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Of profits, transparency, and responsibility: Public views on financing energy system change in Great Britain

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Abstract

Energy transitions in Great Britain (GB) require public engagement and acceptance, but it is not clear how energy system change is to be financed. In this paper we explore public views on responsibility (of the government in Great Britain, energy companies and residents) to pay for costs associated with energy system change and personal acceptance to contribute financially. Five focus groups with 6-9 participants each, were conducted in four locations across GB. Using thematic analysis to examine responsibility and the role of trust we identified three themes relating to 1) views on profits, 2) lack of transparency and 3) the perceived problematic relationship between energy companies and government. Participants assigned greater responsibility to institutional actors and did not believe that these actors were currently contributing sufficiently. Although participants were prepared to accept some additional costs because they were in favour of energy transitions, they also expressed distrust towards the other actors due to concerns over the profit driven energy system, lack of transparency and perceived close connections between the energy industry and government. These concerns could result in reduced public support for transitions if they remain unaddressed; they highlight a demand for a more equal distribution of costs and benefits and fairer processes in the energy system and transitions.

Keywords: Public perception; energy transition; financing; responsibility; trust; justice

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1. Introduction

Calls for energy system change have been based on the need to mitigate climate change (IPCC, 2014) and to renew energy infrastructure (Demski et al., 2017; Department of Energy and Climate Change [DECC], 2016). The 2008 Climate Change Act requires an 80% reduction in UK greenhouse gas emissions by 2050 relative to 1990 levels (Climate Change Act, 2008; Foxon, 2013), although even more challenging long-term targets are in the Paris agreement signed in 2015 (Committee on Climate Change [CCC], 2016). Changes in the energy system necessary to address the above issues will require substantial public support (Wüstenhagen et al., 2007), especially if some additional costs such as taxes or levies on bills are passed on to the public (Demski et al., 2017; Vaze & Hewett, 2012). An additional challenge is posed by the time pressure to reduce emissions which requires an unprecedented pace of transition (Roberts et al., 2018). We use the term ‘public’ to describe residents from all backgrounds, acknowledging that this is not a homogenous category.

Past research has shown that there is widespread public support for energy transitions (DECC, 2016; Vaze & Hewett, 2012), while highlighting that it is important to consider how transitions are situated within the larger social and political context (Demski et al., 2015; Demski et al., 2017; Pidgeon et al., 2014). By ‘energy transitions’ or ‘whole energy system change’ we mean a transformation involving energy production, distribution and use that enables low-carbon, reliable and affordable energy for all (see also Parkhill et al., 2013). Public engagement with energy transitions is dependent on multiple values ranging across environmental and affordability issues, justice and process fairness (Butler et al., 2013; Butler et al., 2015; Demski et al., 2015; Evensen et al., 2018). While there are several ways in which the public is implicated in energy transitions, they will likely be shouldered with some of the cost associated with transitions. This is an aspect of public engagement with energy transitions that has received very little attention to date, while current UK government policy assumes, simplistically, that seeking a transition at ‘least cost’ is likely to present the most acceptable set of solutions for society as a whole (Department for Business, Energy and Industrial Strategy [BEIS], 2017; Heffron & McCauley, 2017; Helm, 2017).

Indeed, energy transitions towards more low-carbon and reliable systems will entail substantial costs and questions remain about how these costs will be distributed in society (Vaze & Hewett, 2012). However, it is important to acknowledge that these current costs are also long-term investments, and that costs are likely to be greater in the future if no action

were taken now (CCC, 2010). Nonetheless, some decisions still need to be made on how such costs will be distributed across society ‘now’ and in the ‘near future’. These topics are particularly pertinent in the context of the privatised UK energy system, with recent debates in politics and the media around the cost of energy (Barrett et al., 2018; Helm, 2017). Energy prices in particular have been a salient topic in the UK media, partly reflecting discussions over energy price caps (Demski et al., 2017; Vaughan, 2017). For example, average UK real electricity bills (for 3,800 kWh) rose between 2010-2014, during which wholesale costs of gas and electricity remained similar and from 2014 to 2016 bills were stable while underlying costs fell (Grubb & Newbery, 2018, citing BEIS, 2017 data). The Committee on Climate Change (2017) noted that: “Improved energy efficiency has been effective in mitigating the majority of bill increases that would have occurred due to price rises from 2004-2016” (p. 14, also see Ofgem, 2014 on price increases). Further, it is noteworthy that energy expenditure shares have risen since the early-2000s, especially impacting low income households who spend a higher proportion of their expenditure on energy compared to those with high incomes (Deller et al., 2018).

