



The role of the small-scale feed-in tariff in electricity system transition in the UK

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Abstract

Carbon reduction commitments and renewable energy targets have become legal drivers of electricity policy in the UK. Meeting those targets will require a transition in the way that electricity is generated, supplied and consumed. This thesis argues that small-scale renewable electricity technologies (<5MW) could have an important role in driving that transition. The thesis evaluates the role of the feed-in tariff - a policy mechanism designed to stimulate the deployment of small-scale renewable electricity technologies - in electricity system transition in the UK.

The research is based on empirical information generated from 37 industry interviews, observations of industry and government meetings and events, and secondary analysis of consultation responses, publications and statistics from government and the energy regulator, Ofgem. The analysis is structured with a framework that draws on transition theory and breaks down the findings into a niche (micro/developing) level, a regime (incumbent electricity system) level and a landscape (contextual) level.

The thesis finds that the FIT has driven solar photovoltaic development and innovation at an unprecedented rate. The other renewable technologies supported under the FIT (wind, hydropower and anaerobic digestion) have not been as widely deployed. It is argued that additional policy support is required to overcome the non-financial barriers that these technologies face. The thesis concludes that the role of the FIT in system transition has been to drive a level and pace of activity in the solar sector that has demonstrated the potential for alternative generation options. This has informed the politicised debate around electricity policy in the UK but it is argued that continued, broader, stable support is required if small-scale renewable technologies are to have a positive role in electricity system transition.

The research has relevance to both academic and policy circles focused on electricity policy, the decarbonisation of energy systems and socio-technical system transitions.

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Acronyms

Acronym	Term
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BERR	Department of Business, Enterprise and Regulatory Reform
BIEE	British Institute of Energy Economics
BCSE	Business Council for Sustainable Energy
CCC	Committee on Climate Change
CCGT	Combined Cycle Gas Turbine
CCS	Carbon Capture and Storage/Sequestration
CEGB	Central Electricity Generating Board
CERT	Carbon Emission Reduction Target
CHP	Combined heat and power
DC	Direct Current
DEFRA	Department of Environment, Food and Rural Affairs
DNC	Declared Net Capacity
DNO	Distribution Network Operator
DTI	Department of Trade and Investment
EA	Environment Agency
EIS	Enterprise Investment Scheme
ETS	Emissions Trading System
EU	European Union
FIT	Feed-in tariff
GB	Great Britain
IEA	International Energy Agency
LA	Local Authority
LCBP	Low Carbon Buildings Programme
LSP	Local Strategic Partnerships
MCS	Microgeneration Certification Scheme
MW	Megawatts
OFFER	Office of Electricity Regulation
OFGEM	Office of the Gas and Electricity Markets
ORED	Office of Renewable Energy Deployment
PRASEG	Parliamentary Renewable And Sustainable Energy Group
PV	Photovoltaic
RDA	Regional Development Agency
REC	Regional Electricity Company

RO	Renewables Obligation
SPV	Special Purpose Vehicle
STS	Science and Technology Studies
UK	United Kingdom
VAT	Value Added Tax
VCT	Venture Capital Trust
WPD	Western Power Distribution