'new environmentalists' like everybody else, are basing their wishes on a desire for political closure and ideological conviction: this recognition is the first step in rescuing the nuclear 'debate' from the emerging environmentalism without values. A political analysis of nuclear power should not seek to simplify discussions around nuclear power but make them more complex. Climate change does not make the nuclear issue a done deal, but rather, makes it a more multifaceted than ever before, as with the case of Germany, it is clear that nuclear power is a political choice,

and not simply a technical necessity. From this point, the next chapter moves on to discuss the social science research on nuclear power and the empirical contexts of this thesis.

3

Chapter Three: Research Context

Introduction

This chapter introduces and discusses the literature surrounding the three research contexts which form the basis of the empirical chapters of this thesis. Firstly, however, recent social science research on nuclear power is introduced. A gap is identified in the literature in terms of research on public engagement with nuclear power, and the politics surrounding this, in the context of the new planning framework, the Planning Act 2008. Secondly, discussion of existing research on public engagement with nuclear power in the UK, leads on to considering the context of the first empirical chapter: the public inquiry. Perspectives on the political and democratic implications of the inquiry are outlined, identifying nuanced positions that fully recognise the many flaws of inquiries, however also recognise their democratic function in terms of 'political opportunities', which offer an important line of enquiry.

Thirdly, perspectives around the themes of 'collaboration' and 'participation' within planning and governance more generally are discussed, which relate to the second empirical chapter focussed on participatory nuclear power policy espoused by the New Labour Government. A key tension is identified here, around notions of 'consensus' and whether the formation of consensus within participatory frameworks is legitimate, or the consequence of continued political exclusion and anti-democratic practice. Fourthly, literature related to planning reform, large scale infrastructure, and the Planning Act is discussed. This is situated in literature discussing particular policy reforms not in isolation but rather as moments in wider processes of governance reform and state restructuring. In order to understand the political tensions inherent in the act, the argument is made for a more nuanced investigation of enactments of politics, where there is not a divide between an approaches focussed on public engagement within policy in isolation, or simply as being entirely steered by external political forces. Rather, an approach which takes account of the diverse practices and spacings of political contestation within a wider governance framework is discussed, leading on to the conceptual discussions of the chapter four.

Social Science and Nuclear Power

As nuclear makes a revival, an important body of quantitative research has developed addressing the nuances of public opinion of nuclear power. Many draw out the connections between identity, pre-existing values, and differing perceptions of nuclear power (Barnes et al 2012; Bickerstaff et al, 2009; Corner et al, 2011; Greenberg and

Truelove, 2011; Groot et al,2012; Groot and Steg, 2010; Keller et al, 2012; Parkhill et al, 2010; Pidgeon et al, 2008; Pralle and Boscarino, 2011; Venables et al, 2009).

Pidgeon et al (2008) have drawn attention towards the 'reluctant acceptance' of nuclear power. If nuclear is 'framed' as a solution to catastrophic climate change, then previously negative attitudes will be altered to accept the technology. This has been demonstrated in other research, for example Bickerstaff et al (2009) who focus specifically upon this idea of 'reframing' and its effects in garnering support for nuclear, corroborated by the work of Truelove and Greenberg (2012). Research by Corner et al (2011) has concluded that the correlation between personal belief in climate change and acceptance of nuclear power is more complex however. Their study shows that when the question is simply focussed on 'nuclear power or not?', then those that have greater concern regarding climate change were found to be less favourable towards the technology. However, when nuclear power was 'framed' in the context of climate change, those with a greater belief in climate change were more supportive of new nuclear power than those with a lesser belief in climate change. This emphasises the way that nuclear power sits obstinately at the centre of the environmental debate.

The research detailed above is vital in understanding the importance of 'framing', where framing connotes "the perceptual lenses, worldviews or underlying assumptions that guide communal interpretations and definitions of particular issues" (Miller, 2000: 212). Such framing can be extremely influential in setting policy agendas, and in potentially influencing what answers are given to particular policy conundrums during government consultations and other forms of formalised public engagement. As Corner et al argue, this points towards the fact that "public engagement and energy policy decision-making must therefore recognise and work with these contradictions rather than seeking to impose a single or definitive framing of the issues under consideration" (2011: 4831).

The problematic nature of the 'framing' of nuclear power development within public engagement and democratic legitimacy will be discussed further in Chapter Six. Greenberg and Truelove (2011: 819) demonstrate that the myriad of differing views, and identity-based reasons behind these views, suggest that understanding a generalised 'public' misses the fact that "there is no single public with regard to energy preferences and risk belief. Rather there are multiple populations with different viewpoints". Such a perspective displays the idea of 'multiple publics' rather than a homogenous, simplified whole. This is discussed further in Chapter Four. It is also indicative that given the complex and nuanced positioning in relation to nuclear power, there is a need for more in-depth empirical study around different publics whose particular position with regards to

nuclear cannot simply be ascertained and understood through questionnaires and quantitative studies alone.

An example of a more in-depth study into perceptions of nuclear power is the ESRC project 'Socio-Technical Risks, Decisions and Values', which explored through interviews as well as quantitative techniques the varied ways in which people relate to nuclear power, which often cannot be reduced to 'for' or 'against' (see Pidgeon et al 2008). The nuclear industry and government routinely state that local communities proximal to nuclear power stations are on the whole favourable towards the construction of new power stations (Science and Technology Committee, 2012). However, in an important intervention through a series of narrative interviews with members of local communities Parkhill et al (2010: 39) demonstrate that there is greater complexity to the views of local people in relation to nuclear power, and that policy makers should be "...more sensitive to the heterogeneity of the extraordinary in nuclear affairs and the importance of socio-cultural histories of space". This refers to the importance of the history of nuclear which was discussed in Chapter Two. It also indicates the multifaceted ways that particular publics come to understand risks related to nuclear power, and draws attention to the importance of developing an understanding of how these views are formed. Thus they are not static but processual and open to manipulation and transformation.

The recent study by Corner et al (2011) also indicates a crucial point; that the 'framing' of the questions which are asked in opinion polls and public surveys must be taken into account when considering the answers given. For example EDF Energy, concluded that through their survey of the local population around Hinkley C in 2010, the majority of the population were in favour of the development. Goldacre (2010), author of the 'Bad Science' series, illustrated that the survey question asking 'Are you in favour of nuclear power development?' was proceeded by a series of questions such as 'How important do you consider Hinkley C for the following: the creation of jobs? The future of local businesses? Why do you say that?' He argues that the long preamble of questions leads people down a certain path making them think differently about the issue "...partly because the penultimate question is 'do you want your children to be unemployed? Rather than 'are you a bit scared that we might cock up and give you cancer?'" (Ibid). This is a vital point, emphasising the importance of understanding how issues are 'framed' to relate to a particular spatial scale, the relationship between argumentation and spatiality, being a key theme developed throughout this thesis.

Against industry interpretations which depict new found enthusiasm towards nuclear power, Corner et al's (2011: 4823) study – which it must be added, pre-dates the Fukushima accident, indicates that perception in the UK of nuclear power "remains deeply

divided, with only a minority expressing unconditional acceptance". Elsewhere work has highlighted the international dimension to nuclear development, drawing attention towards widespread public opposition (Ipsos Mori, 2011; Ramana, 2012; Siergurst and Visschers, forthcoming). The interview-based work of the 'Socio-Technical Risks, Decisions and Values' project also highlights that opinion polls are not entirely satisfactory in understanding these views; they are often nuanced involving trade-offs. This is of vital importance because the 'framing' of nuclear power by the UK Government has involved a language of trade-offs, when such language may close off important choices before they have been considered.

These studies do not address the formalised settings of public engagement within policy and planning, nor is attention paid to the political dimension of nuclear power and the way in which it is played out within particular policy contexts; this thesis seeks to attend to these gaps in academic research. Recent interventions have sought to 'politicise' nuclear power once again through a thorough critical assessment of the social implications of each stage of the fuel cycle (see Sovacool, 2011); an analysis of the geopolitical and colonial implications of the uranium trade (Hecht, 2012); and critical reflections on the construction of nuclear power within the context of India (Ramana, 2012). In the UK context, Baker (2012) has focussed on the 'meta-governance' of nuclear power arguing that an attempt to meta-govern a transition towards new nuclear power is 'likely to fail' as the government have underestimated the complexity of the policy landscape and do not have sufficient control over important stakeholders. This is an important point, however it remains at an abstract level, rather than empirically analysing in more depth the workings of politics around nuclear development. Sovacool and Valentine's (2012) National Politics and Nuclear Power specifically set out to examine the political and democratic dimensions of the technology. They do so through a comparison of six countries' historical establishment of nuclear power. The broad trends across the case studies indicate that all relied on substantial economic subsidy and top-down decision coordinated by the state, with limited transparency or democratic engagement with concerned publics.

Whilst top-down state-led decision making common in relation to a variety of policy issues within the 1970's and 1980's, previous studies have argued that the expertise, cost, and potential risk of nuclear development necessitated forms of decision making which circumvent democratic intervention from publics, as full transparency of these significant issues would prevent nuclear power from developing in the first place (Byrne and Hoffman, 1996; Camilleri, 1984; Jasper, 1996). Thus, what has been identified as a tension between nuclear development and democratic engagement (Wynne, 2010), is not simply a

consequence of a particular historical institutional configuration, but relates to the materiality of the nuclear fission process itself.

However, this position has been challenged in other social science research which outlines that the problematic nature of historical institutional configurations governing nuclear power could be detached from the materiality of the technology itself; that more transparent, democratically accountable, horizontal decision-making could ensure that nuclear power in the future did not suffer from the lack of trust, and public scepticism created from the vertical and closed forms of governing which surrounded it in the past (Morone and Woodhouse, 1989). This is similar to the position now taken by journalist George Monbiot, who has moved from strong opposition (Monbiot, 2001; 2005) to reluctant acceptance (Monbiot, 2008) to outright support (Monbiot, 2011), back to a more nuanced positioning (Monbiot and Simon, 2012).

An exchange with Theo Simon in 2012 is described by Monbiot as 'by far the best debate he has had on nuclear power', and it is indeed one of the very few debates on nuclear power which is worth reading. Both recognise the argument that historically the nuclear industry was not exposed to full democratic scrutiny, operating in an often secretive and unaccountable manner – a historical legacy detailed in the 'short history of nuclear power' beginning on page 33. Whilst for Simon, the institutions surrounding nuclear development continue to act in ways which circumvent democratic intervention, through for example, the secretive nature of negotiations around nuclear's 'strike price', Monbiot originally argued that improvements in governance practices made over the past decades ensure that new nuclear development will be more accountable and transparent. Central to the perceived lack of democratic accountability with regards to the nuclear industry was the notion that it was protected and coordinated through unaccountable State-led bureaucracies, however state strategy has undergone substantial transformation within the shift from 'government' to 'governance' (Jessop, 2007). Given that the 'nuclear renaissance' is recent, there is a necessity to re-examine the technology within the context of discussions around the evolving nature of the state which will be discussed further in the following Chapter. This is of vital importance given that this is the first time in the UK context that nuclear power is being constructed in the 'liberalised' energy market in which it is said the state is not to intervene. Thus the relationship between nuclear technology and the state is a central thread of this thesis.

More recently, in the UK context, research focussed on more recent public engagement with nuclear power in the UK includes work related to the CoRWM project for the disposal

of radioactive waste (Blowers and Sundqvist, 2010; Chilvers and Burgess, 2008). Bickerstaff and Simmons (2009) draw attention to the complex politics entailed in the way people engage with risk related to nuclear waste in Cumbria, where 'absent presences', such as previous experiences with institutions and previous controversies, impinge on the current landscape impacting on the ways in which publics engage in the present. This research however, does not relate directly to the contemporary context of nuclear new build as it pre-dates the implementation of the Planning Act 2008. In terms of formalised public engagement important research was carried out around the nuclear public inquiries in the 1980's. The public inquiry is the focus of Chapter Six, and attention now turns to existing research which relates to this, after briefly setting out the understanding of 'public engagement' used throughout this thesis.

Public Engagement

'Public engagement' is a term which has come to prevalence in policy circles and academic work over the past twenty years. The term covers a broad range of activities as debate continues about what form public engagement between Government, stakeholders and citizens should take (Row and Frewer, 2004). In relation to technological development, Delgado et al outline that public engagement "should not simply be about generating public acceptance through the provision of information on science and technology, but about citizens' active involvement in the development of socio-technical trajectories" (2011: 827). A Government report similarly points out that, against the idea of 'stakeholder communication', "engagement programmes provide genuine insight and creative thinking to improve policy outcomes – giving the public a real sense that they have been able to contribute to government's work." (COI, 2008: 1).

Government sponsored public engagement activities have utilised a variety of methods such as citizens juries, citizens conferences, consultations and deliberative polls (Mahony et al, 2010). Over the past two decades, the principles of 'public engagement' have increasingly been viewed as necessary elements of an organisation's activity across all sectors of society. This thesis focuses on the political differences between two methods of formalised engagement: the public inquiry and the consultative framework of the Planning Act.

It is important to note that these formalised approaches are not the only way in which publics can 'engage' with governmental policy. Various other channels – from direct action protest through to more proactive forms of activity including grassroots transformation towards alternative low carbon futures such as Transition Towns, can all be seen as methods of 'engaging' with energy policy more generally. Additionally O'Neill

and Nicholson-Cole (2009) make the significant observation that a positive correlation between public engagement and outcome cannot be assumed. A number of negative outcomes must also be considered. These include issues of public trust in institutions, and inclination to engage with policy in the future being adversely affected through negative experiences of public engagement. Indeed, the argument of this thesis hinges around the ways in which policy reform has altered the spatialities of planning, and in so doing has impacted upon the locations and methods involved in engagement with government policy on nuclear power and wider issues of energy production.

As there are multiple forms of engagement there are also multiple publics. Whilst notions of 'the general public' and 'the public interest' are often evoked by government in the rhetoric surrounding NPS's, there are in fact 'multiple publics' emerging around differing issues and channels of engagement (Mahony et al, 2010). This thesis is focussed in particular upon 'activist' or 'partisan' publics (Braun and Shultz, 2010), those members of collectively organised campaign groups aiming to influence the political direction of government policy. The 'activist' public has been an integral element in the narrative of nuclear development over the past few decades (Herring, 2010). It is often seen as 'representing' the substantial proportion of the population sceptical of nuclear power, but without the time or economic means to challenge the incredibly complex and time-consuming policy discussions surrounding nuclear power (Welsh, 2000). This relates to Warner's definition of a 'counterpublic', that "…against the background of the public sphere, enables a horizon of opinion and debate" (2005: 56).

Understanding the Planning Act: The Public Inquiry

The rising oppositional movement towards nuclear power in the 1970's ensured that the Government would be required to carry out extensive public inquiries into the building of new power stations. Nuclear plants had previously been subject to planning inquiries, however these had usually only lasted between five and ten days (Rough, 2011). With the rise of environmental groups and a strengthening of the nuclear position, the late 1970's and 1980's featured a series of notable inquiries, beginning first with the inquiry into THORP, also Sizewell B, the Dounreay fast breeder reactor, and Hinkley C inquiry. These events, in particular Sizewell, received significant academic attention.

Public inquiries emerged in an ad hoc fashion from the 19th Century (Burgess, 2011). Inquiries have existed in some form since the 1801 Enclosures Act. The 1947 Town and Country Planning Act made provisions for public inquiries as well as being open to

anybody who wished to make a representation for 'the right to be heard'. It was also open to developers whose applications had been turned down, as well as inquiries to be 'called in' by the Secretary of State to 'inform the ministers mind' (Ryder, 1987). Public inquiries were thus part of the "general investigative aids vested in government ministers" (Wynne, 2011: 76) and were used as key points of public engagement in the planning system. Wynne usefully outlines the different types of inquiry; there are 'local hearings' on activities such as compulsory purchase orders which can be 'of great or negligible significance', there are also 'Royal commissions', and 'tribunals of inquiry' into such things as disasters and accidents.

The public inquiry can be differentiated from 'Royal Commissions' and 'Tribunals', given that it is designed to only entail specific powers based around a litigation model of interests by private parties. However, this model is contradicted as they are a mechanism set up to "advise the ministers mind" (Rough, 2011), thus entailing a key relationship towards policy and political decision-making. Given this dual identity of the inquiry, created by its quasi-judicial nature, Wynne (2011) makes two further important points which highlight the tension key to this chapter in examining the politicisation and democratisation of the nuclear new build issue. Firstly, "public inquiries exist in the amorphous territory between politics and administration" (Ibid: 76), related to this first point, there is an important difference in perception between the "modest" institutional view of inquiries as technological assessments, and public views of the inquiry as "an important forum" in influencing the policy process (Ibid: 93).

The democratic and political function of public inquiries, as sites where government policy could be challenged and influenced, has long been recognised (Wraith, 1971). Kemp et al (1984: 486) argue that:

> "The development of the 'big public inquiry' in the UK exemplifies the type
> of procedural innovations which occur as a means of ensuring public
> accountability in state decision-making on environmental issues".

Elsewhere however, it has been observed that inquiries can be used strategically by political authority as a mechanism allowing adversarial groups to "blow off steam", acting as a container to limit political antagonism (Drapkin, 1974; Kemp, 1985). This corroborates with Brian Wynne's perspective, who points out the ways in which inquiries can embroil activists in a process which potentially distracts from other potentially more impactful courses of action thereby limiting the scale of protest, especially in relation to France and Germany at the time (Wynne, 2010: 16, see also Welsh, 2000). This was a significant concern for some Marxists, who saw the inquiry as restricting radical politics and potentially more effective alliances between green groups and more traditional

socialist organisations, due to the fact that the green groups were 'sucked in' to the setting of the inquiry (Immanuel, 1983). Indeed, the potential of the public inquiry to be an 'instrument of government power' had been recognised (Wraith and Lamb, 1971).

One of the notable aspects of the 'big' public inquiries of the 1980's, was that they became arenas for a form of experimental democracy, which was never meant to be the case. The authoritarian legacy of nuclear power's development in the 1950's and 1960's was for Wynne, relevant to the problems which would occur during nuclear's new status as a 'public' issue in the late 1970's and 1980's. As Wynne (2010: 50) argues, the inquiry became the default setting for democratic engagement with nuclear power because:

> "It is uncomfortably obvious that more than a generation of estrangement between the nuclear problem and the democratic system left a lack of preparation for representative politics".

Such disconnect between the traditional channels of democratic representation and nuclear power ensured that politics was 'displaced' to "the sole forum available – the public inquiry" (Ibid: 76). Thus there was extensive research into the actual workings of the 'big' nuclear public inquiries taking place in the late 1970's. Most of these workings are nuanced, in terms of recognising the limited nature of the inquiries as political and democratic spaces, due to their technocratic and exclusionary nature, with processes such as 'cross examination' making access for non-technical publics extremely difficult. Due to their technocratic nature, For Massey (1988), inquiries represent a 'very limited' way of democratising decision-making.

Nevertheless, what was being demonstrated through the experience of the inquiries was that a 'one size fits all' approach to democracy was insufficient. The time-scales and issues raised by nuclear technology required not just a process of aggregative procedure, but rather a means through which citizens could actively learn and engage in order to be able to make decisions regarding an area of such complexity. Brian Wynne's (2011) assessment of the 1977 Windscale inquiry (originally published in 1982) was a defining work in examining the politics of the public inquiry on nuclear, but also influencing a generation of literature which would evolve into Science and Technology Studies (STS).

Preceding the Windscale inquiry, demands had been made that nuclear decision-making could no longer remain in the hands of a few experts. The decisive Flowers Report in 1976 commissioned by the government and written by an industry insider and nuclear physicist concluded that:

> "nuclear development raises long-term issues of unusual range and difficulty which are political and ethical, as well as technical, in character"

and called on greater commitments towards public engagement to be made by the government as well as a full exploration of these issues before any new build took place." (Flowers, 1976)

Similarly, the Council for Science and Technology (CST) published the report 'The Big Public Inquiry' (1979) which sought to learn the lessons of Windscale and work towards new procedures for the impartial investigation of projects with major national implications. The essential question being posed, as Wynne wrote in the New Scientist was, "how should the government organise public inquiries into the big technological decisions whose outcome could dominate our lives for many years to come?" (1979: 1078).

The recommendations of the CST report outlined the need to focus on procedural justice issues and the need for opportunities for 'lay people' to participate in the engagement process. The report also emphasised the need to deliberate earlier on, or 'upstream', in the policy process due to the fact that by the time the inquiry setting was reached, opposition appeared as 'luddites' unable to deliberate on the substance of policy. As discussed later, these are the kinds of debates that remain relevant to understandings of public engagement within discussions around 'the third wave' today (Owens, 2012).

By the time the Sizewell B Public Inquiry was proposed, there was widespread public pressure upon the government to enable a more participatory and deliberative process. The Sizewell B Inquiry received significant attention not just in terms of nuclear power but also for the questioning of merits of the 'big inquiry' itself (Purdue et al, 1984). Tim O'Riordan in his 'anatomy' of the Sizewell B Inquiry details the process of the inquiry led by Justice Parker from the preliminary meeting to the final decision, carefully documenting how the inquiry evolved and how technical discussions on Sizewell were broadened out into much wider debate about nuclear power itself. O'Riordan takes a nuanced account to the inquiry illustrating it's frustrating length, cost, and complexity, whilst also making the observation that that "it will never be known how much the inquiry saved the electricity consumer in terms of producing a safer and less expensive reactor" (1988: vii).

The process took two years and grappled with probability assessments and notions of risk to an unprecedented extent. It was undoubtedly a major expansion of the public inquiry process. In particular, notions of 'tolerable risk' were deliberated on extensively as many of the complexities involved in running, maintaining, and ensuring the safety of a nuclear power plant were publicised for the first time through the cross-examination process (O'Riordan et al, 1988). Whilst the planning application for the power station was in the

end granted, a huge number of safety improvements were recommended and some important conclusions were drawn in the inspector's report which would have a lasting legacy.

For example, probabilistic risk assessments came under scrutiny as it was concluded that there could 'never' be a guarantee of safety from such assessments, as they do not take account of 'human error' - an unquantifiable aspect of such assessments (Layfield, 1987). This explained discrepancies which had been identified by campaign groups during the inquiry between probabilistic models, which outlined the risk of serious nuclear accident as being a 'one in a million' event, compared to the observed frequencies of nuclear accidents including TMI and Windscale in what was then only a thirty-year life-span. Furthermore, what had also unravelled during the inquiry were deeply uncomfortable revelations regarding previously denied links between civilian nuclear fuels, and the weapons programme (O'Riordan et al, 1988).

There is a danger however in potentially romanticising the public inquiry, and it is important to recall the deeply technocratic nature of the engagement process. It often involved intimidating processes of cross-examination, not to mention costs and the length of time it entailed meaning that for many, participating in the inquiry represented a full-time job. Owens (1985: 546) describes that for some participants, the inquiry into Sizewell was a "tortuous" experience. Wynne also describes how power continued to be enacted within the setting of the inquiry; nuclear issues are not purely technical, but actually are "attitudes towards social relations as much as technologies" (2011: 17), however these matters were often excluded. For example, during the inquiry into Windscale, through deliberating which issues mattered via recourse to scientific expertise as authority, various uncertainties were covered up, and issues relating to the legitimacy of the institutions which govern nuclear power are ruled out of the discussion. Discussion is limited to measurements and models which have predominantly been produced by government and industry actors.

Wynne's (2010) account of the Windscale inquiry outlines that notions of scientific 'certainty' were used as a means of delegitimising certain issues as not valid for discussion in an attempt to focus on those issues which were deemed to be settled through objective scientific calculation. Wynne describes that during the Windscale inquiry, certain important issues such as concerns over the enrichment of plutonium for military use were often excluded from the inquiry, due to the fact that they were not legitimised by scientific certainty, as they related more to issues such as trust in institutions surrounding nuclear power. Wynne refers to this process as one where "uncertainty is covered over by mirages of factual certainty (such as demand forecasts indicating 'need' or safety figures)" (2011:

78). This is what is understood as a process of depoliticisation of the nuclear issue, as through the 'covering up' uncertainty, discussions of political 'choice' regarding future policy is replaced with unchallengeable statements of need and 'factual necessity'.

In recent years public inquiries have become of concern to the wider process of the 'modernisation of planning' (Cowell and Owens, 2006). The inquiry process has been criticised for slowing down timely development in large scale projects, as "...public inquiries can become embroiled in debate about national issues, rather than focussing on local issues related to the siting of the proposed development...these elements can also create difficulties for participants, including uncertainty, delays and sometimes significant upfront costs" (DTI, 2006: 135-136).

Lengthy and costly inquiries, particularly the Heathrow Terminal 5 Inquiry, but also previous nuclear inquiries such as Sizewell undoubtedly contributed towards this view (Cotton, 2011). Indeed, in the 1980's the same debate was being had. As Owens states, industry was arguing strongly that planning had gone beyond its remit; believing that the system had gone "to far" in favouring those wishing to object to developments, especially because questions of need and national policy were being addressed at inquiries, causing delays and cost overruns (1985: 548). For campaign groups however a different conclusion was drawn. Whilst agreeing that public inquiries were insufficient, the key concern was not a lack of 'streamlining' but rather the lack of engagement and substantial debate 'upstream' during the formation of the policy in question (Ibid: 549). In short, the debates which have occurred over the past decade through a series of policy negotiations running up to the implementation of the Planning Act, clearly resemble the unresolved tensions over the public inquiry in the 1980's, and in particular, over the balance and correct location for public engagement on matters of a 'in principle', 'national', 'local' and 'site specific' issues (Owens, 2002).

For Grove-White (1991) however, inquiries represent a 'vital' space for policy debate. In terms of environmental policy, inquiries have often proven to be crucial spaces where policy can be transformed and improved through public engagement, and where processes of 'policy learning' can take place (Dudley and Richardson, 1996; Owens and Cowell, 2002). Rough focuses on processes of 'policy learning' through examining archival data of the early nuclear inquiries in the late 1950's and 1960's which have often been overshadowed by the more famous public inquiries of the 1980's. 'Policy learning' is defined as "policy maker's ability to draw on past experiences when making decisions about future policy" (Rough, 2011: 26). The 'learning' process experienced by government was unrelated to the underpinning procedural, institutional, and political issues of nuclear power development, as through 'boundary work' it remained a restricted issue with

limited scope for the public to influence policy. Thus 'policy learning' was limited. However Rough (2011: 42) also states that "The role of public inquiries in gradually opening up the closed, opaque world of nuclear energy should not be underestimated". Whilst perhaps limited, inquiries did 'open up' the nuclear debate for further parliamentary scrutiny, thus beginning a process of making the issue more 'public'.

In the context of the 'modernisation of planning' Cowell and Owens (2006) have re-examined the inquiry in terms of assessing the 'political opportunities' it provided. Their research addresses the affordances which campaigns have in terms of influencing policy as being context-dependent, and differing significantly in terms of the structural constraints of state strategy (Kitschelt, 1986; Meyer, 2004). Such an approach highlights the 'argumentative' function of planning spaces, where they are viewed not merely in an instrumental sense, but rather as a domain in which policies are continually contested and remade. As Cowell and Owens state:

> "...planning inquiries have provided crucial institutional spaces for challenges to the status quo. Such opportunities have been skilfully exploited by coalitions of local and nonlocal actors, not only to resist specific developments (with mixed success) but also to articulate critiques of the programmes and policies from which individual proposals derive."
> (2006: 404-405)

Thus, public inquiries have been used in a highly political capacity, and have been a method of democratic engagement with the kinds of issues which remain muted in the settings of UK Parliamentary democracy. In the context of sustainable development, they point out that rather than a purely instrumental process planning, and public inquiries in particular, have entailed political struggles over ideas around sustainability, and have contributed towards the 'greening of the state' (Cowell and Owens, 2010). They add however, that in relation to 'political opportunities' there is a need to develop an understanding of how "actors create opportunities" (Ibid: 954).

This is where Chapter Six, focussing on the case of the Hinkley C Public Inquiry 1988-1989, takes inspiration. In understanding how the Planning Act has transformed the political nature of nuclear power development, and the argumentative dimension of this process, it is necessary to gain a deeper understanding of the unfolding of political opportunity within the setting of the inquiry, given that the act is in part a response to this dimension of the inquiry. Asdal (2008), in research on a hearing over a Norwegian oil-fired power-plant, considers the hearing (which is the Norwegian equivalent of the inquiry) as a 'tool' of democracy for campaign groups. Using archival data, Asdal empirically traces the ways in which political openings were created through following the issues as they extended through various practices enacted by participants. By following this process, Asdal

demonstrates how the hearing over the power plant was broadened out and 'up-scaled' to encompass wider environmental issues, as well as national policy. Elsewhere, Asdal (2007) has described this process as returning an "issue to the centre". However, as I will discuss in more detail in Chapter Four, it is also necessary to recognise that such hearings can be a 'tool' in the arsenal of government. Rather than one or the other however, it is important to view both publics and the state as strategically battling through argumentative practices which shape spatiality, to use differing 'tools' presented in the inquiry setting. Understanding how these operated in the Hinkley C Public Inquiry thus illuminates considerations of politics, and the political, in the context of the Planning Act.

Understanding the Planning Act: Participatory Governance and Collaborative Planning

The experiences of the 'big' nuclear inquiries arose from, and indeed encouraged, further attention towards questioning how a more participatory, inclusive planning system could be developed. Increasing public concern regarding complex and large technologies such as nuclear demonstrated that different forms of decision-making would be required, given that the potential implications of such developments were far-reaching and had often been shown, through public inquiries, to be uncertain. The adversarial nature of the big public inquiries was not considered adequate by either advocates or objectors to nuclear power however. It must also be noted that similar events had taken place with regards to the development of coal-fired power stations (Owens, 2002) and major road developments (Tyme, 1978).

During this time, the environmental movement more generally, was growing around a range of issues from industrial pollution and the dangers of nuclear power, forming well organised political movements. Given the lack of a strong official Green Party, these movements increasingly pursued their aims through the planning process, attempting to halt damaging developments. This coincided with a shift in planning towards 'collaborative' approaches away from traditional 'instrumental' processes, as well as the wider shift from 'government' to 'governance'. These developments were taking place within the wider context of neoliberal rhetoric preferences (not necessarily practices) for 'hands of government' and the 'small state', and the rise of ideas such as the 'risk society' (Beck, 1992) and the 'third way' (Giddens, 2000). This is not to equate particular changes to wider causal factors, but it is necessary to recognise the varied and interconnected processes that were occurring, rather than isolating particular areas of policy emerging in and of themselves.

Throughout the 1960's and 1970's rationalist theories of planning were dominant. As Allmendinger (2009: 50) highlights, the value of rationalist approaches relates to claims of 'objectivity', where "the continued good currency of rational process planning lies in its claims that planning can be a scientific enterprise with the associated kudos and respectability that accompanies it." As outlined by Faludi (1973), rationalist planning is focussed around the best way of producing results, where the planner takes a non-ideological and scientifically rational approach which can be applied to various issues. This represents an 'instrumental' view of planning, where it is a 'means' to reaching a limited number of preconceived 'ends' identified by the planner. Therefore, the ability of policy to be transformed during the planning process is limited (Allmendinger, 2009).

Rational approaches to planning began to receive criticism in the 1970's and 1980's. Marxian critiques focussed on the way that claims of rationality existing independently of political and economic power, and more specifically class, were problematic (Paris, 1982). As Marx (1843) put it, "reason has always existed, but not always in a reasonable form". That is, the form that reason takes cannot be extrapolated from wider influences of politics and social life. Such a political critique of rationality and reason was also made elsewhere, such as Flyvberg (1991), who argues that rationality is 'context dependent'. Here, "...power defines what counts as rationality and knowledge" (Flyvberg, 1998: 227). The point here is that the planning process can be utilised to forward political agendas, thus the claims to 'objectivity' of instrumentalist planning is misleading. The ways in which power can influence supposedly neutral decision-making mechanisms has been described as 'the dark side of planning' (Yiftachel, 1998).

There was a critique of 'rationalist' planning based around objective assessments and recognition that some of the experiments in public engagement in the 1980's, such as the public inquiry, were too adversarial, and criticised by industry and opposition alike. This also prompted a general push for greater transparency and participation throughout the 1990's with regards to environmental decision-making at the European scale (Smith, 2003), with recommendations such as the Aarhus Convention (1998) outlining "the right to participate in environmental decision-making".

The response to the critique of rationalist approaches as well as the associated challenges emerging from the shift towards governance listed above, was the development of 'collaborative approaches' to planning. Patsy Healey, reflecting on her key text 'Collaborative Planning' (1997), identifies four influences for the development of collaborative approaches. Firstly, an understanding of planning as an 'interactive' approach rather than a top-down transfer between 'means' and 'ends'. Secondly, comprehension of the wider institutional environments within which governance takes

place, which shape but do not fully determine governance arrangements. Thirdly, an awareness of planning as entailing the protection and enhancement of places and the environment. Lastly, a commitment to social justice and equality between actors in governance arrangements (2003: 104).

The need for an 'interactive' planning process is concomitant with what Healey (1998) recognises as 'stakeholder society'. This refers to the perceived societal realities of the governance era, where a variety of actors including NGO's, businesses, community groups, and governmental departments all have a stake in a decision within policy 'networks' rather than previous centrally-directed 'top-down' approaches. A key role for planning within the stakeholder society is the 'management of conflicts' between these different interest groups, achieving a consensual process of policy development (Healey, 1998: 1). Similarly, Innes (2004: 5) argues that 'consensus-building' achieved through collaborative planning is particularly appropriate for issues of uncertainty where resolution is difficult to achieve, and where "all stakeholders have incentives to come to the table and mutual reciprocity in their interests". Collaborative planning is a varied project, and was part of more general 'post-positivism' including 'post-modern' planning and 'neo-pragmatism' (Allmendinger, 2002).

I now focus upon collaborative planning stemming from Habermasian ideas of 'communicative rationality', which was a central theoretical influence for collaborative planning (Harris, 2002; Healey, 1999; Innes, 1995). This was part of a wider 'deliberative turn' followed by a number of theorists. Taking environmental issues as a key example, rational choice theorists would argue that the most 'rational' choice could be established through an aggregation of individual preferences. For example, through, Willingness To Pay (Carson, 2005; Pagiola et al, 2002; Pearce, 1998) and for rationalistic planning, through presenting pre-conceived options or establishing an option and defending it. Deliberative approaches would counter this with several points. Firstly, that relationships with place and the environment are imbued with power relations and values which cannot simply be quantified, as they are 'constitutive incomensurabilities'; the relation to the environment is, in part, defined by the fact that no price could be placed on it (O'Neill, 2007). When there are differing values, rationality will be produced not through individualistic preference, but rather through deliberation in the public sphere. This is because preferences do not need to be justified, but deliberating in public would ensure that reasons behind preferences would need to be discussed, and therefore more rational arguments or 'the better argument' would be produced by the discursive process (Dryzek, 2000; O'Neill et al, 2008; Smith, 2001). Similarly it is a generative process, in that new and better options, compromises, and ways forward can be reached through consensus that

would not have been recognised prior to the communicative process taking place, occurring 'additively' or 'multiplicatively' (Fearon, 1998).

As Harris (2002) points out, collaborative planning is highly practical, and much effort was made to apply collaborative techniques to planning decisions over various developments and consult with stakeholders early on in a development process. As Campbell (2000: 321) observes, 'decentralisation', 'participation', and 'community empowerment' became the key words of the Post-1997 Blair Government, and there are "striking parallels" between the language of New Labour and the aims of collaborative planning; most notably, the work of Anthony Giddens and the 'third way' ethos (1998). This outlook is based around notions of 'reflexive modernity', where traditional ideological divisions have been replaced by a new consensual politics produced through the interaction of a variety of stakeholders. Here, new participatory spaces inclusive of a variety of actors must be fostered to democratically manage the challenges of an increasingly complex and continually evolving society. Thus a key tenet of the 'third way' ethos was that the traditional spaces of political participation were unsuitable for the challenges presented by reflexive modernity.

Indeed, under New Labour a variety of "new deliberative institutions" were established. These included citizen's juries, citizen's panels, in-depth discussion groups, consensus conferences, round tables, and focus groups to feed into policy (O'Neill, 2007: 185; Mahony, 2010). Controversial technological development was similarly subject to public input. The development of Genetically Modified foods (GM) was party to lengthy public interrogation during the 2003 'GM Nation' consultations (see Horlick-Jones et al, 2007). A tension at the heart of this however, was the difficulties caused by groups which were identified as a generalised citizen, and organised, politicised groups with preconceived ideas concerning GM who were not recognised by the consultation setting (Levidow, 2007).

In terms of nuclear power the government established CoRWM, an independent committee set up by the government to advise on the best solutions for the disposal of radioactive waste. The committee included not just specialists on the mechanics of waste disposal, but also contained a number of social scientists and members of Greenpeace. Its instruction from government was to go back to a 'blank sheet' on the waste issue, and consult extensively with stakeholders, emphasising that "public engagement was to be central and not an 'add on'" (MacKerron, 2010: x). Thus the lessons which collaborative planning had drawn had to a certain extent been taken onboard, as well as the lessons drawn from insufficient levels of public participation historically associated with nuclear.

This sought to take a 'deliberative-analytic' approach to the issue of nuclear waste, exploring all options. The CoRWM project has received significant attention from those pointing towards its positive role in extending deliberative and collaborative models to a traditionally technocratic industry (Chilvers, and Burgess, 2008; Gregson, 2012; Lehtonen, 2010; Morton et al, 2008; Solomon et al, 2012). Others however, argue that the CoRWM project went too far in its deliberative approach, excluding important scientific expertise from the process (Baverstock, 2005). Indeed, as time went on, the CoRWM project became the site of antagonism between some members of the project over the issue of the role of social science in the nuclear waste debate (Lowry, 2010). Even those who saw the deliberative-analytic approach to nuclear waste as a progressive step raised concerns over the ways the decision-making process was rushed through and influenced by the political necessity to reach conclusions regarding a solution for nuclear waste due to the nuclear new build agenda, an important point detailed in Chapter Seven (Chilvers and Burgess, 2008; Blowers and Sundqvist, 2010; Wallis, 2008).

The infusion of political power in the 'rationalities' of planning practice has been referred to as planning's 'dark side' (Flyvberg, 1998). This is one way in which the approach of collaborative planning has been critiqued; whilst Habermasian ideals of 'communicative rationality' are thought to produce legitimate consensus through deliberative practice, underpinning the process in the first place could be certain logics which dictate the terms of the collaborative process, thus operating as a form of Foucauldian governmentality. This represents a key tension within the planning literature which is one of the underpinning premises of this research; the divide between communicative and deliberative approaches on the one hand, and agonistic readings of politics, which are critical of notions of consensus on the other.

The Habermasian communicative rationalist aspects have been critically evaluated since its emergence. Tewdwr-Jones and Allmendinger (1998) critically engage with collaborative planning outlining that decisions remain coordinated by powerful individuals, that a completed consensus is an impossibility, whether collaboration necessarily leads to better outcomes, and that striving for consensus could silence rather than give voice to individuals. Huxley (2000) argues that collaborative planning does not account fully for power relations influencing particular collaborative procedures, and particularly state power, which is a point that is addressed in the following chapter in relation to state theoretical perspectives.

The debate around consensus and collaborative planning against approaches focused on power relations and conflict which began at the start of the previous decade continue at

the end of it (Bond, 2011; Gunder, 2010; McClymont, 2012; Ploger, 2004). For Bond (2011) there is a task to move beyond the agonistic-deliberative divide. Moving beyond is an important step, however moving beyond does not mean the same thing as reconciliation between agonistic positions of politics and consensus based approaches. Elsewhere, Bickerstaff and Walker (2005: 2138) in a discussion of deliberation in local governance, go some way towards this challenge. Rather than viewing and evaluating deliberative events in isolation they "...[situate] the achievements and failures of deliberative activities in relation to the wider political landscape of power and decision making".

Elsewhere in relation to public engagement, Bickerstaff et al (2010) argue for an institutional focus on public engagement forums, where again the focus is on the institutional patterns in which particular activities are situated. This is a key point for this thesis, which looks towards getting beyond an 'either or' understanding of deliberative events as either pre-determined by political power, or as events which can be improved simply by procedural change. Rather, it is about how these spaces are used as 'tools' in the wider governance context, sometimes opening up argumentation around an issue, and sometimes closing down such opportunities. It is about focussing on how a decision reached in a deliberative forum 'travels' within the wider political context, that the effects of the event can be properly evaluated. A framework for developing such an understanding is developed in the following chapter, and through the empirical investigation.

Towards the Planning Act: The Modernisation of Planning and Large-Scale Infrastructure

This must be seen in the wider context of transformations within British planning however. The approach which had become dominant during the New Labour era had been 'spatial planning'. Spatial planning could be seen as a reaction against the 'project led', 'vertical', approaches of previous regulatory approaches to planning in the 1980's (Haughton et al, 2009). Spatial Planning was in part, driven by a new enthusiasm for planning. Government saw it as a decisive tool in delivering policy, one through which new challenges such as 'sustainable development', requiring the balancing of different interests and multiple stakeholders, both private and public, could be implemented. As outlined by Government, "spatial planning approach should be at the heart of planning for sustainable development" (ODPM, 2005: 6). A further definition of spatial planning is provided:

> "Spatial planning goes beyond traditional land use planning to bring
> together and integrate policies for the development and use of land with

other policies and programmes which influence the nature of places and how they can function" (Ibid: 12).

Key to such an approach is:

> "...to integrate the wide range of activities relating to development and regeneration. Plans should take full account of other relevant strategies and programmes and, where possible, be drawn up in collaboration with those responsible for them. The aim should be to co-ordinate urban and rural regeneration strategies, regional economic and housing strategies, community development and local transport plans with development plans" (Ibid: 13).

As well as this, Wilson and Piper (2010) point out that spatial planning stems from more integrative trends occurring at the European level, as well as increasing concerns around sustainable development at this scale - a policy aim which needed new integrative and collaborative approaches to manage the balance between protecting the environment whilst encouraging development and economic growth.

Haughton et al (2010) note, that spatial planning was a reaction against 'vertical', 'project led' approaches of the 1980's, increasingly vocal citizen engagement around single issues such as the environment, spatial planning 'fitted' with the zeitgeist of the shift from government to governance, horizontal networking, as well as devolution. Situating spatial planning within the wider framework of political transformation, Allmendinger (2011) points out that there was 'nothing sacred' about spatial planning in the Blair era, but the 'integrated approach' of spatial planning, was a way of 'getting things done' on a number of broad issues, such as health and environmental protection, which chimed with the aims of the pragmatic tendencies of New Labour.

Thus rather than working within the traditional spaces of planning, demarcated from the national to the local scale, spatial planning through integrating a variety of stakeholders, worked across a variety of scales and networked spatial relations. Such a system created what have been referred to as new 'soft' and 'fuzzy' spaces, outside of the traditional spacing of planning (Haughton et al, forthcoming; Allmendinger and Haughton, 2012; Olesen, 2012; Allmendinger and Haughton, 2009). As outlined:

> "whilst planning still needs its clear legal `fix' around set boundaries for formal plans, if it is to reflect the more complex relational world of associational relationships which stretch across a range of geographies, planning also needs to operate through other spaces, and it is these we think of as `soft spaces" Allmendinger and Haughton, 2009: 619).

Thus, these are new spaces which are outside of the 'hard' regulatory, vertical spaces from the national to the local. These relate to new 'fuzzy boundaries' with the creation of new

scales through planning reform, such as the example of the 'regions' approach developed in the Wales spatial planning strategy (Ibid) or new forms of urban governance. Within this planning 'joins up' various dimensions within these new 'soft spaces' as a form of 'meta-governance' (Allmendinger and Haughton, 2009).

Elsewhere the democratic legitimacy of new 'soft spaces' of planning have been brought into question. Here, spatial planning and the creation of new soft spaces as viewed as processes of 'post-politicisation'. Here, consensus-based approaches script out oppositional voices, and decisions made through such 'soft spaces' are often lacking democratic accountability (Metzger, 2011; Allmendinger and Haughton, 2010).

The development of spatial planning has also been critically evaluated in terms of how it relates to processes of neoliberalism and state restructuring (Haughton et al, forthcoming; Allmendinger and Haughton, 2012). Here, the development of integrated approaches based around multiple scales and sustainable development as an overriding concept, is understood in the context of the continuous reworking of the spatial relations of the state within evolving governance arrangements (Ibid).

Such an analysis understands neoliberalism as a varied process occurring around multiple scales ,where different manifestations of neoliberalism are borne out of contradictions driven by competing aims and objectives within particular governance context. This contrasts with 'overarching' or 'monolithic' understanding of neoliberalism that both Brenner et al (2009) and Peck (2010) identify as problematic. As Allmendinger and Haughton (2012: 16) write, "there is evidence that soft spaces and fuzzy boundaries are being used not only to supplement formal processes but also to usurp them in order to overcome resistance to growth". Thus, 'soft spaces' are implicated in the continual reworking of spatial relations within the unfolding progression of neoliberal logics of governance.

The Planning Act must also be seen in the context of the evolving nature of the state, and as relating to contradictions within the wider sphere of UK planning and governance. Large-scale infrastructure has consistently posed challenges for the Planning system, and throughout the New Labour period, consistent demands for reforms of the planning system, to 'speed up' and 'streamline' it were consistently made. In the last section, the specific case of the public inquiry, and how it was identified as a source for delay and as harm towards profit was identified.

As Marshall (2011) notes, calls were made throughout the 1990's to streamline and speed up the planning system, which continued in the New Labour era. The Confederation of British Industry (CBI) made some important interventions in 2000 outlining that "The

planning system is seen by business as a barrier to competitiveness...For major infrastructure projects, the time taken to hold enquiries must be radically shortened" (CBI 2000: 22-23). This was followed up in another paper in 2005, addressing the need for a 'national' planning framework' to oversee planning and assist business, calling for the formation of National Policy Statement's (NPSs) (CBI, 2005).

A important point made by Marshall (2011) however, is that whilst the Heathrow terminal 5 inquiry had made a big impact, there had not been many other inquiries in the 1990's and in the first term of New labour, voices such as the CBI calling for planning reforms were as powerful as they would be in a few years time. Newman (2009) and Marshall (2012)

note the important influence the resurgence of nuclear power reform and streamline the planning system. Keith Parker chief executive of the Nuclear Industry Association (NIA) had addressed these reforms in 2005 as being 'essential' for nuclear to be viable (quoted in Meek, 2005). EDF's application in the Energy Review (2005) stated:

> "Planning controls are proving to be a common barrier in the development of many energy related projects...the planning system needs to provide more consistent decisions and to more effectively balance the national and local interests where there is conflict. This can be achieved only with stronger guidance from government" (EDF, 2005: 4).

It was added that there is an importance that planning inquiries focus on 'local issues' and "...the planning process should follow a predictable timescale" (Ibid: 5). Elsewhere, notable reviews of planning such as the Barker review of land use planning (Barker, 2006), as well as the Eddington transport study (Eddington, 2006), focused on the need to 'streamline' and modernize planning, developing stronger National policy directives in order to enable the development of important infrastructure through the market in the increasingly competitive and challenging context of globalization. The recommendations of these reports were taken up by government in the 2007 White Paper 'Planning for a sustainable future' (HM Government, 2007).

Returning to the issue of spatial planning as it relates to the Planning Act, As Haughton et al (2009: 30) write,

> "...[spatial planning] can be seen as a reaction against regulatory planning that had dominated the 1980's. The 'project led' approach that saw planning as a regulatory function had become increasingly criticised."

Spatial planning gained a new legitimacy however:

"acting as a forum for debating how best to achieve better quality development through partnership with a range of actors, rather than as a separate sphere of expertise which, in effect, told people how the government was going to work with the private sector to develop new housing and other forms of development" (Ibid)

However such an approach did not necessarily fit well with important infrastructural needs. There was a crisis concerning a housing shortage in the UK, and notions of an impending 'energy crunch' caused by many power stations coming 'offline' from 2015 onwards. Thus,

"in some other parts of government spatial planning appears to be seen as adding to governance clutter, allowing those opposed to development to thwart it through seemingly endless consultation and involvement" (Ibid)

These changes culminated in the unveiling of the Planning Act 2008 – an act of parliament which aimed to 'streamline' the planning process through two crucial developments; the creation of National Policy Statement's (NPS's), and a new decision-making body, the Infrastructure and Planning Commission (IPC), which has subsequently transformed into the Major Infrastructure Planning Unit (MIPU). These measures were designed to mitigate against developmental risks and encourage investment through reducing the substantial upfront construction costs of large-scale infrastructural development such as airports, roads, ports, and large power stations over 50 Mega Watts including off-shore wind farms and nuclear power stations (HM Government, 2008). These transformations were considered necessary for new nuclear to be built (see Parker, quoted in Meek, 2005).

As the government stated:

"These [NPS'S] will set out the national need for infrastructure and explain how this fits with other policies such as those relating to economic development. By setting out the Government's strategic, long-term approach to infrastructure development, national policy statements will provide greater certainty and clarity for promoters, planners, and communities" (HM Government, 2007: 19-20).

NPS's therefore, are designed to clarify and answer questions of policy. The importance of policy is set out in relation to 'national need', which forms the basis for the decision-making process. Once NPS's have been ratified by parliament, policy-related questions of need, siting, and safety, are decided and fixed. Therefore opportunities for challenging the basis of policy are undermined by the sequential nature of the new decision-making process under the Planning Act. Thus the changes entwined in the Planning Act could be seen in part, as a reaction to the approaches of spatial planning. As Owens (2002) notes however, concerns over large-scale infrastructure were long-standing from the 1980's,

and as discussed in the previous section, this related specifically to debates around the problematic nature of the public inquiry.

The changes in the White Paper 2007 were accepted by the RTPI, however there was contestation from environmental NGO groups (see FoE, 2008). The changes brought about through the implementation of the Planning Act have seen mixed reaction. The British Chamber of Commerce (BCC, 2008), welcomed the decision as it would 'de-politicise' decisions on large scale infrastructure, and create timely investment. For others however, the aims of more efficient infrastructure were unproven and the reforms were evidence that "the government agenda has been to elevate competiveness above public legitimacy" (Ellis, 2008: 1). Elsewhere, however Smith (2008) viewed the act as a democratic move, bringing decision-making closer to communities.

The Act must also be considered in relation to the work of Flyvberg, who through a series of publications has discussed the problematic nature of 'mega- projects' in terms of the ways in which cost-overruns and delays are the norm, and projections around costs and timings are often exaggerated for the sake of political gain (Flyvberg, 2008; 2007; Flyvberg et al, 2003). Whether these issues will be resolved by the Planning Act, is yet to be seen. Cotton (2011) however, points towards potential 'democratic deficits' caused by the act, as 'streamlining' may sideline certain voices from the debate on energy infrastructure. Newman (2009) points towards the process as one of 'depoliticisation', where through moving functions towards new organisations such as the IPC, the government seeks to continue processes of 'distributed governance'.

For Marshall (2012) the remit through which applications for projects are judged during the Planning Act is limited as the MIPU judges individual applications, however these are not assessed in relation to alternative policy options. So whilst a particular development application may meet the baseline as an 'environmentally friendly' technology in terms of an 'appraisal of sustainability' and an assessment of cost effectiveness, this may prevent the development and long term assessment of other potentially more innovative options, which may be more effective in mitigating against climate change over longer time scales than the immediacy of investment decisions of current policy configurations. The limited nature of what the MIPU examines leads Marshall to contend that it may be the 'easiest' rather than 'the best' policy options which are implemented.

This thesis seeks to explore some of these concerns through specifically exploring the relationship between the Planning Act as a series of tensions related to previous issues such as public inquiries, collaborative planning, and the need for efficiency and streamlining.

Conclusion

This chapter began with a review of the social science research into public engagement with nuclear power, identifying a gap in the literature in terms of public engagement within the new framework of the Planning Act. After a discussion of what is meant by 'public engagement', literature relating to the three empirical areas of inquiry were discussed, identified as revealing certain key tensions which the Planning Act seeks to rectify.

The differing and unresolved conclusions regarding public inquiries were discussed, including the views that they caused unnecessary delays and were harmful to business, that they were means of eradicating alternative forms of political intervention, and more nuanced positionings focussed on the 'political opportunities' of inquiries. There is a need to explore further how such opportunities were created, as well as understanding the specific spatial dimensions of inquiries, often identified by Government as problematic, and how spatiality relates to political opportunity.

Secondly, the general shift in terms of more participatory forms of governing, and within planning, the movement from instrumental planning to more collaborative and communicative approaches were identified. This was discussed in the context of the second empirical chapter, which studies the shift in public engagement on nuclear power towards more participatory forms of negotiation. However these were complicated by movements to bring about a new nuclear programme where forms of public engagement were disrupted by these political movements. This relates to discussions in planning around collaborative public engagements working towards consensus, and other approaches which bring critical awareness to how such settings are infused with political power struggles. There is a tension in the development of an 'either or' approach however, where public engagements of various forms are seen in isolation, or as pre-constituted conclusions of prior political decisions. This tension is explored in the next chapter.

Lastly, the Planning Act was situated in wider transformations of planning in the context of neoliberalism. The complicated reforms of planning during the New Labour era, such as spatial planning relate to the Planning Act in terms of the need for large scale infrastructure inspired pressure for other types of reforms based around more rigid scalar fixes. These were also responses to the problematic nature of the public inquiry, whilst the consensual and collaborative rhetoric of New Labour also sought to be integrated into the streamlined planning framework. It is argued that these tensions and the theoretical angles they relate to, require further attention. A conceptual discussion in the following chapter builds towards a framework which through exploring various discussions around

politics and democracy within Geography, can be more attentive to the varied processes of politicisation and post-politicisations, taking place though the differing eras of public engagement with nuclear power. Through such a dynamic understanding, the tensions within the Planning Act are made coherent.

Figure Two: Contested Visions of Contested Politics

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                  ┌─────────────────────────────┐
                  │  The Issue: Contested Politics of │
                  │        Nuclear Power        │
                  └─────────────────────────────┘
                         Arenas of public
                        engagement within the
                          policy process:

                          - Public Inquiry

                          - Consultations
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The Issue: Contested Politics of Nuclear Power

Arenas of public engagement within the policy process:

- Public Inquiry

- Consultations

Politicisation: Emergent Publics and political

Post- Politicisation: Framed and pre-defined publics and fragmented groups

Spatial Extension

Spatial Containment

Policy reform, spatial change, re-definition of the issue

4

Chapter Four: Theoretical Framework

Introduction

This chapter picks up on the tensions identified in the literature discussed in the previous chapter, regarding 'consensus' reached within collaborative and participatory forums. The argument is developed in support of a more nuanced approach in comprehending the diverse practices of contestatory politics within the context of policy reforms surrounding nuclear power development. Recent interventions on the political are discussed, including post-political perspectives, STS-based approaches, multiple publics, state theory, and spatial theory. Through exploring these themes and discussing the 'blind spots' in these approaches, a conceptual model is reached for developing a focus on the spatial practices and interactions which constitute varied processes of politicisation and post-politicisation.

The previous chapter reviewed existing literature relevant to the thematic areas of this thesis; nuclear power, public inquiries, planning reform and specifically the Planning Act 2008. Within the literature review I identified a tension within the planning literature in relation to debates around collaborative planning, and perspectives which focus on planning's 'dark side' or agonistic views of the political. This problematises notions of 'consensus' reached through collaborative and/or participatory means, and questions whether such a consensus is legitimate or in fact an exclusionary process disguising political decisions made elsewhere. Deliberative democratic ideas which form the basis of collaborative and participatory planning were also considered, in terms of wider transformations related to the shift from government to governance.

The tensions between collaborative and political-economic approaches are not easily resolved. Elsewhere Marshall (2012) has stated that in terms of the Planning Act, critics identify a lack of participation and engagement, whilst in contrast those in favour believe the act is more democratic and open to public input. These two very different conclusions suggest that there is a need to interrogate further the kinds of politics which are enacted through the changes in specific policy reforms. This is to avoid a potential 'either or' position; where participatory measures and public engagement are either viewed as being gestures of hidden anti-democratic decision-making (Swyngedouw, 2005), or focus is directed to the procedural issues of a particular participatory event in isolation.

This is important as whilst policy changes rapidly, the rhetoric of public participation and collaboration is ubiquitous and here to stay. For Wesselink et al (2011:2688-2704) "participation has become the mantra of environmental governance". There is a lack of clarity however, concerning exactly what impact such participatory spaces are supposed to have. The central problematic of this thesis is to understand the political consequences

of the transformations in public engagement around nuclear power through recent planning reforms. To do this I argue, requires understandings which get beyond viewing participatory practices in 'either or' terms; that is, either as isolated events or as governmental tools in forwarding particular agendas.