Previous research on public perceptions has shown that there is significant concern regarding energy prices (Demski et al., 2013, 2014), but that people are supportive of using public money to subsidise energy programmes (Steentjes et al., 2017). Additionally, Parkhill et al. (2013) suggested that people do not invariably find the lowest cost options the most preferable, especially when they are associated with other undesirable outcomes, such as continued fossil fuel dependence. The authors point out that a simplistic focus on costs overlooks, for example, decision-making processes and (dis-)trust towards energy companies and government.

Building on this, we aim to investigate issues that influence public views on responsibility for paying towards energy system change. We explored the following two research questions: (1) how, and to what extent, do people assign responsibility to various actors for funding energy transitions (2) and which issues shape public acceptance of additional transition costs? We suggest that public acceptance of cost will depend on the extent to which a combination of interrelated concerns are addressed regarding fair process and on the involvement of other actors. We stipulate, in particular, that people’s perceptions of, and trust in, other actors is an important aspect of this. To engage the public with information about different aspects of whole energy system change and existing costs, we employed focus groups.

2. Theoretical framework

2.1. Responsibility and trust

The UK energy system has become increasingly liberalised over the last couple of decades. With the shift to privatisation, responsibility for reducing costs to energy bills has been placed on the consumers of energy, who are expected to shop around for the best rates and reduce costs through efficiency measures. Whereas responsibility for energy provision used to lie with the state, this social contract between citizens and the state is unravelling (Packer, 2013; Pidgeon, 2014). Shifting responsibility and uncertainty may cause problems for energy transitions and public support in general, as individuals cannot address transitions alone. This background of privatisation also makes the UK an interesting example for examining the role played by the relationship between the public, government and private energy providers in energy transitions. Liberalisation of the energy market is not limited to the UK (Pollitt, 2012), for instance, electricity reforms in other countries worldwide often used the ‘British Model’ as an exemplar (Newbery, 2005; Thomas, 2005). The findings we report here may also hold wider relevance for countries where the trend towards increased liberalisation of energy markets is creating new relationships and distribution of responsibilities between individuals, government and industry.

As such, responsibility is a central theoretical construct we examine. Various actors involved in the energy system could be deemed responsible to contribute financially towards energy transition, such as government, energy companies and individual residents. Although ultimately the public pay for all of these (through taxes and bills) there are different ways of allocating costs. Previous research has pointed out that responsibility within current neo-liberal governance paradigms tends to be individualised (e.g. for climate change mitigation [Eden, 1993; Kent, 2009; Shove, 2010]). Others have suggested that members of the public displace their responsibility by shifting it onto government or companies (Stoll-Kleemann et al., 2001; Lorenzoni & Pidgeon, 2006). Notably, Bickerstaff et al. (2008) highlight that responsibility is relational, i.e. people evaluate their own responsibility and efficacy relative to others (see also Eden, 1993).

Although there might be a normative expectation for government or companies to take responsibility for a given societal risk, simultaneously there can be a lack of confidence that they will take responsibility (Bickerstaff et al., 2008). The UK public is heavily reliant on energy companies and government to run the energy system, but previous research suggests

that dissatisfaction and distrust are widespread (Demski et al., 2015; Parkhill et al., 2013; Vaze & Hewett, 2012). For example, an Ofgem survey found that in 2013: “43 per cent of customers did not trust energy suppliers to be open and transparent in their dealings with consumers” (Ofgem, 2014, p. 10). Trust is therefore a further theoretical construct important in examining how the public assigns responsibility for financing energy transitions and whether they are willing to take on some of the cost themselves (for previous examinations of the role of trust in energy transitions see Bellaby, 2010; Rayner, 2010).

We propose that the role of public trust and distrust in energy-related institutional actors (energy companies and government) could have a crucial influence on energy transitions. If there is significant public distrust this could then jeopardise the progress of energy transitions, particularly paying for these, because citizens might be less willing to contribute financially if other actors are not trusted.

We draw on the following definition of trust proposed by Rousseau et al. (1998): “Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p. 395). According to Rousseau et al. (1998) trust can be understood as the willingness to be vulnerable under conditions of risk and interdependence. The willingness to make oneself vulnerable to the trustee thus depends on the belief that the trustee is both motivated and able to act in line with the interests of oneself. In the case of energy provision and transition the public could be considered vulnerable not by their own choosing, but by their dependency on energy for providing everyday services and through this on energy companies and government (Demski et al., 2019). Therefore, it is important to explore how the public perceive these actors and why they trust or do not trust them.

