Place-based reflexivity for just energy social science

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Standfirst

Where host communities are marginalised by industry practices, energy social science researchers must ensure that their research does not doubly exacerbate extractive practices. Place-based reflexivity provides a set of principles and concrete practices for researchers to avoid extractive relations with host communities and promote contextually-relevant and democratic processes in pursuit of a just transition.

Introduction

Energy social science research often takes place in community settings where there are unequal shares of power between host communities and energy developers, which are often multi-national companies. Energy social scientists have been critical of extractive practices, encompassing both the physical extraction of resources and extractive relationships with host communities[1]. Typically in these arrangements, industry operators physically take what they have been granted the legal right to extract; involve communities only to the degree necessary to secure planning consent; take information from communities that will assist with the extractive process while failing to provide communities with the information they desire; and provide compensation only if mandated by policy. These extractive practices are not compatible with just energy transitions[1].

Overlaid on this power asymmetry between communities and developers is the issue of relations between academic researchers and those same communities, often occurring during fraught time periods when communities feel under threat. Problematically, there has been insufficient reflection by researchers on how energy social science can also involve extractive relationships with these same host communities, collecting data without providing information, reciprocity, recognition of research contributions, or local benefits.

In order to avoid a doubly extractive setting for energy projects, we propose a place-based reflexivity approach for energy research that combines the principles of reflexivity, positionality and emplacement. In doing so, we aim to start a conversation around the ethics, practices, tensions and responsibilities of energy researchers alongside other research ecosystem actors such as universities, funders and publishers. We argue that just energy transitions must incorporate relational, place-based and community-centered research in order to avoid reinforcing unequal power dynamics and reproducing extractive practices.

Defining the problem

There is a need for energy researchers to do more to embed their research in place in ways that establish reciprocal and non-hierarchical relationships with communities, and to adapt their own practices of engagement to foster just, inclusive research. In making this argument, we draw on existing literature and our own diverse experiences of research in Europe and North America on shale gas fracking, forms of renewable energy and emerging net zero technologies. In the authors' combined experience, conducting energy research in contexts of unequal power relations between communities and developers leads to numerous problems and challenges.

There is often unequal sharing of information about energy development proposals. For example, when investigating community responses to a proposed offshore wind farm (Gwynt y Mor in Wales), we found that many participants were not aware of the energy development at all[2]. When the wind farm was brought up by the researchers in focus group discussions, residents in the coastal town of Colwyn Bay responded by asking the research team what the development proposals would involve and their opinion of those details. Not responding to such legitimate requests for information would be unfair, even if our responses would, in turn, likely shape the opinions of those we were there to study, making impossible a 'distanced', objective position of the researchers towards the proposed wind farm.

Similarly, in research on shale gas drilling proposals, residents responded that we were the first people to come to their homes and talk to them face-to-face about a project or even inform them about it. In the village of Woodsetts (Yorkshire, UK), most of the residents found out that drilling was proposed when a legal injunction order was posted at the field that would serve as the site entrance. Residents

expressed frustration at the lack of information provided to them by the developer, where distrust led to the dissolution of the community liaison group[3].

Moreover, numerous research projects have involved community members regarding research practices with suspicion and mistrust, questioning who we are funded by, often assuming that we are working on behalf of developers. In such contexts, distrust towards developers can spill over into distrust of researcher ties and motivations. At an information exchange event we hosted to share our research on shale gas fracking and elicit feedback, one community member expressed concern about who exactly we would be sharing our findings with. Their concern was that information from the community members, if put in the hands of developers, would simply be used against them in the future.

Therefore, it is important to approach these contexts with an ethic of responsibility and care[4], so that how data or findings might be collected and used is co-decided with community members or at least considered with the interests of host communities in mind. This aligns with similar calls in related fields: the need for co-producing climate adaptation knowledge systems[5]; a "boom and bust" research ethic which requires researchers to invest in community conditions and outcomes[6]; as well as environmental justice challenges to 'extractive logic' in government data infrastructures[7].

Further, researchers should be transparent with those communities about key aspects of research[7] (i.e. funders, approach, data management) as well as themselves[6] (i.e. research interests, affiliations, community relations). For example, when asked we have agreed to community vetting before undertaking data collection. In other cases, we have actively chosen not to pursue case study research in communities that have been inundated with media and researcher requests. Doing so is even more important when a community has made clear their desires to not participate in research.