The aim is to capture the dynamism of the changing articulations of contestatory politics around nuclear power within transformations in policy, viewing public engagement as crucial 'moments' within the wider decision-making landscape. Drawing on planning theory in the previous chapter, I argue that planning reforms are perceived in the context of 'tensions' which produce particular responses. This chapter discusses further theoretical understandings through which to frame an empirical study of such tensions as they relate to the politics around nuclear power.

The first area of focus is literature on 'post-politics'. This is discussed with attention towards more nuanced openings within the literature to examine empirically grounded processes which give rise to post-political situations. Post-politics has however been critiqued for overlooking multiple, ongoing political struggles, and being overarching as the political is often viewed as a rare event (Dean, 2009). The second theoretical area discussed is STS based approaches to politics, which focuses on the material emergence of political collectives around specific objects and issues. STS approaches conceptualise disagreement emerging around multiple objects and issues which 'spark publics into being' (Marres, 2007), directing attention towards the specific ways in which politics emergence. However, as Rancière has correctly pointed out, "if the political is everywhere, then it is nowhere" (2009: 3). There is insufficient focus within STS perspectives on the political struggle involved in 'making issues public'. Often due to a lack of emphasis on political struggle, the emergence of democratic engagements can appear as an automatic process, depicting the false impression that 'lively', 'material' issues will *necessarily* generate collective engagement. The third area of consideration is recent work in Geography on publics (Barnett, 2011; Mahony et al, 2010) which places more emphasis on the struggle which takes place over a particular emergent matter of concern, to force an issue to become political. This work on 'multiple publics' directs attention to the multiple grounded struggles through which politicisation occurs. Fourthly however, both in terms of STS and work on 'multiple publics', whilst the state is recognised it often remains unexamined or static, whilst grounded processes related to publics are considered emergent and empirically relevant. Often then, it can seem that there is an inevitability concerning the 'emergence' of political and democratic interest, without attention towards how issues and the politics surrounding them do not merely get 'opened up', but can be 'closed down', or even contained. Thus state theory is examined in terms of how spatial

analysis of the state is crucial in understanding how the boundaries of the political are enacted.

Particular policy reforms enacted by state institutions can be vital in opening up or closing down political opportunities to different groups. However, what is recommended is more attention to the specificities of the particular 'objects of governance' which the state responds to are given more consideration (Jessop, 2002). Here the state is also viewed as dynamic, and the spatial reforms enacted are viewed as responses to certain tensions and challenges related to particular objects of governance. This builds towards a conceptual model open to various interrelated moments which are vital in comprehending empirically, processes of post-politicisation and politicisation; where struggle over what issues count, the spatial parameters they relate to, and those considered relevant to the issue is vital to the formation of politics.

1) Post-Politics, Post-Democracy, and Agonistic Democracy

Deliberative theories related to 'communicative planning' were discussed in the previous chapter, and a tension in the literature was identified between the degree to which 'consensus' is a legitimate condition, or whether it eradicates oppositional viewpoints from the discursive process. Deliberative theorisations, I argued, whilst effective in evaluating the validity of particular procedures utilised in consultative spaces, are not attentive enough to the locations and emergence of democratic subjects and the institutionally limiting factors which impact upon deliberation and the decision reached through a particular process.

This is not to misrepresent deliberative theorists however. The impact of political and economic forces to distort particular deliberative processes is well noted. Dryzek for example argues that:

> "... a more critical project of deliberative democracy has to go beneath the surface to reveal and counteract the extra-constitutional factors that can prevent or distort political dialogue and its connection to collective decision-making" (2000: 175).

Similar concerns have been raised elsewhere within deliberative democratic theory (Benhabib, 1996; Elster, 1997; O'Neill, 2008; O'Neill et al, 2007; Spash, 2001). However, there are limitations to this perspective. In consideration that the basis of deliberation is debate between "...free and reasoned citizens" (Cohen, 1999), the collective dimension of political identity may be missed, as well as the necessarily divisive nature of political

decisions (Mouffe, 2005). From an STS perspective, what is also missing is sufficient attention towards the objects which give rise to politics in the first instance – that is different issues can be treated by the same deliberative procedures (Marres, 2007).

As I explored in the previous chapter, notions of 'consensus' within planning have been critically assessed in terms of the potential exclusion of oppositional voices and critical dissent from public discourse (Bond, 2011; Gunder, 2010; McClymont, 2012; Ploger, 2004). Similarly, scepticism towards consensus has recently been discussed within Geography more specifically, through a turn towards radical and agonistic ideas of the political and the democratic (Allmendinger and Haughton, 2012; Dikeç, 2005; Kythreotis, 2011; Swyngedouw, 2010).

These discussions have centered around a group of post-structural philosophers – Slavoj Žižek, Jacques Rancière, Etienne Balibar, Chantal Mouffe (amongst others) for whom, against the consensual vision of politics, "the essence of politics is dissensus" (Rancière , 2010: 38). Rancière separates the idea of the 'police' or politics - the consensual, stable form of politics and policy-making where all groups are accounted for and are said to be represented without lack or supplement, with 'the political' – an act which forms a rupture in this 'stability of order' (Rancière , 2000: 124).

Thus, 'the political', as opposed to 'politics', as conceived by Rancière is not about a difference of opinion enacted through deliberation, but rather about a 'part' which changes the very coordinates of the 'whole'. For Rancière , a democratic act is when a *demos,* or 'surplus' subject to the police order makes 'visible' that which has been made invisible. Here, "democracy is the paradoxical power of those who do not count: the count of the "unaccounted for" (Ibid). This 'unaccounted for' is what Rancière calls 'the part of no part' (2010). This demand for equality made by the unaccounted to be recognised puts into question the stability and validity of the police order. It is an identity which cannot be accounted for in politics, because the identity of the 'part of no part' is formed through its exclusion and excess from the accounting and management processes of politics. Rancière also distinguishes between the different ways in which the political is disavowed or contained, as the figure below shows:
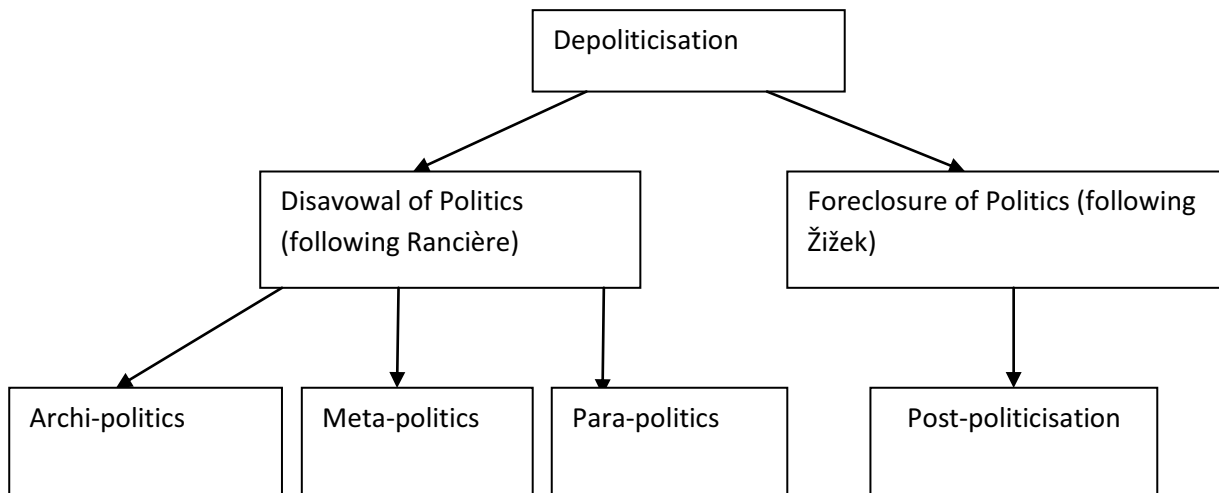
Figure Three: Disavowal and foreclosure of the political. (From Gill et al, 2012)

As outlined in Gill et al (2012) 'Archi-politics' describes the way in which the political is disavowed through assigning a position and role to every individual in the social body. In so doing it attempts to eliminate the grounds for claiming an exclusion. 'Para-politics' accepts that there are people who have no part in the existing police order. But it attempts to assign them to a particular party, to name them, group them and classify them in an attempt to bring them within the system of calculation. Finally, 'meta-politics' declares a radical surplus of injustice or inequality in relation to what politics puts forward as justice or equality. It asserts absolute wrong, the surplus of wrong that destroys any political deployment of the argument of equality (Rancière, 2004a: 81). In other words, metapolitics sees the claims of politics as insufficient to address the ills society faces and demands instead a more fundamental, revolutionary reorganisation of social relations.

Rancière's understanding of the disavowal of 'the political' was developed by Žižek in his conceptualisation of the 'post-political'. 'Post-politics' entails the 'foreclosure' of dissensus and radical democratic intervention, with a managerial scientific form of governing. In more practical terms:

> "…the conflict of global ideological visions embodied in different parties which compete for power is replaced by the collaboration of enlightened technocrats [where] via the process of negotiation of interests, a compromise is reached in the guise of a more or less universal consensus".
> (1999: 236)

Thus it is through consensus as the dominant political motivator that the political is foreclosed. For Swyngedouw (2007) the post-political consensus is clearly visible in the

terrain of 'climate change' and 'sustainable development'. Within these terrains both left and right are in firm agreement on the solutions required (a minority of climate change sceptics excluded). Here divergences around proposed 'solutions' are minimal, located within a business-as-usual neoliberal approach. Within the post-political climate change discourse:

> "…matters of concern are thereby relegated to a terrain beyond dispute, to one that does not permit dissensus or disagreement. Scientific expertise becomes the foundation and guarantee for properly constituted politics/policies." (Swyngedouw, 2007: 27)

Decisions are portrayed as 'politically neutral' necessities. They cannot be disputed through conventional democratic channels as they are largely dictated at non-accountable scales, comprised of hybrids of expert-government and business interests. Such a process of depoliticisation, according to Žižek (1999: 221) is an anti-democratic act where "the struggle for one's voice to be heard and recognised as the voice of a legitimate partner" is replaced by a 'consensus' centred around the decisions of the 'expertocracy' (Sloterdijk, 2005). Elsewhere, the situation where policy decisions are formed through non-accountable elites has been referred to as the 'post-democratic' condition (Crouch, 2004). The consequence of this process is said to be the emergence of an increasingly large gap between an elite mix of politicians, business leaders, think tanks, and associated expert advisers, on the one hand, and an increasingly apathetic and disempowered public on the other (Swyngedouw, 2011). Increasingly, according to Crouch (2004: 4):

> "…the mass of citizens play a passive, acquiescent, even apathetic part, responding only to the signals given to them behind the electoral game, politics is really shaped in private by an interaction between elected governments and elites that overwhelmingly represent business interests".

This demonstrates that within a post-political and post-democratic context it is only solutions that fit with the underlying ideological 'state of the situation' which are considered. For example, excessive wealth consolidation into a small percentage of the population is a 'fact of life' of a globalised economy and is essentially 'ring-fenced' from political discussion. As Dicken notes, this is a 'Panglossian' worldview of neoliberalism where economic distributive matters are always 'the best of all possible worlds' (2011). Debate and discussion can take place on a range of matters, however certain 'ring-fenced' areas are not up for negotiation.

Swyngedouw (2011: 8) weaving between the perspectives of Badiou and Rancière, identifies democratic political spaces as those that form "…new spatial qualities and new spatial relations, both materially and symbolically". Again, the emphasis here is on an

interruption that creates new possibilities for reconstituting the whole, where democracy is "...the emergence of a political articulation, at a particular time and place", which "...becomes the claim for the unaccounted for to redefine the whole" (Dikeç, 2005: 177). As Staeheli (2009: 64) asserts this process "...disrupt[s] what seem to be settled relationships and practices, as new peoples, voices, and ideas enter the public sphere". Thus democracy can be defined as a process through which agonism is expressed and action is taken" (Ibid).

This focus on agonism follows the post-Marxian thought of Chantal Mouffe, who unlike Rancière or Žižek, holds that a form of agonistic democratic and political struggle can operate within the confines of liberal democracy itself, by following 'liberal democracy' to its 'radical core'. As mentioned in the discussions around collaborative planning in the previous chapter, this involves recognition of the 'paradoxical tension' at the heart of liberal democracy between on the one hand, the individual rights-based approach of liberalism, and on the other, the collective formation of political identities inherent in democracy (Mouffe, 2000).

This tension cannot be eradicated through consensual governing mechanisms, as according to Mouffe, the properly political and antagonistic moment can be constituted not merely from 'the outside' *a la* the 'part of no part' thesis, but can be achieved by a 'radical pluralism' between different 'friendly adversaries'. As Mouffe (2005: 14) states:

> "only by acknowledging 'the political' in its antagonistic dimension can we pose the central question for democratic politics that goes beyond the limitations of the consensual model, which necessarily contains a surplus or excess that poses an antagonism which must be accounted for, rather than being ideologically suffocated by a false consensus."

This draws attention to a commonality amongst conceptualisations of radical democracy; that of the emergent subject. It cannot be accounted for or predicted from the perspective of the state of the situation, or current institutional order, as it is a necessary excess to this formation. The consensual police order relies on all identities being accounted for, however new alliances, identities, and collectives emerge from political struggle itself, which are in excess of the stability of the police order.

In relation to this notion of emergent politics, some questions require further reflection: the empirical focus of this thesis is to discuss the conditions under which specific instances of emergence occur. What is often not emphasised is that theorisations of post-politics entail the idea that there are always 'returns' of the political, and the post-political condition is necessarily never complete (Swyngedouw, 2010). Such 'returns' of the political entail new collectives and channels of political action which require further

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empirical attention. Thus, it is through research into the processes of post-politicisation around nuclear that is one way in which this thesis seeks to comprehend to political consequences of the Planning Act.

The language of 'post-politics' itself it partly to blame for a lack of emphasis towards 'returns' of the political however. It often appears overarching, and there is little attention within the post-political literature towards the processes through which political contestation arises around particular objects and matters of concern, thus potentially ignoring how the 'political' may return through myriad new channels. As Jodi Dean (2009: 12) outlines, the language of post-politics, "…not only overlooks the reality of politics on the ground but it ceded in advance key terrains of activism and struggle". There is a danger, Dean continues, in not recognising "political sites, as political sites" (Ibid).

The idea of 'not seeing political sites, as political sites', relates to similar critiques stemming from STS-based approaches, which emphasise the role that particular 'objects' and materialities play in the formation of dissensual political interruptions. For Marres (2010: 186-187) this stems from a suspicion on the part of post-political theorists that "politics pursued by material means presents a non-, post-, or even antidemocratic form of politics". Thus there is a need for greater focus towards what Barry (2000) refers to as 'objects of contention' and the role of materiality in the constitution of political and democratic life. This can assist in focussing on the empirical emergence of political contestation rather than starting from an overarching conceptualisation of the post-political which may miss key areas of antagonism.

2) Towards the Importance of the 'Object': STS and Political Theory

Recent attention towards how STS based approaches can contribute to understandings of the political, have provided the space for overdue conversations between traditional political theory and Science and Technology Studies. For example, the collection of essays, 'Political Matter: Technoscience, Democracy, and Public life' (2010), edited by Bruce Braun and Sarah Whatmore, makes an important intervention in "harnessing the frictions" between working with both political theory and STS, to "spark new ways of understanding political matters and the matter of politics" (Braun and Whatmore, 2010: xii; See Johnstone, 2012).

There has been a latent tendency to oppose political theory and STS. As Castree (2002) points out in relation to Marxism and Actor Network Theory (ANT), developed by Bruno Latour, Michel Callon, and John Law, a false opposition has evolved. Here, a divide has emerged between STS and associated concepts such as 'networks', 'assemblages'

'intermediaries', on the one hand, and types of 'political theory', including Marxian thought on the other, preventing potentially interesting and nuanced connections being made.

What is clear within discussions between STS and political theory is that 'objects' increasingly take centre stage in conceptualisations of political and democratic life. They are not considered secondary and passive concerns negotiated by pre-formulated deliberative communicative procedures taking place *prior* to the objects in question, but rather they are recognised as generating the crucial dimension of political and democratic life in the first place. As Stengers (2010: 24) writes, the 'collective becoming' of democratic concerns are not simply produced "by humans themselves", but rather emerge, "because of the situation that generated the power to make them think".

Another misrepresentation of STS-based approaches is that concepts such as ANT are focused on 'attachment' at the behest of politics. Whilst understandings of the processes of attachment between issues and publics are necessary, 'division' and 'dissensus' are central to the unfolding of how such processes come about. Bruno Latour (2005; 2004) addresses this point. He outlines that democratic 'collectives' – groupings of human and non-human entities, are brought together through what he refers to as:

> "...obstacles, scandals, as what suspends mastery, as what gets in the way
> of domination, as what interrupts the closure and composition of the
> collective...human and nonhuman actors appear first of all as
> troublemakers." (Latour, 2004: 81)

Division around objects, issues, or what Latour (2005) terms 'matters of concern' are the essential manner through which, in a technologically advanced and increasingly complex society, democratic passions can be harnessed and public life is sustained. This contrasts against a model in which priority lies with procedural politics which then 'deals' with a series of objects and concerns. Thus 'objects', or the materiality of political life, takes centre stage and points towards the further extension of public participation and processes of democratisation. With similarities to post-political theorists, the focus is on dissensus and antagonism as generative of political life. Thus politics begins as a response to particular matters of concern, and given this, Latour (2012) argues in opposition to criticisms of 'reactionary politics', to claim that "we are all reactionaries today".

Related to Latour's position, Noortje Marres (2005) observes that the role of actual 'issues' in sparking moments of political and democratic emergence has been overlooked. There has of course been much research around particular 'issues' and 'objects of concern' and the formation of publics. For writers such as Latour and Callon the focus has been on actors forming around 'matters of concern' and the establishment of 'hybrid forums'. For Barry (2001) the focus has been on 'objects of contention' and the formation of political

disputes. What Marres (2007: 759 Original emphasis) argues however, is that the lingering question remains "why issue formation should be appreciated as a crucial dimension of *democratic* politics" and moreover, what insights STS brings to political theory and understandings of the formation of publics.

For Marres it is the intensity of the issues which must be fully appreciated in the formation of publics. Issues which 'spark publics into being' do so because they are so engaging that they "... *must* take the form of democratic politics" (2007: 769 Original emphasis). This is due to the ways in which particular issues challenge the very institutional and spatial arrangements of traditional political articulation. In doing so new 'publics' are formed outside spaces of representation, in a process recognised as the 'displacement of politics' (Marres, 2005). This then, calls for an extension of democratic engagement.

The 'democratic deficit' outlined by Marres then, specifically relates to the ways in which particular issues 'displace' politics, yet democratic institutions may not be in place to facilitate the kinds of politics certain issues bring forth. Particular issues may challenge democratic legitimacy and accountability, as well as the spatiality of certain institutional arrangements:

> "For each issue, there are multiple candidates for the set of actors to be taken into account, the form of political democracy to be enacted, and the site at which this is to be done...it is issues which may serve as the guide to the sites, subjects, and forms of democratic politics." (Marres, 2005: 5)

Thus engagement with certain issues is not accommodated by traditional institutional settings, and thus is displaced to other arenas forming a democratic deficit. In this sense, Marres's issue based focus sees democratic accountability 'catching up' with the displaced politics.

3) Multiple 'Publics', 'the all affected' Principle, and Empirically Grounded Accounts of Political Emergence

Further elaborations of different forms of 'publics in the plural' have been made elsewhere. STS-based approaches, and particularly research on public engagement with science, has been attentive to the ways in which publics form in the plural (Abels, 2007; Braun and Shultz, 2010; Irwin, 2001; Michael, 2009; Wynne, 2007). For Braun and Shultz (2007) the focus is on describing a taxonomy of various 'publics' that emerge at particular times within a particular policy development. They split these into four different types: firstly, there is the 'public in general' – this is constructed through opinion polls for knowledge production for governing institutions. Secondly, the 'pure public' refers to groups of 'individuals' as seen by the government, assembled often through participatory

mechanisms such as citizens juries. Third, is 'the affected public – those specifically related to a problem such as people with a specific gene disorder relating to a form of genetic testing. Lastly, is the 'partisan public' – that is, political interest groups holding strong opinions who are political committed to particular issues. Warner (2005) identifies the notion of the 'counter-public'. Whilst government identifies the 'generalised public' as justification for various policies, the counter-public is a group contesting the status quo, and are seen as representing a large proportion of those unaccounted for by the government framing of the 'general' public.

The authors argue that the tendency in government-sponsored programs is to privilege the idea of the 'pure public', where:

> "Participatory exercises display a certain tendency to construct the subjects of participation in a way that allows for harmonious, supposedly win-win constellations that theoretically can benefit everyone, at the expense of more conflictual and antagonistic ones." (Ibid: 415)

However, rather than simply viewing different categorisations of 'publics' constructed through government programs related to science and technology, Michael (2009), echoing Warner (2005: 620-623), argues for an understanding of publics "in relation to other publics". He defines two categorisations between the 'Public in General (PiG)', an "undifferentiated whole that is distinguished from science that is itself characterised globally in terms of some key dimension" and 'Publics in Particular (PiP)' which represents "those publics that have an identifiable stake in particular scientific or technological issues or controversies".

For Michael, these two categorisations of publics are constitutive of one another, existing as a relation, and ultimately these two public roles are performative. As he elaborates "such enactments – or doing being a member of the public – are neither static nor singular they are dynamic and relational" (2009: 620). There can be 'radical' and 'reformist' PiP's, each reliant on each other at various stages of a process of scientific engagement, so there is a strategic performativity to the ways in which particular publics frame themselves, as well as the relation they have (or do not wish to have) with other publics.

It is important however, that emergent accounts of publics with such issue-based foci are not depicted causally; that issues are not seen as automatically generating passionate political engagement. More attention towards the political contestatory aspect of theories of publics which relate to such issue based accounts is required. Returning to an aspect of John Dewey's work (1927) is particularly useful here. For Braun and Whatmore (2010: xxvi) Dewey's conceptualisation represents a 'materialist' perspective on publics, through

a focus on "the force of things to spark new publics into being and thereby to generate new political demands", which they state requires closer attention.

Again this focus is empirical. As Mahony et al (2010: 8) point out, a crucial aspect of Dewey's conceptualisation of the public, is "the sense that publics are formed through processes of becoming – that they are always emergent, rather than mere expressions of pre-existing interests, issues, and identities". This draws attention empirically to the sites and processes through which publics emerge (Angus, 2001).

Barnett (2011: 2) calls for a 'topological' sense of political space, where "democratic political action as emerging from worldly situations of injustice". Thus the focus is turned towards how experiences of injustices produce subjects of democratic concern. Here:

> "Components of democratic agency are contingently assembled in relation to situated contexts of domination and injustice, which generate contentious politics of variable spatial extension and reach".

This reinforces conceptions of democratic and political space as not pre-constituted, but rather bringing about an "empirically minded attention to the particular spatialities enacted through transactional problematisation in particular cases" (Ibid: 11). This fosters an interpretation which takes seriously both emergent publics and the processual nature of their formation. It should also draw attention to the ways in which these interact with institutional configurations, and the new spaces of participation which are created through the extension of democratic agency around certain issues.

As Mahony et al (2010: 4) point out, it is not merely about a simple causal formulation that certain issues are initiated into the public arena, but rather "their construction as public matters involves political struggles to make them so". Dewey's conception of the 'all affected' principle, firstly relates to those 'directly engaged' by an issue, and secondly, "they extend to those who do not directly share in the performance of the acts" (1927). The movement between Dewey's idea of those 'directly engaged' by an issue, and the 'extension of the issue' towards other publics is vital, and is a process of political contestation (Mahony et al, 2010). This is also the process through which the space of political engagement is extended and shaped. This section has drawn attention towards approaches which are more attentive to empirical unfolding of political contestation and how they materialise. Despite the recognition within this work that publicisation involves political struggle, there remains a lack of critical attention to the processes by which the spatialities formed through extension interact with, are constrained by, or perhaps extend a particular institutional and governance framework, where reforms enacted by the state

are crucial. The state thus represents a missing dimension in the consideration of more empirically grounded approaches to politics.

4) Spatial Politics and Bringing the State Back In

For Staeheli (2010: 75) processes of politicisation are characterised by 'interplay' between various agents, some extending spaces of democratic interaction, whilst others regulate discipline those spaces. Thus whilst academic literature has focused on the new and multiple spatialities of democracy, forming more grounded ideas through an empirically informed analysis of the emergence of political spaces, more attention should be given to the actual spatial manifestations enacted through these struggles. More specifically the notion of a 'path-dependency' to the emergence of publics should be argued against as focus on emergence, whilst welcomed empirically, must also take into account processes of containment, and indeed, the state, forming a key part of the contextual and institutional setting within which emergence occurs.

This relates to some unresolved tensions in, for example, the work of Latour, and other STS approaches to public engagement mentioned in the previous section, where the 'either or' dilemma once again emerges. On the one hand Latour's idea of politics is based around the idea that the technological world and the issues which emerge from it should generate *more* public involvement. On the other hand, present in Latour's work are notions of apathy and decreasing public involvement (2005). Callon et al (2011: 9) refer to 'hybrid forums', comprising of a range of actors, involving "collective experimentation and learning", where "uncertainties predominate, and everyone contributes information and knowledge that enrich the discussion". They argue that through "opening up new sites, and experimenting with new procedures", there can be an ongoing struggle for the "democratisation of democracy" (Ibid: 11). However, what has not been accounted for is why such scenarios occur in certain settings and not others. Issues may well spark publics into being, but some issues fizzle out, lose momentum, are depoliticised and displaced. There is not a causal relationship between issues and the 'generation' of passionate politics.

In their discussion of publics Mahony et al (2010) outline that in addition to publicisation, processes of 'de-publicisation' are also occurring (Mahony et al, 2010). In this section I argue that these moments of de-publicisation' have to date lacked academic attention. Examination of the 'always contextual' moments (Barnett, 2011; Staheli, 2009) needs to involve discussion of state strategic circumstances under which new democratic opportunities emerge. This involves understanding the object-oriented ways that states

respond to certain issues over time, and the differing spatial strategies utilised which relate to processes of politicisation and 'de-politicisation'.

Consideration of the state is a looming presence within Political Geography (Agnew and Muscara, 2012), as well as discussions of new theorisations of democracy from a Geographical perspective (Barnett and Low, 2004). There has been somewhat of a turn away from considerations of the state however. As Dicken outlines, after the collapse of the Soviet Union and the rise of 'globalisation', the nation state was perceived to be declining in significance as market driven processes and new forms of networked governance, made up of a variety of horizontally-formed stakeholders took precedence (2011). This could be viewed in many accounts, for instance, from the 'world is flat' thesis (Friedman, 2005), or the 'network society' Manuel Castells (2004).

In particular, the move from 'government' to 'governance' was accompanied by interpretations which increasingly viewed the state increasingly as one amongst many actors within a network of stakeholders, for example Rhodes' 'governing without government' thesis (1996). Elsewhere however, Geographers have been particularly attentive in resisting the governing without government thesis and the idea of the disappearing state, to focus on the unevenness of globalisation, and the powerful and complex roles that states maintain within processes of globalisation (Brenner, 2004; Dicken, 2008; Swyngedouw, 2000). Such perspectives however, do not theorise the state as a singular entity but examine the multiple processes and power relations that constitute the state.

Notions of 'the state' as a singular and clearly identifiable phenomenon were problematised in Geography through the rise of Marxist Geographies. Marxist interventions in Human Geography began to question 'taken-for-granted' definitions of state power. As David Harvey (1976: 87) outlined "the state, like capital, should be viewed as a relation, or as a process – in this case a process of exercising power via certain institutional arrangements". The rise of Marxist thought in geography coincided with important economic, political, and spatial transformations which challenged the naturalised assumptions of existing state theories. Processes of globalisation and the decline of the Keynesian Welfare system were producing 'new regionalisms and localisms' which were putting traditional models of state power into question (Brenner et al, 2003: 4).

Bob Jessop's theorisations have been particularly influential in comprehending what constitutes 'the state' within the complex dynamics of neoliberalism. Jessop's 'strategic relational approach' is based on the premise that there is no single entity called 'the state',

but rather 'the state' and its political formations are part of a broader set of social relations. Therefore one cannot adequately describe or explain the state apparatus, state projects, and state power without referring to their differential articulation within an ensemble (Jessop, 2008). Jessop emphasises that "States do not exist in majestic isolation overseeing the rest of their respective societies but are embedded in a wider political system (or systems, articulated with other institutional orders and linked to different forms of civil society)" (Ibid: 6). This perspective moves away from both strictly 'state-centred' forms of analysis as well as 'stateless' theoretical perspectives such as the 'governing without government', whist recognising the crucial role that the state plays in forming collectively binding decisions over a given population.

A central theme which emerged within this new area of research was a focus on 'the politics of scale'. This perspective developed from traditional static and bounded interpretations of scale towards understandings based on mutability and transformation. As Neil Smith (2003: 228) outlined:

> "Far from neutral and fixed...geographical scales are the product of economic, political and social activities and relationships; as such they are as changeable as the relations themselves".

The 'politics of scale' shifts focus away from fixed notions of spatiality towards more relational understandings. Here:

> "theoretical and political priority...never resides in a particular geographical scale, but rather in the process through which particular scales become (re)constituted" (Swyngedouw, 1997: 140-1).

A number of policy arenas have been examined by geographers which speak to broader questions of the 'rescaling' of the nation state. These include Labour reform (Peck et al, 2005); Processes of Devolution (Jones et al, 2005); the study of 'partnerships' in the context of rural governance (Edwards, 2001); Neo-liberal policies related to 'local' innovation (Moulaert et al, 2005); and the ongoing spatial reconfigurations of the EU (Richardson, 2004) to name a few. Issues of environmental governance have been analysed through the broader lens of the 'politics of scale'. For example an analysis of the 'Cities for Climate Change Programme' (Bulkeley, 2005); the scalar strategies involved in natural gas programmes (Lindseth, 2006); 'urban ecological security' (Hodgson and Marvin, 2009); Water governance (Norman and Bakker, 2009); and the spatial contradictions of climate change policy (Gupta et al, 2007). The processual nature of scale is the focus here. As Brenner (2009: 70) puts it, "it is, in short, processes of scaling and rescaling, rather than scales themselves, that must be the main analytical focus to the scale question". He goes on to say that "scales exist because social processes are scaled...scales

are the provisionally stabilised outcomes of scaling and rescaling processes: the former can be grasped only through an analysis of the latter" (Ibid: 71-72).

Work on the rescaling of the state has drawn attention to the ways in which processes of rescaling simultaneously include processes of the redistribution of power and democratic legitimacy. As Edwards et al write, the "rescaling of government also constitutes a redistribution of power, raising issues of democracy and accountability" (2001: 290). This focuses attention on connective changes in state space enacted through policy reforms with processes of political emergence around issues, not so one is seen as defining the other, but rather to see these processes as interrelated and the sites of political dissensus. The emergence of more publics therefore, is not necessarily a continually expansive process, and the dividing line between what and what does not constitute a 'public' issue is an area of political contestation, where the tension between processes of politicisation and depoliticisation is the point of analysis (Mahony et al, 2010; Newman and Clarke, 2009).

It is at this point where the thesis is located; the idea of emergent publics and the extension of the issue in question as a politicising process can be counterpoised by processes of de-politicisation. The point of interplay between these two positions, and indeed the relatedness of these two processes requires further attention. The contention is thus between processes of spatial expansion and extension, and processes of containment. The control and definition of space is central to both the formation of the political, and to processes of post-politics. The boundaries around, for example, the issue of nuclear power are not pre-designated, but are constituted through political struggle to define the space which is occupied by the issue.

This resonates with the work of political scientist Eric Elmer Schattscheider (1960) who outlined that the movements of the attempted expansion of participants in a political controversy, and the attempted limiting of who the participants are, serve to fundamentally shape who and what factions constitute a political community. Thus as Marres points out in a discussion of Schattscheider, the democratic moment is in "the struggle against the containment of conflict" (2005: 27). The role that spatial politics and state restructuring plays in this process is an important focus. There is a need however, to also capture the dynamism of the state as specific challenges and tensions related to particular objects of governance emerge.

5) Object Focussed State Theory

Jessop's work and his 'discursive material' approach seeks to avoid perceiving state strategy and reformation as being a purely 'semiotic' affair by paying attention to the ways

in which 'extra-semiotic' factors impinge upon governance structures (2004: 160). However this thesis argues that not enough attention is given to the role that certain objects play in constituting governance structures. More attention should be placed on the contextual circumstances of certain issues which 'spark', in the words of Marres (2007), particular policy responses. Here it is the spatial mapping of specific issues in a particular policy environment – between the publicisation of an issue, often containing an extension of what is considered the space of the affected – and processes of de-publicisation which entails containment of issues to particular spatial imaginaries, which is the focus.

This could be referred to as an 'object oriented' form of state analysis, where in a world of 'beyond-the-state' governance in which "power is diffused through many actors" (Dean, 1999), it is important to examine how the state emerges as a 'response' to particular problems and issues. What is more, particular objects of governance can have wider implications for other areas of policy and democracy, due to the reforms which may be necessitated by their development. The work of Dewey (1927: 31-32) argues that "by its very nature, the state is ever something to be scrutinised, investigated, searched for. Almost as soon as its form is stabilised, it needs to be made". This 'search' for the state is required more so today than ever. The state appears harder to find as increasingly complex policy problems involving an array of non-governmental organisations, as well as the language utilised by members of government with, for example energy issues, takes the form that decisions are not being made at all, giving credence to the 'governance-beyond-the-state' ideal.

In Jessop's 'discursive-material' approach however, it appears that often the objects follow the state decision. This thesis argues in response to this, that more priority should be given to how 'the state' is made visible through particular objects of governance. As Latour writes:

> "Contrary to all expectations for its progressive obsolescence, never was the rediscovery of the state more important than today...we all know the reason: never was the state so busy, so overburdened than now. Every day, we discover to our great dismay *more* elements to take into account and to throw into the melting pot of public life, not less". (2007: 2 Original emphasis)

Thus it is about searching for the moments of 'visibility' of the state, as well as the "partially invisible" moments and the politics surrounding this, where "agent[s] who have unforeseen consequences on other agents to be made *accountable*" (Latour, 2007: 3 Original emphasis). The question of *who* has unforeseen consequences and *who* is affected, and the spatial extension of this relationship, is where the politics of making things public, and 'de-publicisation' occurs, in response to particular objects of governance.

This is about viewing the moments where the state becomes visible, and where 'state affects' are felt. This looks towards the 'improvised state' (Jeffrey, 1991), to particular moments where the state is 'remade' in the fashion Dewey (1927) describes. These are moments where the state is remade in the image of a particular technological necessity as much as its own policy choices. It is within these moments that crucial contestations over what, and what is not, 'made public' can be most fierce. There is thus a crucial and understudied interplay between spatiality and argumentative structure; solutions to problems that are profoundly ideological may be attempted through spatial reforms by state institutions, with unintended and unpredictable courses of action and responses for the ways in which various publics emerge and respond to the particular contextual formulation of an issue.

The 'political opportunity' literature has connected state strategy to the argumentative function of spaces of public engagement. It has examined the ways protest movements and certain political viewpoints are constrained by particular 'structural' or 'institutional' configurations. As Meyer describes it, in relation to activist struggle:

> "The key recognition in the political opportunity perspective is that activists' prospects for advancing particular claims, mobilising supporters, and affecting influence are context-dependent". (2004: 126)

Kitchelts (1986) seminal paper on 'opportunity structures' compared anti-nuclear movements around Europe. Kitchelts assessed the relationship between the strength of these movements and the kinds of tactics which they utilised, within the context of the forms of state policy which were present in each case. This contributes towards an understanding of how states can influence the kinds of opportunities NGO and activist groups have to play a role in the argumentative function of government policy.

Cowell and Owens have built on such a debate by exploring the link between state strategy as enacted through planning reform and 'political opportunity'. They argue that "temporal and spatial restructuring of planning…effects 'opportunity structures'" (2008: 404). Elsewhere, Allmendinger and Haughton (2010: 804) place emphasis on post-politics and spatial planning, not as a monolithic overarching condition but rather, enacted processually through specific policy regimes, and "diverse sets of practices" (Ibid).

In another paper, Allmendinger and Haughton (2012) make reference to the development of 'multiple soft spaces' forming through the post-politicising' effects of certain spatial planning practices, including new 'scalar fixes' as well as other "more fluid spaces and associated governance processes" (2012: 9). For Allmendinger and Haughton, these new spaces often represent the "obfuscation of the political", as democratic legitimacy is put

into question by the fuzziness of these new spaces. Metzger (2011: 192) argues that such spaces "have very limited degree of transparency and questionable levels of democratic accountability".

Thus, these accounts are beginning to examine the interface between publics on the one hand, and state restructuring on the other. However, the precise spatial practices which form the context for these interactions require further attention, in terms of their effect on the political and argumentative terrain of a particular issue, and how this interacts with emergent agonistic politics 'sparked' through such issues.

Spatial Debates in Geography

It is necessary at this point, to discuss recent spatial debates in Geography. The spatial reasoning of much state theory in particular has generated significant criticism in recent years however. In particular, the concept of scale has been interrogated and questioned as to its usefulness, which has sparked an important debate in Geography. The 'politics of scale' is currently facing some conceptual challenges. Most notably, there exists an ongoing debate centred around the contradictions between the differing spatial categorisations of 'territories, places, scales and networks' (see Jessop et al, 2008). The network/ scale debate has become particularly prolific. For Amin (2002) spatial relations are to be thought of as unbounded, highly mutable, fluid 'networks' which shifts attention away from any so-called 'vertical' notions of spatiality. Elsewhere calls have been made to abandon the concept of scale altogether in favour of a 'flat ontology' (Marston et al, 2004).

The argument by Marston et al, points towards the lack of coherence in what actually constitutes scale as problematic, and more so, that the concept of scale is prohibitive of viewing processes of "composition/decomposition; differential relations; and emergent events" (2004: 423). A move towards a flatter ontological positioning, would direct awareness to the ways that "complex systems generate both systematic orderings and open, creative events" (Ibid).

Elsewhere, Thrift (1995) has argued that scale does not exist. These critiques however fail to fully acknowledge that for many, the category of scale does not relate to the spatiality in which a particular process occurs but rather, scale is made and remade by the process itself. Scale is processual and is necessarily emergent, constituted by ongoing social processes and political struggle.

However, this ignores a focus on what scale actually *does*. Specific policies are made within particular scalar frameworks which, whilst these can be pointed at as being, in actual fact, non-existent, nevertheless have very real implications for how political action unfolds. As

Žižek (2008: 132) writes in relation to how we treat a variety of phenomena: "even when we know how things are, we continue to act upon our false beliefs". Even if we know that the national scale is produced through social and political processes, we continue to live as if it is an actuality, and thus scale continues to impinge on the political context in which certain publics and areas of political contestation emerge.

Moore (2008: 212) describes as flawed the "...assumption that denying the ontological reality of scales implies that they are merely inconsequential heuristics in the minds of geographers that 'do no work', or have no effect in themselves." Instead a move towards examining "...how scale operates as a category of practice" is recommended (Moore, 2010: 211). This contradicts simplistic and reductive critiques which view the concept of scale as being 'reified' and therefore of no use as an analytical category (Marston et al, 2005). Rather than a focus on 'the politics of scale' Mackinnon (2011: 22-23) argues for attention to 'scalar politics' rather than a politics of scale, examining the "specific processes and institutional practices which are differentially scaled".

Thus I examine how scale operates as a category of practice amongst other spatial practices enacted by state institutions. This relates to recent work on state theory which emphasises the state as "...a series of contingent and unstable cultural practices, which in turn consist of the political activity of specific human agents" (Bevir and Rhodes, 2010: 1). This turns attention towards an 'ideational' or 'constructivist' understanding of the state, as something which rather than containing an identifiable core, is continually made present by certain practices and creates its own boundaries through such practices. Thus the 'idea' of the state, as something separate from 'society' is a consequence of the ways in which people behave towards what they perceive to be the state in action.

Thus scale can be analysed as a spatial practice amongst others, as informing a significant part of the context in which publics emerge. The emergence of publics cannot be predicted by the configuration of governance structures, but at the same time it must also be recognised that not all publics emerge in identical contextual frameworks. Thus more attention should be directed towards how the spatial practices of state institutions, in response to emergence of publics, operate in response to the features of certain objects of governance, which in turn are met by spatial practices of emergent publics which potentially disrupt the spatial orderings of state practices.

Contested Spatial Politics

An important intervention by Leitner et al (2008: 157) argues that attention should be on the 'multiple spatialities of contemporary politics'. Here, the focus is on the "complex ways

in which they [multiple spatialities] are co-implicated with one another, with unexpected consequences for contentious politics" (Ibid). Indeed, the focus is on multiple spatialities and how they are co-implicated in the formation of agonistic politics. This directs attention towards the practices of spatial reasoning and the consequences for democratic and political life. In relation to 'objects of governance', the ways in which different issues are comprehended and contested, relate to particular spatial strategies. These could include spaces of containment of a specific object, and coordination of who is considered to be affected, against other spatial extensions of a particular issue, fostering new connections and new spaces for those who are considered to be affected by a particular issue.

Here, as Dikeç writes, the idea that spatial framings are only 'metaphorical' is not of importance, because:

> "Even when used metaphorically, different understandings of space and spatiality inform particular conceptualisations of politics…certain spatial metaphors may indeed fail to account for the complexity of the world, and limit, rather than expand, political imagination." (2012: 1-2)

This is a vital point as through space the emergence of publics can be sought to be contained and modified by state institutions in order to implement rapid and 'efficient' policy developments. Here it is not just the containers of political life which are being modified but rather, argumentative, political, and democratic interventions are constituted by multiple and overlapping spatial practices.

As Rancière (1994: 31) writes "the capacity to make each concept correspond to a point in reality and each argument coincide with an itinerary on a map" is fundamental to the formation of a 'de-politicised' police order. Necessarily there is a surplus to this formation. In discussing the emergence of publics as 'sparked' by a particular issue, it must be asked, how are the spacings of the issues *seen* by various publics which emerge around an issue? What are the spatialities of the issue *seen* by those with a capacity to reform policy such as state institutions? How do these two visions interact and map onto each other in practice? And what are the consequences of this interaction for the way that the issue is comprehended and fought over, the publics that emerge around it, and the tactics and strategies used to forward political causes?

Conclusion

This chapter has developed theorisations of the political. The chapter started about by critically evaluating deliberative democratic theory, exploring how the agnostic and exclusionary nature of the political, is not sufficiently accounted for. Theorists working around notions of post-politics were discussed, with particular attention towards notions

of the 'foreclosure' of agonistic politics. Such depoliticisation was considered as an aspect of the 'post democratic' condition. Criticisms of these approaches were considered, and it was outlined that often they are viewed as being overarching and 'missing' key sites of political struggle. It was outlined that post-political perspectives are based around the idea that the political is excessive and therefore, can never be fully foreclosed. However, not enough attention is given to these 'returns' of the political. There is a need for more empirically sensitive attention towards the how political contestation emerges in certain settings and through certain issues.

This turned attention towards STS based approaches which also recognise politics as a disruptive dissensual moment, however focus on the objects and issues which give rise to this. This offers a way in towards understanding political contestation as a dynamic process emerging in certain settings. Work on emergent publics and the idea of the 'all affected' principle were discussed. This displays the initial point of struggle in the process of politicisation is to *extend* the issue towards others beyond the particularity of a particular setting. This displays the politicised nature of concepts such as 'making things public'.

The problem is however, the political dimension of such as process is not emphasised enough. Often with STS based approaches and emergent publics, there is an implicit idea of an almost causal 'generation' of political passions and disputes from particular issues. What is not accounted for enough is why such political contestation arrives in some locations and not others, and through certain channels and forms rather than others. Also, why do some politically generative issues fissile out and die, or disappear as sites of political contestation. Thus while the focus is on emergence and expansion, other processes such as containment and confinement have been neglected.

This brought the discussion on to a point of analysis which had been in the background through questions posed, which is the state. State theoretical perspectives were discussed, and it was pointed out that in STS based approaches whilst publics and issues are lively, dynamic, and emergent the state is either static or not theorised. Building on state theory, an object focussed understanding of the state was developed, which focuses on how certain objects of governance constrain and influence governance arrangements and state restructuring which can often cause contradictions between ideological projects, existing spatial dynamics and the desire for a particular object of governance to be developed.

Thus taking into account these different moments in the formation of political contestation, builds towards a more dynamic and nuanced understanding of the political, which focuses more attention on the *where* of politics. This specifically relates to processes

of spatial extension and spatial containment, where key political frictions are created from competing attempts to define the space of the issue at hand, generating policy reforms, politicisations, and processes of post-politicisation. Here the relations between different aspects of the policy environment and forms of public engagement are examined, rather than being seen as isolated or independent.

5

Chapter Five: Researching Nuclear Spaces

Introduction

This chapter outlines the methodological approaches utilised to answer the research questions, and the practical and ethical considerations surrounding them. Firstly the research is situated in the more general framework of policy research and planning, and the process and reasoning behind the line of enquiry that was followed in terms of the empirical moments selected. A discussion of the various methods utilised to address the research questions and key problematic concerning *the political and democratic consequences of the new public engagement framework surrounding new nuclear power* follows.

Researching Policy Transformation

There is a lack of contemporary research focused on the political dimension of nuclear policy in the UK. In understanding the different movements and un-foldings of contestation around nuclear power development, three different 'eras' of public engagement with nuclear power were identified. These are the Public Inquiry into Hinkley C 1988-1989, New Labour and participation between 2003-2008, and the post-Planning Act 2008 consultative framework. This thesis began as an investigation into the political and democratic implications of the Planning Act 2008. However, as the research began, I became inspired by the idea that the politics of the Planning Act could not be fully understood without a comprehensive understanding of the politics of previous engagement with nuclear power. Thus it was necessary to not only examine contemporary policy, but also to engage with historical experiences which are integral to the story of policy reforms today.

This focuses on nuclear power policy in terms of a complex web of social interaction, rather than as the result of purely 'rational calculation' and 'neutral' decision-making. There has been significant qualitative research undertaken on previous key nuclear policy events. Brian Wynne (2010), in his revised edition of 'Rationality and Ritual', originally published in 1982, uses the case study of the Windscale inquiry to discuss the politically uneven relationship between scientific expertise and public intervention in the unfolding of nuclear power policy. Inspiration was gained from this piece of writing, in terms of the ways in which Wynne (2010) builds a story which does not isolate the particular event of Windscale purely in terms of procedural matters. Rather, the public inquiry is situated within the context of the emergence of nuclear as a public issue and 'matter of concern' in the 1970's and 1980's.

A similar, qualitative approach was taken by Andrew Massey (1988) in his analysis of the role of 'professionalism' in directing nuclear power policy and limiting the terms of debate. Massey interviewed over one hundred civil servants and participants involved in nuclear power policy, in the aftermath of the Windscale and Sizewell B inquiries. Secondary sources were also used to situate the decisions of 'technocrats' within the wider contexts of energy policy.

This thesis utilises qualitative methodologies in order to examine the changing forms and locations of politics in an assessment of contemporary public engagement with nuclear power policy, in comparison to previous forms of public engagement. In particular it will question what 'political opportunities' are created for different groups through different policy formation. Qualitative methods are more suited to understanding these interlinking processes. As Dwyer and Limb (2001: 6) point out:

> "qualitative methodologies do not start with the assumption that there is a pre-existing world that can be known or measured, but instead see the social world as something that is dynamic and changing, always being constructed through the intersection of cultural, economic, social, and political processes".

Thus policy contexts are often talked about in the abstract and the political, also. For example, as already discussed it has been said that within public inquiries there were 'political opportunities', but this then poses a number of questions for further investigation: firstly, was it actually the case that there were political opportunities? If so, what are the actual processes through which these opportunities were enacted? Who where the protagonists carrying out these opportunities? How did these processes relate to spatial formation? The research engages with a variety of moments and actors in different policy environments to address the effects of policy reforms on democracy and the political. The key thread is that nuclear policy under the Planning Act is best understood as a response to particular tensions which have developed in previous eras of nuclear development.

In undertaking this research, Flyvberg's (1998: 7) 'narratological approach' was particularly useful. This approach investigates the "actual practices of politics, administration, and planning" through building a narrative based around multiple sources and methods. In a similar way, I wished to understand the practical dimensions of, for example, 'political opportunities', and to develop a more grounded, empirical understanding of how processes of rescaling impact on political practices, and simultaneously, how space is constructed through such practices. Often processes such as 'de-politicisation' and 're-politicisation' are discussed in the abstract and can be over-

arching; by tracing the politics of a particular 'object of governance' through different eras of policy, the more subtle tensions and political processes which occur, and the effects of these, can be comprehended.

As Allmendinger (2011: 3) states "if we want to understand change, then complexity and contingency provide the backdrop to any study". Research studying processes of policy formation is necessarily complex, and usually utilises a variety of qualitative methods with which to study social phenomena. As Sharp and Richardson (2003: 200) point out:

> "Policy-making is complex, rich in fine grain detail, and the type of research we are advocating inevitably gathers large amounts of data that must somehow be analysed and presented convincingly".

Following Sharp and Richardson it would seem the challenge is to reconstruct the policy process, to trace the narrative of the emergence of certain spatial and democratic changes, and to track how these changes occur 'in action'. This involves a 'historical analysis' of discourse building through secondary sources alongside an analysis of current events entailing 'discourse in action' (2003: 205). This approach is useful, however present conditions cannot be reduced to past discourses. 'Tracing' different movements of 'politicisations' and 'depoliticisations', reveals key points in the contestation over nuclear technology within settings of public engagement, which often remain unresolved in the nuclear present.

The concept of researching the three 'eras' of public engagement with nuclear power emerged from the research process, rather than being the initial plan. I set out to first and foremost assess the political and democratic implications of the Planning Act 2008. After several preliminary interviews I learned that there had been an inquiry into Hinkley C in the 1980's. Many participants spoke comparatively about the Planning Act and the inquiry. At this time I was also doing reading around the Planning Act. There had been a focus on the ways in which the Planning Act was forming a 'de-politicisation' of policy around large scale infrastructure (Newman, 2009), and that activist groups would be side-lined by the process (Ellis, 2008). Elsewhere, I had been reading literature on 'political opportunities' available in public inquiries. Many questions remained unanswered around these due to insufficient empirical research. If the Planning Act was de-politicising then what did this entail, and how was this done? If public inquiries had 'political opportunities', then what were the processes involved, and who were the protagonists through which such opportunities were enacted? Through a comparative view of the different eras of nuclear development, a more thorough understanding of political contestation, as well as a fuller understanding of the consequences of the Planning Act, could emerge.

Examining these different eras required several methods to be used in order to develop an understanding of the transformations in public engagement around nuclear power. These included archival research, semi-structured interviews, discourse analysis of secondary data, and participatory observation of consultations within the Planning Act through attending events where publics interact directly with government policy. My methods of data collection, analysis and storage were conducted in accordance with the University of Exeter's Ethics protocol. I will now discuss these different approaches in more detail.

Archival Research and Historical Interviews

An entire transcription of the 1980's Hinkley inquiry is available in the National Archives at Kew. To examine the changing policy environments of nuclear, a thorough analysis of the transcriptions from the Hinkley C Inquiry was made. The process contributed to a qualitative assessment of the differences between the 1980's consultation and the current consultation. This entailed addressing the issues raised, and who could contribute to the process and make their views heard. This analysis was then developed through key interviews with civil servants from the era, and activists who took part in both the 1980's Hinkley inquiry as well as the current consultative framework.

Whilst there are strict guidelines regarding the process of research for specific areas of historical analysis, within geography a detailed outline of a methodological approach to archival research remains hard to find. Aside from Robert Mayhew's (2008) intervention, there are few articles written on the topic. Lorimer states that:

> "...there are few nuggets of advice to be quarried. Suggestions on mechanistic and systematic ways to search records are of undoubted functional use, but oftentimes they can only be a niche interest for the tight-knit community of researchers for whom they will ever actively come to matter...methodologically, what this all actually amounts to can still be hellishly hard to determine or render systematic." (2010: 250)

Researchers are not permitted to remove the Hinkley C Inquiry documentation from the Archive premises at Kew. I therefore studied the inquiry documents within the archive and then over a period of several days, took digital images (which is permitted) of several thousand pages to enable further research and analysis off-site (See Appendix B for an example). Through a detailed reading of these copies of the inquiry proceedings I studied the practices through which 'political opportunities' were enacted within the inquiry, tracing the unfolding of spatial processes such as 'up-scaling' and networked processes. This was carried out through coding key categories of interest which included; significant actors involved in the consultation, key arguments made, timetable of events, and notable

events during the inquiry. This process enabled me to build up a narrative and sense of the 'political opportunities' experienced by various groups under the general inquiry experience of the 1980's. This is reinforced by personal accounts from central participants in the original Hinkley Inquiry. Interviews were secured with civil servants, mostly now retired, and activists involved in the original inquiry process. A few activists interviewed had taken part in both consultations on Hinkley C, which offered valuable personal accounts of the perceived changes that have occurred with regards to public participation and nuclear policy over the three eras of nuclear policy.

Interviewing individuals about a historical event involves its own methodological issues, which can be discussed in terms of 'life story interviewing'. Of particular concern is the reliability of accounts of events which took place twenty years ago, from the current subjective position of the interviewee. As Jackson and Russell point out:

> "In focussing on personal biographies, life histories may seem vulnerable to overstating individual agency. This tendency is, however, counteracted by the life history approach which emphasises the interweaving of public and private narratives." (2010: 185)

In terms of my own research, a balance is achieved by combining these personalised accounts of events with excerpts and inquiry documentation, as well as news reports from around this time to build up a detailed understanding of the qualitative differences between the previous Hinkley C consultation and the present one, and the political and democratic differences between them.

Interviews

This section outlines the details of the interviews which were carried out to address the research questions and overall research objective, and the issues which were raised during the process. Interviewing was a central method used to gather data for this research. A total of forty-two people were interviewed from a variety of stakeholder groups with regards to the nuclear issue (See Appendix D for table of interviewees). My aim for the interviews was to gauge the changes in the political opportunities of new nuclear power policy from a variety of vantage points, and to record and understand people's first-hand experiences of the new policy framework.

The interview is probably the most widely applied method in qualitative research, however there are many varieties and differing techniques with which to approach the interviewing process (Cloke et al, 2005; Watson, 2006;). Bryman differentiates between the 'structured interview' and the qualitative interview, which takes on either an

'unstructured' or 'semi-structured' form. In qualitative interviewing "...the researcher wants rich, detailed answers; in structured interviewing the response is supposed to generate answers that can be coded and processed quickly" (2008: 437). Rather than a set of rigid questions, there is a greater degree of generality in questions initially asked in qualitative interviewing. As well as this "interviewers can depart significantly from any schedule or guide that is being used. They can ask new questions that follow up interviewees' replies and can vary the order and even wording of questions" (Bryman, 2008: 437).

A significant majority of the interviews carried out were done so taking a semi-structured approach, addressing key themes that I had written down in advance as well as following the trajectory of questions or themes which emerged during the interview process. Interviews with certain members of Government such as members of the Office for Nuclear Development (OND) required a more structured approach, drawing on a more thorough list of questions because, as suspected, their responses did not fit the pattern of a conversational style which would often be the case when interviewing NGO members and activists. I got a sense that their responses were heavily informed by 'media-training' and on occasion the answers seemed pre-prepared.

Interviews were recorded with permission on a digital device and transcribed as quickly as possible after the research encounter in order that observational field notes could also be added. Interviews were then coded using the NVivo software, beginning around initial themes related to issues, actions, and spatial dimensions. As the research progressed and more interviews were conducted, I began to divide the key themes into sub-themes, increasing the analytical precision of the data. This led to the organisation of numerous folders with different documents containing data relating to particular themes within the research. When the fieldwork concluded, I then had a series of diaries relating to themes and sub-themes each containing a range of coded data. Interview data was stored in a password protected computer folder, and was anonymised; over half of interviewees wished for anonymity so this was applied to all.