Trust has been conceptualised as comprising several different aspects (Poortinga & Pidgeon, 2003), but two core components have increasingly gained traction. While these components are often referred to and defined in slightly different ways by different authors, they are generally denoted as (1) ‘competence’ or ‘expertness’ and (2) ‘care’ or ‘trustworthiness’ (Hovland et al., 1953; Metlay, 1999; Poortinga & Pidgeon, 2003). The first component touches on the knowledge, skills and ability of a person or institution to achieve a given goal, and the second, although less clearly defined, generally concerns the perceived underlying intentions and motives of the other party. This implies that members of the public must view energy companies, government and other institutions involved in the delivery of

energy transitions as caring about similar goals and values to those of the general public. If this is not the case, distrust might ensue. Further, Frewer et al., (1996) as well as Poortinga and Pidgeon (2003) found ‘vested interests’ to be an important additional aspect of trust, such as the government being too influenced by industry. Examining the role of trust does not, however, mean that complete trust is desirable, rather it has been argued that some distrust (‘critical trust’) is important for members of the public to scrutinise actors and to hold those in power to account (Poortinga & Pidgeon, 2003; Walls et al., 2004). Further, O’Neill (2002) maintained that trust only ought to be placed in the genuinely trustworthy, because misplacing trust can also have negative consequences.

2.2. Procedural and distributive justice

There are noteworthy similarities between the constituent items of the second trust component of ‘trustworthiness’ or ‘vested interests’ and notions discussed in energy justice literature (Jenkins et al., 2016), such as procedural justice (fairness in the process of decision-making) and distributive justice (fair distribution of costs and benefits).

With regards to procedural justice, Simcock (2016) outlines three important aspects: inclusion (who is present and given voice), influence (whose opinions and concerns have weight), and information (provision of accurate and sufficient information). Although Simcock (2016) draws on the case study of a wind project and we discuss energy transitions as a whole, there are nonetheless useful elements to draw from Simcock’s understanding of procedural justice. In particular, we can draw parallels between issues of procedural justice and the previously discussed trust literature. For example, ideas of inclusion and influence are implicated in Frewer et al.’s (1996) and Pidgeon and Poortinga’s (2003) notion of vested interests, such as who works closely together in order to defend whose interests. Simcock’s (2016) third aspect of ‘information’ or transparency, is similar to Metlay’s (1999) ‘openness’ (provision of all relevant information), which the latter author argued is crucial for trust.

For the purpose of the present research, transparency is a particularly important concept because it is a prerequisite for being able to assign responsibility. Further, transparency is a precondition for customers to compare tariffs and switch energy suppliers, which they are expected to do in the UK privatised energy market. Moreover, the transparency of the UK energy sector has repeatedly been called into question by media reports of overcharging and a competition inquiry (BBC, 2013; 2014; Gosden, 2018;

Macalister, 2014; Moylan, 2015; The Guardian, 2016). In March 2014 an Ofgem review found that competition was not benefitting consumers as it should, noting a rise in total reported profits of ‘the Big 6’ energy suppliers (2009 – 2012) as well as increasing public distrust of energy suppliers (Ofgem, no date; Ofgem, 2014). Following the review, Ofgem referred the retail energy market to the Competition and Markets Authority for a full competition inquiry (Ofgem, no date). In this context transparency is a particularly relevant aspect of procedural justice for trustworthiness.

The above-mentioned reports of rising profits and overcharging also call into question the level of distributive justice (sharing of costs and benefits [Wüstenhagen et al., 2007]). Similar to procedural justice, we can find parallels between distributive justice and the trust literature. In particular, trustworthiness might be undermined by energy companies’ current mandate to maximise profits, if this is perceived to be at odds with goals and values supported by the public. Indeed, procedural and distributive justice have been suggested to play a notable role in shaping views on energy transitions and for informing energy policy (Evensen, 2016; Gölz & Wedderhoff, 2018; Sovacool et al., 2017; Wüstenhagen et al., 2007), including influencing perceptions of public responsibility for and personal acceptance of energy transition costs (Evensen et al., 2018). It could therefore be argued that justice criteria are essential for the maintenance of trust, which, in turn, is important for people’s acceptance of responsibility and costs associated with low-carbon energy transitions.

We therefore draw on concepts of trust, procedural and distributive justice, to examine people’s perceptions of responsibility for financing energy transitions and the role they see for government, energy companies and themselves. We stipulate that how members of the public perceive the process on decision making (e.g. in terms of transparency) and how they are treated by energy system actors, as well as the extent to which benefits and burdens are shared amongst actors will influence their level of trust and therefore views on who should pay.

3. Method

Focus groups

Focus groups were employed because they facilitate nuanced and in-depth examination of people’s views (Pidgeon et al., 2014). Debates and counterviews can emerge in focus groups and give insight into diverse narratives. The present research extends

previous survey work (Evensen et al., 2018) to examine in more detail the conditions and reasons for people's views on responsibility to pay towards energy transitions. However, the nuances are not covered in existing literature, as there is no previous qualitative data on this topic. Sovacool (2014) has noted the lack of human-centred research methods (such as focus groups) in energy related research, outlining the predominance of hard-science approaches over the use of social science methods with the latter dominated by quantitative survey research. The author proposed that alternative methods can reveal the multiple ways in which public perceptions, experience and actions interact with and shape the energy system.