A decision not to pursue research in or with a particular community is important when considering another problem identified by energy social science researchers: research fatigue in energy host communities[8]. Previous authors acknowledge the need for early community engagement, reciprocity that creates tangible community benefits, and the importance of avoiding overlap and saturation in addressing research fatigue[8]. Tools have been developed to better train energy social science researchers on community engagement, but research on these topics tends to emphasize the

importance of avoiding research fatigue in order to ensure research quality more than examining impacts on communities.

These experiences problematise the research practices of energy social science, demonstrating how a just transition necessitates a research approach that is mindful of and challenges power asymmetries between researchers, communities and developers. Beyond this, it draws attention to the role of research funders when issuing calls for proposals and encouraging community-centred research approaches. We propose that place-based reflexivity is central to how research can be conducted to successfully navigate these challenges.

Place-based reflexivity

Re-thinking relationships between energy social scientists and host communities requires researchers to act with a clearer understanding of place and positionality, what we call here place-based reflexivity. Developed and refined through critical feminist theories, positionality emphasizes the importance of social relationships in informing our life experiences and knowledge creation[9]. In the context of research practices, this involves recognition of both the position of the researcher and that of research participants in relation to each other[10]. From this perspective, all social science knowledge is considered 'situated', inevitably partial and not 'all-seeing or all knowing.' Instead, it is embedded within particular people, times and contexts[11]. Related to positionality, reflexivity derives from feminist epistemology and can be understood as both a broader set of practices and a specific research methodology[12,13]. In particular, it involves researchers reflecting on, making explicit, and challenging existing asymmetries of power in research contexts, including problematising their own positionality[13].

While ideas of positionality and reflexivity provide useful foundational principles for just and inclusive social relations between researchers and communities, they often pay less attention to how these social relationships are embedded within physical environment contexts (even if there are some exceptions to this in Black, feminist and subaltern geographies, see ref 14). For that reason, in the context of energy host communities we advocate the application of a synthesis of feminist theory and practice with ideas of 'place' drawn from human geography and environmental psychology.

The concept of place (see Box 1) involves conceiving the physical environment is more than a backdrop to social relations between communities, developers and researchers, but is a constituent element of those social relations[15]. For that reason, place-based researchers, not dissimilar to feminist scholars noted above, are critical of studies that claim to produce universal, abstract knowledge about behaviour or social systems. Taking a place-based approach means paying attention to specifics of the unique and particular geographical context in which research is conducted.[16]

A place-based approach is informed by fundamental dialectics of people-place relations, including connections between the inside and the outside of a place, and rejecting assumptions that localities are bounded, parochial or isolated.[17] It also involves attending to the politics of place change that leads to flows of valuable resources out of places, the uneven distribution of power over access to and exclusion from place, and the myriad forms of alienation that displace people from places that have meaning for them and meet their material, social and psychological needs[18].

The implications of these ideas about place for energy research practices are numerous. They include the necessity for reflexive assessment of researcher positionality in further contributing to any sense of displacement felt by host communities directly impacted by extractive energy projects. This is particularly the case when research practices involve the rapid extraction of data without return to those same communities. It also means assessing researchers' claims to 'insideness' in a place with honesty, and whether their methodology provides a credible basis for understanding that place and community in its particularity and uniqueness. Unlike methodological approaches that are detached and purely quantitative, feminist-informed, place-based research is grounded in direct and extended engagement and power-sharing between researchers and communities, using qualitative and mixed methods to provide a more relational approach for understanding and respecting 'inside' perspectives.

We suggest that place-based reflexivity, then, is a process through which actors can reflect on and challenge power dynamics in relations between researchers and communities. This approach helps to capture the geographical context that constitutes embedded research in energy social science, including the physical processes of resource extraction and flows into and out of place referred to above. Further, it can help prevent a replication of developer-community power imbalances derived from extractive practices, while also spotlighting these inequities. If these principles are turned into practice, they can provide a foundation for energy social science researchers to avoid extractive relations with

communities and promote contextually-relevant and democratic processes in energy decision-making in pursuit of a just transition.

Turning principles into practice

To acknowledge and abide by the principles of place-based reflexivity, we call on energy social science researchers to engage in longer-term partnerships with host communities using collaborative, community-based, participatory action research where possible[19, 20, 21]. We consider use of qualitative and/or mixed method approaches (e.g. participatory mapping, walking interviews, focus groups, community-generated surveys) consistent with these principles since they give space for community voices in data collection, rather than prescribing and restricting responses based on *a priori* theoretical assumptions. In cases where a community partnership approach is not feasible, there is still much that researchers can do to address power imbalances and to reflect upon, clearly acknowledge, and use the power that they possess.