Gaining access to certain interviewees was problematic at times. As McDowell (2010: 161) points out, "actually identifying, contacting and arranging to meet interviewees, often raises complicated logistical and ethical questions". Negotiating access and securing interviews was a challenging process. I interviewed a cross-section of various stakeholders who were involved in the consultation phase of nuclear power policy. Officials from the OND at DECC, Local Councillors, local activist groups, NGO's, private utility companies, and lobbyists were interviewed to gain a broad understanding of the differing perspectives on the new policy environment. Although I secured an interview

with a leading Civil Servant at DECC, it was difficult to gain access to substantial numbers of Civil Servants and Government officials. Nuclear power is a highly controversial issue which is fraught with trust and security issues. Throughout the technology's relatively short history, controversy has surrounded the technology's development. Many of the civil servants contacted were therefore unwilling or perhaps even prohibited from engaging with the research, and some offered fairly strongly worded emails in response.

Despite this, I managed to gain access and interview several key civil servants. One of the most effective means of securing these interviews was through attendance at several events in parliament and elsewhere, including the Royal Society. These were a vital meeting ground where key players in the nuclear debate could be intercepted and met in person; as such several interviews were secured through such encounters. As Cloke et al (2005: 152) state "In our collective experience, the unexpected 'chat' with key individuals has often proved to be a most fruitful research moment". This was very much the case at these nuclear events. Several of the subsequent interviews were also achieved through 'snowballing'. Snowballing provided a much more productive method of access than sending letters or 'cold calling' in many cases. On a number of occasions, interviewees forwarded my contact details onto potential interviewees, or supplied email addresses which would have been potentially hard to come by through other means.

A number of interviews were also secured through what could be described as a 'cold calling' approach. Both emails and letters were used. Emails were, bar one exception, ineffective in securing interviews with civil servants, members of the IPC, and Local Councillors. Email requests were, at times, declined but more often than not, never responded to. Letters on official University of Exeter headed paper were used and were significantly more successful in gaining access to the political establishment. An example letter used to contact potential research participants can be found in Appendix C. Activists were much more responsive to emails. Phone calls were also used to secure appointments with interviewees who were not initially responding which proved to be successful approach.

A variety of unforeseen events occurring during the period of research had a notable effect on the general 'mood' of the policy environment. One event which I believe had a profound effect in terms of issues of trust and access with the activist community, were revelations that undercover police had been infiltrating environmental protest groups for years, which became apparent with the 'outing' of PC Mark Chapman (Guardian, 2011). This certainly contributed to a general feeling of distrust and uncertainty amongst the activist community and made people more suspicious of my intentions. The Fukushima nuclear disaster in March 2011, two months before the 25th Anniversary of Chernobyl was widely

referred to as a 'game changer', setting UK nuclear policy behind schedule by some months, and contributed to a significant reluctance on the part of the civil service to discuss issues of nuclear power with a postgraduate researcher.

This was further compounded by a significant Freedom of Information request by the Guardian on the 1st of July (see Guardian, 2011b). It revealed, through a series of emails, that secret meetings had taken place between key civil servants (some of whom I had fortunately already interviewed!) and industry members only forty-eight hours after the disaster to create a joint 'public message' on nuclear power to 'play down' fears over Fukushima. Due to this, calls were made from within the Liberal Democratic Party for Chris Huhne, the Energy and Climate Secretary to step down (Guardian, 2011c). The perceived collusion between the government and the nuclear industry was described as 'Orwellian' by Guardian journalist John Vidal (Vidal, 2011). This led to the interview 'trail' inside government effectively 'going cold', demonstrating that the research process does not take place in a vacuum and is impacted by political processes. These events heightened the difficult issues of positionality and ethics which the interviewer has to deal with when undertaking research, to which discussion now turns.

Positionality and Ethics in Researching Nuclear Power

The unexpected events described above, and their consequences for the 'mood' of the policy environment pays testament to the description of the interview process as being an "interpersonal drama and plot development" (Cloke et al, 2005: 155). As McDowell points out, "rather than being a transparent, straightforward exchange of information, the interview is a complex and contested social encounter rife with power relations" (2010: 161). The controversial nature of the nuclear issue was compounded by these events which presented significant challenges in gaining access and trust.

Interviewing has been viewed by some as a fundamentally 'collaborative project' (Crang and Cook, 2007). Whilst acknowledging that this can be the case, the degree to which an interview can be perceived as 'collaboration' depends very much on who is being interviewed, and for what purpose. When interviewing leading Civil Servants there are definite boundaries that are maintained whilst the process is taking place which feel anything but collaborative. You are speaking to somebody who is maintaining a symbolic position, and even managing to get a civil servant to talk in terms of 'I' rather than 'The Government' can be a challenge if the issue is current and controversial enough.

Cloke et al (2005) observe that the decision of whether or not to record interviews can be an important consideration. The only interviews which I did not record were with certain

Civil Servants, where I chose to make notes. Following Goffman's (1964) idea of 'front' and back' stage symbolic appearances, turning off the recorder was a necessary step by which to access the 'backstage' thoughts of Civil Servants.

In discussing power relations Cloke et al state that:

> "Although there will be times when power is exercised upon the researcher... it is far more common for power to be exercised by the researcher in his or her investigation of, and interpretation of, the lives of others." (2005: 130)

Whilst interviewing Civil Servants and individuals from private utility companies however the power asymmetry very much favoured the interviewee. Elsewhere, interviewing members of the activist community the slant was shifted in the other direction. Certain interviews with elderly activist members in their own homes had to be treated with particular sensitivity.

A common question asked by opponents of nuclear power when I first met them was, as I was based in Exeter where EDF has offices, was I employed by them? And who was I funded by? Again, this reflects the general feelings of suspicion and mistrust which haunt discussions of nuclear power. I produced a document which contained the information about my funding and also displayed that I was abiding by the University of Exeter Ethics protocol. I made sure that participants had signed a consent form, and that any work that I produced could be accessed upon request. These were important steps which allowed rapid transition from an initial atmosphere of mistrust to a more comfortable atmosphere of exchange.

Related to this was the issue of self-presentation. As McDowell states, "language, bodies, clothes, gender, clearly matter in the sorts of exchanges that take place in interviews." (2010: 156). Whenever I was going to interview a Civil Servant, or person in an official position of authority, I would wear a suit to appear more professional. A suit would not have been appropriate for talking with activists and NGO's so I dressed more casually. McDowell (2010: 161) draws attention to another 'self presentation' issue which is "How much should/must a researcher reveal about the purpose of the work to facilitate access?" This difficult question was mediated through the letters or emails which I wrote to participants and the ways in which the research was described.

Given the sensitivity of the topic, and the fact that I was interviewing a broad spectrum of those involved in the nuclear debate, the various positionality issues discussed above were very important considerations during the research. Following Rice (2010) I sought to develop an 'elasticated positionality' as a 'field strategy', which utilises a flexible

presentation of the self to mediate the diverse power relations in which the researcher finds themselves. Gaining 'rapport' was a key part of the interviewing challenge and involved mediating one's own position on nuclear power; I found this was easier as I was agnostic about the issue in the first place. Despite being more difficult at times in terms of the atmosphere of the interview, I was as happy to talk to members of the Civil Service as I was to interview members of activist groups.

Ethnography and Participant Observation

As Martin and Pavlovskaya (2010: 370) note, in contrast to the traditional anthropological practices of ethnography, the 'ethnography' being adopted by geographers "...cannot be reduced to a single method or a single form of writing around which a research project is organised". Ethnographic work is 'shamelessly eclectic' and 'methodologically opportunist' which "studies what people say and why. And what they are seen to do" (Cloke et al, 2004: 179). Participant observation is a key ethnographic approach which, as the name suggests involves "observing behaviour, listening to what is said in conversations both between others and with the fieldworker, and asking questions" (Bryman, 2008: 402). Ethnographic research treats people as knowledgeable, situated agents and is an 'immersive' methodology allowing themes to become gradually apparent. Within this approach the researcher themselves is the main tool of research (Cloke et al, 2004). As Cloke et al also note, ethnographic approaches grapple with a key issue which haunts this thesis; the difficulties of studying 'abstract' theory and relating it to 'everyday' social occurrences (Ibid: 182).

Unlike quantitative methods which seek to detect patterns and regularities, or test hypotheses, a key element of ethnography is that "it seeks to explain the phenomenon observed" (Martin and Pavlovskaya, 2010: 374). Ethnography focuses on a performative sense of the world. As Martin and Pavlovskaya (2010: 375) note it "...provides a means by which to understand how discourse is effectively performed and it, unlike analyses of discourse in print, opens the door to micropolitics". Ethnographic methods are thus a particularly important tool in analysing the qualitative and experiential nature of the new policy environment of nuclear power, and how spatial changes impact upon the kinds of debate which can take place.

Participant observation was a key ethnographic method utilised as part of the research. As Bennett describes:

> "Participant observation attempts to understand the everyday lives of
> other people from their perspective...to study cultures, subcultures, and the

value systems and social structures which make up these, researchers work within the patterns of relationships in a given setting." (2002: 139)

Here, the researcher is involved to some degree rather than merely being a passive observer. This brings about some important issues in terms of how much 'participation', as opposed to 'observation' the researcher should be undertaking. As Bennett (2002: 140) points out "getting the balance 'right' is sometimes difficult and demands the researcher navigate the study around difficult issues of ethics."

I undertook personal involvement in the revised National Policy Statement Consultations on Energy. There were three consultations in total, taking place in Bristol, London, and Manchester. In addition to this I also attended several consultations at Bridgwater proximal to Hinkley Point. I also attended several significant events at the Houses of Parliament in the aftermath of the Fukushima disaster, which contributed to gaining insight into key spaces in which NGOs and government representatives were meeting to negotiate the future of nuclear power.

At times the research method was most akin to Thrift's (2002) concept of 'observant participation', DECC arranged various group activities and round-table sessions as part of the consultations, and rather than merely observing I was fully immersed in these activities, discussing and contributing ideas. Similarly, at meetings I found myself often contributing to discussions due to the knowledge and views on nuclear power I had cultivated during my research.

A key component of participant observation involves continually write up field-notes as the research progresses (Crang and Cook, 2007). During consultation events, brief notes were made where possible and then were written up fully after the event had taken place. Following Bennett (2002: 146) research diary entries included field observations, attempts to make sense of these, and feelings in relation to the research. Diary entries of the research in their original format were unstructured personal accounts of events which were then read through thoroughly, and annotated in terms of key themes in order to make sense of the diary entries and produce more structured data. Key themes, quotes, and occurrences were coded through this process, and tabulated by code for more effective analysis.

To conclude, this chapter has outlined the various qualitative methods employed in conducting this research. In order to fulfil the aims of the research, these methods are used to engage with various actors involved in the process of nuclear development, as well as the historical context of such development. I now turn to a more empirical focus, beginning with analysis of the Public Inquiry during the 1980's.

6

Chapter Six: Hinkley C 1988-1989; From Protest to Inquiry

Introduction

This chapter examines the politics of the 1988-1989 Public Inquiry into the construction of Hinkley C nuclear power station. The chapter builds on recent discussions surrounding the 'political opportunities' of public inquiries (Cowell and Owens, 2006), developing an empirical focus on the grounded processes and multiple issues through which political opportunities are pursued. These varied processes are related to wider discussions around politicisation and agonistic politics. Firstly, the context of the Hinkley C inquiry is discussed, situated in relation to the nuclear power development programme of the 1980's and the legacy of Sizewell B. Secondly, the 'battle' to define the issues and spatial boundaries of the inquiry between the CEGB and campaign groups is identified, and the tools through which the scale and scope of the inquiry was extended are discussed. Thirdly, the further strategies employed to extend and develop political opportunities are discussed with particular attention towards the spatial dimensions of these processes. A discussion follows, in which the key dimensions of the politicisation of the Hinkley C Inquiry are identified, as well as the key tensions and challenges which new nuclear policy would attempt to resolve.

If an essay question read "public engagement with nuclear power in the 1980's: discuss", then one case study would undoubtedly receive almost all attention; the Sizewell B Public Inquiry. Extensive academic attention was directed towards this inquiry, addressing themes of public participation and risk, and producing important and lasting insights into the roles of controversy and uncertainty in generating democratic and political negotiation. The inquiry lasted over two years, producing vast quantities of pages of documentation, and was, until Heathrow Terminal 5, the longest and most expensive public inquiry in the UK's history.

The inquiry also culminated in planning permission for what would be the last nuclear power station to be built in the UK to date, with the station first producing electricity in 1995. Sizewell was preceded by a public inquiry into the THORP reprocessing plant in 1977 (Wynne, 2011), and was followed by a public inquiry into the Fast Breeder Reactor at Dounreay (see Ryder, 1987). As detailed in Chapter Two, inquiries were increasingly perceived as sites for democratic experimentation as nuclear moved from a 'private' to a 'public' issue (Wynne, 2011). One of the most significant achievements of nuclear campaigners was to use the inquiry to alter the inquiry agenda, expanding the issues under consideration, and concurrently discovering new and important information concerning nuclear technology (Wullshlager, 1989).

Following the planning process for Windscale, the importance of fair and equitable procedures to enhance democratic accountability had been recognised in a report by the CST (1979) on 'The Big Inquiry'. The report made recommendations for improving public engagement, including facilitating substantial debate 'upstream' in the policy process before policy is decided, and for objectors to be funded in order to increase fair access to the process. Prior to this, The Flowers Report (1976) had outlined that engagement with nuclear cannot simply be a technical matter, but that ethical, political, and emotive issues must be considered as a legitimate part of decision-making. Alongside these recommendations the influence of environmental NGO's continued to increase, contributing to the simultaneous expansion of the public inquiry. Thus by the time the Sizewell B Inquiry began in 1982, the government conceded that there needed to be a "full, fair, and thorough" investigation into the construction of new nuclear power (O'Riordan et al, 1986: 4).

Another inquiry, which received far less attention, was launched in 1988 into the construction of a proposed new nuclear power station at Hinkley Point on the Bristol Channel, in Somerset. The inquiry into Hinkley C encompassed many of the same elements of interest as Sizewell. It produced staggering amounts of documentation, involved extensive examination of various nuclear risk-based issues, and produced seemingly endless economic and probabilistic assessments. The inquiry was costly and generated similar complaints of technocratic malpractice, with many believing it to be exclusionary of various non-expert groups. As with Sizewell, it was a site of discord between two visions of what the space of the inquiry was for; the CEGB and government taking a narrow view of its function in resolving the specifics of a particular development at a particular site, whilst for NGO's and campaign groups it was a rare and important means of challenging the substance of policy developments. The antagonism between these two views in addition to the role of spatial politics in the 'battle' over the inquiry is of particular interest in this chapter.

What must be added however, is that whilst they share many characteristics, Hinkley C and Sizewell B public inquiries are substantially different on several related counts. First and foremost Hinkley was the public inquiry for the power station that was never built. It stretched over the end of one era of British Energy policy based around the highly centralised CEGB and into the post- privatisation policy environment of 1990, entailing the 'liberalisation' of the UK energy market. The irony was that the Conservative Party led by Margaret Thatcher, who had been the most vociferous advocates of new nuclear power in the 1980's, effectively destroyed their own new build programme through a commitment towards the privatisation of the energy supply.

The course of the Hinkley C inquiry would see a key conundrum still plaguing the nuclear industry and government keen for its development in the era of neoliberalism, providing a significant narrative running through the entirety of this thesis; how do you support a technology that emerged from, and has been dependent on a 'very big' state and continual subsidisation, whilst also outwardly remaining faithful to the privatisation processes at the centre of government agenda and which provides the justificatory basis for a host of other policy developments? Turning towards the Planning Act 2008, the close study of the unfolding of the economic debate during the Hinkley C Inquiry reveals a key tension which the Planning Act is a response to, in terms of insulating a particular policy development from the winds of economic change.

Whilst Sizewell has received the lion's share of the academic attention as a key historic moment in nuclear's relationship with publics there is much to be learned, possibly even more so from the case of Hinkley C. The argument here is that in terms of 'lessons learned', the last nuclear inquiry, indeed the inquiry where the power station was not built, is likely to be more informative for policy makers and industry specialists in our nuclear present. In particular, the case of Hinkley C displays an attempt on the part of Government to insulate the development from processes occurring elsewhere, and from matters of National policy. Through critical cross-examinations and verbal exchanges during the inquiry, the tactics of insulation and scalar containment on the part of the CEGB were undermined by campaign groups to extend the remit of the inquiry with regards to the issues under consideration, the people involved, and the spatialities considered relevant.

Thus the inquiry was politicised, contradicting the depoliticising tendencies of the CEGB. The power station was granted permission, however due to the fact that it had been extended, 'scaled up', and delayed, the power station was 'exposed' to events occurring elsewhere in the form of privatisation which proved to be its demise. Recent academic attention has focussed on the 'political opportunities' of public inquiries (Cowell and Owens, 2006), and other 'non-'instrumental' functions they provide (Rough, 2011). There is a need however, to attend to the actual processes through which 'political opportunities' are created and enacted within the setting of the inquiry (Cowell and Owens, 2010), and to understand the 'more grounded' enactments of democratic engagement and the link between spatial scales and argumentative action (Asdal, 2008). Through archival research and interviews this chapter explores the key battles of the Hinkley C Inquiry, and the ways in which politics was enacted. A particular focus is placed on the spatial politics which took place during the inquiry.

The Road to Hinkley C

Despite the negative attention that nuclear power was receiving following the TMI accident, plans were put in place to construct PWR reactors in the UK. The nuclear industry had a new found enthusiasm thanks to the positive signals sent by the Thatcher Government. One of the first things Lord Howell did, as Secretary of State for Energy in the Thatcher Government, was to propose the construction of ten new nuclear power stations, aiming at constructing one per year (Warner, 2012). The search was on for a suitable coastal site and the South-West of England became the favourable location in order to balance out the grid system.

This would form another forgotten chapter of the UK's nuclear history. The CEGB had ear-marked three sites in Cornwall as potential locations for the construction of new nuclear power stations, which led to the formation of the Cornish Nuclear Alliance, made up of Cornish Nationalists, the Liberal Party, and environmental groups such as FoE, and Greenpeace. A demonstration took place in Truro of around 2,500 people – one of the biggest recorded moments of direct action that Cornwall had seen in recent history (Aubrey, 1991).

The council voted by a significant majority against the proposals, and essentially by 1982 Cornwall had become a 'no go' for the construction of PWR reactors. Cornwall and Dorset had been proposed as favourable locations for the construction of new plants in terms of their physical geography. Selection criteria were amended following the Cornish decision, to be made related to issues of public barriers. Hinkley in Somerset, the site of power stations A and B, was deemed to provide a suitable location due to the fact, according to Derek Davis, a CEGB strategist, that 'there was no strong local opposition' (Davis 1982, quoted in Aubrey, 1991: 60). This provides an important reminder that the selection process for locations for new nuclear does not simply equate to preferences based on the absence of physical barriers to development, but also, the absence of political barriers. For some, this raises significant questions regarding justice for communities in burden-sharing for nationally significant infrastructure, where it is argued that siting of nuclear power is dependent on, and enhances, the 'peripheralisation' of host communities (Blowers, 2010; Blowers and Leroy, 1994; Schrader-Frechette, 2011; Sovacool and Valentine, 2012).

In contrast to the view of Davis concerning the lack of opposition however, local opposition began to emerge as the plans for Hinkley C progressed. These responses related to the kinds of sentiments around 'sensing injustice' (see Barnett, 2010) which

generated opposition to Torness. An interview with a self-identified 'veteran nuclear campaigner' offered insights into the sentiments surrounding Torness:

> Interviewee: "There was this immense sense of injustice, of the huge power of the state to impose a plan on the public...so you felt compelled to do something, anything against this. Something had to be done. So when Torness came around, it was the same kind of feeling.

> PJ: How come you felt that something 'had to be done'?

> Interviewee: There was a foregone conclusion and it was going to be built, and you saw them coming along and producing these graphs. The whole sort of, attitude of the Electricity Board, they would show you these ridiculous graphs of our electricity going up and it would all be exponential, and you just knew, out of instinct that it was never going to happen. True enough it never did. But they were right, and you were wrong, was their attitude. It just made you want to fight back!" (Interview with member of Greenpeace, 2011)

The notion of 'the good fight' is one that was mentioned frequently by interviewees who had taken part in the inquiry into Hinkley C, which I shall return to later in the chapter. This resonates with Mouffe's (2005) idea of 'agonistic pluralism'. Here it is passions which drive politics, based around 'adversaries' and an 'us' and 'them' relationship. Such passion in response to the proposed development of Hinkley C in the 1980's was central to the formation of an adversarial form of politics around the proposal. The directness displayed by the CEGB in their optimism regarding the site at Hinkley was generative in garnering opposition as a member of the campaign group, Stop Hinkley Expansion (SHE) describes:

> "It seemed we were an easy target after the disaster of the Cornish experience where the CEGB had been chased out of the area. Hinkley was on a list and it was a sense that there was an arrogance to that decision – 'oh, they won't mind, they're just a bunch of farmers who are used to it' kind of thing, so when the CEGB started sniffing around we felt we had to do something" (Interview with member of SHE/StopHinkley, 2011)

An initial group, the Alliance Against Hinkley C, was formed. This sounds similar to one of the many NIMBY organisations set up to oppose wind farms in local areas today; however nuclear technology and NIMBYism have an altogether more complex relationship (Welsh, 1993). The confinement of opposition as being 'NIMBY', against more principled concerns relating to the implications of the technology itself, is a key aspect of the framing of the public by the nuclear power industry and government. Also, it was not 'long-term' residents of the Hinkley area who were against the development:

> "...there were some people from around the power station involved but we were very interested in the accidents and controversies. I was a London

boy, in a rural conservative area, and remember most of those villages around the site had workers living in them so they could be thought to toe the party line, and often with those that were cynical there was a feeling of resignation about the whole thing. So it was more about getting in contact with the movement across the Channel in Wales who had been campaigning against nuclear quite successfully." (Interview with member of SHE/StopHinkley, 2011)

As well as the emergence of the Alliance Against Hinkley C, in 1985 Somerset County Council became Liberal and set up opposition to Hinkley. One year later, the worst nuclear accident ever to take place occurred in Chernobyl in the former Soviet Union. There were no signs that the CEGB were likely to change their plans for Hinkley due to these events. As Aubrey (1991: 67) documents, Lord Marshall, Chairman of the CEGB announced on a BBC documentary that:

> "Now we are going to build Hinkley C...sometime in the future. We don't know exactly when, we'll be decommissioning Hinkley A. We'll be building another, Hinkley D, probably another PWR...We're going to be working on the Hinkley site virtually forever".

With this in mind it is timely to return to the quote at the very start of this thesis from Vincent De Rivaz to observe similar levels of certainty, and assurances that the development 'will definitely happen'. It is worth noting, as Wynne (2011) does, the rhetoric of certainty and indeed, over-estimation; it is never just one power station being proposed, but rather a fleet which will revolutionise the energy system, this is part of the self-legitimising narrative of the nuclear industry. At this time the local Bridgwater newspaper published a 'rare editorial' which had also resigned to the inevitability of the construction of Hinkley C:

> "Hinkley C will be built, make no mistake about it. The CEGB know it, the local authority know it, we know it, you know it, and the inspector appointed to carry out the inevitable inquiry will know it before he hears the first evidence. Alas, we must go along with the charade which will take months, cost millions and produce enough hot air to carry Richard Branson back and forth across the Atlantic in his balloon a dozen times." (quoted in Aubrey, 1991: 67)

This attitude was not shared by the Alliance Against Hinkley C, which transformed in 1986 to a broader coalition, Stop Hinkley Expansion (SHE). The group set about organising huge numbers of meetings, creating networks of parish councils, farmers, professional middle classes and campaign groups (Aubrey, 1991). This included important connections with national environmental groups such as Greenpeace and FoE, as well as making links with Trade Unions and the mining community in Wales. The CEGB had a clear idea however, that matters of policy were settled. Thus they viewed the inquiry as a space to deal with

what could be referred to as the 'NIMBY issues'; the location of the workers' hostel, traffic congestion, noise pollution from the construction site and so on. In terms of the development of renewables, NIMBYism is considered a threat in blocking development. In contrast, with regards to nuclear power development, NIMBYism is a great ally. Dissensus around road developments and noise is useful for developers; it distances and distracts local people from broader uncertainties at the level of national policy, as was the case with Hinkley C in the 1980's and as is the case with Hinkley C presently.

What follows is an empirical tracing of the ways in which the Public Inquiry of Hinkley C was repoliticised, from originally being focussed around the specific development of a power station, to broader considerations of wider policy. This involved rendering certain issues 'visible', which government and the CEGB had sought to distance the inquiry from. The inquiry became the staging for passionate agonism around many aspects of governmental policy and wider political issues; however it was deeply reliant upon expertise and economic assessments to enable agonism to occur. Drawing on Asdal (2012), I trace key events in the inquiry in order to examine the ways policy was 'returned to the centre', and how political opportunities were enacted. A discussion of the inquiry in relation to political theory and post-politics follows.

The Boundaries of an Inquiry: Extending the Issue

As O'Riordan et al (1988) note in relation to the Sizewell Inquiry, participants turned up to the preliminary meetings not just to learn about the ways the inquiry would be run, but to determine the outcome. The Hinkley C preliminary meetings were also attended by substantial numbers of campaign groups, keen to participate in decision-making around the parameters of the inquiry. Many activists were particularly concerned that due to the multiple problems that the Sizewell process had created for government, and the subsequent landmark report by Frank Layfield (1987), the parameters of the Hinkley Inquiry would be severely limited. As one activist from FoE, who had also participated in Sizewell described:

> "I remember that the noises from the CEGB was that Sizewell was unnecessarily long, and could not happen again. It seemed that the message they were giving out was "never again". I remember there were Statement's being made by the government that all nuclear related matters were concluded at Sizewell and were not of relevance to Hinkley. This was a concern." (Interview with FoE member, 2011)

Inquiries were chaired by independent inspectors, at Hinkley the Inspector was a lawyer named Michael Barnes. A colleague of Barnes during the inquiry describes that there was pressure early on for the inquiry to be as swift as possible:

> "They [head civil servants] rather thought they were running it at times... like they thought he [Michael Barnes] was just supposed to sit there and be the person who would say 'it's 9:45 let's start now!' that sort of thing. They were the people who were the civil servants with the real power in the background and he found it quite difficult to get on with." (Interview with former colleague of Barnes, 2011)

A Civil Servant researcher for the CEGB at the time, recalls the position of Michael Barnes in relation to the inquiry:

> "Michael Barnes, the then Inspector, was very clear that he wasn't going to have another Frank Layfield, so he wanted to cut out a lot of extraneous arguments. On the same token, he was very clear that his obligation as an inspector under the statutes was that it was to be a full inquiry to, use that wonderful quote 'to inform the ministers mind'...So he wasn't going to stop anybody giving evidence..."(Interview with retired civil servant, 2011)

The parameters of the inquiry were questioned early on, when objectors announced the intention to have several 'informal' meetings in Cardiff and locations in South-West England. The inspector also made the interesting decision to employ somebody to cross-examine on his behalf:

> "Michael Barnes was unusual in that case because most inquiries didn't have their own QC, he had his own advocate, doing the cross questioning for him, and the cross examination for him...and that actually saved a lot of time, because questions were prepared in advance for the written evidence, as well as the spokesmen evidence, and Mr Barnes didn't have to intervene very much at all because the work was done for him and he could concentrate actually on the crux of the issues, rather than formulating questions...I thought that was a good use of his time" (Interview with retired civil servant, 2011)

Whilst the CEGB were keen to limit the inquiry to the specifics of local groups and issues around Hinkley, early on Barnes strongly indicated that there would be no automatic exclusion of certain issues as irrelevant to the case of Hinkley C, stating:

> "One of the main matters arising was regarding the scope of the inquiry. Plainly that concerned many people, and I did my best to assist participants on that by indicating that I would not exclude in principle certain evidence or submissions" (Inquiry Transcript; Preliminary Meeting. 12th July, 1988: 2).

Other requests were made on behalf of objectors towards the CEGB by Barnes through the preliminary meetings. One of these was specifically in response to the report by O'Riordan et al from Sizewell, as well as previous recommendations made by the CST (1979) and Brian Wynne (1979). It was recommended that objectors should be funded to ensure that the process was fair and in order to reduce the perceived power asymmetry between the resources of the CEGB and campaign groups. Another main point of contention, which would prove decisive, was a call to postpone the inquiry until the government's impending privatisation bill came to fruition. It was however announced by the Inspector that:

> "The secretary of state did not agree to supply funds for the objectors...requests were also made that the secretary of state should postpone the commencement of the inquiry proper until the present privatisation proposals for the electricity supply industry become law. The secretary of state also rejected the request." (Inquiry Transcript; Preliminary Meeting. 12th July, 1988: 2)

Mr Thornton, from Greenpeace, drew on the work of O'Riordan arguing the case for funding for objectors:

> "We see a role of financial assistance for certain parties at inquiries which are regarded as serving a specific public interest: we support the case for funding for two reasons: political acceptability and efficiency. Objection is the life blood of the inquiry. Bona fide, or as we put it, accredited objectors, must be able effectively to participate, because they genuinely contribute to a wider understanding of the issues raised. [quoting from O'Riordan et al, 1988] 'The inquiry would be discredited if it did not entertain full blooded objection, and few proponents would be happy if they achieved their objectives against enfeebles opponents'" (Inquiry Transcript; Cannington, Somerset. 4th October, 1988: 33).

Greenpeace rounded off this particular statement with what can be theorised as agonistic political language:

> "Finally sir, although we feel the opponents are severely handicapped both by the lack of time and a lack of financial resources to oppose the applicants case, it is clear to us that the CERGB case is so weak, so flimsy and so incomplete, that we have no doubt that we will win this inquiry, and convince you that Hinkley C will not or should not be built [Applause]. As far as the CEGB goes with their massive resources, as the saying goes, "the bigger they come, the harder they fall" (Ibid: 35).

The CEGB refused to fund the objectors, however in the second meeting, Barnes made clear to the inquiry that against murmurings of governmental pressure, boundaries would not be drawn in terms of who would be considered as legitimate objectors:

> "Certain objections have been made against the Hinkley C proposals on behalf of certain Local Authorities in the Republic of Ireland...since the

meeting I have seen certain press reports that have indicated that a decision has been taken not to permit those councils to appear. I make it clear that I have taken no such decision and in fact, in order that the matter be laid to rest, I announce now my decision is those five councils in question may appear at the Inquiry [Applause]." (Inquiry Transcript; Preliminary Inquiry. 12th July, 1988: 3).

Suspicions that the inquiry was a "done deal", heavily influenced by government, was a main contention voiced by objectors:

"I know that the CEGB would like to ride an express train through this inquiry in the belief that all those issues were resolved at the Sizewell Inquiry. They were not. We have had since then Chernobyl, the total collapse of the economic case for nuclear power; privatisation is now looming… I ask you not to jump aboard the express train which the CEGB want to ride through this Inquiry" (Inquiry Transcript; Cannington, Somerset. 4th October, 1988: 69)

Demands were also made that the CEGB should send witnesses to the proposed sessions in Cardiff due to the significant number of objectors located there. Lord Silsoe representing the CEGB, had "significant concerns" about the informal meetings, and the CEGB's policy was to "not send witnesses" (Inquiry Transcript; Preliminary Inquiry. 12th July, 1988: 8). The Inspector clarified that sessions would take place in Cardiff (Ibid), however there was uncertainty regarding their status and whether evidence given would be considered official. Greenpeace however stated that "We believe that the hearings in Cardiff should be a full and formal session in recognition of the affected parties there" (Inquiry Transcript; Preliminary Inquiry. 12th July, 1988: 34). This included, as a matter of importance, the provision of a library in Cardiff, containing all relevant documentation translated into Welsh.

The democratic function of the public inquiry was continually emphasised at these opening exchanges:

"Without the public inquiry system, with a system which is falling into disrepute, the growing numbers of objectors would have to find recourse for their genuinely felt and amply substantiated views in other ways, ways which could place generally law abiding citizens in conflict with the law; a position I and others would deeply regret…The Hinkley C Inquiry, in Friends of the Earth's and many other objectors views, is a crucial test of the fairness and independence of our inquiry system, in the face of what I believe is strong external pressures from the government and the clearly expressed views of the developer. In the absence of funding, all objectors are exclusively reliant on the goodwill and fairness of yourself." (Inquiry Transcript; Cannington, Somerset. 4th October, 1988: 43)

This quote is integral to understanding the different channels through which politics is pursued. The point being made by Ms Boyle is that if opportunities are curtailed for objectors in the inquiry, then other alternative channels will have to be pursued, such as direct action. This gives an idea of how political agonism shifts between different locations and channels, and the ways in which this relates to state strategy and planning reform will be discussed further in Chapter Nine.

Another point made by the objectors was that to ensure a democratic inquiry the process should not be confined to official written submissions and cross examinations focussed on technical issues, but that members of the public should be permitted to give oral statements without the support of written evidence or being subject to cross-examination:

> "…there are a great many individuals that would like to give evidence of a general nature and they have expressed their hope that they can do so after the close of all topics. The main reasons for this – there are several – the main ones are that as the Inquiry progresses people feel better acquainted with the procedures which are, as has been stated by other people already, intimidating to many people, and because more and more people are coming forward as objectors, many of whom do wish to give evidence of a general non-expert nature" (Inquiry Transcript; Cannington, Somerset. 5th October, 1988: 2-3)

The Inquiry Inspector responded favourably to such demands stating that, "I am anxious that people should be able to do that and do not feel intimidated, I can understand some people may feel nervous with the proceedings" (Ibid: 3). In terms of politicising the inquiry, accepting non-expert statements into the inquiry setting was an important strategy:

> "We wanted to make sure that as many people as possible would have the chance to have their say…it's a very intimidating process getting up there and discussing things in the inquiry jargon… so that [allowing people to talk in a more general manner] meant that those who had strong views about nuclear power but who were unfamiliar with the jargon could attend the inquiry, and have their views counted. In the end we got loads of people to come and give their views, we got a lot of support through this." (Interview with SHE/StopHinkley member, 2011)

The inspector responded positively to some of the recommendations made by objectors. For example, regarding the Cardiff session, despite the reluctance of the CEGB to provide witnesses to those sessions in the preliminary meetings, Michael Barnes announced:

> "As to Cardiff, the Secretariat are as of now trying to make arrangements for a further session in Cardiff in the new year. I request that the CEGB should make available, for those days three of their witnesses giving evidence on topic 1, Mr Jenkin, Mr George, and Mr Goddard, in order to

answer questions which people may wish to put to them in Cardiff. We will
seek to put a full public library in Cardiff, and investigations for that are
underway. People who wish to register as participants at the Inquiry may
still do so. No closing date for such registration has been announced."
(Inquiry Transcript; Cannington, Somerset. 5th October, 1988: 5)

Thus the spatiality of the inquiry was extended to Wales, altering the coordinates of who was considered 'affected' and 'relevant' to the issue at hand (Barnett and Bridge, 2012). Additionally, it was emphasised that no evidence would be ruled out as 'irrelevant' on principle. This is a particularly significant point which gets to the heart of interactions between argumentation, issues, and spatiality. The key questions which were being addressed during the early sessions relate specifically to what the relevant space of the inquiry was and what form of information could be communicated at the inquiry in terms of technical or more general, and informal discursive lines. The inspector clearly demonstrated during the preliminary stages that he was willing to allow the inquiry to be extended in a way that opened up political opportunities for campaign groups. The following table summarises the different points of contention around the scale and scope of the inquiry, and how they were settled.

Issue of Contention Regarding the Inquiry	Course of Action
Calls were made for **funding for campaign groups** following recommendations of the Science and Society 1979 report.	The Inspector Michael Barnes made the request however this was rejected by the CEGB.
Calls made to **delay the inquiry** until the details of the **Energy Bill** were known	Michael Barnes requested this, but it was also rejected by the CEGB.
Calls made concerning **'evidence' relevant to the inquiry**: CEGB believing substantial issues were resolved at Sizewell, recommending a focus on only local issues; campaign groups pointing towards the changed policy conditions and seeking a broader debate.	Michael Barnes strongly indicated that he would not be excluding evidence on principle, thus acknowledging that broader policy debates could still be considered 'relevant' to the case of Hinkley C.
Campaign groups argued that more **'informal' evidence** (without written submission) should be allowed in order for the inquiry to be more inclusive.	The inspector agrees to this point, stressing the importance of people not feeling inhibited by the inquiry setting.
The **Independence of the Inquiry Inspector** Pressure on the inspector to just "be the person to turn up and open inquiry", a rushed process to get CEGB decision.	Michael Barnes, through above actions, as well as enabling Irish councils to give evidence, sends strong message of independence.
Space of the inquiry – CEGB, both in terms of location and issues discussed, desired to confine inquiry to specific scale of the local around Hinkley. Campaign groups seek to extend the scale towards national policy, and also horizontally, through making Hinkley a Welsh, and Bristolian issue.	The inspector, through the Irish decision, the allowance of policy related evidence to be discussed, and an agreement to hold sessions in Wales, permits the spatial extension of the inquiry beyond the local. Barnes makes a recommendation that the CEGB should send witnesses to Cardiff despite their reluctance to do so.

Table Two: Extending the Boundaries of the Inquiry

Economics as a Tool for the Creation of Political Opportunity: Returning the Hinkley C Inquiry to 'the centre'

The economic case surrounding the development of Hinkley C was one of the main lines through which the inquiry would be broadened out, 'up scaled' and extended to wider policy changes, or whether the economic case would remain considered 'settled'. The manner in which the inquiry was extended back towards issues of national policy and

other aspects of policy transformation was essential to enabling more overtly political and oppositional voices to come forward. In this section the grounded, argumentative practices through which this occurred in the inquiry are examined. This was a key area where two visions of the inquiry collided; on the one hand the CEGB's vision was to define the inquiry's relevance as being confined to the specifics of Hinkley development; on the other, the view of many objectors who argued that given the changing circumstances surrounding the economics, as well as safety following Chernobyl, the policy context that the CEGB believed to have been 'resolved' at the Sizewell B inquiry, and the case for the 'need' for nuclear, required re-examination. Also, this was a political opportunity for campaign groups. "Delaying was a key political strategy" Aubrey (1991: 79) describes, resonating with the ideas of 'slowing down' as a crucial democratic act (Bingham, 2007; Whatmore, 2009). The closer the inquiry got to the privatisation of the electricity network, the more the uncertainty surrounding the economic costing of the CEGB emerged. Thus the effort on the part of the CEGB was to 'insulate' policy from these wider transformations. For the objectors, the aim was 'policy exposure'; to air the insulated case of Hinkley C to the gathering winds of wider economic circumstance.

During the preliminary meetings the inspector demonstrated his willingness not to confine the inquiry simply to local issues, but to enable evidence on more substantial policy-related matters to be heard. This was something campaign groups were keen to remind him of in the opening sessions:

> "...you said in the first pre-inquiry meetings that you were going to be fair and look at the economic arguments of nuclear power. We call came along in the first instance thinking that you were going to be totally different, that you were going to be say this inquiry is only got to do with the design of the power station and possibly to do with safety and local environmental measure, but you did not. You said you would be totally objective and fair, and you were going to expand the whole premise" (Inquiry Transcript; Cannington, Somerset. 4th October, 1988: 65)

Although a direct response was not given by the inspector, an interesting answer was given in relation to another question posed by Brian Parkin, Researcher from the National Union of Coal Miners (NUCM) on the reluctance of the CEGB to provide up-to-date figures on a cost comparison between coal and nuclear:

> Mr Parkin: "We want to contest the costs between coal and nuclear especially in relation to advanced coal combustion which is able to cut out SOX and NOX, and evidence should be provided accordingly related to this.
>
> The Inspector: You are asking me, are you, to direct the CEGB to produce evidence on the comparative economics of coal and nuclear generation?

Mr Parkin: Yes sir.

The Inspector: I have no power to do that. What I am going to do is listen to the evidence of the CEGB and to listen to what other people wish to say about it, but let me ask you this, if the CEGB failing to call evidence on some relevant point – let's assume that point you mentioned is a relevant and important point, and they fail, well then surely that misfortune will be upon them, won't it?

Mr Parkin: Yes, hopefully, and that should be recorded.

The Inspector: That is one of the reasons that the Inquiry is sitting, to hear arguments about that.

Mr Parkin: Yes sir, but myself and a number of other people are worried that the parameters of the Inquiry have been confined...[Applause]... They still fail to take up the question of those costs, and I believe that is a matter of great public concern.

The Inspector: I have got your point on that now. Thank you very much. Do you want to make another point?

Mr Parkin: No.

The Inspector: Thank you very much [Applause] (Ibid: 51)

Here the inspector suggests that evidence regarding comparative economics is likely to be relevant, and thus if the CEGB did not provide up-to-date data on economics then this would reflect badly on their overall case.

This was clearly not the view of the CEGB however. The following exchange between Mr Thornton from Greenpeace, and Mr Davis from the CEGB illustrates this tension:

Mr Thornton: "I wanted to ask you if the granting of that licence [Sizewell] removes the need for a full discussion of the economic and safety case at Hinkley Point. I ask this because I have read a report on the Sizewell Inquiry, paragraph 2.179 that it reported:

'The CEGB made it plain that the possibility of such as sequence (that is of PWRs) would not remove the need for a proper comparison of alternative means of generation or types of station when each decision comes to be taken on future decisions'

It seems to Greenpeace that this statement is clearly inconsistent with the position adopted by the CEGB at this inquiry, that is that there is no need because of the generic relevance to the findings of the Sizewell B Inquiry and because of the Government policy on diversity of supply to make a full and proper comparison of alternative means of generation?

Mr Davis: We [the CEGB] take the view that government policy is government policy, and Government policy is stated in regard to diversity,

and therefore the central thrust of our case is about meeting the need for diversity, as specified by the Government. To provide a rigorous examination of Coal/PWR economics would be to challenge government policy, and that is not something that the CEGB is prepared to do."(Inquiry Transcript; Cannington, Somerset. 5th October, 1988: 7-8)

This debate, around whether the inquiry should, or indeed could, deal with the dimensions of government policy continued, and the CEBG's response was to insulate the discussion from wider policy issues:

Mr Davis: I understand the point you are making. We are, however, in an inquiry into whether or not Section 2 Consent should be granted for the construction of a PWR at Hinkley Point, and the thrust of the CEGB argument can only be within the context of Government Policy, and that policy has already been enunciated fairly clearly. We are not hiding behind government policy but are making a case in the context of government policy. We have deployed the CEGB view of relative coal/PWR economics, and we have done that before parliament, at least before the select committee.

Mr Thornton: If the CEGB is so confident that the PWR compares favourably with coal why are they so frightened about having this fully examined in the inquiry??

Mr Davis: I can only refer you back to previous answers Sir.

Mr Thornton: I am sure you are aware that most people found these unsatisfactory? (Ibid: 10)

The argument that is being made on the one hand by the CEGB, is that "Government policy is government policy" and they are making a decision within the context of that fixed policy. It is specified that the inquiry is about "whether consent should be granted for a PWR at Hinkley Point", thus emphasising the specific nature of the inquiry. On the other hand, Greenpeace are emphasising that new information has come to light since the Sizewell Inquiry, so it is once again necessary to address these National policy issues, which they claim, the CEGB are attempting to "hide behind". The CEGB, in response to further questioning later on, responded:

"If we will not at this Inquiry forward economic evidence in relation to PWR and coal because it bears upon declared government policy, even less am I prepared to become involved in a debate on the merits of declared government policy in regard to privatisation. So I am not prepared to enter into such a debate." (Ibid: 65)

Another point mentioned in the responses from the CEGB above, was that there should not be consideration of alternatives to the development in the Hinkley C Inquiry, because again that was a matter solved by government policy. This point was also challenged by

objectors. One alternative proposed, which would become a key part of the argumentation of the inquiry, was the issue of energy efficiency:

> "is it not true that if the money the CEGB plans to invest in Hinkley Point C were to be invested instead in energy efficiency measures the result would be such a saving in electricity usage that there would be no need for Hinkley Point C? (Ibid: 15)

The reluctance to discuss the economic case as it relates to government policy was further emphasised by the CEGB:

> "The CEGB's case is formed in the context of the present government's stance and the present government's declared intent in the context of privatisation, and as Lord Silsoe sought to explain yesterday we have taken the view that to pursue the economic argument in the context of this application *would be to pursue an argument which bears upon declared government policy*, and we do not believe that that is appropriate for us to do in forwarding this application." (Ibid: 60 Emphasis added)

Further containment of the inquiry to the specifics of the localised details of the Hinkley C development is emphasised in the CEGB view expressed regarding public opinion, that the inquiry is not the setting to discuss opinions related to the technology:

> "The right place to determine, in the light of public opposition to it, as to whether they should be allowed to pursue it, and should pursue it, is Parliament. Therefore it is in Parliament that debates which take account of the opposition in public terms to it should take place." (Ibid: 82)

Again, this works under the implication that issues related to public opposition (or politics) have been decided in parliament, and are therefore not to be discussed within the inquiry setting, in the view of the CEGB. The point concerning the connection between the economics and national policy, is again emphasised, that the government policy has been covered at Sizewell and should not be returned to:

> "We will not consider government policy because that is not the CEGB's case. The case for Hinkley Point is a very specific as you appreciate, I know. It does not require and it would be inappropriate that it should include consideration of efficiency end-use because that consideration, and other considerations, to which you alluded earlier on, must underlie government decision. We do not believe the inquiry is the place for those elements to be rehearsed. You have heard this particular tune before, but that is the case. The case we have made rests upon government policy." (Ibid: 85)

The context in which the development of Hinkley C was taking place was however changing rapidly. The argument from the objectors was that the specific case of Hinkley could not be detached from the wider changes impacting upon government policy. The

argument of the CEGB was the opposite; that government policy was fixed, therefore economic data did not need to be considered, as it had already been established that the economic case for new nuclear was sound.

A retired civil servant working for the CEGB at the time provided an interesting insight into the mechanisms behind the scenes of the quarrels over economics:

> "I have a recollection of the clash between Barnes and the CEGB, when we originally got the CEGB's figures at the beginning, we asked the economists, and we took one of them down to the inquiry with us...a very skilled mathematical economist, and we asked them to go through the figures, and their response was very interesting...their view was that depending on how you modelled it, you could make either nuclear or coal look most economically viable. They said 'we can make nuclear cheaper to the CEGB if we leave out back-end costs and so forth". (Interview with retired civil servant, 2011)

When questioned further regarding this process:

> Interviewee: "We had to go away, analyse and then give evidence to ministers. If the ministers didn't like it, as occasionally they didn't, the Minsters would say, 'ok, go away and find more evidence'...or 'go away and think about it again'...so they were always thinking very politically, so we had to think politically"
>
> PJ: Right, so it was a political process...
>
> Interviewee: that's when myself, I became even more sceptical regarding economic modelling...and I still don't believe economic models even now! But the political point was that nuclear was the preference to encourage diversity of supply, to encourage energy independence.
>
> PJ: If 'either' could be made to seem cheaper why did the figures showing coal emerge?
>
> Interviewee: Well, there's limits to this, and it had got to the point where because of the changing conditions, the numerous studies being done, it wasn't really possible, without things like the non-fossil fuel obligation to show nuclear as cheaper" (Ibid.)

The quote offers an important insight. Harvey (2006) describes how the rise of neoliberalism has seen a detachment of the economic from politics, and a 'faith' in the objectivity and accuracy of economic modelling. This brings the discussion back towards the political aspect of economics, demonstrating the ways in which the evidence had to 'fit' the politics rather than the other way round, and despite the favoured rhetoric that politics is responding to a series of objective conditions, a mark of the post-political. Thus, politics could be seen as a 'tool' to maintain legitimacy of a political decision already taken,

whilst circumstances surrounding the inquiry rapidly put that decision in doubt. This can also be theorised as an example of Goffman's (1959) notion of 'on stage' and 'off stage' performance. It reveals the 'off stage' rationalisation of political choices which were being made behind the scenes, but which were being presented as cold, rational and objective decisions within the setting of the inquiry. As Flyvberg asserts, "Power produces the knowledge which supports its purposes, while it ignores or suppresses that knowledge which does not serve it" (1998: 226).

Asdal (2007) describes the process whereby a discussion around a particular development can be "returned to the centre", creating the possibility for questioning the substance of government policy through particular 'tools' used by participants. This relates to the little 'tools of democracy' which are opened up through particular channels to broaden and politicise a particular investigative process beyond the specifics of its development (Asdal, 2008). Thus economics was a 'tool' for the CEGB in terms of further legitimising the economic policy of nuclear power. However it also proved to be a key 'tool' for objectors and campaign groups seeking to extend the scale and scope of the inquiry. Clearly groups such as Greenpeace were not in favour of coal-fired power stations as by now the global warming issue was one of the organisations central concerns. Nor were they in favour of nuclear however, and through the use of numbers and contesting the CEGB's economic case, the inquiry was broadened out against the wishes of the CEGB, to discuss substantial policy questions once again – questions which the CEGB believed had been settled at Sizewell. When the implementation of NPSs and the 'in principle' consultation process are considered in Chapter Eight, it is vital to draw on this aspect of the public inquiry. The ability to transform issues from the local scale to the national, and return to substantial discussion related to the basis of government policy once the conditions and context of policy has changed, is a threat to the salience of policy, and one that must be insulated against.

This crucial stage of contesting the economic basis of the inquiry led the way for agonistic discussion around a myriad of issues related to nuclear power, as well as the emergence of alliances between a variety of local and non-local groups. Thus, a technical 'tool' was used as a means of politicising the issue of Hinkley C.

Moving the Inquiry Around: What issues? Whose issues?

> "I orffen, un o fanteision ffordd ymwybodol Gymreig o edrych ar y byd yw
> ei bod yn aml yn haws gweld pethau yn eu cyfanrwydd. Un o anfanteision
> prif ffrwd y diwylliant Eingl-Americanaidd yw r rhaniad llafur deallusol sy
> n nodweddu r meddylfryd imperialaidd.

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Cynnyrch y fath feddylfryd yw arbenigwyr un-llygeidiog, gwrywol gan amlaf, sy ei chael hi n anodd dirnad persbectif fwy crwn ar y byd. Cynnyrch y fath feddylfryd yw r diwydiant niwcliar."

"To finish, one of the advantages of the Welsh way of consciousness, of looking at the world, is that it is often easier to see things in their totality. One of the disadvantages of mainstream Anglo/American culture, is the division of intellectual labour which marks the imperialist attitude of mind. The result of this kind of culture is blinkered specialists, usually men, who find it difficult to imagine a more rounded perspective of the world. The nuclear industry is the product of this way of thought." (Inquiry Transcript; Cardiff. 22nd March, 1989: 35)

Michel Barnes made the decision to take the inquiry across the Bristol Channel to South Wales, after demands had consistently been made by objectors. On the 20th of March, 1989 the inquiry arrived in Cardiff. Whilst there had been debate over whether these sessions should count as part of the official inquiry proceedings, Michael Barnes again made the decision to strongly emphasise that:

> "These sessions are full sessions of the inquiry. All evidence is taken fully into account. A full transcript in English and Welsh will be prepared of the proceedings. Evidence can be given in Welsh and there are facilities for simultaneous translation from Welsh to English" (Ibid. 1)

By now a number of issues were entering the public domain as the inquiry expanded even further. Tension over whether the economic costings were relevant to what the CEGB were maintaining was a specific development stemming from national policy, was still being played out. A leaked document from the CEGB displayed the extent to which coal was potentially a cheaper option, diminishing the original arguments of policy:

> M. Wallis: "fossil fuel costs are expected to average about 3.5 pence per kilowatt hour, and nuclear costs will be 5p per hour. Are these figures correct?

> F.P Jenkin: I don't propose to give any further comments on the leaked papers.

> M. Wallis: Do I take it then, that you do not intend to give the inquiry real figures, the real figures that your chief executive is prepared to give to possible investors in the industry. You prefer to give us manufactured figures from the CEGB era?

> F.P Jenkin: you have already answered your own question. There will be a prospectus for each new company and that will set the appropriate and proper position"

> M. Wallis: "Could you not give us a document of the costs that are going to be in that prospectus at the earliest possible opportunity?

F.P Jenkins: No, it is directed to a completely different objective. The costs in any case relate to a quite different matter than the case for this reactor. Even my evidence on the relative economics of Hinkley Point C versus new coal stations is, in the CEGB's view, not an essential part of our case. And not relevant to the Secretary of State's decision, but of course that s for him to decide"

M Wallis: The document also states:

"We have to find a formula in negotiation with the Government that makes nuclear power worth the hassle and would justify the further capital investment of new capital in new nuclear power plants. It we can't negotiate the right terms, then of course the right course of action is not to proceed at all."

Would this apply to Hinkley too?

F.P Jenkin: This is where you get into trouble by trying to rely on unconfirmed documents. The position in real life will be that National Power obviously will have a commercial consideration, but it is for the Government through its licensing conditions, its regulatory conditions and through allowing the market to apply to ensure that all companies pursuing their commercial objectives within those constraints, will at the same time meet what the Government believes to be a relevant part of national policy, and of course that can be done if the government wishes." (Inquiry Transcript; Cardiff. 21st March, 1989: 49-50)

Here another crucial issue is being forced into the arena of the inquiry; the relevance to the inquiry of the DoE production of the Privatisation Bill and the economic costings. Attempts were again made to insulate the case of Hinkley C against evidence which is relevant to the basis of the policy which the development is said to stem from. As the sessions progressed, opposition to the government's economic framing became increasingly voiced. For a participant from the local area in the Cardiff inquiry expressed:

"I believe it has become obvious from discussion already at the inquiry that the government is no longer able to claim that nuclear power represents a cheap alternative for generating electricity" (Inquiry Transcript; Cardiff. 22nd March, 1989: 54)

Another participant from a Welsh campaign group emphasised that:

"…under a privatised electricity industry any further nuclear power generation capacity would be too expensive, too dangerous, and impossible to impose on investors" (Ibid: 54-55).

The logic that the 'market knows best' was being severely tested by the desire for nuclear power on the part of government. This was emphasised as more leaks from the CEGB

pointed out that they were well aware that nuclear would require 'special protection' from exposure to market conditions:

> "Under privatisation they are also seeking a subsidy. We cited the November letter from the CEGB's managing director to the Department of Energy to the effect that National Power 'must be relieved of many of the risks of nuclear power if it were to be attractive to investors' citing the financial risks from building four new PWRs, decommissioning, storing disposal. Tax concessions are being sought on decommissioning and they are just part of the secret subsidy to Hinkley C." (Inquiry Transcript; Cardiff. 23rd March, 1989: 28)

This was further emphasised:

> "The government's stated position is that 'competition is the best guarantee of the consumer's interest'. If this is so, then why should the non-fossil fuel element, (which at present essentially means nuclear) be protected from market forces? Why ring-fence nuclear power?" (Inquiry Transcript; Bristol. 17th July, 1989: 9)

The point being made was that nuclear was not a 'normal' industry or economic object:

> "Making a business success out of nuclear generation is not just a matter of making 'normal' economies – perhaps sacking a few hundred workers – it is a matter of climbing over two massive overheads that will just not go away." (Inquiry Transcript; Bristol, 17th July, 1989: 91)

Thus the view that participants from a range of backgrounds were increasingly being exposed to in relation to the issue of Hinkley C, could be summed up as such: "In terms of the free market, nuclear power isn't viable" (Inquiry Transcript; Cannington, Somerset. 20th July, 1989: 13). Aubrey (1991) notes that the Welsh sessions were particularly important in enabling increasing numbers of non-expert individuals to speak at the inquiries. SHE, in alliance with a multitude of campaign groups, worked hard to encourage more and more people to speak out, as the number of issues under consideration continued to rapidly expand.

The Welsh identity was stamped onto the inquiry proceedings through many participants deciding to speak in Welsh, with the provision of a live translation service, as well as a library of all inquiry records being provided in Cardiff. At the time the issue was particularly pertinent to South Wales due to the fact that coal mines were being shut down. Tony Benn had described Hinkley C as the first power station to be built on purely ideological grounds, in that it was being used as a justification to destroy what was left of mining communities.

A former miner Mr Wilks, described himself as "one of the dying breed of South Wales miners" (Inquiry Transcript; Cardiff. 21st March, 1989: 91). Many of the speakers were women from South Wales, who were wives of miners. Arguments were made that a community could not be built around a nuclear power station. A leaked cabinet report was read out from 1979, which stated that:

> "A nuclear programme would have the advantage of removing a substantial portion of the electricity from the disruption by industrial action of coal miners and transport workers" (Inquiry Transcript; Cardiff. 22nd March, 1989: 124)

The number of issues expanded. The problem of insurance was pointed out, highlighting that no insurance company would be willing to pay out in the case of a major nuclear accident:

> "No insurance company has sufficient assets to cover the cost of claims brought about by a major nuclear accident. In other words, I feel the nuclear industry is uninsurable. So if the government is going to compensate after a nuclear accident, how can it justify using public funds to underwrite private profits? (Inquiry Transcript; Cardiff. 21st March, 1989: 120)

This assertion centred on the fact that residents close to Hinkley Point had examined their household insurance policy and discovered that there was a clause outlining that there was no protection against radiological hazard. Insurance in this event would be met through the nuclear power company, with a limit of £200 million. A serious nuclear incident however, would be likely to cost well over quadruple that price, therefore it would be the state that would bear the responsibility.