There are several reasons why we used focus groups rather than other qualitative research methods. First and foremost, focus groups allow for discussion and social interaction between participants, which is not enabled in interviews. Participants can respond to and challenge each other's opinions, agree or disagree, convince one another and expose each other to views and ideas that people might not have had themselves, as well as generating joint outcomes during the focus group (Gailing & Naumann, 2018; Sovacool, Axsen & Sorrell, 2018). In contrast, in an interview the researcher can ask research questions and play devil's advocate, but this does not spark the same level of interaction as in focus groups and the power dynamic between researcher and participant is different than between several participants. Secondly, although focus groups are in no way a naturalistic example of public debate, they are a closer attempt to replicating how people discuss information with each other and the process through which responses are formed, than is the case in interviews.

Sample and location

Five focus groups (between 6-9 participants each) were conducted in the four following cities; Cardiff in Wales, London (2 groups) and Birmingham in England, and Glasgow in Scotland. They took place in November and December 2016 and lasted approximately 2.5 hours each. Participants were recruited to represent a diverse spread in terms of age, gender and socio-demographic backgrounds (age range = 25 - 72 years, 15 females, 22 males, see Appendix A). Recruitment drew on demographic and contact data that respondents from a previous survey conducted under this research project had provided (see Evensen et al, 2018)¹. Due to low recruitment from the survey respondents in some cities (3 Cardiff, 14 London, 5 Birmingham, 3 Glasgow) an external recruitment company recruited twelve additional participants to supplement the sample. The focus groups were held in

¹ The broad research project consisted of a two-part survey, followed by focus groups. However, each phase was guided by separate research questions and this paper focused on the later exclusively.

meeting rooms in central hotels in each city. In recompense participants received a £60 honorarium.

We chose to recruit a diverse sample in terms of key demographic variables (age, gender, income) to gain both breadth and depth in views. Although we cannot claim generalisability due to the inherently small sample size, we aimed to include diversity of opinions, which might vary within and across different socio-economic backgrounds and life experiences. As such, sampling in this way provides a way to engage with as many different perspectives as possible, as opposed to a narrow set of perspectives that would be expected from a more homogenous sample. However, including people from different socio-demographic groups also raises the question of how to deal with ensuing power dynamics due to differing social status and knowledge. The facilitation approach is detailed below under protocol and materials.

Protocol and materials

To begin, participants were briefly provided with background information to focus attention on the energy system as a whole. This included energy production, e.g. importing fuel, or producing from different sources such as nuclear, fossil fuels or renewables; transportation, i.e. grids and fuel transport; to end use, that is efficiency measures and reducing overall consumption from different users like businesses, factories and households. Next, the possibility of changes to the energy system and associated costs were introduced. The following potential four goals for energy transition were presented and discussed in terms of their relative importance; first reducing the use of fossil fuels and increasing low carbon energy production, second decreasing overall energy use, third ensuring a reliable energy supply and fourth supporting disadvantaged groups. Subsequently, participants were prompted on their views concerning responsibility of energy companies, government and the general public (including future generations) for financing energy system change and achieving the four goals previously discussed. After the break, participants were invited to focus on personal acceptance of costs associated with energy transition, such as levies on their energy bills. They were asked to estimate how much of their energy bill currently goes towards energy company profits and towards social and environmental levies. Participants were then provided the percentages given by Ofgem (9% and 7% respectively) and asked what they thought of these. Finally, participants were asked to discuss their views on the effects of Brexit on energy bills, but these results are not included in the present findings. The protocol used to guide the focus groups can be found in the supplementary material.

From the beginning and throughout, it was made clear that no prior knowledge of the energy system was needed and that we were interested in people's experiences and opinions. The researchers who facilitated the focus groups had previous experience in moderating such research and attempted to include every participant in the discussion. Thereby, facilitators attempted to ensure everyone had an opportunity to provide their perspective. Expertise in energy matters was not expected and, upon analysis, not found to play a significant role in the focus group dynamics. We found that various participants disagreed and agreed across different topics regardless of apparent existing expertise and that participants sometimes questioned the approach taken by the researchers, i.e. those who could be perceived to hold the most power and expertise.

Analytic approach

All audio recordings were professionally transcribed, checked for accuracy and anonymised. Thematic analysis (Braun & Clarke, 2006) was used to code the focus group transcripts imported into the software NVivo. A data driven approach was used for coding and analysis, so that themes were primarily constructed based on the data, as opposed to following a pre-existing coding scheme. Nonetheless, the analysis will have been influenced by the authors' knowledge of the existing research in this field (see introduction). To begin, general topics, assumptions, lines of argument and disagreements were noted. All transcripts were completely coded into a wide range of topics, which were ordered and narrowed down for more in-depth examination. Coding was iterative, whereby transcripts were repeatedly read and themes were developed in discussion with the research team. Concretely, we applied thematic analysis to our focus group data by identifying a topic of discussion as a theme if it was relevant for answering the overarching research questions, if it emerged across several focus groups and if it was repeatedly discussed by different participants within a focus group. Rare counterviews within these topics of discussion were also included to understand diversity of perspectives on a given theme.