Drawing on cited literature as well as our own experiences, we identify a variety of practices of place-based reflexivity across phases of research, from research planning to the sharing of findings (see Table 1). Power sharing occurs when communities are more involved in and/or co-leading research (e.g. co-authorship, access to research and policy decision-making spaces, incorporating local and experiential knowledge in research). Researchers can also use the power they possess to both support communities (e.g. providing expert testimony, volunteer work, sharing pertinent information as researchers themselves are kept informed) and to challenge research mechanisms and structures that do not center communities (e.g. reforming proposal guidelines and funding requirements, allocating funding resources to communities). Finally, researchers can refuse to impose upon or harm communities (e.g. emphasising relationship building and trust, respecting community concerns and wishes about participation).

Practices of Place-based Reflexivity	Research planning	Methodology and data collection	Data analysis and interpretation	Sharing findings
Be reflexive about the purposes of involving local communities and stakeholders in research	X			
Develop an online platform for research sharing to avoid overlap and saturation	X			
Utilise research training tools for engagement with host communities	x			
Take time to build community relations and trust prior to data collection	x			
Hold community events to help define the research problem(s)	X			
Ensure community organisations are written into proposals as part of project teams	X			
Ensure the credibility of partnerships through project budgeting and resource allocation	X			
Avoid plans for research that go against the will of the community	x			
Respect their concerns when developing outputs and engaging with other stakeholders (i.e. worry that findings could be co-opted by industry and used against them in future)	X			
Respect an organisation or community's decision not to participate		x		
Use research methods that enable relationship building and lived experience in situ		x		

Use methods that enable residents to voice concerns in their own language		x		
Ensure sufficient time is spent in place to provide a credible 'inside' view		x		
Recognise the potential for research to exacerbate community displacement and provide appropriate support to avoid negative wellbeing outcomes		x		
Practice environmental data stewardship by taking account of accessibility and transparency while preserving anonymity and confidentiality[7]				
To reduce potential research fatigue, use secondary data sources when possible and conduct interviews at public events where participants are already present			x	
Create outputs that are accessible to communities, in addition to academic publications			X	
To ensure reciprocity in researcher-community relations, share research findings back with participants (e.g. via community presentations and feedback events)				x
Co-author publications with community representatives				x
Deliver community check-ins on outputs				X
Provide communities with copies of findings and other research relevant for their concerns				x

Invite community members to research programme meetings and policy spaces and budget for their expenses				X
Keep communities updated when information becomes available to you as a researcher				All phases

Beyond these activities specific to research project phases, place-based reflexivity requires critical interrogation of the inclusivity and fairness of broader research and innovation ecosystems, including research and innovation policy, funding bodies, research institutions and publishers. While elaborating those aspects in detail is beyond the scope of this article, we call on researchers to actively engage in at least three actions. One, providing input when government solicits feedback on energy policies that impact host communities and research and innovation policies that propose thematic areas for future research. Two, providing input when funding institutions scope future energy research programmes and gather feedback on existing ones. Finally, volunteering with community energy organizations.

Moreover, we call on funders to reflect on ways that research programmes structure particular forms of relationship between researcher and researched. This includes assumptions about approach (e.g. community-based research), recognition of diverse forms of knowledge (e.g. Indigenous, experiential, lay, local, place-based), method (qualitative, ethnographic) and duration.

Place-based reflexive practices solely on the part of the researcher will be insufficient to successfully address these issues. The need for reflexivity should not be limited to individual-level analysis, nor should the burden of shifting these relationships sit solely on the shoulders of individual researchers. Instead, the broader ecosystem of energy research, incorporating funding institutions, universities, research teams and academic publishers, must engage substantively and genuinely with this agenda. If we are to have practical impact on communities, this means collectively reflecting on power dynamics and their role in creating institutions and procedures which encourage extractive research practices as opposed to emphasising research practice that is place-based and relationally-minded.