As a member of SHE informed me, "increasingly more and more local people, and lay people were actually getting involved in the wider issues of nuclear power, rather than being bystanders" (Interview with member of SHE/StopHinkley, 2011). This consideration involved a number of highly complex issues related to probabilistic risk assessments, and understandings of 'acceptable risk'. This included procedures for 'checking safety valves and maintenance'; 'Flood defence and models for future flood risk'; suitability of 'emergency arrangements'; risk models for earthquakes; meteorite crashes; 'terrorist attack'; 'police training for evacuation'; and the distribution of iodine tablets, to name a few. People were "…actually learning about the highly complex issues which running a [nuclear] power station entailed, gaining knowledge and testing those responsible for carrying out the running of a power station" (Ibid.).

In fact the whole notion of probabilistic risk was again, as with Sizewell, problematised. It was pointed out "The results of a probabilistic risk assessment are bizarre when viewed against the observed frequency of severe reactor accidents. The safety of the PWR cannot be proved." (Inquiry Transcript; Cardiff. 22nd March, 1989: 97). This was based around the notion that the probability identified by the CEGB of a serious accident was one in a million, but participants pointed towards the 400-odd reactors worldwide noting that there had been at least three major accidents out of that small number in a thirty-year period. In short the certainties of the models being espoused by the CEGB to make their case were receiving significant critical scrutiny with regards to their inherent uncertainties – particularly following a statement in the Frank Layfield report that addressed "The factor that cannot be accounted for is human error" (Inquiry Transcript; Cardiff. 21st March, 1989: 4).

Another key issue which was brought to the fore which, as Bickerstaff (2009) points out, shows the ways in which debates around nuclear are informed by previous historical arrangements which 'presence' onto the contemporary debate, was the issue of nuclear proliferation. This was used to question the degree to which the public could trust the claims and assurances given by the nuclear industry:

> "It is 33 years since the queen opened what was called the world's first commercial nuclear power plant. It was a plutonium factory which had a by-product of electricity." (Inquiry Transcript; Bristol. 18th July, 1989: 74)

Another major concern was the increased risk of proliferation, if Mixed Oxide fuel (MOX) which included plutonium was to be used in the reactor, or if 'reprocessing' would be used to deal with the waste legacy of Hinkley C. Participants demanded a "clear commitment not to use MOX fuel" and a clear commitment not to "reprocess" (Ibid: 44).

Alternative pathways to the development of Hinkley C, in light of what many saw as a neglect of support for other technological developments on the part of Government were proposed. Mr C Jones pointed out that:

> "Since 1985 for every £1 spent on renewables how much was spent on nuclear? 100 pounds perhaps? 200? 500? 1,000? 1,100. That is the answer. 1 quid for every 1,100. Is that fair? I expect more of an opportunity for renewables than this." (Ibid: 22)

This discrepancy in funding for the renewables sector was pointed out by another participant who suggested that the CEGB had been deliberately suppressing renewables in order to favour a familiar technology:

"The DoE appear to have historically treated renewables with cynical disregard, while at the same time have been unashamedly pursuing the nuclear option. It would appear obvious that the renewables now turn around and claim to the Inquiry that the technology for exploiting renewables is highly immature and that nuclear power is the only technologically mature alternative to fossil fuels" (Inquiry Transcript; Bristol. 17th July, 1989: 116)

This debate was becoming increasingly important, as the solution to the issue of nuclear power during privatisation was being constructed in the form of the Non-Fossil Fuels obligation (NFFO). This was a proposal to be built into the Privatisation Act which would require electrical distribution network operators to purchase a certain amount of electricity from non-fossil technologies. It was justified around the need for 'diversity' of energy but increasingly, as the inquiry went on, for environmental reasons to combat global warming. Through the NFFO, nuclear power was being ring-fenced from the full exposure of the market. It could not be called a 'nuclear fuel obligation' because this would contradict the central principle of the Privatisation Act of 'not picking winners'; an NFFO therefore theoretically included renewables as well. However, given that Research and Development into renewables had been minimal as pointed out by an objector in the previous quote, the only technology viable would be nuclear, hence this was a 'nuclear obligation' (Mitchell, 2007).

The principles surrounding the government's policy were attacked on their own terms, as opponents presented technological alternatives to the narrative that the only option was Hinkley C: "Even if we accept the NFF quota it should be made up from renewables" (Inquiry Transcript; Cardiff. 22nd March, 1989: 55). Others agreed; "There is strong feeling of support for the Severn Barrage" (Ibid.). The key point was being made was that 'diversity' could be achieved through other means, that there was a policy choice to be made. As was stated regarding the Barrage:

"Tidal power from the Severn Barrage would produce 5 times the electrical energy of Hinkley C whilst the technology already exists to state unequivocally that a wind generator located in North Cornwall could produce up to 1000mv." (Ibid: 56)

This point was also strongly linked to the attributes of the South West of England:

"The South West, unlike any other region in the United Kingdom, has a multiplicity of energy resources whether it be coal or gas-fired, combined heat or power stations, tidal and wind power. Or electricity produced from geothermal energy" (Inquiry Transcript; Bristol. 17th July, 1989: 25)

The CEGB's forecast for energy consumption was also criticised for being flawed in terms of overestimating the amount of energy which would be required as justification for Hinkley, whilst not taking into account any energy efficiency saving measures:

> "...evidence shows there is a consistent over-estimate of Britain's energy requirements. This is based on extrapolations in the past which assume a constant relationship between gross domestic product and energy consumption" (Ibid: 12)

When the inquiry moved and Hinkley C became an issue relevant to Bristol and Cardiff, there was a significant shift in focus in people's statements towards procedural and democratic issues of the inquiry itself. Campaign groups had made significant efforts to involve as many people as possible. Cardiff was seen as a 'turning point' in consideration of the attendance figures. The notion of external pressure and influence on the Inspector Michael Barnes was raised frequently:

> "We need you to champion our cause Mr Barnes...they are really really heavy pressure guys and are putting the screws on you! The whole thing seems sewn up. The fact is these inquiries have been seen as a bit of a farce but also there is a serious side to it. The fact is that people are really paying attention to what is being said more and more in the media. We are really at a turning point now" (Inquiry Transcript; Cardiff. 20th March, 1989: 74)

The inherent power asymmetry of the process was addressed frequently by participants who pointed out the great discrepancy in resources between the CEGB and groups attempting to critically engage with the construction of Hinkley C:

> "To outline what we are up against, where I live we recently held a poems and pints night to raise money for our side of the inquiry. It took two weeks of organising and a lot of hard work by many unpaid wonderful people. We raised about 60 pound. Lord Silsoe, I estimate, could probably earn this in about 12 minutes."(Inquiry Transcript; Cardiff. 22nd March, 1989: 13)

Members of Plaid Cymru also attended to make their views known, specifically addressing the idea of a 'democratic deficit' in relation to Wales, and the need for Wales to take charge of its own energy future:

> "...lack of democracy, and I believe we are aware of the threats which face democracy and civil rights in this form of nuclear industry, in the secretive ways behind closed doors which the industry is run. We need a Welsh Government to represent us in this sort of thing. No coherence of energy policy. " (Ibid: 90)

The need for a stage of the inquiry to be held in Bristol was emphasised again making visible another aspect of the nuclear fuel cycle for consideration:

> "Twice weekly a train carries waste from Hinkley to Sellafield through Bristol, including temple meads close to St Pauls where there is a high proportion of black and immigrant people. The poorer we are the harder we have to work, the least access we have to information. There is a need for sessions in Bristol" (Ibid: 116)

A session was granted and the inquiry moved to Bristol. In Bristol the issues discussed related directly to poverty and the poor condition of many of the UK's homes. This again directed attention towards energy efficiency as an effective means of reducing power as well as CO_2 emissions: "What the poor need is not more nuclear power but more affordable heating as of right, and government help towards the energy conservation that is otherwise beyond their means" (Inquiry Transcript; Bristol. 18th July, 1989:47). This was also emphasised elsewhere, with a participant stating that "It seems crazy that we in Britain spend more on heating our homes than in Scandinavia. Conservation of energy should be the priority" (Ibid: 99)

This inquiry process featured a diverse range of groups and publics which, it is fair to say, would not usually be automatically associated with public engagement around nuclear power development. This was, however, as one participant stated, a process of 'redefining the public':

> "My name is Anne Neale. I am speaking on behalf of the English collective of prostitutes, a network of black and white women working in different levels of the sex industry...I am speaking at this public inquiry to make visible the voice of women who live in inner city Bristol and in inner cities all over the country, to make visible the voice of those who are prostitutes. When a public inquiry or public consultations are held, the Government or agency conducting it usually, and certainly in the case of this inquiry, has a very narrow view of who is the public, and we are here as a way of redefining who is the public"(Ibid: 60)

Efforts were made to relate the case of Hinkley Point to inner city areas of Bristol, where disadvantaged groups and minorities lived. Again, this would not normally be thought of as being of traditional 'relevance' to the case of a nuclear power station under construction in Somerset. The space of nuclear technology was similarly redefined beyond the confines of the local vicinity of Hinkley:

> "A major accident at Hinkley C would cause damage to Bristol. Bristol sessions would make the Inquiry more accessible to people from other parts of the country and the world also. Again, the Inquiry cannot be said to

be public, if so many people are excluded. This is the petition [Applause]"
(Inquiry Transcript. Cardiff. 22nd March, 1989: 116)

As well as this, it was related to Somerset overall, where the question of benefits to the county was raised:

> Mr . Firsoff: "How would it benefit Somerset?
>
> S. Goodard: The benefits of nuclear power are essentially national, and they are part of a national programme generally which was developed following the Sizewell inquiry." (Inquiry Transcript; Cannington, Somerset. 18th July, 1989: 89)

Here, the CEGB attempted to set out that the national policy justifying the need for Hinkley was established at the Sizewell inquiry, which is an important consideration in terms of future policy reform. The problem with the inquiry however, was that the extension of the process and the decisions made by Inspector Michael Barnes had the inevitable consequence that these apparently 'external' and 'irrelevant' discussions were going to impact on the decision for Hinkley C.

The End Stages of the Inquiry: Economics and Waste VS Climate Change

An important consequence of the inquiry process as it progressed once again in Cannington, Somerset, is pointed out by various members of campaign groups:

> "Many of the locals really didn't want to get involved in the whole thing, but nearer the end there was a substantial number who were firmly opposed to the idea of nuclear power in general, who had joined our cause, it was great...We had produced an excellent case; we'd pointed out huge failings in the CEGB case, many aspects of nuclear that people weren't aware of; people began to be convinced, and we got a huge number of local people to give evidence against the power stations. It was a massive thing" (Interview with a member of CND, 2011)
>
> "there was a local group who set up a kind of 'Hinkley Watch' I think it was called, designed to be a forum to objectively look at the development...by a few months of the inquiry they were dead against the thing!" (Interview with a member of FoE, 2011)
>
> "I think people just don't know about many of the issues, so the inquiry process just shone a light on all sorts of nasty little niggles that the CEGB did not want to discuss. People really started to be convinced that there were other options, that it wasn't a done deal, and clearly, that the government didn't have a clue what they were doing anyway!" (Interview with a member of SHE/StopHinkley, 2011)

This is a key aspect of politicisation which shall be discussed later on. Agonism relies not only upon opposition, but also on processes of attachment and collaboration, to build an

opposition that is credible and that is taken seriously. This relies on technical arguments to gain such credibility, and create political opportunities. What occurred at Hinkley was that the separation between local, national, and 'in principle' issues, began to break down and so too, the separation between 'local' and 'partisan' or political publics. The kind of coalition between local and non-local actors described by Cowell and Owens (2006) clearly emerged.

As the Inquiry returned to the settings of Cannington however, there were three familiar arguments dominating discussions; storage of radioactive waste, economics of nuclear power, and interestingly in consideration of the time period, climate change. The public inquiry into Hinkley C had not just been a site to deliberate over Britain's nuclear future, but must be recognised as a crucial moment in the emergence of the global warming debate in the UK as well. As discussed above, many alternatives were being proposed throughout the inquiry, as it was being argued that radical action must be taken, and the scale of the challenge would mean that the nuclear power station would not contribute enough to this challenge. From the perspective of objectors, global warming was a reason *not* to build new nuclear power, "It is against the background of climate change that we can no longer afford to go down the nuclear option" (Inquiry Transcript; Cannington, Somerset. 19th July, 1989: 23)

Such statements were based around people taking the implications of global warming, such as sea level rise and increased storms very seriously, and considering these in the context of nuclear power stations which are all located on the coast as they need large volumes of water, indeed more water than any other technology:

> "I have no idea how high the sea level at Hinkley C is, but if we find that even as a percentage of the increment of sea level rising that has been predicted, some of the nuclear power stations themselves may be at risk and completely unable to offer the facilities that have been promised to help counteract the greenhouse effect. It's happening faster than we think"
> (Inquiry Transcript; Bristol. 17th July, 1989: 116)

Similar issues related to storm surges, and high levels of uncertainty regarding the prediction of extreme weather events due to the fact that climate change modelling was in its infancy, were argued. The argument was made that given the emerging scientific view that the scale of global warming and its effects had been vastly underestimated, a more substantial shift towards renewable sources of energy, energy efficiency, and decentralised technology would be required. The reluctance to consider these options on the part of the CEGB gave rise to scepticism regarding their green ambitions:

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"Since Mrs Thatcher's much vaunted 'Green' conversion we have heard a lot that nuclear power is ozone-friendly and a good way of combatting the greenhouse effect. This argument is a mirage. We would have more faith in that government was serious if they had invested more in researching the greenhouse effect, or if they were at the same time whole-heartedly backing energy conservation." (Inquiry Transcript; Bristol. 18th July, 1989: 47)

Others argued that the debate was being drawn into "…a game of nuclear 'double or quits'" (Inquiry Transcript; Cannington, Somerset. 19th July, 1989: 17). In many ways this is exactly what had happened as the inquiry began to reach its final stages. A position had been reached between the two sides which would prove to be the main sticking point of the nuclear power debate for years to come. The first was that the CEGB were increasingly using global warming to frame nuclear power in a new light. This had not been the initial framing of the argument, which had been both its competitive cost, as well as the 'need for diversity'. The other side focussed upon the economics of nuclear power and questions around its efficacy in relation to climate change mitigation. Many were sceptical during the inquiry of the increasing rhetoric related to global warming as this extract demonstrates:

"The CEGB and Government case for Hinkley C is full of bizarre twists and contradictions. The latest twist in policy is the new concern about the Greenhouse effect. Nuclear power has been shown to uneconomic and unnecessary, but does it have a redeeming feature? Why, yes, it does not produce carbon dioxide. Therefore, the United Kingdom is morally required to choose this more expensive source of electricity in order to make an almost insignificant contribution to reducing the world-wide problem. This could have come from the scriptwriters of 'yes minister'. After all, this is the same CEGB which still will not agree to fit flue gas scrubbers to the vast majority of its power stations to avoid acid rain. Proposing to spend billions of pounds on Hinkley C merely to reduce total UK production of carbon dioxide by about 0.7% seems to be a strange ordering of priorities. The overall picture of the CEGB and government policy can be easily summed up. Build the PWR. The reasons for this conclusion change from time to time. Nuclear accidents may occur but they are to be ignored. When fuel price changes make nuclear uneconomic, switch to security of supply. When coal strikes come to seem impossible, switch to the greenhouse effect but don't change the conclusion. Obviously the real reasons for this policy have yet to be revealed…However, I think the public, as a whole, is coming to perceive there is some reason. It has been my experience that when someone says they want to do something and they keep changing the reason why they want to do it but they do not change the conclusion, it is obvious that the reason why they want to do it is not the one they are telling you" (Inquiry Transcript; Cannington, Somerset. 19th July, 1989: 11-12)

Regardless of the cynicism which greeted the CEGB's increasing concerns over GHG emissions, the case for nuclear power as an environmental technology was increasingly purported. Increasingly, the environmental concerns of many of the objectors to Hinkley were turned back around and used against them. The two positions which were proving to be the most powerful lines of enquiry can be summed up in the following exchanges between Lord Silsoe of the CEGB, as he cross-examined Tim Jackson who would go on to work at the SDC:

> Lord Silsoe: "Are you not supporting the non-fossil fuel obligation?
>
> Tim Jackson: no, it is that there are other options. Both of these measures, renewables, energy efficiency. Therefore, an argument based on nuclear power, reducing CO_2 emissions should not be accepted.
>
> Lord Silsoe: If the alternative was fossil fuel generation it would stop it getting worse? If the non-fossil fuel obligation has the effect of meaning that nuclear power is provided to an extent which displaces fossil fuel generation, then in terms of CO_2 emission that is a very good thing indeed?
>
> Tim Jackson: It is a good thing indeed, but the problem is it does not go half as far enough as we need to go to ameliorate the problem.
>
> Lord Silsoe: I dare say. Nobody is suggesting it is the only answer, but you seem to be denying it is an answer at all.
>
> Tim Jackson: No, I am denying it as an answer in the sense that if we retain nuclear power at its present contribution, then we will be in exactly the same position as in 50 years time ." (Inquiry Transcript; Carrington, Somerset. 19th July, 1989: 93)

This is an example of the framing which would come to dominate the nuclear power debate in future years, known as 'reluctant acceptance' (Pidgeon et al 2009). What Lord Silsoe is articulating is that the NFFO is an environmental measure, as nuclear is the only technology of scale which had been readily constructed. To object to the construction of nuclear power, is to object to the NFFO and therefore, to mitigating against GHG emissions. In other words, to object to nuclear is to choose coal. Thus the argument being made by environmentalists had been turned on themselves, within the setting of the inquiry.

This was mirrored by another intractable line of argumentation related to nuclear power, and was the initial spark which caused such discomfort for the CEGB; economics and, tied in with this, the difference between the rhetoric of the nuclear industry – 'electricity to cheap to meter', 'thousands of plants worldwide', and the reality – far fewer reactors than planned, and vast cost-overruns, the industry only being sustained through subsidisation. This was a key observation made by Tim Jackson in some of the closing exchanges of the

inquiry, when the predictions of number of reactors being built in the coming decades, and thus as a major climate change mitigating technology were challenged:

> "The potential for implementation of nuclear power by the year 2005 is a matter of some debate. Taking aside issues of public acceptability, the record of the nuclear industry shows a notable propensity for technical delays and cost over-runs. This indicates that CEGB's estimate of five PWR's to the year 2000 and an average of two a year after that is over-optimistic. A total of 9 PWR's could perhaps be in operation by the year 2005, with total installed capacity 10.6 GW." (Ibid: 88)

Later however, it was again asked by Lord Silsoe:

> Lord Silsoe: "Dr Jackson, you indicate in your summary, and if I may turn to your proof, that investment in Hinkley Point C would be a misallocation of resources. Are you then asking the inspector here then to recommend that the non-fossil fuel obligation should not be prescribed?
>
> Tim Jackson: "No. If we are going to use PWR's we would have to start now."
>
> Lord Silsoe: If the secretary of state were to grant consent for this PWR, and if it were built, it would not prevent demand side options would it?
>
> Tim Jackson: It may well do. It would discourage the demand side issues. Allocation of capital to it, without other things happening. This would be misallocation. (Ibid: 115)

A retired civil servant sums it up that it was a 'battle' that the NGO's and campaign groups could in fact never have won:

> "Certainly I sympathised, it's a problem isn't it. It's impossible to engage on equal terms, with an organisation like the CEGB, it's just impossible. What I was very impressed with during the inquiry was the degree of general courtesy and people like Aubrey and others...it would have been very easy for these people to make a scene and cause a show...a few did but by and large it was conducted in a responsible way by people. They were up against government policy. They were up against the enormous resources of the CEGB but they did put their views forward impressively. And almost impossible for those to challenge the technical evidence, which was given in those days by the CEGB, the Central Electricity Board, it was impossible to do so." (Interview with a retired Civil Servant, 2011)

There was in effect a deadlock between two 'matters of fact'. One, that nuclear power was very low carbon at the point of production and a fairly reliable producer of base-load electricity. Two, every nuclear programme to date was based around substantial state subsidy; the record for construction had been, almost without fail, a record of cost-overruns and significant delays. As remains the case today, at the time of the inquiry there

was no agreed or implemented solution for the disposal of radioactive waste. Nuclear waste products can potentially remain dangerous for thousands of years. A waste facility would not be operational for at least forty years, and nobody can predict world events for this time period. This was the deadlock between the two main arguments by the end of the inquiry; this same deadlock exists today, and there is no solution in sight.

This is important in assessing the nature of the debate. O'Neill (2007: 160-161) describes Aristotle's three dimensions regarding the way a particular argument is judged, and how the spokesman attempts to convince. Firstly, there is *logos* pertaining to matters of fact which are used. The second is *ethos* which is judgements made regarding the character of the person speaking – how much they are trusted. The third is *passion* or the emotive side of rhetoric which is utilised to convince an audience. With regards to nuclear power, the debate rapidly moves into issues surrounding trust. This is because the global warming argument is countered with the idea that, given nuclear power has been shown to have very long construction periods, is extremely expensive, and usually only delivers around a tenth of the projected amounts of a new build programme, it should not be considered a solution to the climate change issue. This is simply countered with the argument, that whilst this may be true, this time new build will be different; construction times will be far shorter, lessons have been learned, it will be far cheaper, and there will be a solution to the waste issue. Models are produced for this, but there are ongoing debates about the reliability of such models in projecting future costs. In making these kinds of judgements, the extent to which particular institutions are trusted is of vital importance.

During a research interview, a civil servant who had been involved in the inquiry during stated:

> "I don't think that they will ever be resolved, it's a contradiction. It is expensive to build nuclear power plants and there are risks attendant on nuclear plants that there aren't certainly on a gas plant...we saw it at Chernobyl and now we see it in Japan...and there's lot of local concern about it, those arguments will never go away will they? However you decide it. If you have Stalin deciding it or the way do it, but you have you decided. At the end of the day you will have those three things...the only differences is methods of making the ultimate decision" (Interview with a retired Civil Servant. 2011)

The inquiry lasted 186 days and concluded with a recommendation by Michael Barnes that the power station should be built subject to a number of considerations including evacuation plans, increased safety procedures, and robust economics. As Aubrey (1991) observes, given that it had not been a major issue at the beginning of the inquiry, a

surprisingly large amount of emphasis was placed upon the ability of nuclear power to contribute towards abating GHG emissions. As a civil servant describes, "the nuclear proponents would usually would slip that in at the end at say 'it will stop climate change!' but that was very much at the end" (Interview with a retired Civil Servant, 2011). The revised economics of the CEGB had also convinced Michael Barnes, despite initial concerns regarding back end costs such as full decommissioning and the disposal of HLW. A member of Greenpeace describes the disappointment at the time:

> "We really thought he [Michael Barnes] had been good, well he was good, but he had listened to our arguments, he had even complimented us on our case, and done things like go to Chernobyl on a fact-finding mission and so on so it really felt like we were winning at times, but the report was very heavily in favour of the development going ahead which was a real kick in the teeth after a year and a half of really hard work" (Interview with Greenpeace member, 2011)

However during a research interview, a retired civil servant spoke candidly regarding the economics behind these closing figures:

> "There is no way that you can effectively model these things. If we run this machine for 40 years, based on current knowledge our return will be X. What will it be for a coal mine? We don't know. We don't know how much we're going to import. We don't know what the labour costs will be. We don't know what decommissioning costs will be, in terms of nuclear power. So all of it really is a guess, and to a certain extent, Michael Barnes didn't really... [notable pause and reflection]...I mean he grasped it, he was very intelligent man, but he didn't put it in his report...he said 'based on the current information we have, nuclear is cheaper and that is why I am recommending this, and it should be started immediately'. But he was very much in favour of it. In the Department of Energy, although that was the government's policy as well, there were people working in the department who were saying the 'evidence could suggest all kinds of things'. We put forward the best case for the government because that's what we were told to do. But we could have equally have put forward a case for coal..." (Interview with a retired Civil Servant, 2011)

The Politics of the Inquiry

At the beginning of Margaret Thatcher's leadership, Lord Howell announced the construction of ten new nuclear reactors. By the end, only Sizewell B was under construction. Thatcher's 'nuclear revival' had been a failure; nuclear new build was on ice, and would not fully thaw until 2008. I shall now analyse the different opportunities that

were enabled and created by campaign groups during the inquiry, and the ways in which the inquiry was expanded.

The differing views of the role of the space of the public inquiry between activist campaign groups and CEGB can in part be explained in the claim that the inquiry exists in the "amorphous territory between politics and administration" (Wynne, 2010: 76). Inquiries worked under the assumption that 'policy' could be separated from 'individual cases', and that the role of the inquiry was to aid in the implementation of a policy (new nuclear power) at the specific site of its deployment (the localised issues of Hinkley C). However, Wynne also notes that with developments such as nuclear power, 'secondary legislation', was increasingly prolific. Here, the formation of nuclear was increasingly done through bureaucratic processes that were largely "unaccountable" to the public (ibid: 76). Thus political decisions were being enacted by what were considered to be administrative procedures, and thus there was a desire on the part of activists, given that there had not been involvement in such decisions, to 'return' inquiry discussions to questions of the merits of the underlying policy of a particular development, going against the view of the inquiry as administrative.

The judicial proceedings of the public inquiry are designed to 'inform the ministers mind', entailing that in terms of decision making, whilst the inquiry takes the form of judicial administrative proceedings, these proceedings are directly linked to political decision making. Thus with regards to public inquiries around nuclear power stations, this 'political' function of inquiries became increasingly apparent to participants. Thus whilst the Government still saw the inquiry as dealing with the specifics of a particular development where matters of policy were settled, NGO campaign groups increasingly sought to broaden out the inquiry to 'in principle' questions regarding nuclear power, and questions of National Policy, with the aim of 'informing the ministers mind' to evidence which could alter the course policy.

There was a battle between processes of containment and processes of extension. A notable part in all of this is the independence of the Inspector. Pressure was put on Michael Barnes to speed up the inquiry; although he did not succumb to this, another inspector might have done. Thus the nature of the proceedings was highly influenced by the inspector. However, there was broad agreement from all participants that I spoke to, that Barnes was fair, not giving in to pressure, to the extent that he angered the government and CEGB at times.

Perhaps if the inquiry had been rushed, and evidence confined to localised points, permission would have been granted and investment would have occurred, perhaps it

would the privatisation bill would have been moulded to fit the certainty of nuclear new build at Hinkley C. These are only speculations of course. What is certain is that campaign groups found the crack in the fabric of the inquiry, a crack which spread upwards to trouble the foundations of national policy. I now review how this was done, specifically how this relates to particular enactments of spatial politics linking towards broader ideas of politicisation and post-politicisation.

Up-scaling: 'Returning the debate to the centre'

For the government and the CEGB, the lengthy process of policy related questions such as those regarding nuclear waste disposal and economics, in principle discussions, and the case for the 'need' for new nuclear had been established at Sizewell, and there was no need to return to them. The Hinkley C inquiry therefore was viewed as an administrative procedure in terms of establishing exactly how this would be done on the ground. The rise of environmentalism, the Chernobyl accident, ongoing uncertainties regarding waste disposal, new information regarding the potential of energy efficiency and renewables, and the rapidly changing economic climate meant that for campaign groups these more substantial questions were still of upmost relevance in terms of deciding whether this course of action was a preferable one.

The end of Chapter Four focussed on issues of state and spatial theory. What is being analysed here is an understanding of how "…scale operates as a category of practice" (Moore, 2010: 211). The final section of Chapter Four worked towards an understanding linking the argumentative and the spatial; that the category of scale is not be understood as fixed but rather transformed through political action. This is not to understand what kinds of politics emanate from a particular scale, but rather how a particular political goal utilises existing scalar fixes, as well as constituting new ones. The focus is on what different political strategies *do* politically.

There is no 'natural' spatiality which represents Hinkley C; rather there is a deeply political battle over what constitutes the relevant spatiality, and different strategies can be used to forward particular spatial imaginaries. The subversive aspect of the planning inquiry relied upon an opportunity to transgress scales between the specifics of Hinkley, and national policy. Thus technical arguments regarding economics (and later on, safety issues and waste disposal) took place. Here economics and numbers became key political tools to challenge the spatial delineations of the Hinkley inquiry. The numbers were no longer adding up in relation to nuclear as the economic text books had said they would. By repeatedly discursively challenging the CEGB in the inquiry setting eventually, with assistance from the inquiry inspector, the inquiry was extended towards considerations of

national policy as the CEGB were forced to reconsider their economic case. Asdal (2007: 316) argues against the simple governmentality reading of numbers being used to prevent politics, that numbers can help "...strengthen those in the periphery, or margins, in their efforts to challenge the decisions of the centre". Similarly Cowell (2012: 4) notes that often political interventions causing changes in the direction of policy, or the 'greening' of the state, have been sparked by "highly technical procedures". The fixed spatialities of the initial visions of the inquiry had been destabilised, as the inquiry over Hinkley C was rescaled to become a national issue. This moment resembled 'flood gates opening', allowing a multitude of other issues to flow into the arena of the inquiry.

Transforming the 'One into Many': Or, the Lack of a Master-Signifier.

The 'upscaling' of the Hinkley Inquiry forced questions regarding government policy. This enabled a variety of other issues to come to the fore. Such 'upscaling' also relied on the Inspector making clear, against the wishes of the CEGB, that certain evidence would not be excluded 'in principle' as had been hoped, enabling a number of issues to be discussed. The demands to enable informal statements to be read without cross-examination allowed a number of people to make overtly political statements regarding the general behaviour of government and the legacy of the nuclear industry.

Part of the uncertainty of the case was the myriad issues being held together by an overriding argument in which all other considerations must take place. This proved to be unstable as demonstrated by some of the accounts detailed earlier in the chapter. The case for Hinkley was built on the foundation that government policy had demonstrated nuclear power to be economical; this fell apart. The second argument was based around the 'need for diversity' in energy supply. As more arguments emerged regarding issues with reliability of energy projection figures, alternative energy sources, and renewables, as well as the lack of industrial action by the Coal Miners, this argument similarly became destabilised. The end stages of the inquiry were enacted within over-riding concerns regarding climate change, although this came in late during the inquiry, and formed the basis for the arguments of both objectors and proponents.

A process of "overflow of existing boundaries" (Callon et al, 2009: 9) took place as more issues entered the inquiry setting; "new objects and artefacts which disrupt discursive boundaries" (Barry, 2007: 296) were enrolled as the issue moved from overarching considerations related to nuclear power including the economic case or diversity of energy supply, to a whole host of issues. Cowell and Owens (2006) describe the 'messiness' of democracy, Staeheli (2009) theorises the politics of 'disruption'. For Latour (2004) the overflow of issues and controversies sees political collectives emerge as

'trouble makers'. Thus a crucial point is where the stability of the debate held together by one overriding concern – the need for diversity – breaks down into the articulation of a multitude of issues and objects.

Latour (2004b: 235) describes attempts to render a multitude of issues as "...one unifying, unanimous, solid, mastered object", and the counter process in which a stable object becomes a thing through such disruption with an "unfolding of its thousands of folds". Such a process could be witnesses during the inquiry, where the one transformed into the many. A solid, unified debate about the necessity, justification and practicalities of building a designated 'object' unfolded rapidly into many matters of concern and questions; radioactive waste disposal, uranium miners in Australia and Canada, safety exclusion zones, insurance policies, energy efficiency, renewable technology, reprocessing, the legacy of military crossover with civilian power, probabilistic risk assessments, police training for accidents, energy poverty, cost-overruns, risks related to computer hacking, sea level rise, plane crashes, terrorism, safety valves, leukaemia clusters, transportation methods for HLW, road routes, community compensation, Chernobyl, Welsh sheep farmers and Mining communities, the privatisation of energy, storms, earthquakes, meteorite strikes, future generations – 100 years time to 10,000 years time, energy consumption projections, the Severn Barrage, inquiry procedures, democratic deficits, governmental prejudice regarding particular technologies, investment decisions, to name but a few.

A variety of issues came to the fore within the same setting, and thus as will be discussed later, a variety of publics were exposed to these issues. Dissensus was created around a number of issues; nuclear waste for example, was made visible through the Hinkley inquiry as an issue equally significant as diversity of supply arguments. All the varied parts of the fuel cycle were coming to bear on what was meant to be a specific case, distanced from all of these concerns. What could also be said to be lacking was a "master signifier". To recall, Laclau (2006: 109) identifies master-signifiers as "quilting all other signifiers into a unified whole", or for Žižek (2006: 37), it brings about "a new harmony" to disorder. For Gunder and Hillier (2005: 1053) master-signifiers "suture diverse and contradicting narratives...under one shared identification". This broke down in the Hinkley Inquiry, as it grew to encompass more and more issues. Issues which were considered to be settled, fragmented into a variety of competing narratives and concerns, rendering visible different aspects of nuclear technology, which were all given a space (some more than others) within the same setting of the inquiry. Such disorder and rupture in a unified stability of policy is thus a key process in re-politicisation.

Networks: Extending 'those considered affected'

As Jessop et al (2008) describe in their TSNP framework, there are a variety of spatial processes to consider, as opposed to prioritising one particular form. As well as 'up-scaling' the inquiry, networks were also critical in establishing and expanding political opportunities. After proposals from objectors at the preliminary meetings, and further pressure in the early stages of the inquiry, sessions were granted for Cardiff, as well as the inquiry documentation with full translations in Welsh being made available for a library. Again, this demonstrates that what constituted the spatial relevance of the Hinkley C inquiry was extended beyond the local. Technical tools were used to justify this, including data on evacuation zones created following Chernobyl, maps depicting the radius of a radioactive plume from a worse-case scenario at Hinkley and the likely effects on Cardiff were produced, as well as a link established between the closure of pits and the plight of miners in South Wales and the simultaneous opening of Hinkley. Train routes through Bristol were used as another piece of the nuclear jigsaw to bring the inquiry to the city.

The issue became associated with a variety of groups for a number of reasons. The Hinkley issue was transformed into, for example, an issue regarding urban poverty and poor insulation of domestic space. What if the money being spent on Hinkley was spent on creating or modifying housing as well-insulated as that in many Scandinavian countries? It became an issue for the inner city, and an issue for the Welsh valleys. Thus new spatialities which were undercutting the national interest were further highlighting the necessity of the inquiry. Mahony et al (2010: 4) state, it is not merely through a simple causal formulation that certain issues become publics, but rather "their construction as public matters involves political struggles to make them so". "Empirically minded attention to the particular spatialities enacted through transactional problematisation in particular cases...does not presume in advance that democracy has a proper space or spatiality, whether bounded or open, local or global" (Ibid: 11). This echoes assertions made elsewhere about taking seriously the "always contextual" nature of democratic and political process (Stokke, 2009: 740).

The Mixing of Publics: The Intermeshing of Spatial Scales

Though the extension of the parameters of the inquiry both through 'up-scaling', and horizontally through networks established by the process of moving the inquiry around, there was a meeting of groups which would be framed as NIMBY and 'partisan' or 'political, respectively. As shall be demonstrated, this differs substantially from the Post-Planning Act environment where there is a clearer separation of publics based around

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particular scales. The simple fact that a variety of issues – from road works to the economic policy of the British Government – were being examined within the same setting enabled greater crossover between local communities and campaign groups. Thus distinctions between which particular 'group' should be engaged with which particular 'issue' based around geographical scale similarly broke down. Interviews with members of campaign groups demonstrated that as the inquiry progressed many local people critically engaged with more substantive issues of nuclear power, thus further contributing to the 'messiness' of the inquiry as a democratic space.

Again this can be contrasted with the ideas of stability and containment where particular publics or social groups correspond to points on a map as a stable order. As Mahony et al (2010: 8) state, "Publics are formed through processes of becoming – that they are always emergent, rather than mere expressions of pre-existing interests, issues, and identities". Publics emerge through issues (Marres, 2007) rather than a simple 'framing' of a 'partisan public'. For Braun and Shultz (2007) the recognition of how publics are viewed within mechanisms of public engagement is important. Containing the issues under consideration to localised disturbances of the power station could be theorised as separating out an 'affected public' against a 'partisan public'. However, through the scalar mixing of issues, the form of opposition and the nature of the issues under consideration became inextricably linked, contributing to more complex inter-weavings of issues and people which constituted the public of the Hinkley C Inquiry.

Agonistic Politics: The Honest Politics of Making the State Visible and 'the good clean fight'

The momentum of the inquiry built alliances between local and non-local actors to object to the development and to propose alternative pathways. The criticisms proposed were not just in relation to nuclear power, but related to the wider emergence of considerations of climate change. Cowell and Owens (2006) also discuss the kinds of coalitions between local and non-local actors which can emerge to resist certain developments, and contribute to a gradual process of the 'greening of the state'. The Hinkley Inquiry was an important setting for this process to occur. As the end of the1980's approached, this had been an important arena for environmental issues such as global warming to be addressed and put forward to government. Many different groups were brought together in the same forum to hear arguments concerning renewable energy, energy efficiency, tidal power, nuclear power, and how these related to issues around sustainability and global warming.

This was however a contested arena of sustainability and the environment as a politicised terrain, in which there were divergent visions of what kind of sustainable development

competing groups desired. The vision of the government and CEGB was focussed around centralised technologies and grid system, whilst others perceived many issues, including democratic ones, with continuing with nuclear technology as the centre of sustainable development transitions. These ongoing debates remain important today, however as will be argued later on, have become more muted and occluded by overarching visions around sustainability which foreclose such opportunities for dissensus.

An activist's passionate description of the campaign as "a good clean fight" is an important one. Generally the interviews displayed enthusiasm, energy, and fondness for aspects of the inquiry process. A significant aspect of literature on post-politics focuses on how the political produces a new identity – it is not based on the stability of the police order. Mouffe argues for the importance that passions and collective identity play in the formation of the political. Crucial to this formation, is to recognise the *agonistic* political dimension to democratic struggle, producing a "vibrant clash of democratic positions" (2005: 104). This is based upon the recognition that political decisions are necessarily exclusionary, because agonism implies that a completed consensus is impossible. It relies upon a process of one decision being taken at the behest of another, particularly in terms of technologies such as nuclear power, which require firm, binding political decisions which close off alternatives, thus reducing uncertainties and displaying commitment.

The notion of the 'good clean fight' echoes Mouffe's conceptualisation of 'worthy adversaries'. It was evident to campaign groups and concerned publics that the government had made a clear decision that it wanted to build nuclear power, and it was forwarding that aim. An 'us' and 'them' distinction is an important element to the agonistic view of the political, where this builds collective identities, produces passions, and where the clarity of the decision emanating from government "forces us to keep the democratic struggle alive" (Mouffe, 2000: 105). By 'rescaling' and 'returning' policy to the state, the 'good fight' became one based around the collective which had emerged during the inquiry, and the state. Badiou (2008) has articulated the notion of 'distance from the state' and the ability to 'see' the state as key to the formation of the political. Similarly, Critchley (2009: 92) writes that such distance "…allows for the emergence of new political subjects", as a certain political decision emanating from the state is contested, and is thus democratically generative.

Policy Exposure: From Certainty to Uncertainty

Throughout the inquiry, there was a battle between processes of insulation and exposure in terms of the case of Hinkley C. Repeatedly the CEGB made the case that many issues were not relevant to Hinkley C because they were designated government policy, and the

inquiry was about a particular case, or that they were not obliged to comment on these issues. A number of things were occurring that would potentially interact with the policy related to Hinkley. There was the accident at Chernobyl, which could easily tip the scales in terms of causing a halt to new build; there were economic figures regarding comparative pricing of coal which were emerging outside the setting of the inquiry, putting the economic case of Hinkley in doubt; but most of all, there was the impending Privatisation Act, which the CEGB, and the DoE were very unsure on with regards to how nuclear power would work under market conditions. Again the argument was that this was a matter for government, and was not relevant to the specific case of Hinkley C where policy had already been decided.

This was then a crucial challenge: how do you insulate against the changing conditions of external events which place a particular political decision in jeopardy? In the end the CEGB were not able to do so as the inquiry was delayed, stretched out, and extended towards discussions of national policy, creeping ever closer to the Privatisation Bill. As Owens (2002) notes, the biggest danger to the nuclear programme was what Sabatier (1987) refers to as an 'external system event'. Campaign groups attempted to expose the case of Hinkley C to the turbulent winds of privatisation, using the ideological convictions of the state against itself to combat the simultaneous preference for nuclear technology. It was the inability to reconcile nuclear power within a market framework which brought the new build programme and Hinkley C to its knees.

Lessons Learned from Government and Nuclear Power

It is important to remember the inquiry into Hinkley C; Hinkley C was no Sizewell. The process may have produced similar amounts of documentation but in terms of length it was 186 days rather than two years. It represented a more efficient method of public inquiry, whilst also engaging with all issues relating to nuclear technology. A historical perspective reveals the often shaky foundations that claims of objectivity, future energy projections, and certainties are based on. This is not to doubt the genuine commitments, hard work and care of many of the members of the CEGB and government, but it does address the 'on stage' nature of such claims, when what is really at play is a political decision that needs to be protected in some form. The decision was to build nuclear power stations; elsewhere however, a decision had been made to privatise the electricity network. The contradiction of these two decisions made at the end of the 1980's, would be the central one requiring a solution twenty years later. These two decisions collided. But how do you protect two decisions from each other?

Policy insulation, spatial confinement, an over-arching justification and speediness were the tactics, but this gave way to spatial extension, multiple competing issues, slowing down, and more potent than all, policy exposure. The power station was granted permission, so the campaign groups had not succeeded in their aims. Policy exposure had occurred however, and it was concluded by Lord Marshall, that 'it is clear nuclear power will not be built this decade' (Aubrey, 1991). History is often rewritten however; the story is once again that the 'public' blocked nuclear new build, but is this not a case of shooting the messenger? Was it legitimate to address wider considerations, or should the objective, and factual statements of the CEGB have simply been accepted due to the urgent need to focus upon energy security and climate change, enabling the inquiry to be completed in five days as with Torness? If planning for the power station had been granted, would the Privatisation Bill have bent to the needs of the new power station rather than the other way round? Would this have been fair, or would it have entailed vast subsidisation of private firms by the public? If Hinkley C had been built then would the tentative moves towards renewables that began to emerge in the 1990's have occurred? It is important to remember, against the current narrative of the 'irrational public' that the objective models were proved false and the forecasts were proved wrong. It was not public opposition, but contradictions in government policy which halted the development of nuclear power at Hinkley.

In conclusion, there was much to learn from Hinkley C if future nuclear power development was to occur. Most importantly, if external conditions change, how can nuclear development be insulated from such changes? How can the technology and a market framework be reconciled? What better methods of public engagement could be created? Indeed, the complaints from campaign groups were that there was insufficient participation, for the state perhaps there had been too much. How would this be resolved, and what was to be done about the politics of nuclear power? There was also much to learn from the many people involved in the Hinkley C inquiry, an inquiry which had revealed the key challenges which needed to be resolved.

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Chapter Seven: From Public Inquiry to Participation

Introduction

This chapter focuses on the politics of the 'participatory' era of nuclear power development. Building on a series of interviews in addition to secondary sources, key tensions within the New Labour framework surrounding policy on nuclear power are identified. To begin with, the first term of the Blair Government, is seen to make notable efforts to enable forms of decision-making around nuclear power, far more participatory than previous attempts, including the collaborative input into the Energy White Paper 2003, BNFL consultations, and the creation of the CoRWM project. The second dimension however, sees problematic consultations and the 'speeding up' of policy, based around a limiting form of globalised environmentalism. Further controversies surrounding the decision on waste related to CoRWM are addressed.

CoRWM is designed to facilitate in the disposal of nuclear waste, and importantly, waste is not subject to NPS's, planning decisions for waste made at the local level of Cumbria County Council. The Planning Act 2008 and its associated consultative framework, is a direct replacement of the public inquiry system, in terms of entailing public engagement which relates to National Policy, and is often defined as an 'improvement' in relation to the public inquiry, therefore the interrelation between these policy frameworks in understanding how the politics of public engagement with nuclear power has transformed with the Planning Act, is clear. What needs reiterating at this point is the reasoning behind the focus of this chapter - the events of the Energy White Paper 2003, the Energy Review and nuclear consultation, as well as the events of CoRWM.

Following the likes of Allmendinger (2011) in terms of planning policy, and Asdal's (2009) call to focus on the 'context in action' of particular engagements, the Planning Act and the changes to the formalised spaces of public engagement, did not originate out of thin air, but has worked through over a number of years as a series of tensions related to the 'governance object' of nuclear technology. One line is to accept the linear progression model used in the rhetoric of government that there is greater opportunity for publics to democratically engage with nuclear policy through the consultative framework of the Planning Act. Initial discussions with those who had taken part in both the public inquiry system and the consultative framework suggested that the 'modernisation' account may be more nuanced. That as Allmendinger (2009) writes there are 'winners and losers' in planning reform, and for certain groups abilities to influence policy related to nuclear power, may have been negatively altered, which required further exploration.

Owens (2002) points towards the tension between 'efficiency' and 'democratic engagement' as being a consistent theme in policy reform debates since the public inquiries of the 1980's where it was perceived by many in government and industry that 'efficiency' was losing out the increasing public involvement through inquiries, causing delays in planning. Thus, calls were consistently made by organisations such as the CBI throughout the 1990's and 2000's that the public inquiry was troublesome due to delays that were apparently the cause of cost-overruns, and therefore, 'streamlining' of planning for large scale infrastructure needed to take place. However, the Planning Act cannot simply be viewed as a reduction in public engagement in favour of greater 'efficiency'. Other trends had also been occurring within the period of the Planning Act. An alternative reading of the public inquiry was that it was not democratic enough, that it was technocratic and failed to engage publics 'upstream' at an earlier stage of policy engagement (Wynne, 2010).

Public inquiries into nuclear of the 1980's coincided with and inspired, increasing concerns around sustainability issues, greater calls for participation, awareness of the 'risks' associated with technological advancement and the often unaccountable ways through which they were governed. Awareness of these issues highlighted the need to form new ways of doing politics which ensured publics would be involved in the policy process and the governance of technology and risk made accountable. This was taking place within the more general shift from 'government' to 'governance' favouring a plurality of stakeholders negotiating and taking part in the policy process.

New 'collaborative' approaches were thus utilised to engage with nuclear issues during the new labour era. Thus the evidence base of the Energy Review 2003, engaging upstream with an independent panel of NGO's and experts to assist in the development of policy, the notion that the 'in principle' ideas of nuclear power must be fully deliberated before any new build can take place, and the new ground breaking formation of CoRWM, with commitments to the full inclusion of social science perspectives and continual engagement and participation of the public throughout the process. These occurrences as confirmed in both the literature and initial interviews with members of NGO's, were a completely different way of carrying out the formation of nuclear policy than had ever been attempted previously (Mackerron, 2010; Blowers, 2008). If it is accepted as it usually is (Wynne, 2010; Rough, 2011), that prior to the late 1970's and 1980's, public engagement with nuclear power was severely limited, and that it was from the inquiries in the late 1970's and 1980's that it moved into a terrain of 'public concern' as political action increased, then the three eras identified represent three substantially different ways of carrying out official public engagement on nuclear issues. What is more, as this thesis concerns itself

with the assumption of political controversy surrounding nuclear power, then these three eras are differing frameworks for negotiating the political, agonistic element of the nuclear debate. Thus the era explored in this chapter is a pivotal one in terms of the changing politics of nuclear power.

Within this chapter the idea of an 'object centred' notion of the state is developed, to display the key tension between participatory and horizontal principles of New Labour and the simultaneous push for new nuclear power. These tensions are vital in understanding the changes entailed in the Planning Act. Within Geography, state theoretical perspectives have emphasised the importance of moving beyond the simplistic dichotomy of the state and the market. Whilst private capital undoubtedly plays a significant role in policy formation and public life more generally, the state remains a crucial player in establishing the frameworks and mechanisms through which the interactions can occur. The state represents processes of 'meta-governance' (Jessop, 2002), or the 'Janus face' of state control behind an illusory 'governance beyond the state' (Swyngedouw, 2005)

The Thatcher project of the 1980's is a prime example of this; "The purifying winds of market efficiency depend on state action to both remove obstacles and to provide the appropriate social context" write Duncan and Goodwin. This is, as they outline, the "paradox" of the free-market project (1988: 49). In considering this, it is useful to draw upon Harvey's (2007) distinction between the ideological underpinnings of neoliberalism –such as individualism, small state, decision-making through the market, and what Harvey considers to be its practical aims – a class project, aimed at the centralisation of wealth into the hands of a relative few, a process requiring state intervention and various 'de-regulations' and 're-regulations' to be actualised.

In 'Capital' Marx argued against the idea of an idealistic conception of the market creating equilibrium between many different industries through competition, and that the tendency was in fact a process of "the general conversion of various small industries into a combined few industries carried on upon a large scale…accelerating the concentration of capital" (1867: 635). There is perhaps no better contemporary example of the process of centralisation than the UK energy market post–privatisation in 1989, and 'liberalisation' in 1998. Here, 99% of energy is sold by 'the big six' energy companies (Carrington, 2011). One of those, EDF, the main investor in nuclear power, is 85% owned by the French State (BBC News, 2008). James Meek (2012) has provided the best account of the history of Britain's energy liberalisation, highlighting the chronology of events leading to the majority of British energy being sold to foreign capital.

This placed emphasis upon the interweaving of the materiality of certain objects of governance, institutional forms, and political processes; "I am all for 'horizontal' organisation, but I would hate to see an anarchist commune in charge of a nuclear power station" stated David Harvey during a public lecture (2009), which is an understandable position. Expertise and the ability to make rapid, informed decisions are essential to carrying out the complexities of managing a nuclear power plant; such skills in the industry have sustained energy provision from these facilities, whilst generally keeping the public safe for decades.

Historically, strong binding decisions and state power have been essential due to the unique challenges nuclear poses; vast up-front capital costs, and extremely long lead times before energy is produced, features which have relied on subsidy (up until the last ten years) and the creation of certainty through protection from external events; large amounts of capital and subsidy required for Research and Development; insurance and guaranteed financial cover from the state in the extremely unlikely, but economically and environmentally devastating, consequences of a major nuclear accident; the long-term nature of the technology which stretches across multiple parliaments and political transitions, in terms of decommissioning and the disposal of radioactive wastes; and assistance in security operations from potential attack, including securing power stations, trains transporting nuclear waste, and protection of waste disposal facilities.

Harvey's (2009) quote referenced earlier directs attention towards the materiality of a particular technology, and how this interacts with the spatialities of governance arrangements, and forms of politics it is associated with. This is not to fall into the trap of technological determinism, but rather to understand through empirical examination how 'objects of governance' (Jessop, 2002) interact with, shape, and are shaped by, other objects and political and discursive projects. Whilst there is often mention of 'variability' in terms of the material role of objects of governance there remains scope for further examination.

Attention has been drawn to the link between nuclear energy and vertically integrated, 'top-down' decision-making which favours and increases state control by a number of academics (Camilleri, 1984; Martinez and Byrne, 1996). Hecht (2009) examined the formation of Post-World War Two French National identity within the context of the nuclear power programme, in which nuclear "became the quintessential symbol of modernity and national power". Durant (2009: 150) argues that "as political projects" nuclear power development has been "unambiguously authoritarian" (2009: 150).

Sovacool and Valentine (2012) review the historical development of nuclear power policy in six different countries; all cases relied on considerable levels of state intervention, centralised decision-making, and the curtailing of democratic accountability.

Such perspectives are historical however, and originate from an era of centralised decision-making, as well as the ways in which civilian nuclear power was entwined with the military establishment. In recent years there have been significant changes, and the situation in the UK is now different. The Privatisation Act has opened the doors for private utility companies to invest in new nuclear power, with strong pledges not to subsidise it and to ensure that commitments are made for investors to pay their 'full share' of costs for the disposal of nuclear waste (DECC, 2011a;b). The UK context between the years 2003-2008 has not been addressed with regards to the insights it can offer theorisations of the state. As a civil servant from the OND stated:

> "I really don't think there is simply a 'nuclear power lobby' anymore. Things have all changed. Companies now have a portfolio of energy choices. It is more about utility companies and their choices rather than a single 'industry'. In many ways, the nuclear power industry doesn't exist." (Interview with civil servant from the OND, 2011).

This chapter develops a more nuanced way between these two perspectives; one focussed on nuclear technology as it used to be orchestrated, through authoritarian institutions, and the other where the nuclear industry 'does not exist' anymore. Drawing on interview data, as well as discourse analysis of policy documents, this chapter highlights how the period 2003-2008 witnessed a tension at the heart of state policy in relation to nuclear, between third-way commitments towards participatory governance, and a simultaneous commitment to new nuclear power.

Through addressing different moments of public engagement with nuclear policy, the state is reconsidered at the end of the chapter, which provides a conceptual discussion of the themes emerging from the empirical data. Nuclear power is perceived to create a key tension for the Blair Government; between noble preferences for increased participation and stake-holder based policy-making, and the need to 'get things done' on nuclear power. The tensions between these two processes are explored, and discussed in terms of how they relate to the Planning Act, which is the focus of the following chapter.

New Labour and a New Participatory Approach Towards Nuclear Power Decision-Making

The 2003 White Paper on Energy was pivotal. It recognised the need for a long-term approach to policy in order to facilitate a transition to a low carbon economy. An

ambitious target of 60% cuts in carbon dioxide emissions by 2050 was set (DTI, 2003). The government also strongly committed to this being done with a primary focus on renewables and energy efficiency. As the report outlined:

> "In reducing carbon dioxide emissions, our priority is to strengthen energy efficiency and renewable energy sources. This White Paper sets out the policies we believe are necessary to support that." (HMGov, 2003: 12)

The document also contained a long-awaited section on nuclear power which, following the abandonment of the project at Hinkley C had not been considered as a viable policy option throughout the 1990's. The review stated that:

> "Nuclear power is currently an important source of low carbon electricity. However, its current economics make it an unattractive option for new, carbon-free generating capacity, and there are also important issues with nuclear waste to be resolved. These include legacy waste and waste arising from other sources. This paper does not contain specific proposals for building new nuclear power stations" (Ibid: 12).

Thus the paper favoured renewable energy and energy efficiency, establishing specific proposals for those technologies, whilst omitting any proposals for nuclear power. The Labour Government under Tony Blair had made notable steps towards a more participatory policy process. This was demonstrated in relation to climate change and energy, where NGO's and a variety of academics were invited to directly input into constructing material which would form the basis of the White Paper. A member of an NGO group who has been involved with nuclear matters since the construction of Torness in the 1970's outlined this change in approach:

> Interviewee: "When Blair was first elected he had an Energy Review which they set up a panel in a PR union in Downing Street which doesn't exist anymore. They turned it into cabinet research office or something. People like Gordon Mckerron and the woman that's at your university, Catherine Mitchell. They produced a report for this PRU Unit...took about a year to do it. There were various committees set up to decide whether to go ahead with new nuclear reactors or not. And Patricia Hewitt was the head of it. They published the results of their energy review, and said that they didn't want to go down to the nuclear path because it was too expensive and there was no solution to the waste problem.

> PJ: So this was the 2003 White Paper? Which said 'we're not going ahead with new nuclear, but we're keeping the door ajar'?

> Interviewee: Yeah. And that was...there was basically deadlock. There was [Michael] Meacher and [John] Prescott against, and Brian Wilson and Blair and a few others in favour.

PJ: Prescott was against?