A contextualist method guided the analysis in order to explore both how participants viewed and made sense of energy transition, as well as relating these views to the larger social context in which they are set. Braun and Clarke (2006) characterise a contextualist method as one that is characterised by theories of critical realism, taking into account how individuals make sense of their experience, as well as examining the extent to which the wider social context influences those experiences and meanings. For example, in our analysis we were interested both in how participants view energy companies, which has partly been

influenced by their personal experience of them, as well as understanding how these views are influenced by the broader social context, such as the privatised energy system. In focus group research this means that participants bring both their own pre-existing experiences and views, as well as having the opportunity to share and compare these with each other, forming an understanding and ideas about energy transitions in the group.

Participants spent a similar amount of time discussing different topics across all focus groups and we did not notice participants avoiding topics that they were prompted on (see Stewart et al., 2007). We did not include non-verbal communication and body language in the analysis because this was beyond the scope of the analysis and our understanding of the specific research questions. Location of the focus group also did not appear to significantly influence participants' responses. Themes presented in the findings section were identified across all locations. In the findings section and tables we present illustrative quotations of the types of statements participants made which contributed to our identification of themes.

4. Findings

The findings are presented in three sections - views on profits, lack of transparency, and perceived collusion between energy companies and government. These were identified as particularly important for understanding how participants assigned responsibility for financing energy transitions and under what circumstances they themselves were willing to pay towards energy transition costs. It is important to note that, in line with previous research, the discussions clearly indicated strong support for energy system change (increasing low carbon energy, reducing energy use, ensuring energy reliability and affordability) (Parkhill et al., 2013; Vaze & Hewett, 2012).

Energy companies and government were assigned primary responsibility for paying for energy system change, because they were seen to have the financial means and the structural power to do so (see Table 1 for illustrative quotes). Although participants ranked responsibility differently, several viewed all three (energy companies, government and the public) as being responsible for contributing to energy system costs. Some argued however that the public was already paying disproportionately because, in the end, all means of paying come from the public in the form of taxes or energy bills. This may be considered one source of distrust, because members of the public felt they were fulfilling their responsibility while institutional actors were not. Below we unpack in more detail how people's perceptions of

energy companies and government shaped their views on responsibility and their own willingness to take on a share of the costs associated with energy transitions.

Theme 1. Views on profits *“I’m just not comfortable with them maintaining that level of profits.... if my energy bills go up”*.

Perspectives on profits were a recurring topic throughout the focus groups. Participants’ views on profits led them to question both energy companies’ and government’s motives and illustrated distrust. Two sub-themes are presented: first we examine the conditions under which profits were evaluated and second we explore how profits were conceptualised as part of a systemic issue.

1.1 Conditions placed on profits *“It depends what they do with it (profit) I suppose”*

In the instances where making profit was not rejected outright, certain conditions were used to judge the acceptability of profit levels. These relate to profit use, how deserved they are, whether they are proportionate, and affordability of energy (see Table 2 for illustrative quotations). The use of profits for shareholders’ dividends or directors’ salaries was seen as largely unacceptable, whereas reinvestment in infrastructure and innovation was viewed more positively. Profit use was evaluated based on the notion that making profits comes with a responsibility to ‘give back’. As Susie from Cardiff said “they should be using it (profit) more wisely and not just throwing bonuses to people and actually pay them back into other things”. Important was also whether the profit level was deemed as deserved or not considering the roles that individuals or companies play. There was however a certain level of distrust whether profits were in fact deserved, which often emerged in the form of cynicism: “Yeah, [are] they actually really working or are they out playing golf?” (Katherine, Cardiff).

In contrast, Amanda’s point (Glasgow) provides a counterview that emerged less frequently, where deservingness was based on the higher risk, responsibility and workload taken. “That (9% profit per energy bill) to me is quite a low profit I think for the risks they take.... The hundreds of thousands of people that they must employ”. Some participants indicated they would be happy to pay more on their energy bills towards energy transitions, if profits were also reduced (see Caroline’s quote, Table 2).

Participants also evaluated the extent to which profits were proportionate or disproportionate. Profits and directors’ salaries were seen as disproportionate in the context

of people being given advice on saving energy to reduce their bills. For example, Laura (Birmingham) stated:

“It would be nice if the company directors took a bit of a cut though.... between ordinary people like us ‘what you should do is save energy, turn the thermostat down a notch, put a jumper on’ they tell us things like that and I really resent it when I know what these directors are taking home.”