Conclusion

In a context of environmental and climate emergency, energy-systems transformations are taking place globally. While our own research experiences are situated in European and North American contexts, we believe that place-based reflexivity can have wider reach. In any context where communities are marginalised by industry practices, it is necessary for energy social science researchers to be reflexive and ensure that their research does not doubly exacerbate extractive practices. In order to achieve a just transition, Waitt[20] writes that we must adopt a transdisciplinary effort that incorporates everyday lived experiences, shifting our emphasis from 'scientifically objective' knowledge to 'socially robust'

knowledge—that is, knowledge that is "assessed by appreciating how the process of knowledge co-production is understood as transferable, credible and legitimate within specific social and political contexts"[20]. Thus, place-based reflexity at the institutional level demands that energy research funders, publishers and universities shift their emphasis of evaluation and review from a constant demand for short-term (or 'parachute,' see ref [21]), techno-centric research, to prioritising long-term, embedded, socially useful and impactful research.

There are positive signs that such recognition is beginning to emerge. Globally, the IPCC has recognised the value of Indigenous and lay as well as expert knowledges for climate adaptation[22]. In the UK, the ACCESS (Advancing Capacity in Climate and Environment Social Science) network has proposed guiding principles that integrate co-production, equality, diversity and inclusion and environmental sustainability into research practices, and a Place-based, Just Transitions framework has been devised under the Industrial Decarbonisation Research and Innovation Consortium. Yet much more remains to be done in terms of transforming research practices around equity, power and the politics of knowledge. Moving forward, we encourage diverse actors in the space of energy social science research to urgently and energetically pursue this line of inquiry and practice.

Box 1: Definitions of key terms

Positionality refers to how aspects of our identity influence our social location in the world relative to others. In the context of research, positionality helps us to better understand the different social locations of the researcher(s) and the researched, and how these relate and influence the research itself. In particular, it involves making explicit researcher values or worldviews, and attending to asymmetries of power between those involved in research practices (refs 10, 13).

Reflexivity in research is the process through which researchers reflect on and challenge asymmetries of power in research contexts, including making explicit their own positionality in relation to those who are researched[12].

Place refers to a particular location in the world that has meaning for individuals and communities[15,18]. It is a complex, holistic term that combines physical, ecological, political, economic, social and

psychological attributes. A place-based approach to research centres the physical environment in which research is conducted and views unfolding social relations (e.g. between communities and developers, between communities and researchers) as always occurring in place[16].

Emplacement is one of several attributes of the lived experience of place, and can be understood as an ongoing dialetic between feeling emplaced and displaced, alongside dialetics between what is inside/outside of a place and what is fixed/mobile in place[17].

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Competing Interests

The authors declare no competing interests.

Positionality statements:

Patrick Devine-Wright (he/him) is a white, cisgender man who was born in Ireland and has lived in the UK for the past 30 years. His gender, social class and ethnicity have afforded various privileges throughout his academic career, even with minority status as an Irish citizen in the UK. His approach to research has continually evolved, influenced by disciplinary training and work experience in Environmental Psychology, Social Psychology and Human Geography. This has led to a shift from purely

quantitative/positivist to mixed-method/critical and constructionist approaches with a strong recognition of the value of qualitative research and plural forms of knowledge. He has spent two decades researching the lived experience of communities impacted by energy infrastructure projects, critiqued 'NIMBY' assumptions about community objections and advocated siting approaches sensitive to place attachments. He has volunteered in a local Community Energy initiative (Exeter Community Energy, ECOE). His current role as Director of the ACCESS network involves reflexive intervention to empower early career researchers, and to increase equality, diversity and inclusion, sustainability and knowledge co-production across environmental social science.

Stacia Ryder (she/her) is a white, cisgender woman who was born in the U.S. and has worked in higher education institutions in both the U.S. and the U.K. Her race and nationality have afforded her various privileges in academia, though her status as a first-generation student has meant that she is continuously still learning how to navigate and challenge the culture of academia. She is an early career sociologist and Assistant Professor of Sociology at Utah State University, who primarily uses qualitative methodology to explore interdisciplinary environmental issues with a focus on equity and justice. She takes a critical and social constructionist approach to knowledge, recognizing the importance of plural sets of knowledge and the degree to which all science is value-laden. Her work is often inspired by critical environmental justice, standpoint theory, intersectionality, and feminist political ecology; subjects that scholars and activists of color have done much to establish and advance over the last several decades. She has spent several years working on community-based research around energy impacts, particularly in rural communities that often experience marginalization at the intersections of class, race and ethnicity. She recognizes that some iterations of her own research have failed in terms of (1) acknowledging and addressing power imbalances between herself and the communities and (2) centering communities in research leadership positions. With each new research effort she endeavors to do more to address these issues in order to build impactful research that can empower residents to take action and hold researchers accountable for their work.