Interviewee: Yeah, he was at this point certainly" (Interview with Greenpeace member, 2011)

This was a period in which political balance was being tipped in favour of a more critical stance towards nuclear power. Action by the new government to include wide ranging expertise within the decision-making process was crucial to garner alternative perspectives on the technology. As a member of NLFA informed me during a research interview:

> "I suppose it was promising, because this was the first time ever that we had seen a message from government to the nuclear industry that things were not going to be the same…we're not going to bend over backwards for you, kind of thing…things will be done democratically and transparently…so it was good in that sense. It was a break with the past, or so it seemed at the time" (Interview with NLFA member, 2011)

Such a message was delivered elsewhere. A member of FoE in Scotland explained what was happening around the same time North of the Border:

> "The Scottish Government was asked, after devolution, their opinions. Lib Dem and Labour. I was quite friendly with the Labour Environment spokeswoman of the time…she was quite a good minster at the time. There was another minister in a coal mining constituency, and the two of them, by chance got to look at the draft of a policy outline on the environment, and they went through it with a red pen, which is quite unusual. Usually ministers nod it through, but they changed quite a lot of it and made it much more critical of nuclear." (Interview with FoE member, 2011)

A member of the committee which advised the government for the 2003 White Paper recalls the different approach that they were attempting to articulate:

> Interviewee: "If you are actually thinking long-term, then you have to start thinking about a world where energy is much more visible in our lives…this involves decentralised technologies, and really pushing those through, as some of us view the centralised grid as being unsustainable…you can look at the amount of electricity lost from transmission for example. Nuclear is a technology which relies on centralised grids and centralised decision-making simultaneously, and this can be at the detriment of other technological choices. It would involve energy being more visible at the household level. Sustainable housing, energy efficiency, transport…and of course, using less stuff – of course we had to try and frame this 'using less' in a way that was acceptable to the market-led approach of that time…
>
> PJ: So how did nuclear relate to all of this?

Interviewee: We emphasised that nuclear was very much 'business as usual'. A way of attempting to solve the problem without the big changes – with respect to the grid, energy efficiency, housing, promotion of carbon neutral technologies – which would be required. It was far from easy, but the best way of convincing government on this was to point to the vast economic costs of the UK's original nuclear fleets...they couldn't really argue with the idea that it had been a failure on these grounds...also the cost, however much it was then of 40 odd billion [pounds], to clean up the waste legacy, and to say, 'does this seem like a good idea'? We need a different path, and to our pleasant surprise, on many points they agreed!" (Interview with member of Advisory Panel for Energy White Paper 2003, 2011)

Other examples were given of the participatory committees that were set up by British Nuclear Fuels Limited (BNFL) to discuss issues of nuclear waste and decommissioning, as one member describes:

Interviewee: "And there was also Early Blair era, Blair talking about stakeholder this and that, and things start to have a different feel about them altogether. I think it was probably happening in other parts of society as well. Like the NHS was setting up community health panels and so on...and they have learned from the nuclear thing to be honest...and they set up the BNFL thing, the stakeholder dialogue as well.

PJ: How did you find those stakeholder engagements?

Interviewee: Obviously we were pretty cynical about all this stuff that the BNFL were doing, but the thing was that we got paid – travel expenses...we didn't get any wages while we were there, but we got travel expenses, hotels, whatever we needed to attend the workshops that were being put on. We had a final say in what was produced in the final report. And some of the stuff that we produced was fairly useful at the time. But we certainly felt with the BNFL stuff, we felt we were making a bit of a difference" (Interview with FoE member, 2011)

Thus there were many movements around this time that displayed a fundamentally different approach towards nuclear policy process on the part of government. This was a 'participatory moment' in nuclear power's UK context. For the first time, as demonstrated by the quote above, the original recommendations made by the CST, that objectors (or stakeholders) should be funded to increase accountability and trust in government, were being carried out. For the nuclear power industry however, this 'moment' was a disappointing one, as a member of the NIA describes:

"...that was the first time, in a very long time that government was going to make a judgement on new nuclear build, and we had been making the case quite strongly that it was to be the main player to combat climate change,

so yes, that wording was not what we had been looking for at the time."
(Interview with member of the NIA, 2011)

This was a clear decision by the government, which showed that not every industry could be satisfied in the push towards a low carbon economy. The development of certain technologies would require support due to their infancy, which simultaneous support for large centralised technologies such as nuclear power could impede upon through a diversion of resources (Verbruggen, 2008). This was the point stated by Patricia Hewitt during a House of Commons debate on the Energy White Paper:

> "It would have been foolish to announce…that we would embark on a new generation of nuclear power stations because that would have guaranteed that we would not make the necessary investment and effort in both energy efficiency and in renewables. That is why we are not going to build a new generation of nuclear power stations now." (Hansard, 2003. Column 32: 24th February)

The participatory nature in which the paper had been written, with environmental organisations and new stakeholders such as the SDC involved in the production of policy, had impacted directly on the direction of the government. Sir Bernard Mangham, Head of the Supporters of Nuclear Energy Group, described it as an "irrelevant, irresponsible, and dangerous decision" (BBC News, 2003). This White Paper was a break with tradition and business-as-usual, and in order to be so it had divided and angered those whose interests had not been served.

Nuclear Returns: Consultation Period, Climate Change and Sustainable Development

Whilst a united front had been presented for the unveiling of the Energy White Paper, behind the scenes battles had been fought within New Labour. The wording in the 2003 White Paper that the door should remain 'open' on nuclear power was written into the document at the insistence of Tony Blair, who stated, "I have fought long and hard, both within my party and outside, to make sure that the nuclear option is not closed off." (quoted in Wintour and Brown, 2004).

Personnel changes within government began to occur rapidly after the publication of the White Paper, which were highly significant as a member from the SDC recalls:

> "There was a big change in the government. He [Tony Blair] got rid of people like Michael Meacher... He took much more control. It was really as soon as it [the Energy Review 2003] was done and dusted, Blair started working to change it, and that's when you got the White Papers that Greenpeace took legal action against, and they did it again, and that's how we got to where we are now. It's almost as if there's two Blair Governments.

The first quite critical, more dialogue, and consultation and so on. The second, he did away with Meacher, and Hewitt and it became about hurrying the thing along." (Interview with SDC member, 2011)

The idea of 'two Blair Governments' expressed in this quote is an intriguing one which is developed later on in the chapter. Nuclear power was being re-thought in the context of the Government's Energy Review by 2006. New Labour had made notable commitments that if nuclear power was being reconsidered then the "fullest consultation" would have to be conducted before a policy decision was reached, again displaying a commitment towards more participatory forms of decision-making.

For some, this was a step too far in the direction of participation, with Tim Yeo arguing that:

> "What more do the Government need to know about nuclear technology or public attitudes before making up their mind? Given that the lead time for planning, approving and building nuclear power stations is very long indeed, does the Secretary of State agree that by requiring both the fullest public consultation and the publication of yet another White Paper before any decision can be made, the Government are effectively trying to kill off Britain's nuclear industry?" (Hansard, 2003. Column 31: February, 24th)

Others disagreed with such a rushed approach however, given that a similar approach in the past had led to deep distrust of both the nuclear industry and government. New Labour had performed other notable actions to devolve powers towards alternative stakeholders with the creation of the Sustainable Development Commission (SDC), an independent watchdog on the government's environmental actions. The SDC published a report leading up to the Energy Review outlining that:

> "Our conclusion from this research is that, for good governance reasons, a comprehensive national debate will be needed to explore all possible sustainable energy options with the public, before any decisions are made on a new nuclear power program by Government. It is dangerous for any government to appear to ride over a social framing that is not wholly willing to embrace a mistrusted technology." (SDC, 2006: 14)

Against increasing pressure from what the SDC referred to as 'siren voices' to bypass such a consultation, government outlined that "it is crucial that we have a wide ranging and informed debate" (DTI, 2006: 2) where "public policy needs to shape the framework so that decisions made by business properly reflect the country's goals on such matters as climate change" (Ibid: 9). It was made clear that it was an *energy* review rather than a *nuclear* review. With respect to nuclear it was stated in the consultation document that:

> "The government is clear that, in making important decisions about energy policy including nuclear power, there should be the fullest public

consultation. This consultation paper is part of the process. The government is not at this stage bringing forward policy proposals" (UKGov, 2006: 10).

The Energy Review was widely criticised however, from a number of perspectives. The House of Commons Trade and Industry Select Committee outlined that:

"Throughout the process, the Government has hinted strongly that it had already made up its mind on nuclear power. The last review took three years to complete, yet this one had been conducted in the space of six months…It is clear to us that the outcome of the energy review has largely been determined before adequate consideration could possibly have been taken..." (Trade and Industry Select Committee, 2006)

Under the Nuclear section of the Energy Review it was declared that "Government believes that nuclear has a role to play in future UK generating mix alongside other low carbon generating options. Evidence gathered during the Energy Review Consultation supports this view" (UKGov, 2006c: 114). After the declaration that "nuclear has a role to play" in the Energy Review Report, by July the 11th 2006, the government had published a policy document which ratified:

"Having reached the position that nuclear has a future role, this document sets out how Government intends to create a policy framework under which developers will be able to make proposals for new nuclear build, and seeks views on the proposal for the framework." (UKGov, 2006d: 2)

A critique was also launched by the Environmental Audit Committee regarding confusion over what the Energy Review was actually intended for:

"The nature of the current energy review is unclear – whether it is specifically fulfilling the Prime Minister's desire to make a decision on nuclear, whether it is a review of electricity generating policy, whether it is part of the wider process of The Energy White paper, or whether it is reopening the broad policy debate which the White Paper itself encompassed." (Environmental Audit Committee, 2006)

There was notable consultation and deliberation during the event, adhering to New Labour's participatory ideas. The above quote directs attention to the way in which a particular consultative procedure was being influenced by political decisions. A huge blow arrived for the government however, when Greenpeace launched a legal challenge against the consultation process, making accusations that the process had been "seriously flawed" and "wholly inadequate" (Royal Courts of Justice, 2007: 45. Legal analysis highlighted that although advertised as a consultation paper directly seeking the views of the public, in actual fact it was more akin to an *issues* paper. The analysis identified that as an *issues*

paper it was fine, but "as *the* consultation paper on an issue of such importance and complexity it was manifestly inadequate" (Ibid. Original emphasis).

One of the critiques of the legal analysis was that the paper did not include sufficient relevant information to allow respondents to make an intelligent response, and also contained no information of any substance regarding the two issues which had been identified in the 2003 White Paper as being of critical importance: the economics of new nuclear build, and the disposal of nuclear waste. Most notably all of the information relevant to the economics of nuclear power emerged *after* the consultation period had been concluded. The reason the case had such strength was that the Government had used the Energy Review as justification for their conclusions in the Energy Review Report, that "nuclear has a role to play…evidence gathered during the consultation supports this view" (UKGov, 2006c: 114). This was swiftly followed by the Review Report which stated that:

> "having reached the position that nuclear has a future role, this document sets out how Government intends to create a policy framework under which developers will be able to make proposals for new nuclear" (UK Gov, 2006d: 2).

The decision in July 2006, which was supposed to have been based on information gathered during "the fullest consultation", was discredited as an undemocratic one when Lord Sullivan stated that;

> "the declaratory relief will be to the effect that there was a break of the claimant's legitimate expectation to fullest public consultation; that the consultation process was procedurally unfair; and that therefore the decision in the Energy Review that nuclear new build "had a role to play" was unlawful (Ibid: 45-6)

Thus policy was being speeded up through political pressures, at the expense of extensive participatory measures. Though participants were under the impression that the process was a 'general review', however the government counted it as the 'fullest consultation' on nuclear power, and used it to justify rapid movement towards the formation of concrete policy.

The day after the court ruling Tony Blair made the now infamous announcement that "this won't affect policy at all" (BBC News, 2007). During an interview with a Greenpeace member this announcement was mentioned, to which they responded:

> "Everybody was pissed off from the consultation. It was sneaky, luring people in to what they thought was an energy review but turned out to basically be a review to bring back nuclear. But at least Blair was basically being honest here. He was saying, 'this is going to happen', it was the end of Mr Nice Blair!" (Interview with Greenpeace member, 2011)

A Civil Servant in the OND described the government's action during this period:

> "Well, this was an example of what not to do…this was really bad…this wasn't a good period, and there was a lot they were doing wrong with nuclear which we've learned from. The court case was a bit similar to Al Capone you know…he was committing many counts of gangsterism but then it was a small piece of tax evasion which put him behind bars."
> (Interview with a civil servant in the OND, 2011)

The Government was forced to re-consult on nuclear power in 2007 (UKGov, 2007: 4). The consultation was published alongside an Energy White Paper 'Meeting the Energy Challenge' which situated nuclear power within the wider considerations of the overall strategy to create and build towards a low carbon economy. As well as online responses, and the distribution of stakeholder briefings, there were several deliberative events held across the country. Again however, a number of complaints were raised regarding the manner in which the consultations were run. In particular, the deliberative events run around the country were only one day long, and were deemed to be based upon aggregative measuring around 'framed' questions which did not effectively explore the myriad issues of nuclear power in a deliberative manner (Greenpeace, 2007).

The way in which the consultation was framed was also considered problematic. Nuclear power was now inextricably linked to the over-arching narrative of climate change. This is in one sense understandable; government has a responsibility to ensure security of supply, ensure competitive pricing, and contribute to the mitigation of climate change. Thus the executive summary at the beginning of the Nuclear Power Consultation seemed to situate the nuclear question more forcefully into the frame of climate change and sustainability. Page three of the executive summary for instance, focussed on relaying the latest figures from IPCC and predicated indicators of sea level rise, before addressing the issue of nuclear directly. The first question posed in the consultation document was "To what extent do you believe that tackling climate change and ensuring the security of energy supplies are critical challenges for the UK that require significant action in the near term and a sustained strategy between now and 2050?" This question framed the rest of the discussion. There were eighteen questions in total, and crucially, question sixteen of the document asked "In the context of tackling climate change and ensuring energy security, do you agree or disagree that it would be in the public-interest to give energy companies the option of investing in new nuclear stations?" (UKGov, 2007: 29).

A member of an NGO who was involved with discussions on how the consultation should be run described the event to me during a research interview:

"Nuclear build for OND DECC, said that it would be a good idea to run the consultations in a particular kind of way. And I recommended the way that the MoD are running their consultations about the laid out nuclear submarine fleet, in other ways you may like the answer, or you may dislike the answer, but at least things are out in the open. The alternative approach was to frame it was 'IF nuclear power were to help significantly with global warming, then would you think it would be a good idea?' There is a whole set of assumptions in that, in effect they based their consultation simply on that question. That was the fundamental question that underpinned that consultation. It was like a show of hands aggregating on that one question that was the most important thing for them. This is not deliberative. The kinds of issues nuclear presents cannot be encapsulated in one question. You want a difference to be opened up, you want discourse to be opened up. It's not a voting exercise. There's a big different between representative democracy and participative democracy." (Interview with member of NCG, 2011)

The consultation broke down however when an announcement was made halfway through what was supposed to be an 'open' and 'undecided' process; "that is why we have made the decision to continue with Nuclear Power, and that is why the security of our energy supply is best safeguarded by building a new generation of nuclear power stations" (Hansard, 2007. Column 995: 4th July). FoE, WWF, The Green Alliance, and Greenpeace, as well as members of the public, withdrew from the consultation process, with Greenpeace releasing a statement that "it has now become clear that the government has already made up its mind on building new nuclear power stations and this new consultation is nothing more than a sham" (Greenpeace, 2007). During a research interview, a member of FoE suggested the reasoning behind the abandonment was that "To stay in would be to justify the process. They'd made the decision already, we knew that back in 2006, but this was the nail in the coffin really" (Interview with FoE member, 2011)

One of the most contentious elements concerning nuclear policy during this time however relates to the statement that "…we have technical solutions for waste disposal" (DIT, 2007:9). In understanding why this proved to be so controversial however, the case of the Committee on Radioactive Waste Management (CoRWM) must be discussed.

CoRWM: Participation Meets Power

CoRWM must be situated within the historical context of negotiations around the siting of permanent disposal for nuclear waste. In the 1980's and 1990's NIREX – the Nuclear Industry Radioactive Waste Executive was the limited company designed to manage the disposal of nuclear wastes. Bickerstaff (2012) notes the controversy surrounding the NIREX-led siting process in the 1980's and 1990's, as it was carried out in a way in which a

decision was made and then defended – a process that local councils and NGO groups perceived as lacking transparency and legitimacy due to the lack of involvement in the decision making process. Subsequently a planning application by NIREX for the development of a Rock Characterisation Facility (RCF) to study the Geological features of sites in Cumbria was rejected. This led to a "crisis of legitimacy" for institutions surrounding the disposal of radioactive waste (ibid: 2615), which would have lasting consequences on the waste disposal process. The legacy of NIREX contributed to a more open process being carried out, through the governments consultative approach, *Managing Radioactive Waste Safely,* set up in 2001. CoRWM was part of this, and sought a cooperative approach aimed at inspiring public confidence through public participation in the search for solutions to the HLW problem. Rather than the Decide Announce Defend approach of NIREX, a volunteristic approach was implemented, involving communities through two stages. Firstly, through an initial Expression of Interest (EOI), where communities indicate their interest in being involved, and secondly, a Decision to Participate, where elected councils formally decide to take part in the implementation of proposals for the siting of a permanent disposal facility. Whilst this appears to be radically different from NIREX, Bickerstaff (ibid) highlights the 'lingering presence' of the NIREX era, where many local people still associate the process with the negative experiences of NIREX in the 1980's and 1990's.

Indeed, NIREX was subsumed into the Nuclear Decommissioning Authority (NDA), however, there exists the viewpoint that the idea of a new era of participation and transparency is too clear cut. Much of the documentation surrounding NIREX is now unavailable, and many feel this is a means of deliberately erasing the historical legacy and diffusing political tensions and opposition (ibid). This particularly relates to the ways in which the nuclear legacy of Cumbria and its peripheralisation caused by its attachment to nuclear things, contributes to sentiments that perhaps, there still remains a lack of choice regarding the siting of a Disposal Facility in Cumbria, as there has not been sufficient exploration of other sites in the UK. Thus, the legacy of the storage of nuclear wastes in which CoRWM was working, is a complex when the historical context is considered.

It is also clear that following CoRWM's report in 2006, a more technical approach was once again reinstated as part of CORWM II, again pointing towards the notion that collaborative ideals were becoming less politically favourable in terms of the policy process surrounding 'nuclear things', the new build agenda undoubtedly contributing to this.

The CoRWM I committee was an independent panel of experts designed to consult over an extended period with various publics in order to recommend potential solutions for the disposal of HLW from the production of nuclear power. It was led by Professor Gordon McKerron from the University of Sussex. MacKerron had been a keen critic of the government's plans for nuclear power throughout the 1980's, challenging the CEGB's numbers, and was vindicated in his views as plans for Hinkley C unravelled (Arnott, 2005). CoRWM was set up in 2003 by Tony Blair, and was a decisive break with the past in terms of a move towards more participatory decision-making.

The Committee had appointed a Chair who was neither a government nor industry insider, it was interdisciplinary, including social scientists, and was independent. The brief given by government, as Mackerron outlines, was to "go back to the drawing board" on the waste issue, and "engage extensively with various stakeholders", demonstrating that public engagement was now considered central to the process, and not simply an 'add on' (Mackerron, 2010: x). As Black (2006) commented, "[CoRWM] has been exhaustive in its trawling of global scientific expertise and has taken its discussions into the public domain with openness unprecedented in Britain's notoriously secretive nuclear history". Another long-term analyst of nuclear power, Andy Blowers, agreed that the CoRWM project was an example of notable "progress" in terms of how decision-making is done with regards to nuclear waste (Blowers and Sundqvist, 2010: 158).

The CoRWM project became emblematic of the debate around the balance of 'expert-decision-making' and 'public participation'. This can be characterised by the respective positions of the 'Third Wave' proponents and critics of this approach. Harry Collins and Robert Evans originally coining the term 'the third wave' consistently argued (see Collins and Evans, 2002; Evans and Collins, 2007; Collins et al 2010) that a differentiation between democratic engagement and technical decision-making needs to be reaffirmed (against the dominant viewpoint of STS generally). They pointed out the way public participation can hamper efficiency in relation to technical decision-making. This has generated responses arguing that such demarcations are part of the problem, and that further engagement and democratisation should be aimed for (Epstein, 2011; Fischer, 2011; Forsyth, 2011).

Both sides of the 'third wave' expertise-public decision-making debate crystallised around the events of CoRWM. Whilst for many the deliberative and participatory traits of CoRWM were a notable step in the right direction towards a more inclusive and deliberative form of decision-making (Cotton, 2012), or even for some, not deliberative enough (Wallis,

2008), elsewhere it is argued that emphasis of gaining public confidence was detrimental to expert-led analysis (Baverstock and Ball, 2005).

The debate between these two positions, one advocating the 'deliberative-analytic' or 'participatory' approach, and the other directing criticism towards the process as limiting efficiency, is constrained by viewing procedural aspects in isolation. The important dimension to CoRWM was the way in which the recommendations travelled and were absorbed by other areas of policy. As Blowers and Sundqvist point out, the participatory nature of CoRWM began:

> "…at a time when nuclear was in the defensive and the need to find a solution to nuclear waste was more pressing. In short when power relationships between nuclear's advocates and opponents are more balanced, a more pluralistic and participative approach to policy making gains ascendency." (2010: 149)

By the time CoRWM were making their recommendations however, this was the state of the policy landscape, as elsewhere new build was firmly back on the agenda with the Energy Review and subsequent consultation on nuclear power. The recommendations of CoRWM stated that:

> "Within the present state of knowledge, CoRWM considers geological disposal to be the best available approach for the long term management of all the material categorised as waste in the CoRWM inventory when compared with the risks associated with other methods of management…CoRWM recognises that there are social and ethical concerns that might mean that there is not sufficient agreement to implement geological disposal at the present time. In any event, the process of implementation will take several decades. This period could take one or two generations if there are technical details in siting or if community concerns make it difficult or even impossible, to make progress at a particular site" (CoRWM, 2006: 11)

The crucial statement made in the report also made clear that the CoRWM project and the 'recommendation' were specifically for legacy waste, as a completely separate issue from the deliberate production of new waste from a new build programme:

> "CoRWM takes no position on the desirability or otherwise of nuclear new build. We believe that future decisions should be subject to their own assessment process, including considerations of waste. The public assessment process that should apply to any future new build proposals should build on the CoRWM process, and will need to consider a range of issues including the social, political and ethical issues of a deliberate decision to build nuclear wastes" (Ibid: 12).

It was further emphasised that the "...main concern is the present context is that the proposals might be seized upon as providing a green light for new build. That is far from the case." (Ibid: 13). However, the statement made in regard to the new build programme based on CoRWM's findings, was that there was now a 'solution' to radioactive waste management for a new build programme (DTI, 2007).

An individual involved with the CoRWM project who I interviewed described:

> "[it was] extremely disappointing when they included in their response to a consultation on new build the idea of a 'solution' being found by CoRWM. Firstly they hadn't said it was a solution but rather the best approach for the moment, and that we must proceed with caution. Also, how could it be called a solution: surely to have a solution you must have an example of it actually working? As I'm sure you know, there is nowhere in the world with a functioning permanent storage facility for HLW, the process had not even begun or been tested in the UK; many think the geology is not suitable; it may not work. No decision has been finalised as to whether they will press ahead in Cumbria, so all in all, it doesn't' resemble much of a solution." (Interview with CoRWM member, 2011)

A recommendation for the best course of action for legacy waste thus transformed into the justification for a new build programme elsewhere, despite CoRWM specifying that this should not be the case. Thus the findings had been appropriated to fulfil means for which they were never intended, and in one swift action the independence of CoRWM was removed. The focus on nuclear in the context of potential devastating climate change, and the simultaneous provision of the CoRWM findings as a solution became entwined, in terms of distancing the negative aspects of new build and simplifying the nuclear debate more generally. As a member of CoRWM described:

> "It was like they could point to the CoRWM recommendations and say 'there used to be this whole big waste problem, but its ok, there's a solution for that now, over there, didn't you know? Now let's get back to the dangers of climate change'. It really deemphasised the waste issue as a concern in terms of new build" (Ibid)

For Blowers and Sundqvist (2010: 155) reflecting on the CoRWM process:

> "The UK Government has seized on the promise of a future repository for legacy wastes as a solution for nuclear waste management. The integrated forms of decision-making widely supported and introduced to find solutions for radioactive waste management are now being used in the support of new build".

The consultation on nuclear power and the CoRWM project must be viewed within a wider decision-making framework. The procedural process of CoRWM was highly successful as

viewed from a deliberative perspective. The move to set up CoRWM was a notable step forward and was testimony to the deliberative and collaborative ideals which permeated the Blair Government's initial term in office. However, the process became infused with the urgency of forwarding a new build programme and was used elsewhere to justify something which, as had been specified, the CoRWM process had nothing to do with. In short participation gave way to power.

Between Two Blair Eras

CoRWM stretched across what an interviewee identified as two 'eras' of New Labour and so is a good place to start. The dynamics of CoRWM can be understood in terms of the notion of 'slowing down' the scientific process, where controversies 'force thought' on particular matters and generate public interest and engagement, leading towards new, experimental and collaborative relations between 'expertise' and publics (Whatmore and Landstrom, 2011; Bingham, 2009; Stengers, 2005). The research emerging from the 'flood apprentice' participatory group offers an example of such a process (Whatmore and Landstrom, 2011; Landstrom et al, 2011; Lane et al, 2011; Whatmore, 2009). The group consisted of a mix of social scientists, flood defence specialists, and local publics to co-produce knowledge around plans for flood defences in North Yorkshire. Crucially this involved publics not merely through consultation, but actually being integrated into the production of potential solutions and different options for flood defence. This same kind of principle could be observed with the intentions of CoRWM.

The focus here is to take seriously the role that issues play in the formation of new, experimental spaces of democracy. This contradicts traditional readings of public engagement which:

> "...avoid equating democratic politics with the institutions of representative government and the machinery of policy-making, and to be more attentive to the multiple and emergent constitution of publics and their political capabilities." (Whatmore and Landstrom, 2011: 584)

This goes against, for example, governmentality based readings where such spaces are usually viewed in terms of manipulation or coercion. What can be seen in the events that unfolded with CoRWM however is that neither reading fits. CoRWM can be viewed as an appropriation of what, by its stated independence, was a discrete event around a particular issue – recommending the best way forward for the disposal of legacy waste was appropriated as the justificatory basis of a new build program. Thus it is not simply that the procedural mechanisms of CoRWM were rigged from the start, but rather the

findings were transformed to a completely different arena and used as a means of 'speeding up' policy.

Asdal's (2008) term the 'little tools of democracy' used to describe the ways in which spaces of public engagement can be used to open up and extend democratic engagement, and is useful with regards to discussions of CoRWM. To discuss these spaces as tools is productive because a tool is a joining point between means and ends; there is neutrality in the idea of a tool however, and just as it can be used for democratic extension, the same tool can be used for another function, such as containment and foreclosure. It is not simply that these spaces can always be limited as being 'framed' where the 'rules of the game' are mean the decision is already decided, or as matters that can be limited to their procedural forms. The legacy of these spaces is in the way they are made to travel, and move, and the role they serve as a tool in the wider decision-making landscape in the future.

This relates to an understanding of the state and nuclear power in this era, and the search for a 'decision' on nuclear. McCormack (2011: 2807) states that "decisions are distributed...decisions always involve an array of things at a range of scales". He also argues that decisions are "less than a discrete moment that is in a space time of variable duration and intensity", stemming from the idea that "they are implicated in the production of potential futures, which once summoned can be drawn into the organization and governance". This is a very useful perspective as again attention is directed towards the various moments which have been analysed in this Chapter. It also frames the idea of the decision as it relates to the state within discussions of contemporary nuclear power development in the UK.

Bachrach and Baratz's (1962) notion of the 'non-decision' is useful here. They outlined 'two faces' to power, one centralised and the other referred to as the 'non-decision' preventing certain issues from arising as sites of political conflict. Another way of understanding this however, is that the point at which a certain course of action becomes a 'non-decision' relies on a number of details being set in motion in order to make a certain decision reach the point of inevitability. Thus, in a distributed decision-making landscape different aspects of policy can be made to work for each other to forward particular strategies around particular objects of governance.

This was clearly a course of action that the CoRWM report that this course of action would be unacceptable. Returning to the idea of spaces of formalised public engagement being used as 'tools' of democracy (Asdal, 2008), the vision of what CoRWM was at the beginning an independent collaborative panel, starting from a 'blank sheet' in order to explore solutions for the permanent storage of the UK's legacy HLW. Whilst this was the original

stated aim, the recommendations of CoRWM were manipulated and became a 'tool' for the justification of a new build programme. Government simply could not proceed without providing a solution for nuclear waste, and CoRWM was a 'tool' to enable the 'Achilles heel' of nuclear development to appear resolved. This only consolidated a focus on nuclear power as a low carbon energy source.

Whatmore (2009: 596) describes the power of "interrogating environmental expertise, slowing down reasoning, and making a difference to the framing of environmental problems". Whilst the work of the flood apprentice groups described above, is a successful example of such a process of 'upstream' participatory engagement of 'opening up' scientific expertise, critical attention must also focus on the ways in which such processes are potentially 'closed down', through political influence. For example, whilst Whatmore acknowledges the climate of austerity and modernisation agenda occurring within planning, the constraints which these processes place on such collaborative ventures is not explored.

Similarly the CoRWM panel made substantial progress in redistributing expertise with regards to reaching decisions on the preferred methods for disposing of High Level Radioactive Wastes. However, as Chilvers and Burgess (2008) note with regards to CoRWM the 'slowing down' transformed into a definitive 'speeding up' as the new build agenda developed, and necessity to provide a 'solution' to the waste issue without which new build could not proceed, became apparent. For Chilvers and Burgess (2008: 1897) the ways in which the recommendations from the CoRWM process would 'travel', were influenced by the "...wider political contexts seemingly far removed from CoRWM's immediate deliberations". Whilst flood defence also undoubtedly had pressure from 'external' power interests, focussing again on the specificities of nuclear power, the vast cost, time scales involved and the waste issues may be more forceful. It may mean that when new build is being proposed, the need to insulate against developmental risks may mean that 'opening up' decision making is incredibly challenging, and collaborative processes such as CoRWM, may break down as political will for a new build program interferes and 'speeds up' the policy process.

Returning to CoRWM, the remit of the group shares many of the same characteristics as the flood apprentice groups, and is itself a notable example of the 'slowing down' of a normally technocratic area of policy-making. However, as Chilvers and Burgess (2008) note with regards to CoRWM the 'slowing down' transformed into a definitive 'speeding up' as the new build agenda, and necessity to provide a 'solution', became apparent. For Chilvers and Burgess (2008: 1897) the ways in which the recommendations from the CoRWM process would 'travel', were influenced by "in wider political contexts seemingly

far removed from CoRWM's immediate deliberations". This brings them to a key question: "whether we have policy cultures that genuinely embrace the emancipatory goals of analytic-deliberative processes or whether current interest is merely a passing fad to justify difficult decisions during a time of increased public scrutiny".

This is the trap of focussing on particular public engagement exercises as events in their own right, detached from relations with activity in other parts of the policy landscape. There has been a focus on processes of 'issue definition' and 'framing' connoting the problematic ways through which public engagement exercises can be manipulated through external influence, disrupting procedural integrity (see Felt and Wynne, 2007 for an overview).

More needs to be done to work through these connections however. Rather than reducing events to a context, focussing on the distributed locations of how decisions come to be realised, in which a particular public engagement exercise may only be one part in a tapestry of events which undermine the legitimacy of a particular engagement exercise.

As John O'Neill (2008: 207) puts it, "The presentation of a decision as a discrete event can itself be an institutional artefact, a retrospective formal ratification of decisions already taken". Bickerstaff et al (2010) provide a compelling case that an institutional perspective on public engagement with energy needs to be explored further, a call this thesis is in part responding to:

> "...we have stressed the need to move away from research oriented to evaluating process in public engagement. Rather, our account, we believe, underlines the need to more squarely focus on teasing out the relations between new ways of engaging citizens and the dynamics of institutional cultures, values and, in the long term, trajectories of scientific and technological innovation and decision-making." (Bickerstaff et al, 2010: 493)

In terms of the institutional relations of this period of nuclear consultation three phases have been discussed in this chapter. Firstly, there was the participatory/ collaborative phase, which culminated in the Energy White Paper of 2003, as well as the setting up of CoRWM – a profoundly more transparent and participatory form of engagement than had previously occurred in the UK with regards to nuclear power. This was followed by the period of consultation on energy, which was mired in controversy, with regards to the framing of climate change, the court case, and then the conflation of the findings of CoRWM as justifying new build, not to mention Gordon Brown's announcement half way through an 'open' consultation that the government was proceeding with nuclear power, and NGO's subsequently abandoning the proceedings.

The notion of 'two eras' of Tony Blair, stated by an interviewee earlier in this chapter, is an interesting one. As Allmendinger (2011: 3) points out, in comparison to 'Thatcherism', "there is much less agreement on the existence of 'Blairism', never mind what it entailed. If we want to understand change, then complexity and contingency provide the backdrop to any study". Also emphasised is the pragmatic nature of the Blair Government; "New Labour was renowned for being concerned less with ideology and more with 'what works'" (Ibid.). This is a point also emphasised by Žižek in relation to the 'third way':

> "...advocates of New Labour like to emphasise that one should take good ideas without any prejudice and apply them, whatever their [ideological] origins. And what are these 'good ideas'? The answer is of course, ideas that work." (Žižek, 1999: 236)

This is not to deny the trend towards the 'third way' processes of community decision-making, governance over government, and decentralisation, but it could be framed in the following way; participatory governing, independent scrutinisers, wide ranging policy advice and upstream consultation works well – until you need to do things like build nuclear power stations. This alludes to the importance of the 'object' of governance. Jessop (2008) highlights this as vitally important to a discursive-material approach, however often the role specific objects play in shaping state response and governance is overlooked. The participatory approach which led to the 2003 Energy Review was an idea that unfortunately 'did not work' with regards to nuclear power, as it produced an undesirable outcome of 'no' to nuclear, and so policy developed as detailed earlier.

As for activist and NGO groups there was great dissatisfaction at what had happened, as was expressed during an interview with a member of FoE:

> "If you were to look at the kind of responses that went into the consultations, you can see that the substantive issues that were raised in the consultation were simply not resolved. The 'what if' questions related to nuclear waste, the risk of accident and attack, health effects, siting, none of the substantive issues have been resolved. They've been resolved rhetorically rather like the notion of the GDF, the Geological Disposal Facility. There WILL be a geological disposal facility, even though in the world there isn't one, and there is no proof that there will be one. The distinction between the rhetoric and the reality which marks the consultation and also the general thrust of the UK energy policy when associated with nuclear." (Interview with FoE member, 2011)

The idea was to find other ways of influencing policy through the planning process, which was the next stage:

> "We were so disappointed with the consultation...that the government thought that was sufficient, that we were looking towards future

consultations, and the planning stages to find other ways, but we had realised that there wasn't going to be much scope for participation." (Ibid)

Thus a crucial stage was reached. Despite the problems encountered, the government had concluded affirmatively with the 'in principle' idea of nuclear power – that there was a 'need' for nuclear. The crucial period of 2003-2008 had begun with collaborative panels of a variety of academics, and ended with disillusionment and anger with government as the 'principle' of nuclear power was concluded. This was only one stage however, as important reforms in the Planning system deemed vital for a 'renaissance' to occur had also been developed, to which attention now turns.

Two Blair Eras: Between Collaboration and the Closure of the Political

There are many crucial moments during this period which are essential in understanding the nuclear present, representing the drive between two differing logics. On the one hand ideas of collaborative planning, and the previously negative experiences of publics with nuclear technology had gained ground, through actions such as CoRWM, and the government outlined that it was 'fully committed' to an open dialogue concerning energy futures. These were perceived as promising steps following the White Paper on Energy in 2003. At the same time however, as new found enthusiasm for nuclear re-emerged, speeding up of policy, consultations proving controversial, policy reforms, and signs of a move away from participatory governance, and reassertion of state intervention. Within this, a crucial process As Latour points out of making the state visible or invisible through particular authoritarian gestures, as well as

Post-Political Environmentalism: Transforming the Many into One

The mistake of conflating the 'is' and the 'ought' has been routinely identified in Philosophy but arguably, is a mistake which is clearly present in the rhetoric of government surrounding the re-emergence of nuclear power. Here framing, where the notion of 'framing' connotes "the perceptual lenses, worldviews or underlying assumptions that guide communal interpretations and definition of particular issues" (Miller, 2000: 212). In recent times, as Bickerstaff et al (2008) argue "the expansion of the new nuclear power sector is increasingly being constructed by individual actors, scientists a range of senior politicians and advisors to government within a prognostic policy frame – in other words it is being reframed as a solution to the problem of climate change" (2008: 147).

Climate change *is* happening and nuclear power *is* low carbon at the point of production, is not equivalent to the *ought,* that nuclear power plants should be built in the UK, glossing over all other potential implications of future nuclear development in a warming world. The 2003 White Paper for example, displayed a different trajectory based around alternative pathways. Limiting the problem to technology alone is also problematic. David Harvey (2009) has pointed towards the problem of a fetish on a particular technology including renewables. As one example, he points to the fact that two thirds of rare earth metals required to build wind turbines is located in China, illustrating the continued material basis to any technological pathway, as well as the host of geopolitical considerations which are therefore entailed in a particular choice of technology. As is pointed out by Fuette and Wynne (2010) in another example, the problem with GM crops cannot simply be located in the objective science of GM. Participants of 'GM Nation' deliberated the social and political implications of GM in terms of a few multi-national companies owning substantial proportions of the global food supply (Levidow, 2007). There is a political discussion therefore, to be had about what kinds of social relations we want to *sustain* and indeed develop, as a response to climatic change.

Instead what has emerged is a reductive view of climate change, where considerations of social relations and the multiple value-laden questions generated by the climate issue, are glossed over. Certain commentators are taking the scientific evidence, as containing *human* inferred statements in themselves. As an example, I attended what is now considered to be a pivotal conference in 2009 called '4°C and Beyond' (see Four Degrees, 2009). This was an event jointly sponsored by the Tyndall Centre and Oxford University It was considered pivotal as it was the first major international conference where the implications of 4°C, rather than 2°C which policy is being geared towards, were being considered. In short, there was a consensus from the majority of attendees that stabilising mitigation at 2°C (which all policy is geared towards) is highly improbable and thus we need to be looking towards stabilisation at 4°C degrees warming.

During the conference, the prominent journalist Mark Lynas was giving a talk and asked whether anybody thought that the idea of 4°C warming was 'alarmist'? Nobody put their hands up. On reflection however, the question revealed a lot. The fact that Lynas believed the question could be perceived this way, was explanatory in itself; Lynas could be deemed to be one of the most alarmist commentators in the UK media with regards to climate change, but clearly there is a misunderstanding of why this is. What was being described was a growing consensus amongst climate scientists that the data gained information gained by the most rigorous scientific peer review system ever trialled, 4°C

warming was becoming increasingly probable. Scientific data in itself, and the communication of this data, should not be considered alarmist.

What could be considered alarmist however, is when the descriptive becomes the policy prescriptive. In the introductory statement of the IPCC Report, it is emphasised that the reports are "policy relevant", but not "policy prescriptive" (IPCC, 2007). This is important in order that the integrity of the scientific process, and the data produced from that process, is ensured. What could be considered alarmist however, is offering a direct policy prescriptive 'ought' statement on the basis of the emerging consensus regarding a 4°C warming world. This is exactly what Mark Lynas does in relation to nuclear power for example, where there is a leap from the stage that 'what the scientific consensus is pointing towards is an increasing likelihood of 4°C warming unless there is a rapid reduction in emissions', to 'this means we need nuclear power and there is no choice on the matter, and if you question nuclear power then this means you are choosing climate change'.

This is what Swyngedouw (quoted in Schlembach, 2010) refers to as the "politicisation of science". As he outlines:

> "…what I object to is that, scientists who correctly state that CO_2 is responsible for climate change and correctly states that human intervention is partly to blame for that increase in CO_2, then add that – because of that fact – urgent and immediate social and political action is needed to bring CO_2 down".

Elsewhere, Swyngedouw (2010: 217) refers to a process of the 'short-circuiting' between the scientific and the political, where "in the climate change debate, the political nature of matters of concern is disavowed to the extent that the facts in themselves are elevated, through a short-circuiting procedure on to the terrain of the political". This 'short circuiting' of science displacing the political, is something which was traditionally identified as insipid to the ways in which nuclear power was technocratically governed. As Brian Wynne (2011: xv) reminds us:

> "This is a confusion of scientific reason with anxious moral and emotional concerns about order and authority for specific political-economic commitments just because these – like nuclear power too – have been made in the name of science, does not justify their proponents presumption of any such unambiguous and undemocratic, normative endorsement."

Shrader-Frechette (1980: 135) described the common self-identification of those involved in nuclear policy making as being "hard-headed, pragmatic, free of theory, and common-sensical in making public policy regarding technology". This relates to Swyngedouw's

conceptualisation of the 'short circuiting' between fact and policy. Here policy choices are not actually portrayed as choices but rather as objective matters of fact; that there is no choice at all, but a particular course of action is a necessity due to a threat which suspends political deliberation.

Thus in this period of the UK nuclear power debate, we have seen the argumentation of the debate 'scaled up' to the global level, which has a particular de-politicising effect. As Swyngedouw (2010: 217) argues, "In this consensual setting, environmental problems are generally stages as universally threatening to the survival of humankind, announcing the premature termination of civilisation as we know it". This can be observed in the UK climate change debate and consolidation of sustainability as it relates to nuclear power: no discussions of the myriad issues and implications of going down a nuclear path can be tolerated due to the imminent threat of climate change which, as it relates to the global and thus is the bigger concern which must be prioritised. As Žižek argues however, "...every neutralisation of some partial content as 'non-political' is a political gesture par excellence" (1999: 227). Thus "the struggle for ideologico-political hegemony is thus always the struggle for appropriation of the terms that are 'spontaneously' experienced as apolitical, as transcending political boundaries" (Ibid: 208). What such a consensus creates is the neutralisation of multiple and competing visions of sustainability, into a singular all encompassing vision on sustainability, which forecloses debate. As Swyngedouw argues such a consensus "forestalls the articulation of divergent, conflicting, and alternative trajectories of future socio-environmental possibilities and on human-nature articulations and assemblages" (2007: 26-27). What such a consensus creates is a politically neutral stance, where 'common sense' ideas are the solution. This sees a nullification of the previous conflictual politics of left and right, where, the consequences of global economic necessity exists as a 'common condition' where what is to be imposed are "...the same solutions on both left and right. Consensus around these solutions became the supreme democratic value" (Rancière, 2004:4).

Conclusion

This chapter focussed on the dynamic of the participatory ideals of New Labour as they came in contact with a push to develop new nuclear power. Taking this object focus, enables an understanding of the ways in which certain governance aspirations are problematised and transformed by particular 'objects of governance'. This could be seen by the state attempting to regain control around the nuclear issue, whilst attempting to continue with participative ideals. Consultations were rushed and framed in limiting ways, whilst most notably, the discrete independent recommendations of CoRWM were

transformed into a justification for new build, and renewed political legitimacy for the government's decision. This relates to the concept of the 'distributed decision' whereby what appears as a non-decision emanating from the idea of 'need', is rather produced from a diverse set of sites and practices, which form a distributed decision over space and time.

Antagonism around nuclear power had reached a compromise in the early Blair era, however this was largely due to the fact that a new build programme was not on the agenda. The immense uncertainties of nuclear power, compel the state into action, to attempt to provide some level of certainty to what has proved to be, extremely unpredictable external conditions which overnight can render a 'nuclear renaissance' moribund. Thus by the time the Planning Act had arrived, the Government had concluded a consensus had been reached, as the new policy terrain became an arena of technical formality. Campaign groups however were still searching for political opportunities, however, they were not there. In the next chapter, the ways in which such opportunities for challenging policy were closed are analysed through empirical investigation of the spaces of the new rescaled consultative framework.

8

Chapter Eight: The Planning Act 2008; From Inquiry to Consultation

Introduction

The two previous empirical chapters traced the politics around nuclear power policy identifying key tensions developing within the forms of public engagement around the technology. In Chapter Six the struggle between the containment of the space of the inquiry, and processes of spatial extension though up-scaling, horizontal networks, and the mixing of publics, were identified. In addition to this, the tension between the desire for a privatised electricity system and nuclear power emerged as the new policy challenge. In Chapter Seven, the tension between the 'speeding up' of planning and participatory approaches was identified as the state, through distributive decision-making, attempted to solve these tensions. The political contestation around nuclear power remained as the Planning Act came in to force. This chapter analyses the spatial politics of the Planning Act, and the relation between the rescaled consultative framework and political opportunity. Interviews with participants and data from national and local consultations are drawn upon, developing wider debates on empirically informed accounts of post-politicisation.

The 'in principle' consultations of 2006-2007, and the aftermath of the CoRWM project were only part of the story of nuclear's return in the UK. Elsewhere substantial reforms had also been occurring to the UK's planning system. As was stated in the nuclear white paper 'Meeting the Energy Challenge', "...the government will carry out a package of facilitative actions designed to reduce the regulatory and planning risk associated with investing in nuclear power stations" (BERR, 2008b: 129). Such changes were delivered in the Planning Act 2008, a crucial piece of legislation which contained two main elements: the creation of National Policy Statement's (NPSs), and an independent panel of experts the Infrastructure and Planning Commission (IPC), to make decisions on large-scale infrastructure. This was referred to as the 'streamlining' of planning, to make it more efficient and predictable for investment decisions.

What would the consequences of the Act be however? For government and much of industry it was clear; this was a system that would save money, and create a more streamlined and transparent system, making it easier for the public to engage with and understand. NPSs had been designed to solve questions of policy, and 'public engagement' with this policy implementation would now be radically different than before. The public inquiry was identified as being particularly problematic for the development of large-scale infrastructure, specifically with regards to nuclear power. 'Consultation' would now be the preferred method of engagement with the public, and this process would have a distinctly 'scaled' nature, based around 'national policy' consultations, and local consultations

regarding the specific development in question. For the British Planning System this was an unprecedented way of doing things (Ellis, 2008).

This chapter considers the political and democratic consequences of this process. Hinkley C nuclear power station could be considered as the first 'mega' project being implemented under the new Planning Act, as it is set to be "the biggest construction site in Europe" according to an EDF spokesman (This is Somerset News, 2011). This has involved local consultations run by the main investor in the area, EDF, whilst policy at the national scale relating to the development of Hinkley is consulted in the NPS consultations.

Thus a unique opportunity is provided here to develop a complex empirical investigation of how political opportunities around nuclear have been altered as a consequence of the Planning Act. As has been argued throughout this thesis, the new policy framework must not be seen in isolation but rather as emerging from specific historical experiences and concerns which impinge on, and relate to, the policy developments which are observed today. The public inquiry was identified as particularly problematic in contributing to delays in the planning system, and thus the development of the new consultative framework and the political consequences of this must be addressed in relation to the political opportunities which were presented in the public inquiry system. Hinkley C was the site where the old nuclear era met the new, and the preference for privatisation prohibited the development of new nuclear power. Hinkley C today is the project to overcome those barriers that were encountered. The history of modern nuclear power in the UK is thus a 'tale of two Hinkleys.'

NPS Consultations: Background

NPSs are designed to clarify questions of policy, and are the framework in which the MIPU make their recommendations. Thus 'streamlining' is partly achieved by ensuring that there are a number of more substantial issues which are considered as they are fixed by NPSs, which have been ratified by Parliament. This enables the MIPU to base their decisions around the specifics of the local plan, so local consequences of the development in question, must be balanced with the case for 'need' established in the NPSs.

However, in order to have the policy 'fixed' in this manner, the government were responsible for consulting on draft NPSs in relation to energy, of which there were six; an 'overarching' EN-1; EN-2 – fossil fuel generation; EN-3 – renewable energy infrastructure; EN-4 – gas supply infrastructure and oil and gas pipelines; EN-5 – electricity supply networks; EN-6 – nuclear power generation, (see DECC, 2011a;b). The original

consultation took place between November 2009 and February 2010. This involved over 3,000 written submissions in addition to consultations open to the public, which were held in London, Bristol, and Manchester.

It was argued that 'in principle' issues were resolved in the controversial consultations of 2006 and 2007 (BERR, 2008). Thus the consultations on NPSs were designed to specifically discuss the 'details' of these particular policy documents. A substantial number of campaign groups were using this as an opportunity to challenge the particular cases of 'need' of the government's plan, as well as the case for nuclear power. Thus again there were substantial differences between government and non-governmental groups perceptions regarding what was of relevance within the NPS consultations.

Many of the issues raised were familiar; arguments were made against the economics of nuclear power, accusations were made that renewables and energy efficiency were being 'blocked' by a commitment and focus on nuclear development, and of course, problems associated with radioactive waste management. The NPSs were also subject to parliamentary scrutiny by the Environment Select Committee, as well as debated in the House of Lords and House of Commons. Changes to the NPSs were minimal, however were substantial enough to ensure that DECC were forced to repeat NPS consultations in relation to the 'revised' statements. In particular, the 'Appraisal of Sustainability' that has to be carried out around each development, was thought to be potentially open to legal challenge in relation to nuclear waste, and thus required attention. The main change in relation to nuclear power was a 'rewording' of the section related to the safe disposal of nuclear waste, and evidence to reinforce the government's concept that there 'will' be a solution to the disposal of HLW. The original statement outlined that:

> "In particular they show under conditions relevant to the Finnish GDF, the long-term safety of the facility is robust to an extreme scenario of simultaneous failure of all disposal canisters and instantaneous release of all the readily releasable radio nuclides in the spent fuel" (DECC, 2010: 107)

Evidence was presented that the wording was inaccurate and inappropriate in terms of the UK scenario for waste disposal. As such it was amended to:

> "Under the conditions relevant to the Finnish GDF, the long-term safety of the facility is shown to be robust to pessimistic cases that were studied, for example where a number of failures of disposal canisters occur due to seismically induced rock movement. The disposability assessments carried out by NDA-RWMD for the requesting parties under the Generic Design Assessment similarly show that existing engineered barrier technologies can be applied to achieve the safe disposal of high burn-up fuel discharged

from EPR or AP-1000 reactors even using what are expected to be conservative calculations of disposal canister integrity." (Ibid)

For a civil servant from the OND the revisions were a disappointment:

> "...we did go through a very painful period. We had to admit that one element of our National Policy Statement suite, the overarching NPS appraisal of sustainability was not adequate...and therefore we felt that it needed to be repaired and we'd have to re-consult." (Interview with a civil servant from the OND, 2011)

With regards to nuclear however, a member of Greenpeace informed me that nothing substantial was altered in relation to the many questions they felt were unresolved:

> "There was an element of change to policy which was essentially to do with defending against the risk of legal attack, but there had been no substantive revisions."(Interview with Greenpeace member, 2011)

The second round of consultations took place between October 2010 and January 2011. I attended each of these consultations which took place in London, Bristol and Manchester, as well as attending an additional session in Bridgwater. Here I discuss the perceptions of non-governmental and campaign groups of this process, the issues which emerged, drawing on interview and ethnographic data, in addition to official transcripts of the events.

1) Reactions to the consultations

The Bristol event took place on the 29th November 2010, regarding the revised NPSs, running from 2-4.40pm. There was already substantial dissatisfaction in terms of the original NPS consultations, in particular the ways that NGO members felt that the government were deliberately tilting policy in favour of nuclear power through the use of 'slippery language'. As a member of FoE informed me:

> "One obvious example was the idea of 'interim storage' of nuclear wastes at the sight of the power stations. There was one sentence that said interim storage could potentially mean '160 years'. What in actual fact was under consideration was the acceptability of having HLW stored on site for 160 years, but this isn't really conveyed by the term 'interim storage' I would say. Things like this – it's sneaky." (Interview with FoE member, 2011)

Another prominent issue before the consultations had even begun was the unacceptable time period involved:

> "Three months to write in evidence which they have already made clear will be ignored, and two hours or so to discuss the entire future of UK

energy policy does not suggest to me that this is a serious consultation. These are promotional road shows" (Ibid)

The event began with an introduction from Susanna Kensella, an independent government consultant. In response to her opening statement, a pantomime-like atmosphere began to develop, which was heightened as the event progressed:

> "The final way in which you can have your say is we also have a little box over here to my right, rather strangely called the burning issues box. That makes me think that they might actually set fire to it after you put your questions in, I'm sure that's not the case [laughter and loud shouting from the audience]" (Bristol NPS Consultation, 2011: 2)

After an introduction outlining the purposes of NPSs, and how they relate to the work of the IPC by Giles Scott, who is in charge of overall implementation of the NPSs at DECC, the process encountered its first point of confrontation as the panel of representatives were not properly introduced. This involved firstly, a member of the public demanding that the full names of the DECC panel were given, and their speciality, as 'we had to give ours'. As well as this, the panel, rather than answering questions directly, were taking them in a list. This was met with confrontation, with a member of the public refusing to ask her question until the previous question had been answered. Thus there was an immediate response of anger regarding the way in which the consultation was being run.

As a representative from the Green party stated:

> "I remember it was made very clear that DECC or its predecessor was all for nuclear energy, because this was part of government policy and therefore, if you like, the usefulness of this exercise is largely a whitewash. They've been given to us and it's like the decision's already been made, it's like to inform us of things, all right so we'll let the public have a rant if you like – sorry about mine – and we'll just carry on so that industry can make the vast profits, just carry on as normal' (Bristol NPS Consultation, 2011: 11)

This feeling of 'powerlessness' that the process was a 'done deal' was further emphasised regarding the time-scale of the inquiry and the extent of information that the general public needed to consume in order to be able to engage:

> "...quite honestly I don't think that this whole process is detailed enough to allow the public and those concerned to actually make...I mean, there's a fair number of documents and pages that people have to read through, comment on, research. Some of us have to do jobs or have to take days off for example to come to meetings like this and therefore the general public are excluded, even though they may well have an interest and they may have a valid point to give." (Ibid)

Others were more direct in illustrating the democratic dimension of the consultative process:

> "I just don't think this is a democratic process. This whole afternoon is basically a sham. We've had fifteen minutes at the beginning for a Q&A session, you overrun by ten minutes and I think there may be five questions may have been answered. There are about one hundred people in this room, if we're all to ask one question at a minute each, that's an hour-forty and that's without any responses. We've had a table session, where I've only managed to sit on one table and not really complete the discussion and then we did another Q&A session where not everyone's been able to ask a question, it's just not a democratic process at all. You can do your road show, move onto Manchester, but the whole thing is a complete sham." (Ibid: 15)

The Aarhus convention was drawn upon, where the government's 'poor' record in relation to the convention was put forward:

> "I'd just like to say I think you're challengeable on your basic premise that you're going to end up with something that you can lay the plans down and we won't be able to contest it. I think you're at odds with the Aarhus Convention, which of course the government has a very poor track record on already and being challenged by the European Commission on their failure to implement it" (Ibid: 23)

This view was further reinforced during a research interview:

> "The language of the Aarhus convention is all about 'participation' in environmental decision-making. Here it is all 'consultation' this and that, which it seems, more boils down to information sharing, letting us know what's going on kind of thing. It's patronising." (Interview with member of NCG, 2011)

In a revealing moment a member of FoE stood up to ask a question which targeted directly the theme of the 'inevitability' of the direction of government, and the lack of opportunity for changing policy direction:

> Q: in a community meeting with DECC, I asked him a question about nuclear power. His [DECC representative] answer was "It will go ahead". I heard that, there are witnesses to that statement. I would like to ask these gentlemen here from the government, is there anything anyone in this room can say or anything anyone in the wider public can write in, which will change that statement? Is there anything we can say or do that will change policy? [Applause and shouting]

> A: Thank you very much. The short answer is... the short answer is, yes. This is a consultation, so yes, if you wish to submit evidence or information, which challenges the premise that the government's made so far we obviously will take it very seriously. Thank you.

Q: I hope that's true.

A: It is true [Laughter and shouting of "No it's not!"] (Bristol NPS Consultation, 2011:29-30)

In a subsequent interview the participant recalled this moment:

"I really asked it in a rhetorical way, because everybody in that room knew that the real answer was no! He knew that is how I was asking it, and the answer was no, but it was amusing watching him trying to answer yes!" (Interview with FoE member, 2011)

Critchley (2002) and Žižek (2006) have both examined the way in which comedy and irony are used to reveal power more effectively than direct engagement with the subject at hand. This has been written about in relation to the anti-nuclear movement, where irony is used as a tool to reveal usually unquestioned relations of power (Seery, 1990)

Deliberate disruption of the consultation occurred during the Bristol NPS consultation, where proceedings were interrupted by shouting, the distribution of leaflets, as well as outside attaching big banners from the top of the building using climbing apparatus. The consultation became increasingly hostile:

[standing up, shouting and disruption]

Panel: "We need to get security in here

[Security guards enter the room]

SK: Good afternoon folks, let's adjourn for a few moments

"Public school boys, listen to you, you're arrogant"

"Now there's no need to be rude"

You're being extremely rude if you think this passes for democracy"

Q: "20 odd years ago you were all... no-one wanted Hinkley C then did they" [shouting]

Q: They didn't want it then did they? It got abandoned!

Q: Can you not chuck her out?

SK: Let me give her some time.