This highlights the issue of how profits relate to energy affordability. Profit levels were often considered unfair and unacceptable in the context of energy not being affordable for some people. One participant suggested that the degree of profit was almost irrelevant as long as energy remained affordable: “They could have 50% profit if I could afford my bill.... And he’s sitting there struggling to get heat, the same as my grandmother, so that again is a problem for me when they’re making so much money” (Freddie, London afternoon). The contrast between energy companies being perceived to make a lot of money, while people experienced fuel poverty was repeatedly judged to be problematic and unfair, speaking to wider systemic issues of energy provision and unequal distribution of costs and benefits (distributive justice).

1.2 Systemic nature of the profit drive *“Re-nationalise it and get rid of the (vested) interest”*

Participants contextualised profits as one part of a more systemic issue (see Table 2 for illustrative quotations). The privatised energy system was viewed to be based on a drive for profits, something seen as problematic for ensuring affordability, investment and delivery of energy transitions: “It’s all about big business making more profits” (Melanie, London afternoon). The systemic nature of the profit motive was made explicit when participants occasionally mentioned capitalism, for example David from Cardiff noted: “It’s the nature of capitalism, isn’t it?... It doesn’t work, it should be taken over by the government.... Because they’re just out for profit, aren’t they? For their shareholders.”

The profit drive was judged to occur at the expense of an ethical or socially driven approach based on the public interest (see Jake, Table 2). Participants were also concerned about extra money paid on bills towards supporting disadvantaged people not getting passed on by energy companies, highlighting some of the distrust participants expressed towards energy companies (Simon, Table 2). The profit motive was seen as a defining feature of the

UK energy system, which would also inhibit addressing affordability concerns even in a lower carbon energy system (Lewis, Table 2). Some participants expressed the view that energy should not be for profit at all.

While several participants thought privatisation provided more choice, others preferred some intervention ranging from reforms to the current system (e.g. regulation of tariffs) to nationalisation. Contrary to the notion that choice reduces the cost of energy to customers, one participant suggested that if people saved energy, then companies would increase the bills: “If we save money, then they put the prices up because our energy is too cheap. So we don’t benefit by that really” (Adam, London afternoon).

Those participants in favour of nationalisation viewed it as a means towards more reinvestment, increasing renewable energy, control and steering away from short-termism. As Tim from London put it:

“But while it’s profit-driven you are going to get nowhere because in the short-term all people are interested in is that, they can’t see beyond tomorrow because as long as the share prices are up, as long as they are getting their dividends, what the hell do they care about wind power and solar power, wave power.”

Theme 2. Lack of transparency “*There’s lies, damned lies and then there’s statistics*”

Lack of transparency was a critical issue that characterised participants’ distrust of energy companies and also government, which in turn affected people’s willingness to accept additional costs. For example, several participants suggested that if there were more transparency about how profits were spent, there might also be more public understanding and acceptance (see Table 3 for illustrative quotations). This highlights that although participants were sceptical of the profit and bonus culture itself, part of the issue focused on not knowing how profits were being used. Information was also considered important for social and environmental levies as the following interaction shows:

Lewis (London afternoon): “This is the problem, it’s transparency. If they told us where it (social and environmental levies) was going, I think most people would be happy.”

Paul: “It’s assuming that people are too stupid to actually be able to make up a decision for themselves based on the facts.... and treat people like idiots.”

These quotes illustrate the role of procedural justice, as the process of communication and lack of information was viewed as patronising. In the following sub-themes we explore how participants discussed not being able to understand energy system costs and how information was not considered trustworthy.

2.1 Not understanding energy system costs *“I think just looking at an energy bill and not fully understanding it shows there can’t be full transparency”*

Participants discussed how complexity meant that they could not understand wholesale prices, energy bills and tariff structures, contributing to an overall lack of transparency and adding to distrust. Not knowing how costs and expenses were currently organised made it difficult for participants to assign responsibility for who should pay more. As Hannah from Birmingham summed up “It’s very difficult to figure out who actually is paying for what”. Participants struggled to understand the discrepancy between fluctuating fuel prices compared to the experienced consistent increase in personal energy bills and questioned why energy bills did not provide clear breakdowns. Some suggested that energy system costs and tariff structures were purposefully complex to keep the public misinformed about the best tariffs and to obscure profit levels.

Additionally, while choice was seen by some as one of the (only) benefits of a privatised system, it was perceived to be undermined by the lack of transparency:

“I think the only benefit of it being privatised is the amount of choice.... I think with the privatisation.... it’s so complicated how they bill you.... that no one actually really understands it.... So it’s sometimes nice to have that choice, but it’s not made easy to choose between them anyway.” (Susie, Cardiff)

In response another participant raised concerns over customers not being able to trust the information on tariffs provided by salespeople, suggesting that often customers were not given open and clear information (Martha, Table 3). Further, due to salespeople’s and companies’ perceived motives the information about tariffs was not considered trustworthy.

2.2 Distrust of information *“It’s called having a good accountant, isn’t it?”*

Participants repeatedly expressed the view that actual profit levels were higher than those officially reported in order to avoid public scrutiny (Susie, Table 3). Notably, due to energy companies' perceived motives, more information was not considered sufficient to remedy the lack of transparency, because the information itself was not considered trustworthy (Nathan, Table 3).

Importantly, distrust towards information provided by Ofgem was also evident. Laura (Birmingham): "But why should I trust Ofgem? I just don't believe anything anybody tells me." Participants were disillusioned with Ofgem for failing to regulate and prevent energy companies from manipulating their profit figures, whereby Ofgem was described as a "toothless giant" (Jake, Table 3).

The lack of transparency and resulting distrust of information affected views on paying for energy transitions. For example, energy companies contributing more money towards an energy transition was not sufficient, because they could simply manipulate the figures. Participants required transparency to be able to trace where extra levies on energy companies were spent. This interaction in London (evening) illustrates distrust of information.

Jake : "Well a bit of constructive bookkeeping we'd never know.... It's lack of transparency.... statistics, these things can be manipulated...."

Lukas: "There's lies, damned lies and then there's statistics!...."

Jake: "I don't trust them as far as I can throw them and I don't think anybody around this table does either!"

Transparency and greater trustworthiness of information were also a prerequisite for participants' willingness to contribute financially themselves: "It's no good putting a levy on our bills if it's going in the back pocket or the shareholders or the company jolly – Blackpool or whatever" (Jake, London evening). Similarly, another participant clearly linked the lack of transparency to distrust, which was sometimes mentioned explicitly, but again found expression through the use of cynicism (Monika, Table 3). Cynicism could be considered a discursive device which people use to express emotions (in this case outrage) that would otherwise be difficult to say (Parkhill et al., 2011).

Theme 3. Perceived collusion between energy companies and government

"Government and the energy companies are bad bedfellows"

A recurrent concern was perceived collusion between energy companies and government, relating to procedural justice such as who has access to and influence on decisions. As Joanna stated in London (evening):

“I think there’s not only transparency on what they (government) use the money for, but there should be transparency particularly for the interests - they won’t increase the use of low carbon energy resources, if there won’t be the interest coming from the private company”.

Government was not trusted as it was seen to be influenced by energy companies through profits and lobbying. As a consequence of suspected collusion, existing regulation by Ofgem was not thought to be functioning.

“I think there’s a third party in this.... which is Ofgem don’t seem to be delivering on their.... transparency and.... I think the government and the energy companies are bad bedfellows, and Ofgem aren’t making much of a change in that” (Tony, Birmingham).

Participants also problematised politicians’ free movement between politics and the private sector, suggesting that politicians had vested interests. For some the presumed collusion between government and energy companies called the transparency and trustworthiness of information into question. Additionally, the failure to adequately regulate was seen as allowing energy companies to work together and fix prices, undermining the purported benefit of competition (Jake, Lukas, Table 4).

When asked who participants would trust to use money from energy bills to deliver on the various goals presented for energy system change, one participant replied:

“Not that you actually trust them as such, but I think you definitely have to go to your government, because they are going to.... dictate to the energy companies how they behave and operate. Whether we trust them is another story” (Nathan, Glasgow).

This statement highlights the public’s dependency on the government for regulating energy companies, but that the suspected collusion is perceived to interfere with this responsibility. Further, it shows that government is ultimately held responsible because they are viewed as having the competence (one of the trust dimensions) to regulate energy companies.

The themes outlined above highlight some of the concerns people have regarding who should pay. Participants were already somewhat predisposed to taking on an even larger share

of the costs, because they supported various energy transition goals, but the concerns discussed above also need addressing: “You probably wouldn’t even mind a few more percent (social and environmental levies) if it generated something worthwhile, if more homes were insulated better” (Nathan, Glasgow).

5. Discussion

The reported research examined public views on responsibility of the public, government and energy companies for financing energy system change. In three themes (profits, transparency and collusion) we explored reasons for distrust towards energy companies and government, which influence responsibility assignment and public acceptance of additional costs. We infer policy recommendations based on our analysis of the focus group results, however these are tentative and while most participants discussed social and environmental levies, only some participants directly discussed other measures such as nationalisation and limiting profits.

There was distrust in the energy sector because public values concerning procedural justice (undercut by a perceived lack of transparency and collusion) and distributive justice (undermined by suspected unfair profiteering) were not being met (Demski et al., 2015; Vaze & Hewett, 2012). The participants in our research were largely prepared to contribute more towards energy transition costs, because they subscribe to the goals and values associated with energy transitions (as was also found in previous survey research, see Evensen et al., 2018). However, some deep reservations about other actors’ commitment to take responsibility and perceived unfairness in the current energy system likely need addressing to increase further public participation in energy transitions generally, as well as taking on increased costs.