Q: chuck her out...

SK: Okay, thank you very much. Can I take a question here, please, sir?

Q: Do you want me to just talk over her?

SK: If you can talk as loudly as you can.

Q: I'll try. She's a bit strident, I have to admit.

SK: She is quite loud.

Q: Nuclear waste.

SK: Is the microphone on?

Q: We don't need a microphone.

SK: Thank you very much.

Q: Is that better?

SK: Right, could we have your question please?

Q: my question is at the very beginning of this afternoon—

SK: Can we just let him ask his question, please?

Q: I don't care

Q: Shut up.

Q: You Shut up.

SK: Gentlemen please.

Q: Could you please—

SK: Gentlemen.

Q: —shut up (Bristol NPS Consultation, 2011: 19-21)

This extract demonstrates the pantomime nature which the consultation took on at times, far from 'the good fight' described in previous chapters however, but a hostile one, where disruption was a tactic used by campaign groups. Speaking to a long-term campaigner who had taken part in the 1980's inquiry, and who favoured a more calm and reasoned approach to these public engagement exercises, it was stated that:

> "It was evidence of how strongly people fell about this, and I was impressed with the strength of feeling. My reading is, is that the DECC people only wanted to hear responses that fitted in with the questions they had asked in relation to the consultation. They didn't want to spread it out to hear broader arguments about nuclear power...and they keep on emphasizing that although they were consulting on these NPSs, that the government has already decided in principle that it wants nuclear power, so that's already fixed. In a way they are saying we don't want to hear any arguments about nuclear power, in a way it's quite confusing. It's a consultation about nuclear power stations but at the same time they are saying that the government has already decided that they are a good idea, so where are you?" (Interview with SHE/StopHinkley member, 2011)

Questioning the purpose of the consultations in the eyes of DECC, and the feeling that the remit of the consultation was narrow, was echoed in London:

> Q: "the whole purpose of a public consultation, as far as I'm aware, is to enable the public directly to alter things, to change decision-making. Now, I know you have altered your consultation, because this is the second consultation on the same thing in a year, so you might say we've already had a tremendous effect, but it could also be argued that what you've done in fact was to realise that the first NPSs were so riddled with flaws that it would make it very difficult to get it through, so you've reissued them now it could be said with most of those flaws hidden to make it more difficult for the public to have any change. Now, could you answer that one, because the paths, that I've been able to so far and I must say this document does help, look as though as you've simply eliminated some of the flaws to make it more difficult for us to object or to recommend improvement." (London NPS Consultation, 2011: 3)

> A: "on the issue of the public amending the NPSs, yes indeed, you know, that's why we're having a consultation is because we need to hear the views of the public, of the interested parties, of the people who are experts in this area to make the MPs... I mean, I have to say yes, it was our aim to eliminate flaws from the NPSs, because that's what we're trying to do is produce NPSs without flaws in them. We are certainly trying to produce robust NPSs that will allow the IPC and then MIPU to consider applications and take into account all the considerations" (London NPS Consultation, 2011: 5)

Attention shall now turn to the sequence of the NPSs, in relation to other important aspects of policy which also came under scrutiny.

2) 'Cart before the horse': Salami Slicing, Confusion, and Disempowerment

A substantial theme which was present in both the live consultations and interview data was that although what was being consulted on was the NPSs which would guide all future decisions, substantial elements of these statements relied upon further negotiations which were yet to take place. The economic case for example, relied on the EMR; negotiations over waste, and indeed the planning of a GDF in Cumbria; there were notable issues regarding the issue of 'interim storage' of HLW around particular sites, and whether the IPC would be responsible for examining this aspect.

As stated in the London consultation:

> Q: "I am a planning consultant. It's fine to have a consultation on the energy

market but is it fine to have it after we've got the NPSs to comment on them because it's bit of a *cart before the horse*, isn't it, really? My concern is...with the free-for-all that we've got here, leaving sort of everything to the market, it may well be that that energy balance does get out of kilter. A hypothetical example, but if there is a great rush of applications for a gas-fired plant. The IPC doesn't need to take these issues – energy balance into account, so it's going to get out of kilter" (London NPS Consultation, 2011: 14)

Evidently, the point being made here is that the substance of how low carbon generation will be made economically viable within a market-oriented system had not yet been established as the EMR's were still to come through, yet NPS consultations were being concluded on the basis that they *will* be made viable. Furthermore, the IPC were already taking applications for NSIP's. Due to the fact that the reforms had not yet taken effect, there was no guarantee that in a market-led context, a balanced energy system could be achieved, because it was not in the remit of the IPC to examine national policy. This was further reinforced during an interview with an energy analyst:

"You need to have a vision, and basically there is no vision in the NPSs. It is a free for all, based around the premise that everything will be ok because it *will* happen. I would gladly predict right now, that if this continues then we will certainly miss the 2030 carbon reduction targets" (Interview with energy analyst from E3G, 2011)

Other participants indicated that the concept of a 'market free for all' was problematic:

"I've only been here for the second half but a lot of the talk that I've heard while I've been here has all been about markets and... if the market pushes it in that direction then that's where we'll go. We'll leave to the markets; the markets will tell us where to get the energy from. Well, surely that cannot be our main concern." (London NPS Consultation, 2011: 19) (London consultation: 19)

This was also emphasised elsewhere:

"I'm really concerned, you say you're going to use market mechanisms and that's going to manage it all for us but surely recent history...I mean we've just had a huge market crash and you're saying you're going to use that mechanism to run our energy markets? I find that really scary. Look at California and Enron. I find this idea terrifying" (Ibid: 21)

A member of the NLFA, similarly raises such concerns regarding private investment running the 'nuclear renaissance' directly:

"There's only two EPR's being built in Europe, one at Flamanville in France, and one in Olkiluito in Finland. And both, Olkiluito is three years over time, and three billion extra on top of its extra cost. Flamanville, it's about the same. You know, the nature of building these complicated civil engineering

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projects will get delayed. There's a two to three year gap as well. When you add in the finance and the labour. The whole reason that nuclear was being brought back in so strongly by the government was that we needed new nuclear by 2020 to deal with all this carbon emission. It might be more like 2025 before it happens. Linked into that is the implications of the German decision. N power and E.ON might drop out of it, which means Oldbury and Wylfa might be under threat. You might just have Sizewell and Hinkley as your only two reactors when we supposedly need fourteen really. You do wonder what all this effort is, really will they get there? The experience of nuclear power over the last few decades is that for every ten that want to be built maximum one is built" (Interview with NLFA member, 2011)

This is a very important point which was made to me during an interview on the 2nd of April 2011. This date is significant because as we shall discuss, a year later these concerns were proven to be absolutely correct. The dangers of private investment dictating proceedings regarding investment in large energy infrastructure were further emphasised:

"What happens if these energy companies who set up these nuclear power stations go bust? Who picks up the cheque, who deals with...is it the government's problem then?... we are using the same system that got us the global financial meltdown to... we're trusting them with our energy supply; it just seems a bit crazy." (London NPS Consultation, 2011: 22)

Much concern was raised that because national policy was fixed there were certain issues that the IPC would not need to consider:

"the planning process, and this is dealing with the planning process, but then the actual implementation process is a market mechanism and the planning process doesn't deal with that, it's outside it and it just strikes me that this doesn't take account of market failure and it doesn't take account of market inefficiencies and surely we know enough about the potential for markets not to be perfect and not to steer this process towards its low carbon outcome, which is what you're intending. It's not just new generation, it's low carbon generation and therefore wouldn't it be helpful, this is the point, for the NPS to have mechanisms that tell the decision maker as you go along, first of all about what's happened to the pipeline, but, secondly, about the cumulative carbon performance of the particular decision that they're making because the decision maker will be partly a market actor, they will be influencing the market by what they are making a decision on and so wouldn't it it"(Ibid: 13)

The representatives from DECC provided answers to these questions, describing again, that EMR's would be consulted on in the future to work out how the market was going to deliver technologies such as nuclear power:

"the government is currently considering how effective the current market

arrangements will...government recognises this key point about how effective markets will be, bearing in mind that all this investment is going to be private sector money, it won't be public sector money. So that's a very live issue, watch out for a consultation and we can expect some changes to the market structure to be able to give more certainty to us all about the right incentives being in place to meet low carbon requirements" (Ibid)

Elsewhere, this point was also emphasised:

"If we're not able to completely bottom out the energy market report before the NPSs are ratified then there has to be enough flexibility in the wording of the NPSs to take forward a general direction of the energy market report. From a policy perspective this is a risk that we're very much aware of and thanks for drawing attention to that" (Ibid: 15)

On the subject of companies going bust:

"I think you were asking the question about what if companies go bust, that could happen. We have a very competitive market. I think the most likely thing is another company would take over that company...They would transfer to the new company but in the last resort. The nuclear regulators would shut that company down. They wouldn't allow it to run if it was unhappy about safety or security" (Ibid: 21)

As a member of the NLFA described however:

"...the answers were vague, again it's a lack of vision, where NPS is being decided and fixed before we actually know the mechanisms through which the policy is supposed to function. The real answer they should have given is, well we don't really know how this is going to work yet" (Interview with NLFA member, 2011)

The other major issue of 'cart before the horse' was with regards to nuclear waste, which again overlapped with questions surrounding the remit of what would be covered by the IPC/MIPU. As one member of the Hinkley campaign addressed during the NPS consultation, which ties in with the economic aspect of EDF's plans:

"I was involved in the first consultation and the second consultation and I'm not sure if this is the second consultation or the third consultation. In Somerset we have two very small local councils who are currently struggling to deal with the mite of EDF and its mass of proposals. They're very small councils and they're under-resourced intellectually and technically to deal with EDF...currently you have a live situation where EDF are proposing to start preliminary works at Hinkley C within the next three months and in EDF's proposal, they state that they will be negotiating a 'cut off point' [for the management of waste], at which they will hand Hinkley C and all its stored radioactive waste back to the UK Government. I don't know if this date has been agreed as yet, I know it's something that they're proposing to negotiate, but many of us believe that it will be handed back to the UK

government at the point that EDF stop generating electricity and therefore receiving revenue. This date will obviously have a huge impact on EDF's business case for Hinkley C. In fact without this date agreed I would suggest it is impossible for any finance director to sign off a business case without knowing when their project ends. I wanted to know if the government has asked EDF to factor the costs of managing nuclear waste and decommissioning Hinkley C into its business case or will we, the British taxpayer, be taking over these costs when EDF walks away or when they financially are unable to sustain their operation...because my experience of government negotiating contracts with private investors is absolutely appalling" (Bristol NPS Consultation, 2011: 13)

This again demonstrates concern over crucial contracts regarding the management of waste in the long-term, and exactly how the economics and management of this would function. Such waste management relates to timeframes of potentially hundreds of years. Indeed, when I spoke to a representative from EDF, in the second half of 2012 – over a year after these consultations, around the time that a final investment decision should have been being made, he described:

"There are still things to work out going forward, before we make the final investment decision. There is the pricing around radioactive waste management that we are still negotiating with DECC, we've really got to get the price right on that if we are to move forward" (Interview with EDF representative, 2012)

This quote is used to emphasise the timescales which make a proper evaluation of NPSs, and the very basis of them, highly complex. As discussion continued in the NPS consultation:

A: "I'll do my best to answer those two very detailed points. Firstly, who is dealing with the issue with EDF? Well, it's DECC. There are very detailed negotiations that will be taking place over many months about the costs that will be incurred to dispose of that waste...that's part of the negotiation that will take place and in terms of the date at which waste will be transferred, obviously that's yet to be negotiated, it will be done on a site by site basis and the government may... and this subject to future consultation, may take the waste, but at a significant risk premium."

Q.   Could you explain what a significant risk premium is please?

A.   It's a matter for negotiation. This will be subject to discussion between Government and energy companies this is about protecting the taxpayer."
(Bristol NPS Consultation, 2011: 9-10)

This is an interesting exchange because new nuclear policy was being based on the premise that the industry would not be subsidised due to the liberalised energy market of the UK (Energy White paper, 2007). As was indicated by former nuclear regulator Ian

Jackson (2008) however, to pay for waste disposal at full commercial value would mean that the cost of a new build programme would be prohibitively high for private investors. Thus companies investing in new nuclear power in the UK would be looking for a 'fixed price caps' on the disposal of nuclear waste. This relates to calculating the correct price to pay to store waste in a deep geological disposal facility (which doesn't yet exist). Here however, if costs were to rise above this, then the state would take on the responsibility for the management of waste, thus the public would still be subsidising the nuclear industry, and the nuclear industry would be cheaper than 'real' market value. So understanding the economics of those prices would be of vital importance in also understanding the validity of the NPSs, based around 'no subsidy' and a 'solution' to the waste problem.

It is fair to say that during the NPSs, details were thin on the ground. A large number of questions – questions which get right to the heart of important issues of policy – were simply responded to with: "this is up for negotiation". In relation to questions regarding the acceptability of EDF's business case, in consideration that the issue of the waste premium had not been consulted on, the answer is that "negotiations are ongoing". A similar response was made, when questions regarding the strike price were asked. The conversation continued:

> "In relation to, as I said earlier, the costs will fall onto generators in two ways; they will pay for the management of their own waste while it remains on site. And yes, subsequently they will pay their share of the cost of managing it and disposing it in the—
>
> Q: And what's 'their share'? You're not really answering the questions are you" (Bristol NPS Consultation, 2011: 12-13)

Again there *will* be a correct economic framework in place thus ensuring that the NPSs appear sound. However, what is also being highlighted is the deep uncertainty underlying the plans for major nuclear expansion. This was another point raised with regards to the effort to develop nuclear power against the timescales regarding climate change and energy security which formed the argumentative basis regarding the NPSs. As emphasised by one participant:

> Q: "Thank you. I'm aware that Mr McDonald said yesterday in Bristol that it could well be the case that only a couple of nuclear power stations will be built in the end. If nuclear is such an important part of the energy mix and given the massive overhead costs that come with its development, why is this the case?"
>
> A: I'm very happy to answer your question about nuclear. People were

saying it's a foregone conclusion there would be nuclear power. I think the government is facilitating nuclear power; it's doing a number of things. It's changed the planning system to bring forward large infrastructure, not just nuclear. But at the end of the day it will be the judgment of energy companies about the economics. Now, it's the government's view that the economics are favourable for nuclear but unless the government still does a number of things like reforming the energy market, it's still possible there'll either be no nuclear power or there will only be one or two stations. So my comment yesterday was saying *you might get some, you might get none*, you might get six or eight or more. *It really depends on how things develop*, whether government meets its objectives in terms of reform of the electricity market, if it continues to roll out its facilitative actions or other things, left field, which we can't anticipate may happen. So it's *a range of things are possible* I guess is what I was saying yesterday and what I'm saying today". (Manchester NPS Consultation, 2011: 6-7)

The discussion will now turn to the central points of uncertainty that revealed themselves during the consultations, and demonstrated the ways in which the consultative framework was spatially segmented.

The Heart of the Matter: Economic Interruptions

A frustration which emerged was the fact that whilst NPSs were designed to create certainty, consultations around them were being carried out without full knowledge of the economic implications and mechanisms by which nuclear would be implemented. This is key point in relation to firm commitments to develop sources of low carbon energy. Because the government is committed to a market-oriented framework, they cannot specify how much energy will come from nuclear power. However, they can discuss expectations from 'signals' from energy companies. The expectations originally established in the Energy Policy White Paper were that the industry had announced 'intentions' to "put forward proposals to develop 16 GW of new nuclear power generation capacity by the end of 2025" (DECC, 2011c: 30). It is "anticipated" that industry will come forward (Ibid). Below this however, a title reads "the urgency of nuclear power", describing that "...it is important that new nuclear power stations are constructed and start generating as soon as possible and *significantly earlier than 2025*" (Ibid).

In EN-1 the government set out that 59GW of new electricity would have to be constructed by 2025 due to many power stations closing. Due to the European Renewables obligation, 33GW will be renewables. This leaves 26 GW of energy. At the time of the Policy Statement 2GW out of the 33GW of renewables were under construction. 8GW of the 26GW remaining non-renewable sources were under construction, none of which was nuclear power. This leaves 18GW to fulfil by 2025. The government's statement on this is that

nuclear is expected to deliver "...as much as possible towards meeting the need for around 18GW of non-renewable as possible by 2025". (DECC, 2011c: 22). This is of vital importance.

At the beginning of 2013, no final investment decision has been made for a single nuclear power station in the UK. Hinkley Point will be the first built if it goes ahead. That would contribute roughly 3.2GW. With an identical plant at Sizewell this would amount to 6.2GW. Thus, three other sites would also have to be constructed to contribute towards the 18GW. The two EPR reactors planned for Hinkley and Sizewell which are under construction in Europe, one in Finland and one in France, will have taken, by the time they are finished, roughly ten years (at least) to build.

Construction is unlikely to start at Hinkley Point until 2014. Considering that the local consultation has only just begun at Sizewell at the time of writing, it can be assumed that construction is unlikely to start there before 2015-16 at the earliest. Most other 'big investors' have now pulled out of the 'renaissance', and so it could well be that by 2025, the only two reactors that have been constructed (even this is by no means guaranteed), will be Hinkley C and Sizewell. Hence there will be 9.6GW of the 18GW we "urgently need" by 2025, unaccounted for by nuclear power. The simple question then, is either something else fulfils this capacity, or the government's entire argument circa 2006, of the "lights going out", was misjudged.

So on the one hand, the government message is essentially that there is an expectation for 16GW of nuclear power to be on grid by 2025, which it clearly states, is "urgent" in order to avoid:

> "...the risk of the UK being locked into a higher carbon energy mix for a longer period of time than is consistent with the government's ambition to decarbonise electricity supply" (DECC, 2011a;b: 7).

However, on the other hand, due to the government's commitment to delivering a market framework, the answer's given by the civil servants during these consultations, as quoted above, are that maybe 'none, one, or two of eight will be built'. How can these two positions be reconciled? That there is an 'urgent' need for deployment before 2025, that there is a 'need' for nuclear, that roughly 16GW achieved by 2025, but if the market does not feel like it, then maybe none, or one will be built? How can such a vague position be the form of policy chosen to apparently save us from catastrophic climate change and the lights going out? These are the kinds of issues, as we shall discuss which a public inquiry would penetrate further: how is this actually going to work?

This is nevertheless the framework in which the IPC would make its decisions, or now in the case of the MIPU 'recommendations', to the secretary of state. The basis for the NPS on nuclear sites in relation to MIPU is that:

> "...when considering an application for a new nuclear power station that is capable of deployment by a date significantly earlier than the end of 2025, the IPC should give substantial weight to the benefit (including the benefit of displacing CO_2 emissions) that would result from the application receiving development consent" (Ibid: 8)

This was further emphasised at the Whitehaven consultation:

> "We have gone for sites deployable by 2025. We are looking at large infrastructure operational between 2018 and 2025 with a 40-60 yrs lifespan. Energy infrastructure will be gas and coal before that. We want to lock in low carbon energy so we can meet later 2050 targets. We have an urgency for certain infrastructure. Beyond 2025 there are so many variables." (Whitehaven NPS Consultation, 2011: 7)

It is widely claimed that it is 'irrational' to oppose nuclear power plants which take ten years to build in Europe (Lynas, 2012) by the same people that write that there is now essentially no chance of stabilising global warming rise at 2°C and that dramatic cuts would have to take place – carbon reductions that have only ever occurred with massive economic collapse (Jackson, 2011). Žižek has recently argued with regards to the European crisis that the protests against austerity have similarly called 'irrational'; there is an idea that the experts should be allowed to get on with the hard work of austerity whilst limiting democratic involvement. For Žižek (2013) however, the protests show that:

> "the protesters know very well what they don't know; they don't pretend to have fast and easy answers; but what their instinct is telling them is nonetheless true – that those in power also don't know it".

Similarly, with these NPSs a huge proportion of the energy plan is shrouded in uncertainty. However rather than deliberate alternatives and contest and scrutinise the plans by EDF and the government in a public forum such as the inquiry, publics must have faith that these will be negotiated effectively in the future, and 16GW of nuclear power will be built by 2025. Thus faith in the government and large energy companies is rational, and to question this is irrational, in what has been critically identified as 'the new environmentalism' (Kingsnorth, 2012).

The IPC, MIPU and Confusion

The NPS consultations were also a crucial 'bridging point' as they were to discuss the operation of the IPC, as the NPSs would be the framework guiding the decision-making of this organisation. Questions regarding the IPC were raised frequently. In Bristol a local councillor inquired about the democratic legitimacy of the organisation, and whether the process would have to begin again given that it was transforming to the MIPU:

> Q: "My question concerns the IPC, which is to be abolished. It was clearly not a democratically accountable body, swept aside the generations of experience that have produced the local planning authority, which we are used to and which gives local people a voice, a proper voice in what will be built in their area and now we are told that the Major Infrastructure Planning Unit will take its place, but we are not allowed to start again on the process of whether a new nuclear power station should be built at Hinkley and I just... would you not agree with me that, first of all, that is a non-sequitur and secondly, how is it that this new body is going to be democratically accountable, please?"

> A: "Now, what's happened here in delivering more reforms, the coalition government has ambitions for full democratic accountability of major planning proposals and that is happening in two ways. First of all, in terms of these National Policy Statements that we're consulting on now there is a process in which parliament is scrutinising those National Policy Statements that's happening now. Secondly, the MIPU will not be making decisions but recommendations. It will be up to the minister to decide." (Bristol NPS Consultation, 2011: 14)

In London, the transformation from the IPC to the MIPU was again questioned:

> GS: "Something that I heard Michael Pitt, the chair of the IPC say the other day when he was describing their current status as an independent body and then looking forward to their new status, which is basically as a government department and he said that in the future it would almost be impossible for the IPC to continue to put the word 'independent' on anything describing it and I just wondered if you could comment on that, because at the moment that's one of their five or so founding principles.

> HH: Okay Giles.

> A: Okay, in terms of the IPC, yes the current arrangements in the Act allow for a provision whereby if the IPC say it produces a recommendation then that will come to the Secretary of State for a decision and the Secretary of State will make that decision within three months. So, that is how we envisage the process happening, though we have to wait and see the Localism Bill, because the Localism Bill will amend the Planning Act" (London NPS Consultation, 2011: 18)

Questioned on the timing of the NPS consultations in relation to this, a member of Greenpeace described that:

> "Again, with a lot that is going on here, the localism bill hasn't come in, so really how this transformation will work...the full details of it, aren't known, but we're consulting on a framework which we do not know the full details of, and an organisation that we do not know the full details of" (Interview with Greenpeace member, 2011)

Significant points are made here; one made earlier on related to how a robust 'business case' can be produced if the costing of the storage of nuclear waste has not been negotiated yet. This is not up to the IPC to judge however, because dictated in National Policy is the fact that there *will* be a solution for the permanent disposal of waste. The wider economic context related to the development of Hinkley C – the turbulent market context, is not of consideration because it is fixed in national policy that there *will* be a solution to the same question which stopped the construction of Hinkley C in the 1990.

Thus the IPC would be evaluating the specific case of whether Hinkley C should be recommended to go ahead, where changes in the wider policy context would not be of importance. As the system under the Planning Act is now 'front loaded', EDF had a duty to consult statutory and non-statutory stakeholders as a 'pre-application' process, in order to demonstrate to the IPC that they had consulted local communities sufficiently, delivered community benefit programs appropriately, and have a suitable business case that development could happen 'significantly before 2025'. Following this the IPC have a period of nine months to assess the application and conduct hearings with stakeholders including councils, businesses and registered members of the public. Crucially however, under the Planning Act there is no longer the process of cross-examination which was central to testing the evidence for a development in the old public inquiry led system, the IPC/MIPU can decide which issues are to be discussed in public, and which stakeholders are considered relevant to a particular hearing. There is a twenty-eight day period once the IPC have received the application to register with the process. The discussion will now turn towards the 'local' scale and consultations surrounding this.

EDF 'local' Consultations and the Preliminary Works: a 'highly unusual' planning application

This section sets out the activities related to the new space of the local consultations run by EDF, and the subsequent IPC/MIPU consultations. Looking firstly towards the EDF applications, it must be noted that having a private developer run the initial stage of the consultation is a novelty within the British planning system. The usual approach would of

course be that government, or an independent arbitrator, would mediate the process whereby publics and private interest could meet. Sedgemoor District Council and Somerset County Council were key stakeholders, and were also charged with assessing another aspect of EDF's plans, the planning permission for conducting 'preliminary works' on the new site at Hinkley. This new framework is based around 'efficiency', 'accountability' and 'transparency', where there is a more equal footing created between the developer and the local community, replacing the 'David and Goliath' struggle between centralised government and local council.

Such a view is worthy of scepticism however, given that the reality of decision-making for granting of 'preliminary works' is a cash-strapped, personnel-limited district council on the one hand, and on the other is a transnational corporation that is, in fact, 85% owned by the French State. Any suggestion of a balance here should automatically be discounted, as it was between the CEGB and local councils in the 1980's, in terms of resources alone. As a member of the NLFA described:

> "It's going to be very hard for the council in Somerset. So much of the structures in place to make the thing happen without question really, and then obviously the 'carrot' of jobs and so on is linked into that and few councils in the current climate are going to be actively saying no to jobs in that sense" (Interview with NLFA member, 2011)

This is a key point reflecting the nature of the consultations run by EDF. Given that NPS consultations were taking place and nuclear, along with aviation, was going to be 'site specific' once it had reached the stage of the IPC (Planning Act, 2008), the focus would be around local benefits and issues, including jobs and the siting of roads, without a remit to discuss the substantial issues of nuclear power at any stage.

EDF's consultation operated at different stages. The first stage was held between the 15th December 2009 and the 18th of January 2010 covering 'initial proposals and options'; the second stage was held between the 9th July and the 4th of October 2010, covering 'preferred proposals'; between the 25th February and the 28th of March 2011 a third stage was conducted, regarding an 'update to the preferred proposals'; finally between the 1st of July and the 12th of August 2011 consultation was held regarding 'proposed changes to the preferred proposals' including the M5 Junction 24 and highway improvements in the Bridgewater area (EDF, 2013).

This process involved public exhibitions, meetings with Parish Councils and relevant local authorities, and organisations (Ibid). EDF consulted formally for thirty weeks and as documented in EDF's application to the IPC, "significant changes have been made" to their case, through the consultation framework (EDF, 2011). These include a substantial

'community development fund' being proposed, including 6 million pounds investment in local colleges, job brokerage and outreach schemes, 1.75 million pounds for leisure facilities, and additional plans for road routes, as well as relocating 'park and ride' facilities and highway improvements (Ibid: 4). A number of issues had to be consulted on, to demonstrate that the local disadvantages did not outweigh the presumption in favour of the national 'need'.

EDF published their Statement of Community Consultation (SoCC), establishing how they proposed to consult with the local community, which was discussed with West Somerset Council, Sedgemoor District Council, and Somerset County Council (see EDF, 2009a). This involved two main stages of consultation. In the document it is stated that the minimum period required by the Planning Act to consult on a stage of proposals is twenty-eight days, but that EDF are consulting for a period of 'seven weeks' for each stage (Ibid: 4). As outlined:

> "This consultation is about EDF's site specific plans for Hinkley C, and directly related associated development, including, for example: proposed highway improvements, campuses providing accommodation and facilities for construction workers; potential park and ride sites, and freight concentration depots" (Ibid).

Due to the fact that there were also going to be NPS-related visits by DECC to discuss why the specific site of Hinkley was relevant to national policy in 2009, EDF were keen to get the timing correct on their local consultations in order to avoid 'consultation fatigue' (Ibid: 5). Unrelated to the Planning Act 2008, EDF were simultaneously applying under the Town and County Planning Act 1990 and associated Marine Legislation, to be granted access to perform 'preliminary works' on the designated site, a decision to be made by West Somerset Council.

The first stage of consultation involved a range of activities including several exhibitions addressing the benefits of the Hinkley C development to the Somerset area. The pre-consultation stage involved several exhibitions around the local area detailing the benefits which the Hinkley C development, as well as nuclear power in general, would bring (EDF, 2009b). These exhibitions provided an overall 'framing' for the consultations that followed. The first piece of documentation which set up the consultation outlined that the government NPS addresses the need for, and siting of, new nuclear, and therefore EDF's DOC "would not address those" (Ibid: 11). This consultation would be for statutory and non-statutory consultees. Following this, the introductory section set out the "need for early deployment of nuclear power" (Ibid: 11), as well as a page setting out in minimal detail, why there are no suitable alternatives to the development (Ibid: 12)

The first stage engaged with statutory consultees including the National Grid and the local councils in addition to the running of the public consultation. Initial proposals and options were consulted on both through meetings and websites addressing a range of issues from sustainability, community benefits, offsite development, training and procurement, to name a few (EDF, 2009c). More exhibitions, meetings and consultations followed, in Stage Two, which addressed preferred proposals related to accommodation proposals, park and ride facilities, the Cannington bypass, and freight logistics facilities. In addition to this, environmental appraisals and flood defences were also outlined (EDF, 2010a) Again, the public consultations included several 'exhibition boards' outlining the details of the development (EDF, 2010b).

These consultations were far from perfect however, and significant disquiet emerged from local councils in 2010 regarding EDF's consultation. West Somerset District Council and Somerset County Council referred to EDF's consultation as 'unacceptable' given a perceived lack of detail over worker accommodation and transport plans (BBC News, 2010a). EDF responded that the criticism was 'quite unfair', and that they had consulted properly. However the council also addressed that EDF had done the 'bare minimum' in terms of listening to the local community (Ibid). It was also addressed by EDF that they should not be seen to be 'purchasing consent'. However, controversy also surrounded the 'community fund', with criticisms that one million pounds was insufficient, and more was required (BBC News, 2010b). Whilst one million was the stated figure, it was observed that this was misleading as many thought this applied to an initial sum, but actually represented the community benefit package for the duration of the life of the power station, thus it would amount to only around fifteen thousand pounds a year (Ibid). Other controversy surrounded a community in Bridgwater willing to 'fight' EDF over a 'park and ride' facility (BBC News, 2010c).

In an official response to the EDF consultation, West Somerset District Council wrote that there was "insufficient depth" to the proposals of EDF which had inhibited their ability to fully assess the details (Somerset County Council, 2011: 2). Issues outstanding, as the consultation progressed and got closer to the IPC stage and the submission of EDF's DCO, were around traffic, particularly in relation to overflow caused by construction traffic at Bridgwater, bypass developments around Cannington, Community funds, workers accommodation, and disruption to the parish council of Stogursey.

The central aspect was that policy and indeed 'issues' relating to nuclear power development were separated on a scalar basis, as between 2010-2011 revised NPS consultations taking place in Bristol, Manchester, and London, were overlapping with the local EDF consultations based around the specific development. Attention was focussed

around road developments and community packages whilst a lot less emphasis was placed upon the increasingly thorny issue of 'interim storage'. 'Interim storage' was the term used in EN-6 to describe the fact that HLW would need to be stored above ground for potentially 160 years, as it would require this time to cool before it could be transported (DECC, 2010). It was later estimated that it was more likely to be "40 to 50 years" (DECC, 2011a;b). Whether 160 years, or 40-50, this is not an insignificant time period. It was these issues of a more substantial nature which did not find their way into the main spotlight in the EDF consultations. In terms of the political groups surrounding 'in principle' issues, local people were not being presented with some of the more fundamental questions:

> "Asking, do you want lots of jobs and money for a while, and do you want a nuclear waste dump located on your coast or two very different questions. One gets rammed down people's throats constantly at the exhibitions and the promotional events, where EDF boast about how much they are doing, the other issues are never discussed...A lot of that stuff is about roads and developments to do with the site. We don't really bother to attend those. No point" (Interview with SHE/StopHinkley member, 2011).

Whilst EDF recognise groups such as Parents Concerned About Hinkley, and Hinkley Action Group, and StopHinkley as stakeholders, many felt ambivalent about engaging with them in the first place:

> "Because there is no way that the issues we want to discuss can be discussed, it is of no use to us. It's a propaganda exercise, to show that they [EDF] are a 'caring sharing' organisation that even listens to the crazy folk. It is just to show they have done it and strengthen their application to the IPC. So we're damned if we do, damned if we don't. If we go along it's a big waste of time, and people get more angry or apathetic. If we don't then they can still say, 'well, we tried. I suppose everyone agrees then!' I feel that to go along to these things would be to justify the whole sordid process!" (Interview with FoE member, 2011)

Substantial controversy surrounded the 'preliminary works' decision made by West Somerset District Council. This was an 'unprecedented' decision, which was to allow EDF to perform preliminary works on the site, before either a planning decision had been made on whether the power station should be built, or a nuclear licence had been received from the Nuclear Installations Inspectorate.

EDF consulted on preliminary works during Stage One of the local consultation and submitted substantial numbers of documents regarding such works. The extent of what preliminary works would entail was fully realised by local people, and caused controversy. This was a strange form of planning decision as it was restricted to deliberation by the

Somerset District Council's decision, yet, again 'need' had to once again be considered. At the actual decision, which I attended, Hergen Haye from the OND at DECC gave the first speech giving a mixed message that this was the decision of the council's however the reason permission was being asked for was because of a position of national need. EDF submitted a 'statement of need' as part of the documentation outlining that "EDF Energy recognises that this is a *highly unusual* planning application, however, it is designed and submitted in response to an exceptional national need." (2010c Original emphasis).

Whilst this was a decision to be taken by West Somerset Council within the framework of the Town and Country Planning Act rather than the Planning Act 2008, in the statement it was addressed that:

> "They are necessary as Preliminary Works to the Hinkley Point C Project to expedite the construction programme so that the new power station can be operational as soon as possible. EDF Energy's programme is for the new power station to commence operation in 2018. This is in accordance with the Government's policy to encourage the early deployment of new nuclear power stations" (EDF, 2010d: 1).

The 2018 deadline shall be returned to as it is important to realise that this underpinned the stated reasons for the development at this point in time. This reasoning however, may look very different when perceived from the present state of affairs at Hinkley Point however. Nevertheless, again it was emphasised that the granting of preliminary works would specifically assist to the national priorities:

> "The benefits of early deployment are that Hinkley Point C would contribute earlier to replacing the UK's aging electricity generating infrastructure, to enhancing energy security and diversity of supply and, crucially, to decarbonising our electricity supply." (Ibid: 2).

Thus this was considered a crucial phase in meeting national policy objectives:

> "Accelerating the completion date of Hinkley Point C by twelve months would result in a saving of approximately twelve million tonnes of carbon dioxide, which would otherwise be emitted from power stations burning fossil fuels. (Ibid)

If EDF's noble quest to save the UK from higher emissions through rapidly developing one nuclear power station were granted, what would 'preliminary works' include? Whilst initially seeming fairly modest, local concerned groups and campaign groups became uneasy as the extent of the preliminary works became clear. They would involve site clearance (including vegetation removal, fence removal, demolition of existing buildings, and creation of alternative footpaths), deep excavations, drainage infrastructure, site establishment works (including car parks, haulage roads, roundabouts, and diversions),

and the provision and operation of plant machinery (West Somerset Council, 2011).

This amounted to a significant level of work and disturbance to the local area as well as surrounding natural habitats. As the hundreds of documents relating to the preliminary works application were studied, it was argued by opponents that what was going to be created was "the biggest hole in Europe" (Morris, 2011). Both local groups such as the residents of small hamlets in the Parish of Stogursey, as well as campaign groups and NGO's, were significantly concerned about the sequence of events, given that there was no certainty, or should be no certainty that permission would be granted by the IPC for the construction of the actual power station. As a member of StopHinkley stated:

> "We opposed the very idea that the works were preliminary as they called them. That amount of work cannot be separated from the actual construction of the power station. The point made was what happens if EDF turned round and declared that they didn't want to build the power station after all? You're then left with a giant hole in the ground, areas of countryside and footpaths destroyed, all for absolutely nothing" (Interview with SHE/StopHinkley member, 2011)

EDF were however aware of this problem, and declared in their application that "In the event that planning permission is not granted, all land and surrounding habitat will be returned to its previous condition" (2010c: 3). It was estimated that the works could amount to more earth being moved than at the Olympic site at Stratford (Vidal, 2011), and thus scepticism arose surrounding two aspects of the application. Firstly regarding the idea that the site could simply be returned to a previous state, and secondly whether a neat designation of these activities as 'preliminary', rather than constituting the beginning of the construction of the power station itself (before planning permission had been obtained) was realistic.

There was strong public opposition regarding this application, voiced on the West Somerset District Council website:

> "The planning process has been split. Preliminary work can start destroying ancient, irreplaceable trees and hedgerows when the decision is made not to have nuclear power stations in the UK" (West Somerset District Council, 2011: 6)

> "It is utterly disgraceful (but understandable) that EDF believe it can get permission for all these highly destructive preliminary works before the Govt has finally decided to fund new N- stations. Who else would be allowed such freedom outside of the normal planning process? It also appears that EDF are billions of Euros in debt so how would they be able to fund a removal of this early stage work and reinstatement (how do you reinstate ancient pasture land and hedgerows, for crying out loud? If they are still in

debt but without permission for the station itself, they will surely leave everything in place and defy your attempts to get them to carry out their legal obligation! Without doubt you must turn down this application resolutely." (Ibid)

"A cynical eroding of people's energy to object by making them think that work has started and therefore it is too late for their opinion." (Ibid)

"I object because EDF (who I know well after having lived in nuclear-powered France for seventeen years) are presuming (know?) that they have planning permission." (Ibid)

"No planning permission should be granted until/if full consent has been granted to construct a new power station." (Ibid: 7)

"I object to this application on the grounds that: 1. It assumes that planning permission will be granted for the build of the nuclear power stations when this cannot be known. It is not possible to reinstate pristine countryside, trees etc. to their original state once the area has been destroyed by levelling etc. 2. The road infrastructure is not in place to carry the vehicles needed for this work" (Ibid)

"...strongly object to the proposed development. It is unethical to prepare the site for Hinkley Point C when the plans for this nuclear power plant have not been approved. If the land is prepared in advance, it adds a weight to the argument to build what is a highly contentious project. If the plans are not approved, it would be needless disruption to the local environment and wildlife, besides being a waste of resources. If the council approve of this proposed development, it would be blatantly condoning the building of Hinkley C and showing support for the nuclear power industry"(Ibid: 2)

"Frankly allowing such range of works to take place for what may never come to be built seems to be an attempt to involve the local authority and many other organisations in starting the project before it's agreed and approved. Any and all such "preliminary works" should wait their time until the actual project is (if it ever is) really going to be begin" (Ibid)

I previously submitted an objection when the application was first lodged and now I would like to reinforce that by requesting permission to address the Planning Committee at its 28th July meeting (note I shall not arrive until 11am) and making the following written points :- (1) The prematurity argument is still by far the strongest in refusing this application on planning grounds and it is now strengthened by the fact that the application is shown in reality to involve such an enormous amounts of preparatory site works, all of which constitutes so much desecration and destruction of the whole 500 acre countryside site AND so much detrimental infrastructure impact on its surrounding environment (particularly on normally quiet villages and their flows of traffic, overall noise levels and regular use of footpaths), that it surely cannot be divorced from the main nuclear new build plans which are due to be submitted to the IPC and Secretary of State in the coming autumn. (2) Another strong reason for refusing the application follows on from this,

either to support the prematurity argument in the event of its being accepted, or to act separately from it should it be not accepted, or reckoned not to be conclusive enough: this is the ridiculous, impossible promise by the applicant to "remove all structures and reinstate the site" together with the now imperative government's big carbon-pricing public subsidy, inconclusiveness about high-level radioactive waste disposal, incalculable decommission costs, unknown delays in construction (ref. present French and Finnish EPR new-builds), dangers in designs of the new over-sized reactors, dangers associated with big natural or terrorist disasters (unprepared for, or unmeetable). (5) In view of all the imponderables entailed in the above arguments for refusal, last, but not least, is the biggest local council argument of them all for refusal, in that the enormous amount of disturbance entailed to local residents and their/everyone's environment and daily lives is such that EDF's demand to desecrate and destroy the site now, so far in advance of any confirmed approval of the whole new-build project is just not on - both on planning and good general management principles." (Ibid: 1)

The crucial planning meeting to make the decision on the preliminary works occurred on 28th July 2011 at the West Somerset Council's offices in Williton. A large protest group had gathered outside the council offices, with police and security on the door. This application was being conducted under the Town and Country Planning Act 1990. Statements were made by members of the public both for and against the application. Those for, including a Head-teacher from the college at Bridgwater pointing out that "EDF are to invest significantly in projects with the college including a construction centre at Cannington which would provide long-term legacy benefits" (West Somerset Council, 2011b: 3), as well as a representative from West Somerset Community College outlining that substantial investment would be made to the college through the EDF project, and therefore it should be supported. A representative from the CBI argued that this decision was needed as a "secure low carbon energy mix was essential for national business" (Ibid: 2).

From objectors, members of Stogursey Parish Council outlined the great disruption which would be brought to the villages due to the preliminary works, stating that they did "...not believe that any other developer would be allowed to undertake initial works such as proposed by the application" (Ibid: 4). From Stop Hinkley campaigners, the message was that works of this scale, were "...laying the foundations before permission had been obtained to build the house", and that "the description as 'site preparation works' was not accurate", as it constituted the beginning of the construction of the power station. Commencing work would "make it easier for the main DCO application to be approved" (Ibid).

The council voted in favour of the decision to grant permission to EDF to begin preliminary works, but for those critical of the overall development this represented a

worrying step because:

> "It was effectively a clear indication that EDF could do whatever they want. There was nothing to be gained from allowing this, other than strengthening EDF's hand for the actual planning decision. Sickening really! Sorry!" (Interview with Hinkley Action Group member, 2011)

Tensions were increasingly high, and as the IPC stage approached and protests become far more frequent. As EDF prepared to submit their DOC, political campaign groups were becoming more active around the Hinkley site, especially in the wake of Fukushima in March 2011. This will be discussed further in the concluding chapter.

The Planning Act, Spatial Politics, and Post-Politicisation: Towards Confusion and Confrontation

One of the most significant differences between the new framework and the public inquiry is the way in which publics are fragmented around particular issues. Unlike the inquiry, when the spatial dimensions of what constituted the issue of Hinkley C were open to extension and negotiation, there is no opportunity to extend the scale and scope of the Hinkley consultation. Many 'locals' now will not hear about the 'interim storage' facility, potentially holding HLW for 160 years; there will not be a discussion of evacuation plans, or of whether the economic case may make Hinkley C an unviable option, hence meaning the massive disruption of the preliminary works would be for nothing. These are issues settled at national policy and, regardless of new evidence arising regarding the 'external conditions' which may put the project in danger, cannot be discussed as in the 1980's inquiry. Issues and space are rigidly defined within one another, uniting the spatial and the political.

As Dikeç (2012: 2) states, "space is a mode of political thinking". For Rancière (1994: 31) "the power of mapping together a discursive space and a territorial space, the capacity to make each concept correspond to a point in reality and each argument to coincide with an itinerary on a map" is a form of post-politicisation. Here issue and space are fixed, as are the publics which surround them. By closing off issues into particular settings the broader nuclear debate is in effect foreclosed, as the issues are treated separately rather than as part of a more general ethical discussion around the implications of the particular deliberate decision to build new nuclear power. Similarly, local and national publics are fragmented so the kinds of 'subversive coalitions' described by Cowell and Owens (2006) are curtailed. The 'good clean fight' described above is foreclosed, replaced by distrust and confusion, and as will be discussed in the next chapter, new forms of political confrontation as a backlash against post-politicisation.

Conclusion

This chapter has focussed on the new spaces of public engagement around nuclear power created by the Planning Act 2008. Firstly, NPS consultations were examined. In terms of the meeting in Bristol, the confrontational nature of the consultation was highlighted. Discussions often revolved around the NPSs as already having been decided, with many participants used the NPS consultations as an opportunity to voice concerns towards government that they considered the process to be undemocratic.

The way space directly impacts on the argumentative and the issues under consideration were discussed. The 'salami-sliced' nature of the NPSs in relation to certain issues caused significant problems in regards to certain important issues which the IPC would take as fixed government policy and not examine. In particular matters relating to the economic aspect of the technology as well as issues of waste, were isolated from the main thrust of the national policy conversation. What is suggested by the comments of participants is that it was not possible to fully weigh-up NPSs without this information. Thus, many felt the NPS consultations were inadequate.

Policy insulation was also achieved by ensuring that matters arising externally would not be regarded in terms of the decision-making process of the IPC. Crucially, publics were segmented on scalar grounds related to particular issues. Thus issues raised at local level, by local participants, such as emergency action plans, the competence of EDF, and alternatives to government policy were ruled out of discussion, and negotiations were tightly contained to specific spatialities. This can be theorised as post-politicisation through spatial segmentation.

In the next chapter the consequences of post-politicisation within the Planning Act, are discussed.

9

Chapter Nine: From Consultation to Where?

Introduction

This thesis has explored the political and democratic consequences of public engagement around nuclear power in the context of the Planning Act 2008. It was argued that these changes could only be fully understood within an analysis of the articulations of politics around nuclear power experienced previously. The Planning Act was viewed, in part, as a response to key tensions that developed in previous 'eras' of nuclear power development. Chapter Six explored the politicisation of the Hinkley C Public Inquiry through various spatial strategies enacted by campaign groups, which led to policy exposure and the abandonment of the project due to privatisation. Attempting to reconcile favouritism for markets with the technology was identified as key driving force behind future reforms. Chapter Seven focussed on the participatory era of nuclear power in which a key tension emerged between New Labour's preference for participatory and horizontal governance on the one hand, and on the other the need to 'get things done' with regards to nuclear power. The Planning Act responded to these tensions. It rescaled policy, and stripped away the public inquiry in an attempt to insulate policy from external threats. Chapter Eight explored the new, rescaled spaces of public engagement around nuclear power, where confusion, confrontation, and reduced political opportunities are all notable. The Planning Act was said to represent a process of post-politicisation through the rescaling of policy and an imposed consensus. The implications of this in terms of future forms of public engagement shall now be discussed, in terms of the 'displacement' of the political from formalised spaces of public engagement around nuclear power.

Political Displacements

Protest
Alongside the final stages of EDF's pre-application consultation, and the MIPU stages, different modes of public engagement were beginning to emerge around the Hinkley site. This section discusses the significance of these new forms in terms of 'returns' of the political, constitutive of the displacement of politics from planning. These are important considerations in terms of the political and democratic consequences of the Planning Act 2008.

On the 3rd of October, 2011, approximately four-hundred people blocked the entry to Hinkley B power station (BBC News, 2011). Many members of the blockade were from Somerset, however also in attendance were protestors from Wales and even from French nuclear campaign groups. This also included a protest march through the local town of Bridgwater. A protestor was interviewed and explained their reasoning as, "At the

moment there isn't a debate, the government's told everybody you've got to have it whether you like it or not and we're countering that" (Ibid).

In February, 2012 it was reported that an abandoned farmhouse on the proposed construction site of EDF's preliminary works had been occupied by a group of activists (BBC News, 2012c). A statement was released explaining that:

> "The government has steam-rollered this through. Either EDF is behaving in a grossly insensitive way by clearing 500 hectares of land, or they know that they will get permission to build the nuclear station. If it is a done deal then the consultation is bogus. The democratic process has been dispensed with completely" (Simon, quoted in Vidal, 2012).

The occupiers outlined the 'preliminary works' application, enabling substantial work to be undertaken before the permission for the power station has been granted, as being particularly problematic:

> "This is like someone who has not got planning permission digging the foundations of a new house. The extent of the activity, the clearance of most vegetation, hedges and trees, the excavation of more than 4 million cubic metres of soil and rocks, the re-routing of underground streams, the creation of roads and roundabouts, major changes to the landscape … mean it is effectively the beginning of construction of the proposed Hinkley C nuclear power station" (Aubrey, quoted in Vidal, 2012).

Legal papers were served to the protestors, and EDF took the case to the High Court in London. An eviction notice was served, however EDF were also seeking the unprecedented move of gaining an injunction which would ban the StopHinkley group to access the land ever again, or even, encouraging other people to do so. The latter aspect would be problematic if implemented, as deciding what actions constituted 'encouragement' could have potentially involved for example, written material on websites, and newsletters (Utility Week, 2012). This was rejected by the High Court as it was deemed that there was no evidence that the group were encouraging illegal activity, it was declared a 'victory for free speech' by the protestors (Ibid). Subsequently, High Court Bailiff's carried out a dawn raid, and two protestors were arrested, they subsequently appeared in Taunton Magistrates court, but were not found guilty of any offence.

On the 10th and 11th of March 2012, on the anniversary of Fukushima, around 700-1000 people gathered for a twenty-four hour blockade of the nuclear plant, forming a human ring around the power station (BBC News, 2012d). This was the largest nuclear demonstration in the UK since Torness in 1979. Activists from Wales and France attended, with speakers including Jonathan Porritt and Caroline Lucas, at the time Head of the Green Party.

A further weekend of action took place on the 6th and 7th of October with protests in Bridgwater and around the Hinkley site attended by hundreds of people. This was followed by a "trespass" onto the site of the proposed reactor at Hinkley C. Here over fifty people were thought to be on site, scaling the wire fence, and seven people were arrested (BBC News, 2012). The 23rd of November saw a dawn raid on the entrance to Hinkley Point C leaving workers locked out, as protestors chained themselves together to block the road, resulting in seven arrests (ITV News Website, 2012). The protestors stated that:

> "EDF still don't have planning permission for the new nuclear plant, the government's energy policy is in tatters. With Centrica pulling out and the long awaited Electricity Reform Act delayed, there is not even enough investment to finish the project." (Ibid)

As touched on in Chapter Two, a now infamous debate took place between one of the protestors from the Hinkley Occupation and Guardian journalist George Monbiot, who is famous for changing his views on nuclear power. In the debate, Theo Simon stated that:

> "George, regardless of your own preference for nuclear, I assume you accept that for this process to be meaningful it must include the possibility that EDF's application will be rejected. If not, then you would have to accept that we now live in a planning dictatorship and that the whole IPC process is in fact a charade at public expense. But if we assume that the consultation is genuine, then clearly by any normal standards of fairness and objectivity it would be wrong for major construction to commence before the permission has been granted. But bizarrely that is exactly what has happened here in West Somerset." (Monbiot and Simon, 2012)

As the debate unfolded, Monbiot clarified his position, stating:

> "I now believe you are right to be campaigning against a planning system that is grossly undemocratic and unfair, and against the way in which it is being used to steamroller this project past public objections." (Ibid.)

Legal Action

When Greenpeace were successful in their judicial review against the government's consultation on nuclear in 2007 (as discussed in Chapter Seven), The 'Solicitors Journal' asked 'is this a taste of things to come?' The Nuclear Consultation Group, wished to launch a legal challenge against the consultation in 2007 after the government's own marketing standards agency deemed it to be flawed, but had insufficient funds to do so (Interview with NCG member, 2011). The first round of NPS consultations were forced to be repeated as it was feared that specific wording relating to the appraisal of sustainability and waste

disposal may leave the government open to legal challenge (Interview with Civil Servant from OND, 2011).

The view of FoE in relation to the new planning framework was that; "Judicial review is the only real way of challenging the IPC and bringing forward issues that have not been brought to attention" (FoE, 2010: 14). When the second revisions of NPSs were concluded, Greenpeace launched a further judicial review against the government (Macalister, 2011). This was against the rushed decision to conclude the NPSs when the full Weightman Review into the Fukushima accident had not concluded.

The court case was unsuccessful due to the fact that safety issues are not considered by the IPC. Wording was also changed in relation to the selection of sites as 'suitable'; the implication here was that given that national policy had identified the sites as suitable, the IPC/MIPU could not recommend against the application due to the fact that localised impacts must always be judged within the context of national need. However, the wording was changed to 'potentially suitable' to avoid this problem; thus Walker (2012), a lawyer who runs a well-renowned blog covering the Planning Act, concluded that the NPSs are "...immune from legal challenge". When Greenpeace did launce a legal challenge, controversy surrounded a Freedom of Information (FOI) Request by 'The Guardian' revealed that the government had been 'sharing intelligence' with EDF over Greenpeace's legal action (Edwards, 2011a). Previous controversy surrounded another FOI request by 'The Guardian' which showed that only two days after Fukushima emails were sent by a civil servant to EDF stating that "We need to ensure the anti-nuclear chaps and chapesses do not gain ground on this. We need to occupy the territory and hold it." (Edwards, 2011b).

Furthermore, concern was raised in relation to Senior Civil Servants being 'wined and dined' by various representatives from the nuclear industry at some of London's most expensive restaurants, with meetings being defined as 'informal' and therefore with 'no notes taken' (Hickman, 2012). Elsewhere a report entitled 'A Corruption of Governance' (Bailey and Blair, 2012) set out to establish that the forecasting figures on energy use had been misleading and a case could be taken to the European Court (Macalister, 2012). The report asked "have we witnessed evidence-based policy making or policy-based evidence making?" (Bailey and Blair, 2012: vi). The case was unsuccessful but is ongoing regarding the ways in which the case for 'need' was presented. This will be discussed further in an assessment of the prospects of the UK new build programme in the context of the Planning Act.

The Return of the Political and the Planning Act

Discussions of the political as dissensus within the context of nuclear power policy have been a key focus of this thesis. Each chapter has taken as a starting point, the *where* of politics, and the channels through which politics is pursued, as well as the forces, issues and processes which give rise to the differing politics of each of the three eras of public engagement identified. This has revealed the varied practices which constitute the political constellation around nuclear technology. The post-politicising tendencies of the Planning Act constitute its own backlash however, as politics is displaced towards alternative forms of public engagement. The section examines the increasing prevalence of direct action, not witnessed within the 1980's, around the development of new nuclear power, as well as increasing use of legalistic means of dissent.

Another dimension of the 'post-political' literature will be now emphasised in relation to the necessarily incomplete nature of the post-political. As Swyngedouw (2009: 605) describes "...the disappearance of the political in a post- political arrangement leaves all manner of traces that allow for the resurfacing of the properly political". Similarly, Žižek describes how "the suffocating closure [of the post-political] gives birth to 'irrational' outbursts of violence as the only way to give expression to the dimension beyond particularity" (1999: 244).

The changing locations and methods of engagement in relation to nuclear power can be summarised as follows; Unlike Germany or France, the UK only had a very brief period of large-scale direct action in relation to the construction of civilian nuclear power, with the planning around Torness in 1979. The inquiry only lasted a matter of days and was limited in terms of the issues discussed. These protests however moved into the setting of the public inquiry both at Sizewell and later, and for a shorter time, at Hinkley C. Political opportunities were available for extending the inquiry and thus it was produced as a viable setting for groups to pursue their aims. The Planning Act is a form of attempted post-politicisation as foreclosure, as concluded in Chapter Eight. As the quotes above indicate however, a key aspect of the post-political literature is focused upon 'returns of the political'.

Political opportunities for articulating dissensus on a particular issue have been displaced from the planning framework through the Act. As Allmendinger and Haughton (2012: 12) write in relation to post-politics enacted through planning reforms, "one implication is that we can expect there to be resistance in forms outside of the redefined politics". Within the responses of campaign groups with regards to nuclear policy, there are three trends

which are visible. Firstly, a substantial increase in nuclear protests and direct action, who describe the bypassing of the democratic role of planning as one of the main reasons, especially in relation to EDF's 'preliminary works' application. Secondly, increased legal action, and thirdly, related to this, increased action at alternative scales such as the European scale.

Implications of New Forms of Public Engagement

The 'Solicitors Journal' was correct in its 2007 speculation regarding the increased likelihood of judicial reviews by environmental groups such as Greenpeace. These have become the norm rather than the exception within the new framework of the Planning Act. One could suggest that as it has mainly been Greenpeace that have been launching these legal challenges, there is not therefore substantial opposition, as Greenpeace are *always* going to protest these things and do not represent wider views. As Allmendinger and Haughton (2012: 12) point out however, legalistic frameworks are "…accessible only to those with the expert support and financial means to participate". Even Greenpeace, a large NGO, has to seriously consider how to use their budget. With multiple battles to be fought such as drilling in the North Sea, rainforest destruction, escalating climate change, and deforestation to name a few, it is perhaps surprising that even they are going to the expense of judicial review in consideration of this. Many other environmental NGO's are simply priced out of this form of engagement.

The other side of the increasing use of legal means is the profound imbalance between the developer's power and local campaign groups, something which was previously lessened through the presence of an independent inspector. As FoE observe in their Planning Act briefing:

> "The Commission will have a set of legal advisers to advise them on the process of the hearing, but there will be no free legal advice available to the public who are involved." (2010: 11)

Highlighting the significant discrepancy between the balance of forces within the increasing legal action was the High Court Injunction sought by EDF. There is a widely available video on the internet on sites such as YouTube. It features anonymous lawyers from EDF marching up to the cottage to deliver a substantial box of legal papers to a small group of people without a lawyer or the funds to get one, where their bodies are the only source of resistance left. This reveals "the dark, cynical under side of legal power" (Žižek, 2008: 10). In fact it is a moment where very briefly the veil was lifted on the whole process surrounding Hinkley. Against all the talk of consultation, community engagement, fair planning hearings, and participation, the 'real' of the situation was briefly glimpsed; a

company with 65.2 Billion Euros in revenue and multiple specialist legal teams trying to evict a small group of people without legal representation, in order to remove 400 acres of soil as 'preparatory work' for a project for which they have no planning permission. In the background, a virtually bankrupt local council (Parker, 2012) attempting to scrutinise 30,000 pages of highly technical documentation in the form of EDF's application, in an attempt to maintain local democracy for their constituents.

Another aspect of the legalistic approach is to consider how it impacts upon the relationship between non-governmental stakeholders and government, and the nature of important debates concerning the energy future of the country for the next 70-180 years. This also relates to the discussion regarding the efficacy of the NPS framework around large scale infrastructure, which will be discussed in more detail shortly. However, this specific point relates to the increased use of judicial review as the main means of dissensus. As could be seen with the NPSs, there the engagement between government and NGOs seems to be a more guarded one, based around second guessing one another in terms of particular wordings and phrasings which could prove to be open to legal challenge.

Thus 'early consultation' as a respondent featured in Chapter Eight suggested, could be more focused upon information gathering on the part of government concerning how to insulate a particular policy from judicial review, rather than genuine discourse over the substantial issues related to the policy in question. This is understandable; to guarantee certainty to the policy formation and provide timely infrastructure it is only natural that the government seeks to protect against legal challenge. However, three issues must be considered.

Firstly, consultations may be increasingly viewed as cynical exercises in information gathering to protect decisions already taken in the future, rather than seeking views on alternatives to preordained policy directions. This may actually discourage participation as NGO's may not want to 'give away' the potential to challenge in the future. Secondly, as I found out during the research process it creates a hushed-up policy process on the behalf of NGO's. I happened to contact some members of Greenpeace during the legal challenge concerning Fukushima, and I was informed that they were sorry but whilst they would like to speak to me, this would not be wise in consideration of the ongoing legal challenge as no statements were being made by Greenpeace concerning government policy during this time. This would not appear to be strong grounding for a healthy, deliberative, trust based public sphere. Thirdly, the irony is that whilst the subtle rewordings within NPSs and other policy documents is carried out to ensure certainty, it may be have precisely the opposite effect. Great vagueness around terms including sites as 'potentially suitable'

rather than 'suitable', nuclear making 'as much a contribution as is possible', being 'essential' but done in a framework where maybe 'none', 'one' or 'two' are built – such language is needed in order that decisions taken in the future are not exposed to potential legal challenge.

Protest: A Battle Against the Planning System?

There are many ways for publics to 'engage' with energy policy, and there are substantial alternatives to engaging with NPSs. For example, building low carbon futures through decentralised community energy projects such as transition towns is one such proactive approach. For those involved with centralised energy policy and those critical of nuclear power however, the displacement of the political is problematic (Allmendinger and Haughton, 2012; Marres, 2005; Metzger, 201).

As outlined above, protests have become increasingly prolific as a more effective means of engagement than through the MIPU process. It is important to point out that when the Planning Act was announced various commentators voiced concerns that the reforms would lead to a backlash against the planning system due to insufficient public engagement. There were "…fears that it bypasses the democratic process" (Planning Magazine, 2009: 1). Ellis (2008) wrote that the changes "will force moderate environmental opinion to choose between legal challenge and direct action, and the bill will generate both on an unprecedented scale."

Journalist John Vidal stated in 'The Guardian' (2009) that:

> "We can expect simmering frustration, resentment, widespread feelings of disempowerment and in consequence possibly more direct action and divorcement from the political process"

In the planning literature it was also suggested that "removal of the right to be heard may be important- perhaps even a justification for alternative forms of representation, such as direct action." (Newman, 2009: 165). Similarly, Ellis argued that the system is likely to "generate substantial public dissent" (2008: 1). Drawing on this research, and from by the political consequences of the Planning Act through the case of Hinkley C, these concerns have been proved absolutely valid.

I would argue that this is not just a case of 'out of touch' environmental NGO's who have been made increasingly angry by the way the process has been carried out. Whilst there are differing views on nuclear power, one thing which visibly united participants at the planning meetings, and from the interviews and conversations I have had throughout this process, was immense anger towards both EDF, and the MIPU. Feelings of resignation and

anger at the process were voiced throughout the open-floor hearings (MIPU, 2012). The West Somerset-Sedgemoor Council reports outline many problems with the pre-consultation, such as EDF refusing to release documentation, refusing to extend stage two beyond thirty-one days, and the IPC stage put on hold as funds were not delivered to relevant councils by EDF. The council survey of local residents uncovered a general feeling of resignation, that the EDF proposal was a 'fait accompli' which, the council noted, "is not a feeling that encourages people to get involved" (West Somerset County Council, 2000: 30).

Post-politicisation is an anti-democratic act, in that it is the foreclosure of relevant voices as legitimate. Žižek describes the political struggle as the "struggle for ones voice to be heard" (1999: 221). This phrase is pertinent, due to the fact that the key element taken away from the public inquiry system from the Town and Country Planning Acts is precisely 'the right to be heard'. Thus post-politicisation, and the effects of the multiple new scales, and new issue-based forms of consultation, have at times resembled Crouch's (2004) description of post-democracy, and the development of a 'negative activism' of blame and complaint. Whilst efficiency may be improved, wider considerations of how the public sphere is affected by such changes must be considered. As Crouch states with regards to consultations, they are a "...means of encouraging the maximum level of minimal participation" (2004: 112).

The Planning Act On Its Own Terms: Public or Economic Opposition to Nuclear Power?

Nuclear New Build

It is only fair to pay credence to the efficacy of the new system as well as focusing on more political and democratic matters. The Planning Act must be viewed in terms of its stated goals which revolved around 'speeding up' the planning system, making it more efficient and developing timely infrastructural development. The development of new nuclear power was one of the main reasons for such change (Hutton, 2008). There were serious problems with the previous inquiry-based system around large-scale infrastructure, including notable delays, and disruption. Nuclear power has suffered delays through the planning system in the past, and therefore it was necessary to reform planning of large-scale infrastructure due to the need for new capacity over the next twenty years. Nuclear power is a low carbon technology and therefore could contribute to significant CO_2 reductions and base load energy.

Therefore an argument made in relation to the political impacts of the new forms of public engagement surrounding nuclear power is perfectly acceptable; the technology is needed

as the government states *significantly before 2025,* and therefore opposition is wrong and the 'right to be heard' of campaign groups for example should be curtailed in order to speed up development. The government set out the need for nuclear in the Energy White Paper 2008, and that need alone justifies the transformation associated with the Planning Act. John Hutton, in a speech to the nuclear industry, declared that the new planning system would substantially speed up and create a more efficient nuclear policy (Hutton, 2008). Nuclear is needed, it is argued, due to the 'energy crunch' predicted from 2015 onwards, as well as combating climate change. The Planning Act will speed up its development. If there is engagement such as an inquiry, then public opposition, which is irrational and can cause delays, may stall construction. This is the line of argumentation justifying the Planning Act so it should be judged whether such speeding up has been achieved.

The problem of public opposition was identified in EDF's submission to the government's Energy Review as a specific problem to nuclear new build (EDF, 2005), and was identified in the Energy Review (2006) by government. Elsewhere, it has been concluded that public opposition could present the most significant barrier to nuclear new build (Ramana, 2012). Certainly, Germany has a long history of strong opposition towards nuclear power which was part of the reason why the decision made by the German Government following Fukushima was not entirely unexpected (Mecklin, 2012). The STC report (2012) addressing nuclear risks similarly focuses on the role that public misunderstanding plays in terms of the difficulties of establishing new nuclear. It argues that if the correct knowledge was imparted to the public then the industry could fair much better. Lynas (2012) argues that it is 'left wing' dogma which has held the nuclear industry back. Part of the 'new environmentalism' is that 'environmentalists should be market friendly' and 'happy with capitalism' (quoted in Rustin, 2011).

An editorial in 'The Economist' (not usually associated with what Lynas refers to as 'left wing dogmatism') stated that 'the nuclear dream has failed' (Economist, 2012). It is argued that the British Government's commitment to a carbon floor price will not be enough to make nuclear a financially viable option, and that "other inducements will be needed" (Ibid). They relate nuclear specifically to areas of social concern, putting forward the idea that "nuclear power is about to become less and less a creature of democracies" (Ibid). The biggest building projects are notably in China where the reactors are of the safest and most modern designs. 'Safety' they argue however, "...requires more than good engineering. It requires independent regulation, and meticulous, self-critical safety culture that endlessly searches for risks it might of missed", something not guaranteed by the current regulatory landscape in China (Ibid).

Despite the new streamlined planning system and the absence of a public inquiry, EDF delayed their final investment decision. Most companies, such as E.ON and RWE, have now pulled out of the UK nuclear renaissance (BBC News, 2012b). EDF is still looking for a partner in the Hinkley Project as there are signs that Centrica may pull out (Financial Times, 2012a). The Chinese state nuclear power company withdrew from discussions with EDF (The Independent, 2012) the 'strike price' has not been negotiated, and if it is too high, then it may break EU state aid rules (Financial Times, 2012b). The two other EPR reactors are billions of pounds over budget and at least four years behind schedule (Bradford, 2012). They will likely have taken ten years from planning consent to electricity production. The question is, will the nuclear power station at Hinkley be built *significantly before 2025*? If it is significantly delayed then can the 'irrational' public still be blamed?

It is difficult to see how they can be, given that the public inquiry is no longer an issue, and there are essentially no ways through which to challenge the basis of policy. Yet it would be a safe prediction that either 'public opposition' or 'the irrational views' of the public which will be held up as part of the reason. The Planning Act is unlikely to speed up development on new nuclear power. This is not because of the public 'slowing things down', but rather because of investment decisions in Paris, the location of the headquarters of EDF. It is time to admit that the tension which first emerged in the Hinkley C Inquiry, between privatised electricity and nuclear power, is as strong as ever. Many of the questions asked in the NPS consultations related to matters including; 'EDF is in financial trouble, will they be able to pay for this?', 'Can we know how much the strike price will be please?', 'What will they pay for the disposal of waste?', 'Why do you claim nuclear is needed whilst claiming that maybe none, or only one will be built?', 'What about the massive cost overruns and delays in Europe?' are dismissed as irrelevant; 'Trust us we're the experts', was the response. The 'irrational' public that voiced these concerns have been proved to be absolutely correct; the market-led system which is the main element under protection through the Planning Act, is a far more effective opponent of new nuclear than environmental NGO's.

10

Chapter Ten: Conclusion

Introduction

In this section the Research Aims are returned to, and it is discussed how each was met through the course of this thesis. Key themes developed through the thesis in order to explore these aims and research questions are drawn upon. The theoretical implications of this thesis are discussed and concluded in terms of potential application for future research. Alternative research strategies are also considered. Below, is a reminder of the Research Aims and Research Questions:

Research Aims:

RA1: To understand the spatial politics of nuclear public inquiries

RA2: to assess the democratic and political implications of the Planning Act 2008

RA3: To evaluate transformations of nuclear politics in the UK

RA4: To develop recent discussions around spatial politics and the political.

Research Questions:

RQ1: What are the spatial politics of the three 'eras' of nuclear power development? (RA1)

RQ2: What are the mechanisms by which 'political opportunities' were enacted during these three eras? (RA1, RA2)

RQ3: What are the spatial politics of the changes brought about in the Planning Act 2008? (RA2, RA3)

RQ4: What is the relationship between spatiality and processes of politicisation and post-politicisation?

RQ5: How can nuclear power be considered within the wider context of governance and state theory? (RA2, RA3, RA4)

Returning to the Research Aims

RA1

This thesis is comparative, analysing the transformations of the Planning Act 2008 and its associated consultative framework in terms of forms of public engagement within previous policy frameworks. The changes brought about in the Planning Act were in part, directly related to perceived failings in the Public Inquiry system, as the consultative framework sought to make Planning for large scale infrastructure like nuclear power more

'streamlined' as well as 'transparent' and 'fair' for communities. The argument then follows that an understanding of the public inquiry, is vital in understanding how exactly, the political and democratic configurations of current nuclear power policy have developed.

Chapter 6 focussed empirically on the Public Inquiry into the abandoned development of Hinkley C in the late 1980's. It was noted that Inquiries such as THORP in the 1970's and most famously Sizewell B, have received significant academic attention, however the attempted development of Hinkley C inquiry had not. The argument was made that Hinkley C may in fact be of more relevance in understanding the trajectories of nuclear power policy in the contemporary policy sphere. Firstly, the power station that is the first in line to be built as part of the UK's current nuclear power policy is once again Hinkley C. Thus, there was the opportunity to contrast the politics of two different systems designed to build what is, in terms of Geographical location, (although not reactor design), the same power station. It has been made clear by the main investor in the site, EDF, that the old Hinkley C inquiry provides a wealth of information regarding planning for the current development. If political interventions are considered to be a potential barrier to 'efficient' development, then it stands to reason that a 'lesson learned' in terms of how policy has changed towards the development is in relation to how such interventions can be avoided.

Before the case of Hinkley C was specifically discussed, social science literature related to studying 'the public inquiry' was examined in chapter two. The specific thread that was picked up on was a body of work stemming from Science Studies, including notable work such as Brian Wynne's (2010) research into the Public Inquiry surrounding the construction of the nuclear reprocessing unit, THORP, in the 1970's. Similarly, the Tim O'Riordan et al's (1988) study of the Sizewell inquiry, and Massey's (1988) study of THORP and Sizewell, were drawn upon. The nuanced interpretations of the democratic relevance of the public inquiry were noted. On the one hand it has been pointed out that inquiries functioned as 'containers' of political action in that they allowed activists to 'blow off steam' without influencing the direction of policy (Drapkin, 1974; Kemp, 1985). Also, particularly with regards to nuclear power, inquiries were technocratic and excluded important viewpoints through the use of 'scientific certainty' as a means of circumventing oppositional voices (Wynne, 2010).

However, others also noted that public inquiries also acted as crucial democratic spaces for challenging certain policies and also for fostering processes of 'policy learning' contributing to perceived improvements in policy over time, due to public involvement through the inquiry process (Dudley and Richardson, 1996; Owens and Cowell, 2002). Rough (2010) in a historical study of nuclear inquiries in the 1950's and 60's discovers

that although very restricted in terms of both length of time and range of nuclear issues under discussion, early public inquiries into nuclear power nevertheless contributed to a gradual 'opening up' of nuclear issues from the secretive domain of military and government to become a 'public' issue. Thus, inquiries have played a crucial unofficial 'subversive' democratic role in enabling publics to influence and engage in government policy, or for enacting what Cowell and Owens (2006) refer to as 'political opportunities'.

A nuanced perspective of public inquiries is reflected in the literature discussed above. The ways in which they excluded a variety of concerns is noted, whilst also recognising the 'opportunities' that were utilised to assert political influence on government policy. Two points relating to 'political opportunities' were made however which are central to the study of the Hinkley C Inquiry in chapter 5. Firstly, there is a need to focus more empirically on how 'political opportunities' are enacted by particular groups within public inquiries. The opportunities are not pre-existing but are opened up by both political struggle, particular lines of argumentation, and events that are external to the inquiry process – for example changes in the economic assessments of nuclear power in the 1980's, or the Fukushima disaster in 2011. Secondly, related to this study, it was argued that there needs to be a more thorough investigation of the spatial dimensions of public inquiries and how these influence the enactment of political opportunities.

This built on the theoretical framework for analysing empirical events which was discussed in chapter four. The theoretical framework, which worked through understandings of political contestation, is reflected on in more detail in the discussion of RA4 later on in this chapter. Briefly, however, the chapter drew on post-politics, STS, state theory, and spatial theory to work through arguments on contested politics, and produce a framework for the analysis of the changing dynamics of politics through different policy frameworks related to nuclear power. This looked at how different spatial strategies are deployed by both campaign groups as well as by state actors to forward particular political positions on the nuclear power issue. Within the context of the Hinkley C inquiry, strategies deployed within the space of the inquiry were studied, drawing on Asdal's 'tools' of democracy, which is attentive to variety of methods utilised to extend, or constrain the scale and scope of a particular form public engagement. Thus attention is placed on the different ways in which the Hinkley C inquiry was used as a tool by groups challenging government policy, and the various ways in which it was used by the CEGB and government to forward a particular policy agenda, focussing on the spatial dimensions of these processes.

Using both interview material with NGO members, activists, and civil servants from the inquiry, as well as data from the inquiry transcripts accessed at Kew, key moments in the

development of the spatial politics of the inquiry were identified and analysed. This began with the struggle at the beginning of the inquiry between NGO groups wanting to extend the inquiry in various ways, and the CEGB who were keen to 'contain' the inquiry in terms of limiting the issues up for discussion and the spatial scale which the inquiry should cover in relation to the proposed Hinkley C development. For the CEGB, the inquiry should concern the specific issues relating to the development of Hinkley C in terms or road building and 'localised' developments, where it was argued that issues of national significance – including safety of nuclear power, and the economic costing had been already settled and should not be returned to.

On the part of NGO's there was a battle to extend the space of those considered affected by the issue, the argument running that the development of Hinkley C had potential implications for those outside of the 'localised' area - which the CEGB believed the inquiry should be limited to. This led to calls for the inquiry to move to Bristol and Cardiff, as well as allowing Irish councils to take part in the proceedings of the inquiry and give evidence. This represented the 'broadening out' of the inquiry through extending the space of 'those considered affected' by the issue (Barnett and Bridge, 2012).

Similarly, calls were made to the Inquiry Inspector Michael Barnes that against the CEGB's wishes, the inquiry should include 'national' issues, due to the fact that the evidence base of Hinkley C was rapidly changing. An agreement was made that evidence relating to the substantial issues of nuclear technology, or 'national' issues would not be excluded from the inquiry proceedings. Thus, the ways in which the Hinkley C development was now 'seen' spatially, was not simply as a singular localised issue, but as an issue of national significance. Through such argumentative exchanges, the inquiry was 'rescaled' towards the national, or as Asdal (2009) refers to it, policy was 'returned' to the centre through an inquiry 'tool'.

In this chapter it was documented how the CEGB repeatedly attempted to refuse to answer questions relating to both issues regarding probabilistic risk assessments of nuclear power, and particularly, the economic case for nuclear power. This is an example of an attempt to 'insulate' policy from changing external events on the part of the CEGB, which has an important spatial dimension. It was through the repeated attempts by representatives from groups such as Greenpeace to demand that the economic case (included as part of the national policy context) should be returned to in the setting of the Hinkley inquiry, that eventually the inquiry inspector Michael Barnes concluded that these were valid concerns and that the CEGB should provide evidence to back up their claims in light of the changing circumstances relating to nuclear economics.

Similarly, the inquiry was extended as meetings took place in Bristol and Cardiff where 'non-expert' evidence was tolerated as an increasingly diverse range of publics, both in terms of economic background and ethnicity began to be involved in nuclear issues. Again the spatial dimension is clear. In terms of the Deweyian formulation of the 'all affected principle' there was a political struggle to extend who 'those considered affected' were, in terms of the implications of the Hinkley C development. Thus the inquiry had moved from a matter related only to those directly affected by a particular road building project around the plant, to one that was said to affect Bristolians, Cardiff-based citizens, and – through the 'renationalisation' of the issue - those further afield. It had moved from a specific building development back towards a development that once again related to political decisions made by the State. Thus, the spatial extension of the inquiry was central to the politicisation of the inquiry.

Similarly, a central point that is especially pertinent in relation to current policy, is that publics were not separated on the basis of particular scales of engagement, but rather there was 'mixing' of national-based NGO's with localised groups within the same setting. Political alliances were formed and dissensual opposition to governmental policy was achieved through the formation of such alliances. The spatial politics of public inquiries are thus, complex and varied, and importantly, not fully predetermined or fixed. 'Rescaling' towards the national, as well as horizontal strategies of broadening the inquiry out to new publics, were opportunities for expanding the political community involved in the debate concerning Hinkley C.

RA2

This research aim followed on from the first, in terms of the wider argument that the Planning Act was in part a response to tensions and problems within the public inquiry system. These included costly delays caused by lengthy inquiries, as well as the fact that what was demonstrated in the chapter on the Hinkley C public inquiry, was that campaign groups had successfully exposed Hinkley C to the dynamics of wider policy change, leading to the power station not being built. The literature surrounding the Planning Act and the 'modernisation of planning' was discussed in chapter three. The tension between drives for 'efficiency' and 'timeliness' on the one hand, and 'public participation' and 'democratic legitimacy' on the other was identified as particularly pertinent with regards to the Planning Act (Allmendinger, 2009). As Owens (2002) points out, this tension has been recognised with regards to public inquiries since the 1980's

In terms of the Planning Act 2008 itself, opinion is divided between those that see the Act as extending opportunities for democratic engagement for local communities (HM Gov, 2008; Smith, 2008), and other interpretations which the 'streamlining' processes of the Planning Act as reducing 'public legitimacy' (Ellis, 2008), leading to a potential 'democratic deficit' (Cotton, 2011; Marshall, 2012), or 'depoliticising' planning policy (Newman 2009).

It was noted however, that given the contemporary nature of the Planning Act 2008, there is a lack of empirical data study of its political and democratic implications. In chapter four, debates around the change in policy entailed in the Planning Act, were contextualised theoretically in wider discussions around the democratic and the political, which are outlined in the discussion of RA4. This utilises literature which is critical of 'consensus' or 'win-win' forms of politics both in terms of post-politics and STS. Given that the Planning Act ushered in a 'consensual' ,'non-adversarial system', the theoretical framework provoked questions which moved away from the purported notion that the Planning Act could favour everyone, as in the 'win-win' concept, to asking questions such as who is favoured, or disfavoured by the policy transformation? Which voices are included or excluded from the policy process? And how is this enacted? Again, this is looking towards the implications that a particular policy reform has on 'political opportunities', or rather, which groups can access and utilise such opportunities. As Haughton et al (2012) point out, Planning reform is never neutral but favours some interests over others.

With regards to the Planning Act, the relations between the new spatialities created through the segmentation of National and Local policy, and the forms and locations of political contestation has not been studied. Again, understanding space as being constituted through social and political activity, Chapter eight studied empirically the new 'rescaled' sites of consultation, through interviews with a range of participants of nuclear consultations, both Nationally and locally, documentary analysis, as well as ethnographic data from observations of the consultations. This was framed around the first 'mega project' being overseen by the Planning Act 2008 – the resurrected attempt to build the Hinkley C nuclear power station in Somerset.

It was outlined how policy consultation was separated between NPS consultations, and 'local' consultations relating to the specific development of Hinkley C in Somerset, as well as a range of 'issue-based' consultations on other nuclear matters. This is radically different to the Public Inquiry system, where a number of issues were deliberated on within the same setting. The scalar separation between National and Local and issue based consultations was widely referred to as the 'salami slicing' of public engagement.

NPS consultations occurring at Bristol, Manchester, and London were discussed. Previous nuclear consultation had taken place in 2006-2007, which despite ending in controversy, were said by government to have concluded the 'in principle' debate on nuclear power. Thus, the NPS consultation already contained within it, an underlying assumption on the benefits of nuclear technology. Thus, participants were frequently reminded during NPS consultations that discussions relating to the benefits or draw backs of nuclear technology were not party to consideration by Government, as 'in principle' issues were already fixed.

The remit was to submit evidence on the 'details' of the NPS statements, however substantial matters pertaining to important questions such as what the cost of nuclear power would be, how will it operate in a liberalised energy market, where nuclear waste will be stored, what the share of costs of a nuclear waste disposal facility will be paid by nuclear companies, amongst other matters – were dismissed on the grounds that the government would work out such issues in consultations which would take place over the next few years. Such questions which many considered vital in being able to properly assess the efficacy of NPS's committed to 16 GW of nuclear power, were not open for critical analysis during the NPS's as they were not part of the 'details' of the NPS statements. Thus despite being grounded in the rhetoric of 'certainty', 'need' and 'evidence-based policy', the salami slicing of the consultative framework ensured that many matters of substance were vague and it was simply concluded that they 'will' be workable at some point in the future.

This led to criticism on the part of NGO groups taking part in the consultations that the NPS's were not a two way dialogue but rather a 'tick box' or 'rubber stamping' exercise, designed to protect the government from legal challenge, but not designed to allow concerned publics to actually challenge or shape the direction of policy. In comparison to the Hinkley C public Inquiry of the 1980's where it was discussed that policy 'exposure' occurred, the development of NPS's would seem to function as a form of 'policy insulation'. Here, improving policy is not the aim but rather protecting commitments made with insufficient information from challenge is the key aim of the design of the consultation process. This contrasts with the collaborative approaches used with, for example, the CoRWM project, as well as the 'participatory' ideals outlined in the Aarhus Convention.

Documented in chapter eight and nine, are feelings of anger, confusion, disappointment, and apathy in relation to the ways in which NPS consultations were designed. Heated encounters taking place during the consultation process became increasingly common. The 'local' preliminary consultations run by EDF, were focussed around the company in question providing sufficient consultation in order for their application for permission to the MIPU to be acceptable. As documented in chapter eight, it was made clear that issues

that were being discussed elsewhere including national policy questions, the economics of nuclear power, and waste disposal, were not part of these 'local' consultations. The local consultations revolved around EDF's arrangements for compensation schemes, workplace arrangements and road building.

Interviews with activists outlined how often there was reluctance to take part in these consultations, as they were viewed as operating as an 'advertising campaign' for EDF, where substantial issues relating to safety and security of the proposed new reactor are not discussed as they are not defined as 'local' issues. Interviewees who had taken part in the 1980's described the differences between the Hinkley inquiry and the consultative process involving the key split between the 'National' and the 'Local'. It was described how there is far less contact with those living nearby the nuclear power station due to the fact that NGO and activist groups do not feel that there are any opportunities to influence policy through these consultations. As a consequence, the kinds of 'subversive coalitions' described by Cowell and Owens (2006) which formed between local and nonlocal groups in relation to particular developments overseen by public inquiries, have not formed in the case of Hinkley C. With regards to the MIPU consultations following the preliminary consultations, anger was routinely expressed at the ways in which during consultations the MIPU panel dismissed significant concerns regarding emergency evacuation, the disposal of nuclear wastes, and safety issues regarding nuclear power as not being local issues, with the perceived implication that these concerns were not for 'local' people.

Thus, spatial transformations entailed within the Planning Act, entailing processes of 'rescaling' cannot simply be considered irrelevant because they are 'merely 'metaphorical', but in fact has direct material consequences in terms of the kinds of political articulations – between a variety of publics – which emerge. It was discussed how, following a Zizekian idea of post-politics as foreclosing political dissensus, the Planning Act and the new spatially segmented consultative framework which has replaced the public inquiry, is an example of post-politicisation, where political dissensus is anticipated and closed down before it emerges, through policy reforms such as the Planning Act. The Act thus denies the political, in favour of a false 'consensus' which guides the policy process.

In chapter nine the consequences of these transformations were discussed further. A obfuscation of the political can never be a completed process, but rather political dissensus returns through other means and emerges in different locations. Thus in chapter nine it is pointed out that two main forms of action against government policy are on the increase, as demonstrated through the case of Hinkley C. Firstly, there has been a major increase in direct action protest against the Hinkley development, the likes of which have

not been seen in the UK since the Torness demonstrations in the late 1970's. Secondly, increasingly NGO groups such as Greenpeace and Friends of the Earth, are increasingly launching legal challenges against government policy.

A wider consequence of the Planning Act, and the processes of post-politicisation entailed within it, is a potential increase in these forms of action. It was queried whether these forms of action are preferable, or whether they represent a 'negative' and 'reactive' form of activism. For example, whilst a legal challenge is launched, NGO's are at risk if they pass comment on policy or give interviews, as I discovered. This is a small example of how, rather than notions of an open public debate, the apparently more 'transparent' framework of the Planning Act may contribute towards a system where policy documents must give enough detail , however, not too much detail that could lead to the Government being caught out by a legal challenge based around discrepancies between the details of policy documents, and the actual way in which policy was implemented. If legal challenge becomes a primary means of dissent, NGO's may be reluctant to take part in initial consultations as this may give Government an opportunity to foresee potential sites of legal challenge and protect against these forms of intervention. Against notions of transparency and openness, and more thorough 'consultation' the obfuscation of the political dimension of the nuclear debate from formalised spaces of public engagement may entail these significant 'unintended consequences', actively discouraging rather than encouraging publics to take part in the policy process.

RA3

This thesis was based around 'three eras' of public engagement with nuclear power, constituting the three empirical chapters, including The public inquiry in chapter six, new participatory forms of engagement in chapter seven, and the new, rescaled consultative framework in chapter eight and nine. Central to this idea, was that the politics of contemporary nuclear power policy does not exist in a vacuum but specifically relates to developments and tensions taking place in previous policy settings. Secondly, the 'where' of politics, discussed more thoroughly with regards to RA4, and the need to understand the point of both processes of 'containment' of political and democratic contestation as well as recent trends to assess the 'emergence' of political contestation, was developed through taking the 'long view' with regards to changing forms of political negotiation around nuclear technology.

It was argued from the beginning of this thesis that even a cursory glance at the complexities of, and controversies surrounding nuclear power over the past few decades should make the starting point of this thesis – that divisive politics should be the

expectation rather than the exception with regards to atomic issues, an unremarkable and acceptable one. These issues are documented in chapter two, and throughout the thesis. Thus, the key question in consideration of the three eras of nuclear development is not whether the agonism around nuclear power is *solved* or not, but rather how it is *approached* or *managed* within formalised spaces of public engagement, again drawing attention to the 'where' of political dissensus.

It was outlined in chapter six on the Hinkley C public inquiry, that prior to the 'big' nuclear inquiries of the 1980's, political energy campaigning against the construction of new nuclear power, had taken place through mass direct action protest at Torness power station in Scotland. New knowledge concerning the nuclear industry, in the form of potential risks and past misdemeanours, and the rise of Green campaign groups, increasingly put pressure on Government and the nuclear industry that there needed to be more openness with regards to nuclear matters. The violent protests that had taken place in Germany and France in the late 1970's and 1980's did not occur in the UK however, as political opposition to nuclear new build was taking place within the formalised space of the public inquiry, most famously, Sizewell B.

Whilst in many ways it still resembled a technocratic exercise, the Hinkley C inquiry nevertheless offered opportunities for intervening in government policy and for the staging of agonistic politics. The ways in which opposition to nuclear technology grew during the inquiry is outlined in the discussion of RA1. It was discussed how adversarial politics was enabled within the setting of the inquiry through returning towards policy based discussions which once again made the state visible. Chantal Mouffe (2000) refers to this as a politics based around 'worthy adversaries', where passionate dissensus between recognised competing visions takes place, and where identifying a decision-maker, in this case the state, as a clear body to oppose, is vital. This was titled the 'good clean fight' by an interview participant, where political adversaries (the government and the CEGB) are recognised, however opposition to policies takes the form of active passionate disagreement rather than hatred or reactive pessimistic protest.

Through the alliances which emerged from the political opportunities within the public inquiry, the Hinkley C development was exposed to the tumultuous events of the changing circumstances of nuclear economics as Britain's privatisation of Energy began to come in to effect. This eventually led to the discontinuation of the construction of HInkley C in the late 1980's. Although it was the events of The Energy Act which ultimately led to the abandonment of nuclear power in the UK, this 'policy exposure' would not have occurred without the establishment of political force within the inquiry setting to delay and extend the inquiry process through the interrogation of the substantive issues of nuclear power.

This is not to neglect what has been emphasised throughout the thesis: the recognition that the inquiry was deeply problematic, and remained an often intimidating, technocratic exercise, excluding many people from its proceedings. There was however, opportunity for activist groups to dictate the issues under consideration, to guide the format and location of inquiry, and enable lay publics whose views could now simply be dismissed in the current policy framework as 'lacking evidence' or as 'emotive', the space to voice concerns. It is clear that a diverse range of publics were confronted with a range of nuclear issues which may have never come to light without the Hinkley C process.

The next era of nuclear development discussed in this thesis in chapter 7 ('from public inquiry to participation'), was the collaborative experiments during the New labour which were progressive in terms of enabling greater levels of participation in nuclear decision making. This era was identified because it was an important step change in how public engagement with nuclear power should operate. Calls which had been made as long ago as 1978 by the Environmental Commission, that engagement with environmental policy should take place 'upstream', before commitments and decisions had been made, ensuring that publics were not merely forced to choose between several preconceived options prepared by government, but rather take an active role in determining what those options were. Public inquiries were considered to be ineffectual in this regard, leading to the public and NGO's acting as opposition to, rather than collaborators in, the policy process. The rise of new challenges such as 'risk' based issues, and environmental problems provoked the need for new methods of political engagement to negotiate such challenges. Science studies, collaborative planning, and 'third way' ideals were cited as being influences in the new approaches towards public engagement with nuclear power policy.

New Labour undoubtedly committed to new approaches with regards to the nuclear policy process. The lead up to the Energy Paper involved independent scrutiny from a diverse panel of academic and NGO expertise, some of which were critical of nuclear technology at an early stage in the policy process, resulting in nuclear being left out of the 2003 White Paper. The Energy Review consultation in 2006, and the subsequent nuclear consultation, represented (rhetorically at least), new attempts to enable publics to engage and shape energy policy, prior to decisions and preferences for particular policy direction being made. This was a notable step change in terms of fostering a collaborative approach to policy formation around nuclear power. Lastly, CoRWM sought to operate in a collaborative manner, signifying a notable step towards increased participation, in terms of the diversity of its panel, as well as its commitment to enable participation of publics at every stage of the process through its deliberative-analytic approach.

Thus, It is fully justified to classify this as a 'collaborative' or 'participatory' moment in the history of public engagement with nuclear power policy a view confirmed by interviewees as well as in the literature. In terms of the divisive politics of nuclear power, such an approach sought to move beyond the confrontational style of previous nuclear issues, where a certain policy is proposed by government, and opposed by the public - the Decide Announce Defend model. Rather, this sought to recognise the controversies surrounding nuclear power, the divergent opinions on these issues, and enable the plurality of perspectives the opportunity to contribute in a collaborative manner, rather than the approach that 'expert' knowledge can somehow triumph over the 'irrational' concerns of lay people.

In terms of the agonistic politics of nuclear power development, these new collaborative experiments were attempts to not deny or displace opposition or controversy, but rather work with the controversies and plethora of issues which sparked political passions. However, as was documented through interview data and secondary source materials, desires by lobbyists and governmental representatives to resurrect nuclear power after it was left out of the Energy White Paper of 2003, began to interfere with the procedural integrity of formalised spaces of public engagement around nuclear power, the politics of which will now be discussed.

The discussion of CoRWM provides the most compelling example of the dynamic between on the one hand, the progressive move towards independent collaborative approaches to decision making on nuclear issues, and the ways in which commitments to a certain object of governance – new nuclear power, can distort the integrity of such aims. This is not in the traditional governmentality reading, where a particular deliberative space is distorted by dominant discourses which dictate the 'rules of the game', but rather it relates to the way in which the independent recommendations found by CoRWM travelled within the wider policy landscape to form an important part of the decision making process for new nuclear power – something for which they were never intended. Swyngedouw's (2005) notion of 'governance beyond the state' is pertinent at this point. Swyngedouw illustrates that behind the appearance of governance beyond the state, the state is vital in asserting a particular decision, however accountability for such decisions is diminished due to the complexities in which a particular policy emerges.

Thus the conclusion of this chapter with regards to the politics of nuclear power, related to the tension between the collaborative ideals which had been explored through the Energy White paper, intentions of consultation, and CoRWM, and the 'speeding up' of policy and

the need to produce certainty through decision making and state intervention for nuclear new build. Thus, this particular 'era' of nuclear power policy, was caught between these two particular drives. On the one hand, 'third-way' ideals of participation and horizontal governance, on the other, the demands placed on the state by nuclear new build.

This led the way into chapter eight and nine, focuses around the new forms of public engagement brought about with the Planning Act. This also relates to RA2. The 'rescaled' consultative framework was analysed focussing both on the NPS consultations and local Consultations with EDF around the Hinkley C development. The dissatisfaction of many members of campaign groups that were interviewed manifested around the ways through which consultative framework, whilst focussing on the details of NPS statements, and local consultations run by EDF focussing on localised issues such as road developments and noise pollution, excluded many substantive issues from discussion. Economics of nuclear power, and unresolved issues surrounding waste were being consulted on in separate forums, running at a later date, and many participants felt that this precluded a sufficient analysis in terms of the justificatory basis of nuclear power.

With regards to the transformations in nuclear politics, despite the Planning Act being based around extensive consultation and transparency, what has in fact been generated is potentially more antagonistic relations between campaign groups and government and industry. This has seen agonism displaced from the formalised spaces of public engagement, towards other locations. It was discussed particularly in chapter nine how legal challenge and direct action have become more prevalent, as a means of staging interventions against the development of nuclear power. The perceptions of many NGO members towards government are increasingly negative, where there appears to be less trust in key institutions surrounding nuclear development, and a 'negative' activism which contrasts with the 'good clean fight', described in chapter six.

Transformations in nuclear politics through the three eras can be summarised, thus. The public inquiry can be understood as a contestation between 'closing down' agonistic politics around nuclear technology, and the expansion of oppositional politics within the inquiry on the part of campaign groups, where there is an attempt by both sides to gain legitimacy over what constitutes the scale and scope of the inquiry. The participatory era was substantially different as the tendencies for nuclear to generate disagreements was recognised and accepted. Attempts were made to tolerate these different perspectives on nuclear issues, and make compromises for the wider goals of sound policy decisions. The Planning Act and the development of the consultative framework can be understood as anticipating and foreclosing opportunities for intervention and the staging of agonistic politics around nuclear power, however oppositional politics is displaced to other terrains

and potentially made increasingly negative by the prevention of opportunity to participate in government policy on nuclear within the formalised spaces of public engagement, perceived by campaign groups and activists.

RA4

I will now reflect more directly on the contribution this thesis makes on key theoretical debates related to the spatiality and the political. To recall, key theoretical concerns were outlined in chapter one, and in more detail, chapter four. The central theoretical concern arose from the identification that debates around contested politics within Geography were becoming increasingly dichotomous, especially in relation to notions of 'post-politics'. It was outlined that relations between post-political literature and STS-based perspectives may in fact be more nuanced. both Post-political theoretical frameworks on the focused on how political dissensus is foreclosed, as well as STS-inspired notions of politics forming around troublesome objects, both recognise 'division' as a key element of political life. Here the contemporary fashion for 'consensual' politics is viewed with suspicion from Slavoj Zizek (1999) to Bruno Latour (2005). Both approaches can also be differentiated from 'deliberative democratic' understandings of politics, as they are both sceptical towards the idea that procedural frameworks can create an equal terrain for the use of public reason, insulated from other interests and power relations.

However, the approaches differ substantially, or perhaps rather, misunderstand one another substantially, when it comes to questioning emergence and the empirical analysis of political contestation. It was concluded that there are relevant 'blind spots' in both approaches which are worthy of further consideration. On the one hand, critics of the 'post-political' literature , point towards the ways in which the language and analysis it generates means that many actually existing political struggles are missed (Dean, 2009). There is a tendency to dismiss 'single issue' politics as not relevant as 'properly political' where political agonism is viewed as exceptional, rather than a normal occurrence alongside other forms of political life (Barnett, 2012).

The trend, in terms of STS-based approaches (and approaches inspired by the work of John Dewey – for example the writings of Geographer Clive Barnett), is a more empirical focus on the actual *emergence* of democratic and political action, or as Marres (2007) describes, the materiality of the actual issues which 'spark' publics into being. Thus the suspicion towards 'single issue' politics, is rejected, in favour of a more empirically attentive move towards understanding the actual unfolding of politics, which is to be welcomed.

However, the argument developed in chapter four is that perhaps the pendulum is swinging the other way: a focus on emergence and empirical attention towards this process may contain a troublesome causal element within such an analysis. The impression which could be garnered is that a particular object – a technological innovation of some variety – will *necessarily* generate passionate forms of political division, and the formation of new collectives will *necessarily* follow. This is clearly not the intention of STS accounts, as the work of Latour (2005) demonstrates, in terms of his awareness that often apathy and lack of interest towards questions of science policy and politics more generally, dominate, highlighting the non-causal nature of the 'vitality' of objects in generating interest. Due to the focus in STS on empirical emergences of political collectives around material 'issues', questions of why such engagements occur in some locations, and not others, is often not explored.

Also, it should be asked, why do some objects and issues generate the kinds of emergence that is the focus of these approaches, and not others? The work of Barnet and Bridge (2012) and Mahony et al (2010) on 'multiple publics', go some way in getting towards this point of analysis. They outline that democratic emergence is always fostered through 'political struggle', with processes of 'de-politicisation' and 're-politicisation' operating within a particular framework. This emphasises that the idea of political and democratic emergence is not causal. However, this is a point that has not been explored or emphasised enough.

Through the substantial theoretical discussion in chapter four the point of analysis and a framework for studying the political is reached. Rather than the starting question being whether there is the 'presence' of 'the political, or not, it should be recalled that the post-political literature is based around the idea that there can never be a full closure of the political. There is always an 'excess' which cannot be confined to the existing order of things, and there are always various ways through which 'the political' returns, as Swyngedouw (2010) points out. Therefore, the starting question should not be the one questioning whether there 'is' the political or not, but rather a more empirical attention to 'where' the political is enacted, and through what means.

Thus, this framework guided an examination of nuclear power policy. Why, for example, does action sometimes take place within the formalised spaces of public engagement, and why is it, at other times, articulated primarily through other means such as direct action? Thus an empirical study needs to take consideration of both the emergence of the political, but also the ways in which it is closed down, or, what is identified as processes of 'post-politicisation'.

What is missing from such an analysis however, is the role that space plays in the interplay of both processes of emergence and post-politicisation. This relates to important spatial debates which have taken place in Geography, around the spatialities of 'contested politics' (Dikec, 2012; Leitner et al, 2008). Whilst Leitner et al (2008) point to a variety of spatial tactics being utilised as forms of political action, it must be pointed out that for some, certain spatial understandings, most notably 'scale' are of limited use. These discussions have focussed around questioning the validity of scale as a category of analysis, the argument going that space is to be understood as a more 'fluid', 'mutable' and 'unbounded' (Amin, 2002), and vertical, scalar understandings of space be replaced with a 'flat ontological' approach (Marston et al, 2004).

What remains unclear in terms of the 'flat ontological' approach is why scale cannot be considered in such dynamic terms. Indeed, rather than rigid and fixed, the dynamic nature of spatial scale, as being constructed through social and political processes is widely recognised (Jessop, 2008; Swyngedouw, 2000). As Jessop et al (2009) point out, scale should not be privileged over other spatial understandings, including networks, territoriality, and place, but undoubtedly scale remains an important way through which policy is framed and delivered, entailing significant political effects. In terms of 'contested politics' Leitner et al (2008) point towards the importance of studying the range of spatial practices which are produced through various kinds of political conflict. This gets beyond looking at what scale is, towards the study of what scale does, as a spatial practice amongst others.

As Cowell and Owens (2006) point out, there is a need to explore how in which spatial practices can be utilised to 'map' issues and control and diffuse political tension as part of processes of post-politicisation, as opposed to the kinds of 'emergent' spatial formations which are produced through democratic struggle, which extend both the space of what constitutes the public debate and the 'publics' involved with such a debate (Barnett, 2012). This relates to an exploration of the relationship between the 'argumentative' and the 'spatial'.

Another element which needs to be considered here however, is the role that the state plays in enabling or constraining new spaces of political opportunity. This returns to focussing on STS-based accounts around the 'emergence' of political contestation. Kristin Asdal (2007) points out that whilst STS-based accounts have been attentive towards 'live' and 'unfolding' emergences of political intervention, the 'contexts' which give rise to such situations, including actions articulated by state institutions, have often been neglected. This is not about returning to the idea of political contestation taking place within a given

'context' created by the state, but rather, to understand the dynamic between processes deriving from state strategy, as well as emergent new forms of political contestation.

Understanding both of these processes in tandem, and the spatial nature of these processes, moves from a focus of the 'what' of political contestation, to the 'where' of political contestation, and asking why it appears in particular forms at particular times, and not others. Through this approach the notion of the 'object focussed' state theory was developed. As Latour (2005) states, the 'rediscovery' of the state is more important than ever, due to the increasing complexity of objects through which the state is made 'visible'. Rather than starting from the perspective of a unified state, studying the ways in which the state 'responds' to a particular object in question, and the ways it is made 'visible' over time, is useful in terms of understanding the unfolding of political processes of both 'opening up' and 'closing down' political opportunities, but also, in terms of understanding both the nature and role of the state in the more complex terrain of governance.

Thus a framework emerged from this theoretical discussion which pointed towards following a particular governance object – in this case nuclear power, and the locations of political contestation and dissensus around the technology especially in relation to formalised spaces of public engagement. This then fitted well with the three 'eras' of public engagement selected as the basis for the empirical examination of this thesis. What was developed was thus the need to be empirically attentive to both processes of democratic and political emergence, and associated processes of spatial extension of the particular issues under consideration, as well as empirical attention towards processes of post-politicisation, and spatial containment, of the issues under consideration. Thus what emerged was the need to study the relations between space and the argumentative, or how a key dynamic in terms of what constitutes the limitations of a particular debate around an issue such as nuclear power, is spatially designated.

It will now be discussed how this framework was developed through the empirical chapters, which may require some repetition from the discussion of previous Research Aims. The chapter on the Hinkley C inquiry, outlined the dynamic between attempts to 'contain' the inquiry towards a local issue on the part of the CEGB, and attempts to 'expand' the inquiry on the part of NGO and protest groups, to become an issue with greater reach in terms of the issues under consideration, as well as what was considered the relevant space of the Hinkley C issue. It was demonstrated how what could be considered as the 'mundane' processes of the inquiry, in terms of the often highly technical cross examinations, were used as 'tools' to expand the inquiry 'upwards' to the national level, as enactments of' rescaling'. The inquiry was also expanded horizontally, through

making the inquiry an issue for 'non-local' locations, including Bristol and Cardiff, not originally considered relevant to the Hinkley C development in Somerset.

These included returning the inquiry 'to the centre', to use Asdal's (2007) terminology, or 'rescaling' to the national level, primarily through highlighting the incompleteness of the economic arguments proposed by the CEGB in order to justify the Hinkley C development, which forced the inquiry away from purely 'local' considerations. It was also through demonstrating how worst-case scenario accident events had potential ramifications for urban locations such as Bristol and Cardiff, and the various publics which inhabited these regions, that the scale and scope of the inquiry was extended. Drawing on Dewey's (1927) work, this is what Barnett and Bridge (2012) point towards as the political struggle over extending 'those considered affected' by a particular issue. Thus, this chapter emphasised this particular process as one not born out of a causal materialist 'reality', but rather, a political battle over what information and tools constitute the given reality of the issue in question, in this case Hinkley C.

Public Inquiries have been cited as having 'political opportunities' and this chapter contributed to a more empirical understanding of some of the actions which force through such opportunities as processes of expansion, both in terms of issues under consideration and spatiality. Another point of consideration was that the divide between understandings of agonistic politics, and apparently more 'empirical' understandings of the formation of collectives through processes of attachment, are not so clear cut. The empirical case study of the Hinkley C inquiry, demonstrates how an effective oppositional force to a particularly power-laden policy environment such as nuclear power development, relies on a variety of spatial strategies to form into a collective and become effective in influencing policy. This chapter emphasised the ways in which it was the intermeshing of scales within the same inquiry – both 'national' policy issues, and 'local' issues, which similarly broke down the apparent divide between those interested in policy issues and those affected by local issues. This had the effect that many 'local' people became sympathetic and in solidarity with those 'campaign' groups through hearing lines of argumentation that they would not have come across if policy and associated formalised public engagement had been segmented on a scalar basis as it is today. From the government's perspective what was clear was that the 'political opportunity' which had been exploited by activists was that the inquiry process was not 'insulated' against the heady winds of rapid developments in the wider sphere of energy policy, such as privatisation, which would be an important lesson for future policy reforms.

Chapter 7 situated the new forms of 'collaborative' and 'participatory' public engagement both in terms of the 'aftermath' of the public inquiry, where it had been concluded that the

lengthy and often technocratic (Wynne, 2010) nature of the inquiry, was not an adequate way of publics engaging with nuclear policy and producing timely decisions. As well as this, the lessons learned from the distrust of nuclear power, moves towards 'collaborative planning', as well as the wider shift from government to governance represented by the Blairist Third-Way' agenda, were also cited.

The theoretical contribution within this chapter, draws upon the 'object-focussed' state theory, which argues in terms of the limitations of the 'deliberative democratic' ideals which had become prolific both in policy experiments as well as in analytical terms, and the limitations of a lack of a wider focus on the actions of the state, in terms of understanding how particular 'decisions' are reached and solidified. This was a pivotal time for nuclear development, the technology being seemingly discontinued in the 2003 White Paper, whilst returning forcefully onto the policy agenda a few years later.

The genuine commitments by the new Labour Government to participatory involvement and the creation of pluralist, consensual processes through which challenging issues related to nuclear are to be explored, were recognised. Based around deliberative democratic ideals, projects such as CoRWM for the management of radioactive waste, as well as the commitments to 'fully consult' on nuclear new build were discussed as key examples in the roll out of more collaborative forms of engagement.

Focussing on the translation of the nuclear issue temporally, through the course of this identified era (from 2003-2008), enabled an understanding which was not limited by a focus on a particular deliberative event in isolation, but recognising both the institutional constraints of a particular form of public engagement (Bickerstaff et al, 2009), as well as viewing the how differing, segmented issue-based consultations relate to one another in terms of the wider decision making process with regards to nuclear new build.

A particular theme which was developed was the way in which the state was made 'visible' through the nuclear issue during this period. Projects such as CoRWM were such breakthroughs in terms of a more participatory and transparent nuclear decision-making process, due to their independence from government, remit to go 'back to the drawing board' on the waste issue, and commitment to continual public engagement throughout the process. However, as the new build agenda arrives, such participatory policy measures and forms of 'horizontal' decision making, or what Whatmore (2009) refers to as the 'slowing down' of policy, were delegitimized through the 'speeding up' of policy through various means, where the state could once again be 'seen' in terms of nuclear development.

These included the reductive ways in which the choices and different pathways around nuclear development were 'closed down' (Stirling, 2008), transforming nuclear from a policy choice, to a 'necessity'. In this chapter it is examined how this process was reliant on the new spatiality of 'the global' being utilised in policy documents provided by the Department of Business and Regulatory Reform (BERR). Here, over-arching discourse of climate change through recourse to the apocalyptic 'globalised' scale, conflates the 'is' – the problem of climate change, with the 'ought' – the premise that we 'need' nuclear power. This then, both confuses issues such as deliberations around the production of 'new' nuclear waste with the underlying premise of the (unchallengeable) need for nuclear power, as well as limiting alternative policy options with differ from a 'business-as-usual' approach. This example of 'closing down', relates to Swyngedouw's (2007) notion of 'post-political' environmentalism, where it is unchallenged expertise highlighting 'need' based arguments, rather than politicians choosing between different pathways which forms the basis of policy.

Another crucial moment where the state was once again 'made visible' to use Latour's (2007) terminology, was in the aftermath of the CoRWM project. It is discussed that despite the ways in which CoRWM was a breakthrough in terms of facilitating participation and deliberation, entailing procedural integrity and independence throughout most of its course, judging the CoRWM process, comes down to a temporal and locational issue (in terms of the policy landscape) of understanding, how the decision reached at the end of the CoRWM process 'travelled'. However, a decision outlining what was the best solution for 'legacy' waste, was transformed into a decision regarding the best solution for future waste from new build, despite the panel being adamant in their final report (CoRWM, 2006) that the ethics of new build cannot be conflated with that of legacy waste. Thus, an independent recommendation regarding the preferred solution for the disposal of legacy waste. The notion that a 'solution' had been found with regards to future waste was an essential part of the justificatory basis of nuclear new build.

This differs from usual interpretations of 'state power' where, through governmentality, forms of engagement with the policy process are said to be manipulated by powerful interests throughout the process, through dominant discourses dictating the terms of debate. Whilst undoubtedly powerful interests will have played a part in the CoRWM process, the action with the decision from CoRWM seems more akin to what could be described as an opportunistic state. Here state power does not have sufficient control over key stakeholders in the nuclear policy field as Baker (2009) correctly points out, however the ability for decisions to 'move' towards a completely different area of policy requires state intervention to make such a transformation of the 'meaning' of a decision reached in

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a particular deliberative sphere, occur. The basis for the need of this intervention is that nuclear new build, requires certainty and 'insulation' from external threats – the fact that CoRWM were only recommending on legacy waste and not providing the justificatory basis for new build in terms of advising on future waste, was thus a threat to the certainty that investment in new build requires.

This then placed focus on the nature of 'nuclear decisions' within the governance era, and the need to articulate a more nuanced perspective of the complexities of what constitutes 'the decision' more generally. The work of McCormack (2012) highlighting the 'distributed decision' was drawn on. Here, decisions are spread across time and space, encompassing more locations and actors than are usually considered. The need for decisions, or what could be considered as 'political closure', needs to be more firmly articulated however, as a key dynamic – as viewed through the object of governance, nuclear power– is between the forms of public engagement which take place, and an evaluation of their relevance, in terms of the wider 'distributed' decision making landscape.

Chapters eight focussed on the spatial politics of the new spaces of public engagement in the form of the consultative framework of the Planning Act. This focussed on the consequences of the move from the public inquiry setting, towards the re-scaled consultative framework, split primarily between NPS consultations and local consultations on the specificities of the new Hinkley C development. A key argument however, was that this could not be understood in isolation, but rather, related specifically to the movements which had occurred before, where an 'in principle' decision on nuclear had been reached through the Energy Review and subsequent nuclear consultation, as well as the justification of the 'solution' to new build waste being 'discovered' by the CoRWM project.

This drew out the relations between, once again, the argumentative and the spatial. If in the case of Hinkley C pubic inquiry, processes of spatial extension, the multiplication of issues under consideration, and extension of publics 'considered affected' by the development of Hinkley C were considered as a moment in the politicisation of the nuclear issue, then his chapter reveals the spatial formations of the policy reforms of the Planning Act as preventing such processes of the emergence of effective dissensus within the formalised spaces of public engagement from occurring.

This chapter thus develops a conceptual understanding of the interactions between spatiality and the post-political, where the new spacings of the Planning Act are understood as processes of post-politicisation. This is not merely done in terms of an abstract understanding – the usual critique levelled at the post-political thesis, but a more empirical understanding of the grounded effects of spatial change as it relates to political

action This can be more clearly articulated due to the comparisons that can be made with the public inquiry in the late 1980's.

This chapter discusses how the segmented nature of the new consultative framework has coincided with feelings of resentment, and disempowerment on the part of NGO's and activists, which was contrasted with the more positive forms of oppositional politics described in terms of the HInkley C public inquiry Again, it must be emphasised that this did not represent nostalgia but rather recognition of opportunities to influence policy with many 'activist' publics in the planning act system felt were no longer present.

Similarly, a key dimension of what was called the 'scalar segmentation' of the formalised spaces of public engagement, between various issues and particularly between the National and the Local, was that there is less mixing between campaigning groups and those designated as 'local' due to the confinement of what issues can and cannot be discussed at particular consultations. Thus the kinds of 'subversive coalitions' which formed between local and non-local campaign groups to resist particular aspects of the Hinkley development in the 1980's are less likely to occur, as there is not the opportunity to 'extend' or 'rescale' the consultation towards national issues, in the case of the 'local' consultation, or towards 'in principle' issues in the case of NPS consultations.

Another key dimension which was also developed within the following chapter, emphasising again, the overall conceptual theme of the 'where' of the political, was a focus on the displacement of dissensual politics around nuclear power, ascertaining 'where' such politics occurred in relation to the new segmented policy landscape. The splitting of publics, through rescaling described above, and the limiting of particular consultations in the manner described does not completely foreclose the political, but does so within the particular setting of formalised spaces of public engagement on nuclear power. but rather dissensus returns through other (arguably more negative) means. The lack of political opportunity for campaign groups within formalised spaces of public engagement sees the political returning through primarily direct action and legal challenge, potentially further diminishing such things as trust and the legitimacy of the institutions guiding nuclear power policy.

Future Research

Numerous other projects are emerging within the MIPU framework. Further research into the politics surrounding these developments such as gas plants, off-shore wind farms, biomass or CCS would provide further useful case studies concerning a policy framework which is in its infancy. This would also enable cross-technology comparisons to develop

understandings of multiple 'objects of governance', how differing technologies are shaped by the framework of the Planning Act, and the tensions which arise out of their development.

Comparative national studies have been carried out in relation to the broader issue of large-scale infrastructural planning (see Marshall, 2012). However, considering that the MIPU is still in its infancy, comparative studies with other national frameworks, for example the Scottish case, would be a productive avenue of enquiry. In terms of nuclear power, analysing the political context of countries which have opted out of nuclear power would provide further data on the relationship between particular forms of technology and the wider influence on governance structures and networks, and processes of politicisation and post-politicisation

The conceptual framework developed could be used to trace a vital and unexamined aspect of the study of the political and democratic nature of scientific and technological innovation. This is the relation between particular forms of public engagement and how these processes are part of the wider aspect of the distributed decision. This involves theorising what constitutes the 'decision' and the object focussed account, stretching between different aspects of a technology's governance, may be a useful tool in understanding the nature of decisions. Understanding this, is vital as it may be that in order to allow certain environmental technologies the space to innovate, certain other technologies may need to be discontinued, which is a matter relating to political closure. The subject of the nature of technological discontinuation, especially in relation to nuclear power, is yet to be explored however.

Alternative Research Strategies

I will now briefly reflect on the research process of this thesis, consider potential areas of improvement, and reflect on what could have been done differently during the course of the research. In am very aware that this research worked through 'snowballing' and was formed through encounters taking place during the research process. I differentiate this from more clearly mapped out research plans, where *who* I was going to speak to, and *what* issues I would explore, would have been more structured from the very beginning. I believe that my method was effective, especially when it is a dynamic and 'live' policy environment which is being explored, as the nuclear policy landscape in the UK was during this project. However, the limitations of this approach must also be recognised. I interviewed civil servants, activists, campaign groups, however there were other groups whose views are absent from this research project.

The nuances of the local situation must be recognised. Inevitably the people I was meeting through snowballing were involved in the consultative process, or were activists. There are other 'less vocal' groups that I would have liked to have also given voice to in this thesis. Firstly, the workforce. I was uncomfortable with the 'straw man' approach taken by some in the activist community regarding the workforce at nuclear power stations. This may include those contributing to the running of the plant, but also security staff, and catering staff, to name a few. In many ways, they often are a silent majority in terms of understanding nuclear politics. This is in part, due to very difficult access and security issues related to nuclear power stations, especially in the post September 11th world. There has been impressive ethnographic work done on the daily practices of nuclear staff, for example Perin's (2004) *Shouldering Risk.* The nuances of the workforce's perspective on nuclear power, as well as its wider effects on the surrounding community could assist in the exploration of some of the nuances of the nuclear debate.

This relates to a fundamental difficulty in terms of accessing groups which have chosen *not* to become engaged in the policy process, which is an important point of reference in terms of understanding political motivations related to nuclear power. What are, for example, the views of local people living around the nuclear power station who did not attend consultations run by EDF as well as the MIPU proceedings? This is an important consideration as these people could be considered to be the silent majority, and in understanding the politics of nuclear power, reluctance to intervene must be considered alongside those who are motivated to passionately engage in nuclear issues.

What could also be done differently, in terms of understanding various articulations of the political is to expand on the methods through which 'engagement' is enacted by various participants. Focussing on the 'formalised' spaces of public engagement provides a coherent analysis in terms of enabling comparisons and transitions through the different policy frameworks to be explored. However, when 'returns' of the political are considered, whilst this thesis was attentive to the ways in which direct action protest and legal action were becoming more prolific methods through which to intervene in government policy, many other channels of engagement may also be taking place. This relates to the idea of 'multiple publics', or what could be considered as 'nuclear publics' and the multiple ways through which they may engage in policy debates. For example, 'tools of democracy' such as new media, blogging, Twitter and news forums, may be considered to be more effective means of contributing to the policy process. In short, it would be good to get a clearer and more in-depth understanding of the diverse methods used to articulate opposition and political dissensus in relation to the nuclear issue.

Returning to the beginning of this section however, concerning the ways in which the research relied on snowballing, it is a consideration that perhaps to reach the 'less visible' groups and methods of intervention above, a more rigorously structured 'plan' of how such groups were to be accessed would perhaps need to take place.

Concluding thoughts on the state of nuclear policy in the UK: the lack of political closure.

The Planning Act is best understood as a form of policy insulation and, in relation to new nuclear, as an attempt to provide certainty and policy direction whilst keeping rigidly to one principle above all others; not mitigation against catastrophic climate change, but rather, that the market must decide. These aims, just as with Hinkley C in the 1980's, may prove to be contradictory. Whilst there is no more certainty regarding new nuclear power development than in the old system, whilst there is no evidence that the process has been sped up, what has been achieved is the production of growing distrust of government, and what has been signalled is, in effect, the end of the participatory experiment with regards to nuclear power. The inability to make binding political decisions on infrastructure, and to openly exclude certain possibilities, a necessary dimension of the political, has been replaced by a dishonest system where greater numbers of people are excluded whilst the language of 'consultation' and 'public engagement' remains. The fact is however, that whatever is done with the Planning System, no matter how much the political dimension of energy policy is displaced, policy exposure remains. François Hollande, the President of France, has more influence over the UK's energy policy at present, than any minister of DECC. No amount of 'streamlining' can escape this fact.

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Appendices

Appendix A: Maps of Nuclear Sites
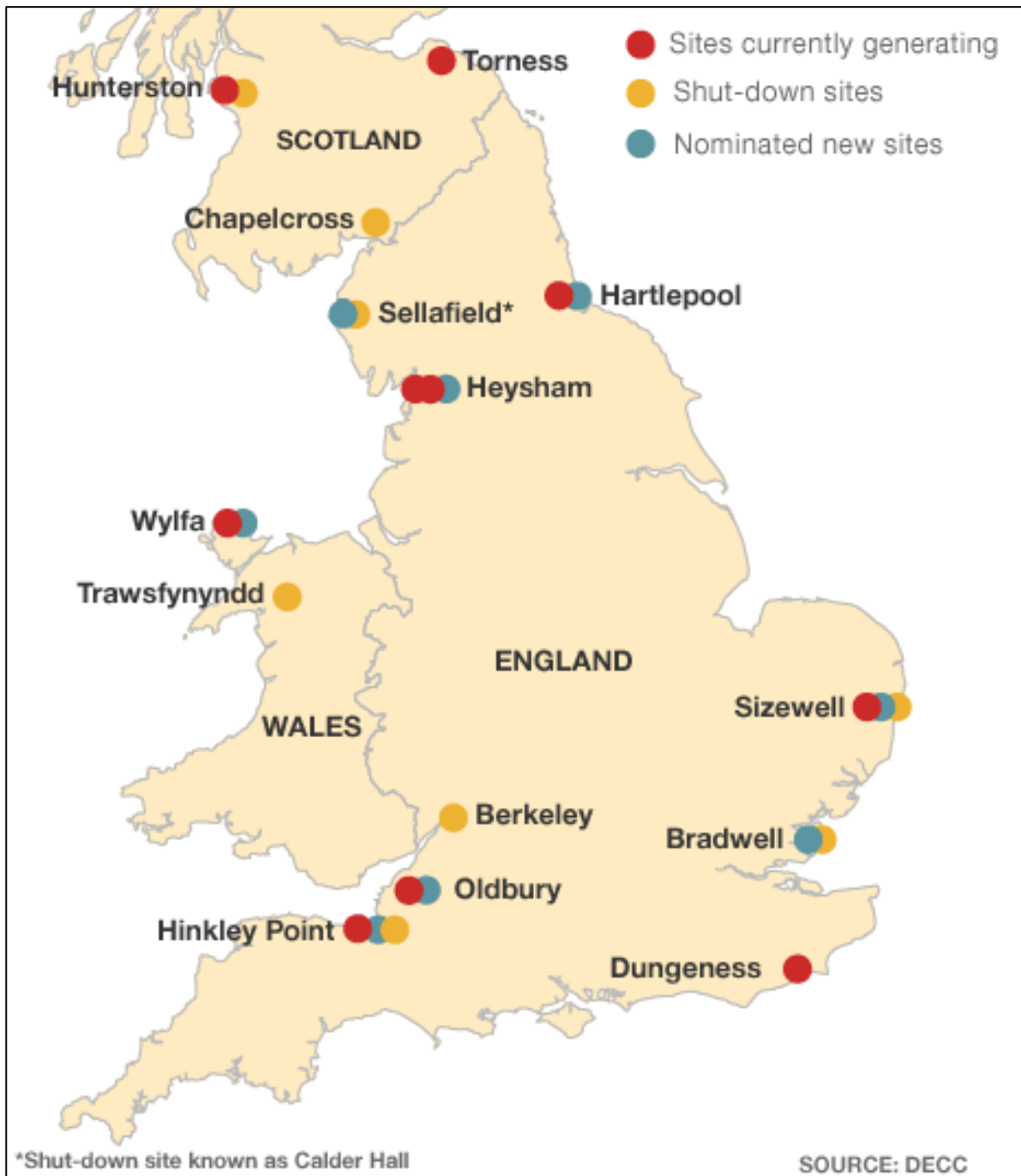
Map of Proposed Nuclear Sites in the UK (BBC News, 2010c)
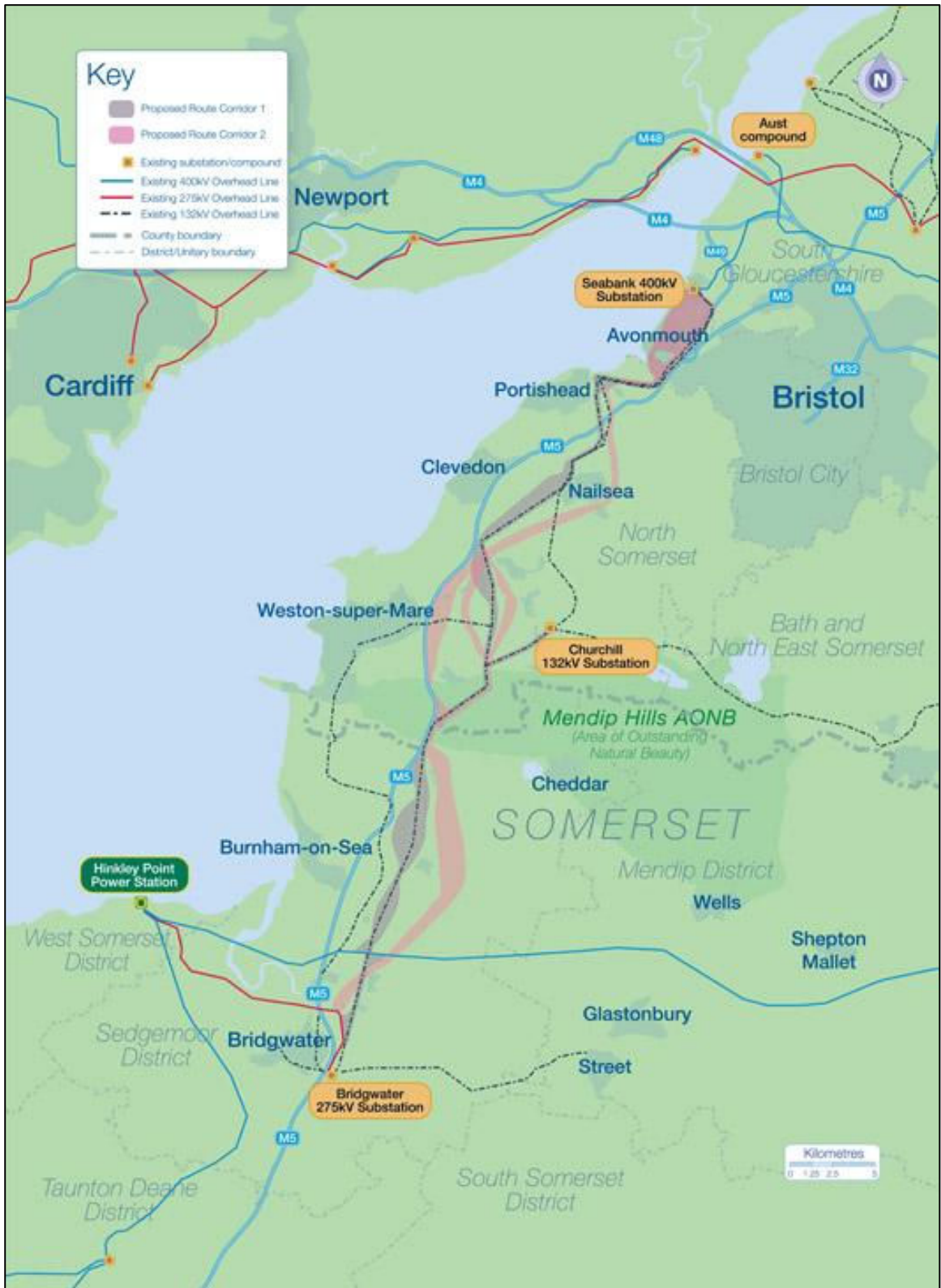
Map of route corridors of grid connections for Hinkley C, showing the site of Hinkley C in the bottom-left corner, and surrounding area of the Bristol Channel (National Grid, 2013)

Appendix B: Digital Images of Archival Material

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ELECTRIC LIGHTING ACTS 1899 & 1909

ELECTRICITY ACTS 1947 & 1957

TOWN AND COUNTRY PLANNING ACT 1971

THE ACQUISITION OF LAND ACT 1981

ELECTRICITY GENERATING STATIONS AND OVERHEAD
LINES (INQUIRIES PROCEDURE) RULES 1987

HINKLEY POINT C INQUIRY

Before

MR. MICHAEL BARNES, Q.C.

(THE INSPECTOR)

DR. K.P. DUNCAN, CB BSc, MB, ChB. FRCP Lond,
FRCP Edin, FFOM

PROF. H.C. SIMPSON, BSc, SM, ScD

PROF. A. ULPH, MA, B Phil.

(ASSESSORS)

At

The Wills Memorial Building

Bristol

On

Tuesday, 18th July, 1989

TRANSCRIPT OF PROCEEDINGS

From the Notes of J.L. Harpham, Ltd.,
Official Shorthand Writers,
55, Queen Street, Sheffield, S1 2DX

witnesses please be present for the whole period.   In view of the time available I will defer from making a statement to allow others to speak.

THE INSPECTOR: You what?

MR. LESLIE: In view of the limited time available now, I will defer from making my statement to allow other people to speak.   (applause)

THE INSPECTOR: Thank you very much.   Mr. Peter Keelan.

PETER KEELAN - Called:

P. KEELAN: A gaf i wneud un pwynt bach yn Gymraeg cyn troi yn ôl at y Saesneg? Dydw i ddim yn credu ein bod ni wedi gweld unrhyw fath o hysbysebu yn Gymraeg yn y cyfryngau Cymraeg ar gyfer yr Ymchwiliad yma yng Nghaerdydd. Felly, pan fydd yr Ymchwiliad yn dod yn ôl i Gaerdydd, a gaf i ofyn wrth yr Ysgrifenyddfa i roi hysbysebion yn Gymraeg ac yn Saesneg yn y cyfryngau Cymraeg a Saesneg ar gyfer y tro nesaf? Diolch yn fawr.

P. KEELAN: (Through the Interpreter):   *May I make one small point in Welsh please before turning back to English?   I don't believe that we have seen any kind of advertising in Welsh in the Welsh media for this Inquiry here in Cardiff.   So, when the Inquiry returns to Cardiff, may I ask the Secretariat to put adverts in Welsh and in English in the Welsh and English language media in Wales for the next time?   Thank you very much.*

I wish to make a point of principle rather than a point about the technicalities of nuclear power generation and this Inquiry into them.   You may remember, Mr. Barnes, when I spoke at the Cardiff Inquiry the first time, I asked you what would count as necessary and sufficient evidence to make the CEGB case fail. Your response was:

"In the nature of these legal proceedings, Mr. Keelan, you can't ask the Inspector or the Assessors questions.   What I have got to do is to listen to what anybody wants to say and make up my mind."

Now I hope this just does not depend on you making up your mind one way or the other as you see fit.   I would hope there would be some basic guidelines that you are adhering to to help you make your decision.

Now you did say in the last Inquiry, "In the nature of these legal proceedings..." - and they are legal proceedings - and I would wish in that case to test that out today by, if you like, donning the mantle of the

Appendix C: Example Letter Used to Contact Potential Interviewees.

XXXXXXXXXXXXX
XXXXXXXXXXXX
Office for Nuclear Development
3 Whitehall Place
London
SW1A 2AW   10/11/2010

Dear XXXXXXX,

I am a researcher in the Geography Department of the University of Exeter. I met you briefly at the Westminster Forum for Energy, Environment and Transport's conference on Nuclear Energy on the 27th of October 2010. I am researching the changes to the regulatory regime surrounding the development of nuclear, and the barriers and challenges facing the nuclear industry in the present regulatory landscape. I am writing to enquire whether it would be possible to arrange an interview with you in January or February 2011, to learn more about the role of the Office for Nuclear Development following on from the talk you gave at the forum.

I realise that this will be a busy time, but the interview should take no longer than 45 minutes. I look forward to hearing from you.

Yours sincerely,

Philip Johnstone
Geography
College of Life and Environmental Science
University of Exeter
Amory Building
Rennes Drive
Exeter, EX4 4RJ
Tel: 07590991815
Email: pcjj201@exeter.ac.uk

Appendix D: Table of Interviewees

Organisations	Number of Interviewees
Friends of the Earth (FoE)	5
Greenpeace	6
StopHinkley	6
Stop Hinkley Expansion (SHE)	1
Hinkley Action Group	3
Campaign for Nuclear Disarmament (CND)	3
Nuclear Free Local Authority (NLFA)	3
Nuclear Consultation Group (NCG)	3
Committee on Radioactive Waste Management (CoRWM)	1
Sustainable Development Commission (SDC)	1
Retired Civil Servants from 1980's Inquiry	2
Advisory panel for White Paper 2003	1
Office for Nuclear Development (OND)/Department for Energy and Climate Change (DECC)	2
Nuclear Industry Association (NIA)	1

Électricté De France (EDF)	2
E3G	1
Associate of Michael Barnes	1
TOTAL:	**42**

Johnstone, P. (2013) 'Planning Reform, Rescaling and the Construction of the Post-Political: The Case of the Planning Act and Nuclear Power Consultation in the UK', *Environment and Planning C.* Forthcoming.

Planning reform, rescaling, and the construction of the post-political: the case of *The Planning Act 2008* and nuclear power consultation in the UK

Abstract

This paper explores the relationship between 'post-politics' and processes of rescaling enacted through planning reform. It centres empirically on the policy shift which has occurred in planning since the inception of the Planning Act 2008 – the new framework which will oversee the development of new nuclear power and other large-scale infrastructural developments in the UK. This act has radically altered the ways in which publics can engage with Government policy. Using interview data gathered from participants in recent nuclear power consultations, as well as participants in the old inquiry-based system of the 1980's, it is argued that processes of rescaling through the Planning Act have diminished the 'political opportunities' available for certain non-governmental actors to intervene in the policy process. This has contributed to the post-politicisation of the planning framework in certain arenas, which raises significant questions concerning public engagement and democratic accountability within the wider context of the modernisation of planning. The potential consequences of these developments are discussed.

Keywords: Post-politics, rescaling, planning reform, nuclear power, Planning Act 2008

Introduction: Planning reform, politics, and the 'nuclear renaissance'

Recently there has been a turn towards 'non-instrumental' readings of the 'modernisation' of planning in order to assess the political and democratic consequences of this process (Allmendinger and Haughton, 2010; 2012; Cowell and Owens, 2006; 2010; Metzger, 2011). *The Planning Act 2008* (HM Government, 2008) represents an important milestone in the modernising trend. The act is a piece of parliamentary legislation designed to 'streamline' the construction of new large-scale infrastructure such as ports, roads, and

power stations through the development of National Policy Statement's (NPS's). Here, 'sustainable development' is the guiding principle through which all development must be justified (HM Government, 2008). This paper focuses on the development of nuclear power within the context of the Planning Act, and the political consequences of the ways in which public engagement has been 'rescaled' between consultations on 'national' policy, directed by the Department of Energy and Climate Change (DECC), and 'local' consultations carried out by the lead investor in new nuclear power in the UK, Électricité de France (EDF). This is assessed in relation to the previous mode of public engagement for nuclear development in the UK – the public inquiry.

This paper draws on a series of interviews conducted with members of campaign groups critical of nuclear power, from both the public inquiry context of the 1980's, and the new consultative framework created by the Planning Act. This focuses on the case of Hinkley C nuclear power station in Somerset. In 1988-89, a public inquiry took place into construction at the site, however the power station was never built due to unfavourable economics following privatisation of the electricity sector and subsequent 'dash for gas' (Aubrey, 1991). The site at Hinkley C has again been proposed as the site of the first power station to be constructed in the UK's present day new build programme under the framework of the Planning Act (Morris, 2011). Twenty eight interviews were conducted with a particular public – the 'activist' or 'partisan' public (Braun and Shultz, 2010), assessing the differing political opportunities which exist within the different methods of public engagement for these groups. These groups represent the politicised nature of the nuclear power debate, and have utilised planning spaces such as public inquiries for their 'unofficial' role of intervening in government policy around the kinds of issues which have not been democratically addressed through traditional settings such as the ballot box (Cowell and Owens, 2006).

There is not the space to discuss the many on-going debates related to nuclear power (see Hultman, 2011; Sovacool and Valentine, 2012), however a basic premise must be established which is assumed throughout: it has always been the case that when the atom is split, so too is the public, but now the civilian nuclear power issue is more divided than ever before. Nuclear has become a more favourable option in the context of climate change and energy security, establishing what has been referred to as a 'reluctant acceptance' of the technology (Pidgeon et al, 2008). However, in the wake of the Fukushima accident in Japan, many countries, most symbolically Germany, have chosen to follow non-nuclear pathways (and in so doing affirm that nuclear is a political 'choice' rather than simply a technological 'necessity'), and public opinion continues to be divided (Ipsos Mori, 2012).

Given this, Brian Wynne's (2011, page 1) statement originally made in 1982, that nuclear is the most "iconically controversial" of modern technologies, remains completely valid today. Nuclear is not merely a technical problem, but a "technopolitical" one (Braun and Whatmore, 2010), overflowing with numerous uncertainties, divisions, controversies, and social and political dimensions, which are generative in themselves in questioning the nature and structure of democracy in technologically complex societies (Callon et al, 2011; Marres, 2007).

The article centres on how the politicised and antagonistic dimension of the nuclear issue is played out through the differing means of public engagement. 'Public engagement' here, refers to the formalised mechanisms designed for public participation within the planning framework surrounding a particular development. Whilst engagement related to the development of renewables within recent policy frameworks has received significant attention (Barnett et al, 2012; Cass et al, 2010; Cotton and Devine-Wright, 2012; Devine-Wright, 2011; Walker et al, 2010), the new formalised public engagement related to new nuclear power development under the new Planning Act remains understudied.

In so doing, recent discussions around 'post-politics' are developed. The 'post-political' condition is conceived as that where politics proper, identified as 'dissensus' involving competing ideologies of socio-economic trajectories, is foreclosed, establishing a 'consensual' policy framework built around the underlying principles of neoliberalism (Swyngedouw, 2007). Others are critical of the term however, viewing it as missing the plethora of on-going political struggles (Cochrane, 2010; Dean, 2009; Marres, 2012). This creates a rather 'either-or" approach to understandings of post-politics however. Instead, this article is corroborative of more nuanced approaches which do not reject post-politics, but rather focus on how it develops within particular arenas, through specific policy reforms (Allmendinger and Haughton, 2012).

The term 'post-politicisation' is used to emphasise its partial and processual nature, focusing attention on the subtler ways in which politics operates within and outside planning frameworks. Thus the 'displacement' of politics, rather than a completed 'post-political' condition is emphasised, where politics returns via other channels of engagement. This paper relates such displacement to processes of rescaling - scale understood as being produced through social and political processes such as planning reform (Brenner, 2009; Jessop, 2008; Moore, 2008).

Public inquiries, in particular those related to nuclear, have been well-documented as being extremely problematic; often technocratic, authoritarian, and exclusionary (Kemp et

al, 1984; Massey, 1988; O'Riordan et al, 1988; Wynne, 2011). Despite this, recent attention has focussed on the 'unofficial' roles these spaces have had in offering 'political opportunities' for the staging of 'subversive politics' (Cowell and Owens, 2006). Considerations of the informal role these spaces include acting as 'tools' of democracy for extending the issues and spatial parameters considered relevant to the issue (Asdal, 2008), or fostering 'policy learning' (Grove-White, 1991; Owens and Cowell, 2002; Rough, 2011). Processes of rescaling have been integral to reducing these politicising moments, displacing politics from formalised settings of planning towards alternative means of engagement. This process is referred to as the construction of the post-political. This paper takes a similarly nuanced approach in addressing these unofficial, and more subtle, functions offered by spaces of planning.

The article proceeds in three main stages. Firstly the background to the Planning Act is outlined, with description of the alterations to public engagement around nuclear power. This is followed by a discussion of post-politics in the context of sustainable development and the modernisation of planning, outlining a more nuanced approach to post-politics where processes of 'rescaling' are key to the displacement of the political from formalised public engagement settings. After a brief discussion of methodology, the subtle ways in which the rescaling of consultation between the national and the local has diminished the political opportunities available to activists in comparison the previous setting of the public inquiry is discussed. In the concluding section the possible consequences of this are addressed, where other channels of engagement with nuclear policy, namely direct action and legal challenge are likely to become more prevalent.

Rescaling through the Planning Act: public engagement with nuclear power.

In the last five years substantial transformations have occurred in the British planning system. A series of White Papers written under New Labour called for improvements to the planning framework to meet the challenges of the 21st century, outlining the need to

> "achieve our goals for secure energy supply, reduced carbon emissions and international competitiveness, in a way that is timely, efficient and predictable" (HM Government, 2007).

These changes culminated in the unveiling of the Planning Act 2008 – an act of parliament which aimed to 'streamline' the planning process through two crucial developments; the creation of National Policy Statement's (NPS's), and a new decision-making body, the

Infrastructure and Planning Commission (IPC), which has subsequently transformed into the Major Infrastructure Planning Unit (MIPU). These measures were designed to mitigate against developmental risks, and encourage investment through reducing the substantial upfront construction costs of large scale infrastructural such as airports, roads, ports, and large power stations over 50 Mega Watts including off-shore wind farms and nuclear power stations (HM Government, 2008). These were transformations considered necessary for new nuclear to be built (See Parker quoted in Meek, 2005)

As outlined by Government,

> These [NPS'S] will set out the national need for infrastructure and explain how this fits with other policies such as those relating to economic development. By setting out the Government's strategic, long-term approach to infrastructure development, national policy statements will provide greater certainty and clarity for promoters, planners, and communities" (HM Government, 2007, page 19-20).

NPS's therefore, are designed to answer and clarify questions of policy. The importance of policy is set out in relation to 'national need', which forms the basis for the decision making process. Once NPS's have been ratified by parliament, policy related questions – in the case of a power station – questions of need, siting, and safety, are decided and fixed. Therefore opportunities for challenging the basis of policy are undermined by the sequential nature of the new decision-making process under the Planning Act. These changes have raised concerns of a 'democratic deficit' in relation to new planning procedures (Cotton, 2011; Ellis, 2008; Planning, 2009).

This directs attention to the transformation of public engagement within the Planning Act. 'Public engagement' is a term which has come to prevalence in policy circles and academic work over the past twenty years. The term covers a broad range of activities as debate continues about what form public engagement between Government, stakeholders and citizens should take (Row and Frewer, 2004). In relation to technological development, Delgado et al (2011: 827) outline that public engagement

> "...should not simply be about generating public acceptance through the provision of information on science and technology, but about citizens' active involvement in the development of socio-technical trajectories".

A Government report similarly points out that, against the idea of 'stakeholder communication',

> "engagement programmes provide genuine insight and creative thinking to improve policy outcomes – giving the public a real sense that they have been able to contribute to government's work." (COI, 2008, page 1).

Government sponsored public engagements have utilised a variety of methods such as citizens juries, citizens conferences, consultations and deliberative polls (Mahony et al, 2010). Over the past two decades, the principles of 'public engagement' has increasingly been viewed as a necessary element of an organisation's activity across all sectors of society. This article focuses on the political differences between two methods of formalised engagement: the public inquiry and the consultative framework of the Planning Act.

It is important to note that these formalised approaches are not the only way in which publics can 'engage' with governmental policy. Various other channels – from direct action protest through to more proactive forms of activity including grassroots transformation towards alternative low carbon futures such as Transition Towns, can all be seen as methods of 'engaging' with energy policy more generally. Additionally O'Neill and Nicholson-Cole (2009) make the significant observation that a positive correlation between public engagement and outcome cannot be assumed. A number of negative outcomes must also be considered. These include issues of public trust in institutions, and inclination to engage with policy in the future being adversely affected through negative experiences of public engagement. Indeed, the argument of this paper hinges around the ways in which policy reform has altered the spatialities of planning, and in so doing have impacted upon the locations and methods involved in engagement with government policy on nuclear power and wider issues of energy.

As there are multiple forms of engagement there are also multiple publics. Whilst notions of 'the general public' and 'the public interest' are often evoked by government in the rhetoric surrounding NPS's, there are in fact 'multiple publics' emerging around differing issues and channels of engagement (Mahony et al, 2010). This paper is focussed in particular upon 'activist' or 'partisan' publics (Braun and Shultz, 2010), those members of collectively organised campaign groups aiming to influence the political direction of government policy. The 'activist' public has been an integral element in the narrative of nuclear development over the past few decades (Herring, 2010). It is often seen as 'representing' the substantial proportion of the population sceptical of nuclear power, but without the time or economic means to challenge the incredibly complex and time

consuming policy discussions surrounding nuclear power (Welsh, 2000). This relates to Warner's (2005, page 56) definition of a 'counterpublic', that "...against the background of the public sphere, enables a horizon of opinion and debate".

The kinds of issues which campaign and activist groups have played a key role in what Latour (2005) terms 'making things public' include the many ethical, moral, and political considerations of nuclear technology. These reveal planning decisions around new nuclear to be not only concerned with matters of objective technical appraisal, but also imbued with significant moments of politically charged uncertainty. Within the era of New Labour, organisations such as Committee on Radioactive Waste Management (CoRWM) took stock of these issues and recognised that they cannot simply be side-lined (MacKerron, 2011). In part this represented the 'slowing down' (Whatmore, 2009) of scientific decision making, to fully reveal uncertainties and allow the politically generative effects of these moments to take place.

As Chilvers and Burgess (2008) note, such a process of 'slowing down' transformed into a 'speeding up' at the end of the CoRWM process, as nuclear new build suddenly emerged onto the policy agenda, necessitating a definitive solution to the issue of nuclear waste. Processes of 'streamlining' involving the re-scaling of policy through the Planning Act surrounding nuclear new build reflects this trend towards speeding up planning decisions. This appears to represent a change in direction from the initial enthusiasm of the 'deliberative turn' (Goodin, 2008), and wider governance trends of localism, devolution and community- focussed decision-making methods forming the basis of the third-way New Labour ideology (Giddens, 2000).

A report by DEFRA (2005, page 8) highlighted the importance of "actively promoting effective, participative systems of governance in all levels of society – engaging people's creativity, energy, and diversity". In the context to the build up to the Planning Act however, a changing stance towards such localised scales of engagement began to emerge, as they were increasingly identified as a hindrance to sustainability. Here it is outlined that

> "...these elements can also create difficulties for participants, including uncertainty, delays and sometimes significant upfront costs" (Department of Trade and Industry, 2006, page 135).

A key problem identified within the old planning regime relates to public inquiries, where:

> "...public inquiries can become embroiled in debate about *national* issues, rather than focussing on *local* issues related to the siting of the proposed development" (ibid, page 136, Author's emphasis).

Lengthy and costly inquiries, particularly the Heathrow terminal 5 inquiry, but also previous nuclear inquiries such as Sizewell undoubtedly contributed towards this (Cotton, 2011), but the spatial element identified above, is crucial to understanding the problematic nature of the inquiry in the eyes of government.

In the late 1970's and 1980's nuclear power became synonymous with the 'big public inquiry' (Kemp et al, 1984), including The THORP development at Windscale (Wynne, 2011), the 'Sizewell' inquiry (O'Riordan et al, 1988), and Hinkley C inquiry (Aubrey, 1991). The intermeshing of scalar practice within the setting of the inquiry is a common theme throughout. As O'Riordan et al (1988, page 97) describe

> "...it was clear from the beginning that although there was considerable opposition from local groups, the bulk of the opposing evidence would come from *national* pressure groups".

This relates to a body of literature on rescaling which focuses on scale not as a stable, fixed, or ontologically pre-given unit of spatial containment, but rather, as being constituted through social and political processes, such as policy reform (Jessop, 2008; Pemberton and Goodwin, 2010; Swyngedouw, 2000). Indeed, as Brenner (2009, page 70) puts it, "it is, in short, processes of scaling and rescaling, rather than scales themselves, that must be the main analytical focus to the scale question". He goes on to say "scales exist because social processes are scaled...scales are the provisionally stabilised outcomes of scaling and rescaling processes: the former can be grasped only through an analysis of the latter" (71-72).

There is a key link between the argumentative and the spatial: whilst government saw the space of the inquiry as relating to a specific development, activist groups saw the space of the inquiry as being one of the few opportunities to engage with the basis of policy directing and justifying specific developments. This demonstrates the fluidity of scale and how it is produced through social processes including lines of argumentation. There is no natural scale of nuclear power development, but a political contestation over what constitutes the issues and spatial boundaries of the development under examination. Key to this are more grounded processes, such as the mixing of local and non-local publics within the same arena (Cowell and Owens, 2006). Thus the established scalar relationships and practices within planning frameworks around nuclear power are

disrupted and reconfigured by such encounters (Staeheli, 2010). This paper focuses on the converse of this process; the ways in which rescaling through policy reform can diminish opportunities for the expansion of deliberation around particular developments. This is considered in relation to recent interventions on 'post-politics' within planning, to which the discussion now turns.

Post-politics, Sustainable Development, and Rescaling

'Post-politics' has become a key theoretical lens through which to examine a variety of recent policy developments (Allmendinger and Haughton, 2012; Catney and Doyle, 2011; Hilding-Rydevik et al, 2011; Kythreotis, 2011). These debates have been brought to the fore most notably by Swyngedouw's (2007; 2010; 2011) analysis concerning the diminishment of the public sphere, political engagement, and democratic accountability through the theoretical lenses of the 'post political' and the 'post democratic'. Swyngedouw's conceptualisation of a properly political moment, follows Ranciére, where "the essence of politics is dissensus" (2010, page 38). Post-politics refers to a consensual situation beyond disagreement and antagonism, driven by the dominant ideological convictions of neoliberalism in the guise of a 'value-free', technocratic governance regime. Here,

> "the democratic character of the political sphere is increasingly eroded by the encroaching imposition of market forces that set 'the rules of the game'" (Swyngedouw, 2005, page 1993).

Another element of the post-political, is the supersession of a political framework structured around competing ideological convictions working towards certain normative goals, with a blurred distinction between left and right. Here, politics is the domain of a "...collaboration of enlightened technocrats" (Žižek, 1999, page 236) providing solutions rooted firmly within the confines of the current socio-economic establishment.

Post-political governance arrangements operate through what Gunder and Hillier (2009, page 1) refer to as 'comfort terms', terms meaning "everything and nothing. All things to all people". They identify 'sustainable development' as such a term, reflecting concerns elsewhere over the dangers of its potential vagueness and utilisation as a 'green-washing' strategy circumventing and even preventing serious discussions on substantial policy change (Briassoulis, 1999; Gunder, 2006; Richardson, 2002; Smith, 2005). Indeed, the

'slippery nature' of sustainable development has received significant attention from planners and geographers alike (Jordan, 2008).

Swyngedouw (2007, page 27) similarly uses sustainable development as the prime example of post-politics. He argues that within governance arrangements surrounding sustainability,

> "...matters of concern are thereby relegated to a terrain beyond dispute, to one that does not permit dissensus or disagreement. Scientific expertise becomes the foundation and guarantee for properly constituted politics/ policies".

A post-political understanding of sustainable development is however contested by ideological accounts which view its potentially slippery nature as a signpost not of consensus, but rather as a mark of political contestation. For example Mansfield (2009, page 37) whilst acknowledging the extent to which politics is often 'written out' of discussions on sustainability, argues that it is nevertheless political because "it is the outcome of heated debate, much of it in the formal policy arena". This echoes similar literature which has identified sustainable development as "one of the most contested terms in the entire social sciences" (Jordan, 2008, page 18).

Similarly, Cochrane (2010, page 372) argues that,

> "[post-politics] understates the extent to which sustainability itself is a contested concept – indeed an important site around which conflict may be generated"

What emerges in the identification of these two perspectives is a rather dichotomous 'either or' understanding of the term however. A more nuanced account of post-politics in the broader context of spatial planning is provided by Allmendinger and Haughton (2010, page 804) who argue that

> "...the post-political condition and the practices of spatial planning are far from being a monolithic force; rather, the practices and discourses of spatial planning have evolved over time and taken on different complexions in different parts of the country, creating the context for diverse understandings and evolving practices".

This opens up the space for comprehending post-politics as being achieved through specific planning reforms and policy developments. Cowell and Owens (2006), whilst not using the term 'post-politics', explore the link between state restructuring as enacted through planning reform and 'political opportunity structures'. This addresses the affordances which activists have in terms of influencing policy as being context-dependent, and differing significantly in terms of the structural constraints of state strategy (Kitschelt, 1986; Meyer, 2004). Such an approach examines the 'argumentative' function of planning spaces, where they are viewed not merely in an instrumental sense, but rather as a domain in which policies are continually contested and remade. As Cowell and Owens state,

> "planning inquiries have provided crucial institutional spaces for challenges to the status quo. Such opportunities have been skilfully exploited by coalitions of local and nonlocal actors, not only to resist specific developments (with mixed success) but also to articulate critiques of the programmes and policies from which individual proposals derive" (Cowell and Owens 2006, page 404-405)

Thus, public inquiries have been used in a highly political sense, and have been a method of democratic engagement with the kinds of issues which in the UK remain muted within the settings of parliamentary democracy.

The change from inquiry to consultation is based around the idea that the adversarial nature of public inquiries was problematic, necessitating the formation of more consensual forms of engagement (Pitt quoted in Hetherington, 2009). Whilst recognising the limitations of inquiries, Metzger (2011) argues that such changes run the risk of creating a 'democratic deficit', through the side-lining of critical voices from the planning process. Consensus here, is understood as problematic due to the ways in which it functions to displace oppositional voices from public engagement forums (Allmendinger and Haughton, 2012). This relates to recent 'non-instrumental' discussions which, whilst fully recognising the many limitations of inquiries, point towards their partial democratic and political function (Asdal, 2008; Cowell and Owens, 2006; Rough, 2011).

Asdal's (2008) account of a public hearing around an Oil-fired power station in Norway exemplifies the crucial role that extending the spatial parameters related to a particular issue plays in its politicisation. This brings us back to questions of scale: As Edwards et al write, the "...rescaling of government also constitutes a redistribution of power, raising

issues of democracy and accountability" (2001, page 290). This provokes a question of how changes in the spatial logic of the planning system simultaneously alter the political opportunities of certain groups, in terms of the connection between the inherent spatiality of certain lines of argumentation.

The public inquiry around Hinkley C in the 1980's acted as a crucial point through which issues of both national and local issues were deliberated. The subtle opportunities presented to activists critical of nuclear power within this context included the ability to extend the scale and scope of the inquiry, but also crucially, the ways that both 'local' and 'national' campaign groups met within the same forum. This was politically generative in that it enabled the formation of 'subversive coalitions' (Cowell and Owens, 2006). In contrast, what is demonstrated in the following section is that contemporary rescaling of public engagement diminishes the political opportunities of activists, reduces the ability to spatially extend the nuclear issue, and fragments publics to curtail the disruptive meetings of differing interests in the same forum.

Public engagement with nuclear power: from Inquiry to Consultation

Twenty-eight interviews were conducted with activists who were members of campaign groups critical of nuclear power (See Table One). As part of the same research project, interviews were also carried out with policy makers and practitioners, addressing their understandings of the changing planning framework around new nuclear. This aspect of the research however will be explored in future publications, and the focus of this paper is solely upon perceptions and experiences of activists critical of nuclear power.

Campaign Group Name	Number of Interviewees
StopHinkley	7
Greenpeace	6
Friends of the Earth (FoE)	5
Nuclear Free Local Authorities (NLFA)	3
Nuclear Consultation Group (NCG)	3
Campaign for Nuclear Disarmament (CND)	4
	Total: 28

Table One: Campaign Group Interviewees

The groups members self-identified as 'campaigners' or 'activists' critical or nuclear power, and all sought to challenge the government's nuclear power policy. This individuals represent the 'partisan' or 'activist' public identified by Braun and Shultz (2010), who tend to hold strong collective opinions, and aim to influence the direction of policy. Such groups are often perceived as representative of substantial numbers of people sceptical or critical of nuclear technology who lack the resources to engage in the immensely complex and time-consuming issues surrounding nuclear new build. The interviewees were recruited from a wide range of NGO groups. It must be noted that StopHinkley is opposed to the development on 'in principle' grounds, and are thus part of a wider campaign against the technology. Interviewees included participants in both the 1980's Hinkley C public inquiry, and the present day consultative framework (See Table Two). These individuals were met directly at NPS consultations, through 'snowballing', or were contacted via mail.

Consultation Period	Number of Interviewees
1980's Public Inquiry	6
Current Consultation (2010-Present)	13
Both	9
	Total: 28

Table Two: Involvement of Campaign Group Interviewees in Current and Previous Public Engagement

Data was also gathered through textual analysis of the transcription of the Hinkley C inquiry at the National Archives in Kew, London; such documentation is only available on site. Similarly, the fully transcribed NPS consultations were also used to corroborate analysis. These are no longer available online, however can be requested from DECC. NPS consultations took place in Bristol, Manchester, and London. Considering this paper is comparing the two forms of engagement for Hinkley C in two different 'eras' of nuclear development in the UK, it could be said that consultations taking place in these locations are not of relevance to Hinkley C, as there are local consultations at the site run by EDF

prior to application to the MIPU. However, this is exactly the point; the public inquiry concerned a specific infrastructural development in question, but was also used to discuss issues of national policy within the same setting, thus folding together local and national planning concerns into the same forum. Hinkley C is the first proposed station as part of Britain's 'nuclear renaissance'. Initial public engagement with Hinkley C is stretched between consultations on the national basis, addressing the reasons for its development, and localised consultations engaging with publics. Questions of how this 'rescaled' public engagement relates to processes of post-politicisation, and affects the political opportunities of activist groups, is of particular significance.

Coding and storage of data was carried out using the software NVivo©. Over half of the interviewees wanted to remain anonymous so anonymity was ensured for all participants. A coding scheme was developed focussing on experiences and perceptions of activists towards the new consultative system of the Planning Act, in contrast with the experiences and perceptions of the inquiry-based system of the 1980's. Of particular prominence during the interviews was a largely negative perception of the new system, particularly in contrast to more positive framing of the 1980's public inquiry. Many respondents felt the scale and scope of the public enquiry had facilitated more substantial public engagement, enabling the inquiry to be carried out in several significant locations, extending and democratising the issue. Following Asdal (2008), this was an unintentional 'democratic' by-product of a largely technocratic, biased and authoritarian public inquiry system, the substantial deficiencies of which are recognised.

Prior to the establishment of the Planning Act in 2008, 'in principle' consultations took place around nuclear power. They were mired in controversy, labelled a 'sham' and abandoned by many NGO's (see Johnstone, 2010). Despite these problems, the government concluded that 'in principle' consultations had fulfilled their purpose, enabling a pro-nuclear power decision to be made, and were thus no longer required. Subsequently, the decision was made to introduce consultative processes on the details of NPS's run by DECC between November 2009 and February 2010, and a second round of NPS consultations taking place between October 2010 and February 2011. Overlapping these national consultations were local consultations run by EDF required prior to application with the MIPU. Other 'issue' based consultations relevant to nuclear power, radioactive waste management, electricity market reform, strategic siting assessment, also took place run by DECC and the Office for Nuclear Regulation (ONR).

Whilst this development had been framed within the rhetoric of nuclear power as giving local people greater opportunities to be involved in the planning process, others are more sceptical. As a member of the NCG stated a less favourable reading of these changes

> "DAD – Decide Announce Defend may be partially over, but it seems that UNCLE – Unlimited Consultation Leading to Exhaustion may be the new trend...the way that policy is divided into separate parts like this, makes it extremely difficult to engage – it is a full time job to do so".

Metzger (2011, page 194) has referred to the overlapping, opaque nature of modernised planning frameworks as confusing and "Kafkaesque". Certainly, a general feeling amongst NGO's has been one of being 'overwhelmed' with the extent of consultation and information that has to be confronted in order to participate. One interviewee, a member of Greenpeace, describing a feeling of "constant frustration" towards the process:

> "sometimes it feels like the only way we can actually influence things, is by... well, deliberately trying to shut the whole process down!...well, delay it at least..."

The deliberate disruption of consultations has been a prominent strategy employed by other groups because, as one member of FoE stated

> "the democratic process has been bypassed, what's the point? The whole thing is designed so that you can't actually have a debate on nuclear!...how is this democratic?"

This was particularly evident at the Second Bristol National Policy Statement consultation on the 29th of November 2010, when the consultation had to be stopped temporarily as persistent shouting interrupted proceedings. Much of the focus in this consultation, and in the subsequent comments made by attendees from campaign groups, was on the democratic implications of the ways in which DECC was running the consultative element of their policy. One CND member stating

> "I call these consultations their [DECC's] promotional roadshows...two hours In Bristol to discuss six NPS statements that will dictate our energy choices for the next 50-100 years? This is apparently our chance to discuss the details of the

policy justifying Hinkley...I don't see any conversation though...I see an advertising campaign"

One participant from FoE during this particular consultation simply asked

"Is there anything we can actually say or do which can change nuclear policy?"

This question was greeted with some laughter and applause by audience members creating an atmosphere resembling a pantomime. Later the participant in question, when interviewed, pointed out that this was a purely symbolic act, addressing a perceived power imbalance:

"Everybody knew the answer was clearly 'no', but it was amusing watching him [the civil servant in question] attempt an answer!"

A general theme which emerged from interviews with NGO members was that the original Hinkley C public inquiry in the 1980's was a preferable form of engagement, despite the fact that the power station was given the go-ahead at the end of the proceedings, as well as the well documented problems with the technocratic basis of inquiries (Wynne, 2011; Massey, 1988). For one member of Greenpeace, who took part in both Hinkley inquiries, the original inquiry now represents

"...the benchmark for how we would like to engage...we had expert witnesses and encouraged many members of the public to have their say."

This echoes other views from a member of the NLFA who felt that while inquiries certainly had their problems there were significant advantages when viewed retrospectively from the current system

"A planning inquiry, would give people, for and against the application, the opportunity to give their views fairly into the process. It doesn't mean that it will stop the process...But it allows for a fairer opportunity...the new system doesn't really allow the same level of debate, and makes it much more difficult for anybody that's critical about it to get their views in"

From the NCG there was also agreement on this point:

"It's about a balance of everyday knowledge against expert knowledge in order to achieve a democratic mean.... set piece inquiries are a good way that a society can really go about understanding what it [the issue] is about."

The focus of the paper now turns towards how spatial changes relate to these differing perceptions of the two public engagement frameworks detailed above. The fixed nature of the spatial framing of the new consultative framework is considerably different from the more fluid spatial formations which developed in the 1980's inquiry. The independent inquiry inspector, Michael Barnes, made the landmark decision to move the Hinkley C (Somerset) inquiry to Cardiff on the 22nd to the 24th of March, 1989, following demands made by campaign groups in both Somerset and South Wales. Similarly, as a result of public pressure, the decision was made to also hold the inquiry in Bristol on the 17th and 18th of July, 1989.

Conducting the inquiry in multiple sites broadened the issues of Hinkley C beyond the locality. This was problematic for the CEGB, causing delays and adding complexity to previously tightly spatially bounded concerns (Aubrey, 1991). What is revealed by the case of the Hinkley C inquiry of the 1980's, is that the spatial parameters defining the Hinkley 'issue' understood as containing those 'considered affected' (Barnett and Bridge, 2012), were open to manipulation by campaign groups. As a Greenpeace member stated during the inquiry

"We had the chance at the start, to say to the inspector – and he was independent from government, "we want the inquiry to go here"; "we think these people in Wales need a say in Hinkley; "we think this is an issue for Bristol". We could take it places..."

Similarly, as can be observed with the consultation on the proposed Hinkley C development in 1989, the very nature of a 'general inquiry' ensured that greater numbers of people, and a variety of interest groups coalesced into a substantial force to influence policy (Aubrey, 1991). As a member of the StopHinkley group who has taken part in both Hinkley C consultations described,

"the original Hinkley C consultation saw *local* effects of the building of a power station actually shaping and contributing to a *national* policy conversation because of the nature of the general inquiry....we could use it as a crucial space to question our concerns as well...That is something missing now"

It has been recognised that often the nuanced perceptions of local publics in relation to nuclear are generalised as being favourable on the whole (Venables et al, 2009). However, these views can become more complex through a generative process of deliberation, as more substantive issues related to nuclear power are encountered. This was addressed by an activist from the StopHinkley campaign, who described how in the 1980's many local people became actively involved in the 'in principle' issue based discussions, through hearing the arguments of campaign groups during the public inquiry:

> "There was a local group set up to with their states aim of looking objectively at it [the proposed development of Hinkley C]. A month into the Inquiry, most of them were anti-nuclear! [laughter]"

Asked why this was, it was stated

> "We had a really good case and we had the time [in the inquiry] to put our points across and some people clearly found these arguments convincing as we had a good deal of support locally."

Michael (2009) considers publics in 'relation to other publics'. The above quote indicates a perceived divide between local groups interested only in 'local' issues, and campaign groups discussing 'national' and 'in principle' problems. However it is often more nuanced. The space of the inquiry also enabled campaign groups to discuss substantial issues related to nuclear power and propose a case for alternative policies.

The 2008 Planning Act reformed and compartmentalised planning into different 'stages' to enable a more 'fluid' and 'streamlined' planning procedure for large scale infrastructure. As already discussed, this involves separate consultations running based between several nuclear issues, but crucially, also through differing scales of engagement; national consultations run by DECC (DECC, 2012), and local consultations run by EDF (EDF, 2012). The local consultations, run by EDF who have a duty to consult under Section 37 of the Planning Act prior to application, have involved a number of consultations on development proposals. There is no doubt that this consultation has involved local groups from the beginning of the proposals and has been extensive. For NGO's such as Greenpeace, these consultations have not been worthwhile however. As one member involved in organising campaigns in the UK described,

> "...things have changed a lot. There's far more battles to be fought because of climate change. We have to think very hard about what to spend the money on. We funded two members of staff and gave money towards the Hinkley group in the 1980's. Greepeace remains resolutely opposed to nuclear power, but these consultations? Not worth it for those interested in the actual issues of nuclear.

The division of policy between the national and the local, as opposed to the public inquiry experience, has contributed to confusion as to what can be discussed within particular settings. Reminders were frequently made by civil servants during NPS consultations that care would have to be taken not to discuss 'local' issues, as the local context was not the concern of the NPS's, thus the spatial boundaries are carefully policed. Indeed the constitution of specific scales of engagement through planning reform related to planning for large scale infrastructure has significant implications for the forms of argumentation pursued and political content deliberated. Primarily it would appear that the 'coalitions' which Cowell and Owens (2006) describe have not occurred to the extent to which it did in the previous consultations. As one StopHinkley activist described:

> "...we don't tend to get involved or even speak to people involved in the *local* consultations as they do not relate to our discussions".

Where previously the 'public inquiry' was described as a meeting place of a variety of concerns which could in turn affect general policy (Aubrey, 1991), dissecting policy into specifically 'local' and 'national' issues and forums without any crossover, successfully prevents the developments of the kinds of 'subversive coalitions' of both local and national groups (Cowell and Owens, 2006, page 405).

Asdal's (2008) account of the public hearing in Norway points towards the way in which an ordinary object of 'objective' point of public administration, is transformed into a lively and politicised 'issue', where tools or administrative government are in fact turned around and utilised to become "...tools for public involvement, for democratization or deliberation, as well`` (Asdal 2008, page 13). Key to this process, is the expansion of the spatial parameters of what constitutes the issue at hand. The counter-move that must be considered is how highly contested and politicized developments are rendered more 'administrative' and 'objective'. The dissection of policy into contained scales, side-stepping the possibility for a return to 'in principle' discussions, diminishes opportunities for this to occur. Thus the construction of the post-political is achieved in certain areas

through spatial practices which dictate what the relevant space, and relevant spacing, of 'the public' is.

Whilst the justification for this has been described as 'speeding up' the planning process in policy documents, this was queried by an activist from FoE, an organisation who have been very critical of the new framework:

> "There is not really any indication that the process will in fact be speeded up. What we've lost from the process in our opinion is democratic engagement."

The question then becomes one of considering how campaign groups, many of them considered 'mainstream' stakeholders during the 'deliberative turn' view these changes, and what likely courses of action will be taken in the future in relation to the new policy landscape of the Planning Act.

Concluding Remarks: From consultation to where? A 'battle' against the planning system?

The above quote neatly brings us back to the tension within the modernisation of planning between drives for efficiency and democratic accountability. It also queries the extent to which the Planning Act will actually make nuclear development more timely and efficient. Despite streamlining, the UK's nuclear ambitions have become far more modest than those announced in 2008, and are shrouded in uncertainty for the foreseeable future (Chazan, 2012) EDF have delayed their final decision on whether to invest in Hinkley point (Carrington and Macalister, 2012). 'Public opposition', often invoked as the reasoning for the staggered development of nuclear, cannot be held responsible on this occasion. This places focus on whether it is the 'self limiting' features of the technology (Romm, 2008), such as economics, rather than 'planning risks' caused by public intervention, which are the main opposition to new nuclear build. Indeed, summoning 'public opposition' as the main cause of nuclear's staggered growth, may function to distract from some of the more inherent uncertainties regarding large scale infrastructural development and the policy surrounding them (Flyvberg et al, 2003; Jenkins, 2012).

An instrumental view could be taken that side-lining oppositional voices is a positive move in order to speed up development. Aside from many democratic and procedural justice-based arguments against this position however, the idea that political dissensus can be 'solved' through policy reform is misplaced. Processes of 'rescaling' utilised to solve political issues can entail 'unintended consequences' (Goodwin et al, 2012); for example,

devolution was expected to produce the by-product of ending the campaign for Scottish Independence, when it in fact strengthened it. As changes to the Planning Act were introduced, concerns were raised that it could cause "simmering frustration, resentment...and in consequence possibly more direct action and divorcement from the political process" (Vidal, 2009). As the limited opportunities presented in public inquiries for challenging policy are closed down, politics returns through multiple other channels. Increasing levels of legal action (Macalister, 2011), and direct action through blockades, occupations, large protests, and mass trespasses, have undoubtedly become more prevalent (BBC News, 2011; 2012a; 2012b; 2012c; 2012d).

Thus what must be considered is how relations of trust between publics, NGO's and government, vital to communication for the effective communication of nuclear risks (Science and Technology Committee, 2012), are transformed through the displacement of politics. Whether other methods such as legal action and judicial review may be more effective in stopping developments is not yet clear. The governing coalition however, is already identifying judicial review as problematic (Wintour and Bowcott, 2012). To reiterate, this article does not indicate a nostalgic position to the public inquiries of the 1980's, as the technocratic and exclusionary characteristics of this approach were unsatisfactory. It does point however towards the limitations of the choice only between problematic public inquiries or constraining consultations. What remains is the possibility that there are other ways to fully deliberate the substantive issues related to a development 'upstream', using "controversy as a mode of exploration" (Callon et al 2011, page 28).

What this paper has indicated however, is that questions of whether or not the planning process is 'post-political' should be replaced with more nuanced and empirically attentive questions of where and how politics operates in relation to specific policy developments. With regards to nuclear in particular, the presence of political antagonism should always be assumed; the location of where such contestation takes place however, should not.

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Appendix F: Academic Paper Two

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