Responsibility and public willingness to contribute financially

Bickerstaff et al. (2008) argued that responsibility is assigned based on an evaluation of one’s own ability to act relative to the competence of others (also see Eden, 1993). In the present results participants assigned greater responsibility for paying towards energy transitions to energy companies, government and lastly to the public because the institutional actors were considered to have a greater ability to implement large-scale change (i.e. competence, Poortinga & Pidgeon, 2003) and because updating the energy system is a part of their role. This is in line with Evensen et al.’s (2018) findings that when energy companies

were perceived to have higher competence than the public, this was associated with less responsibility being ascribed to the public for contributing to energy transition costs.

It is noteworthy, that the public was also held responsible, since energy transitions were considered to be in the public's interest and the normatively 'right' course of action. However, in contrast to energy companies and the government, there was a strong sense that the public was already paying their share. Nonetheless many participants indicated their willingness to contribute further, albeit under certain conditions (detailed below). The notion of a governance trap has been advanced to conceptualise the phenomenon that the public assigns responsibility to government, and government (in democracies) in turn knows it is responsible, but feels constrained from bold action by the electoral cycle, leading to a lack of action on both sides (Pidgeon, 2012). The present findings suggest some nuance, whereby participants desired political action towards energy transitions and presented valid reasons for assigning responsibility to government and energy companies, while also showing further acceptance of shouldering part of the costs.

Profits and distributive justice

In the participants' views, making profits from energy comes with a responsibility to give back to society. They evaluated profit use, deservedness, proportionality and overall affordability of energy as a whole, demonstrating conditions on which people judge profits. The issues raised around profits correspond to notions of distributive justice, highlighting the requirement to achieve a fair distribution of costs and benefits when it comes to paying for energy transitions (Vaze & Hewett, 2012). One element of distrust arose because the interests served by energy companies (increasing profits) were not seen to be aligned with the public's interests (low carbon, reliable and affordable energy access) (Demski et al., 2015). This discrepancy was also noted in the short-termism of profits contrasted to a desired long-term approach (Butler et al., 2013; Butler et al., 2015; Demski et al., 2015). Previous research has shown that participants' perceived value dissimilarity with energy companies was associated with lower acceptance of personal costs for energy transitions (Evensen et al., 2018), suggesting that the profit-drive could be one impediment for people's acceptance of costs of energy transitions. Some participants criticised the systemic nature of the profit drive in the privatised UK energy system, which was viewed as resulting in the prioritisation of profits over social and environmental benefits. The distrust was based on a fundamental

disagreement with the underlying motives and resultant organising structure, meaning that more systematic change might be required to build public trust.

Lack of transparency, collusion and procedural justice

Due to a perceived lack of transparency participants found it difficult to discern who was already paying for something in the energy system and felt that reported profit figures could not be trusted. Participants called for a greater degree of transparency, so that the flow of money from profits and public levies could be clearly traced (e.g. through watchdogs [Poortinga et al., 2004]), often placing this as a requirement before any further increases in levies are added to the public bill. This was linked to a demand for a more independent and stricter regulator who would actually hold energy companies to account. Participants neither trusted the information published by energy companies, nor the regulation by Ofgem, as they suspected actors were colluding to manipulate figures. Ofgem's perceived failure to regulate the energy industry corresponds to the notion of regulatory capture, whereby regulated industries interfere with government agencies which are meant to control and regulate them (Dal Bó, 2006).

This lack of transparency and suspected collusion sometimes undermined participants' willingness to contribute financially, arguing that there was no point paying more towards social and environmental levies if there was no guarantee how the extra money would be used. Here, lack of transparency relates to the 'information' category of procedural justice, and collusion concerns 'inclusion' and 'influence' noted by Simcock (2016), all of which point towards the centrality of fair processes for trust. It is important to note, however, that transparency does not necessarily translate into accountability (Fox, 2007). Even if participants had more transparency, their concerns over profit levels would still remain unaddressed. If greater public trust is to be built, the perceived imbalance of overall costs and benefits suggests that distributive justice concerns need taking into account as well as procedural justice.

Furthermore, while Ofgem has previously attempted reforms to facilitate simpler choices, clearer information and fairer treatment of customers (Helm, 2017), it would appear that, at least until this research was conducted, these attempts have not yet been sufficient to address the corresponding public concerns. Our findings show a desire for clearer separation between the regulator and the energy companies to ensure tangible regulation, reduce perceived collusion and increase transparency. One such measure that could be considered in

line with participants' requirements, is the price cap for customers on standard variable and default tariffs, currently under policy consultation (Ofgem, 2018). Policies that encourage uniform and fair tariffs whereby customers are automatically placed on the best rate for them would help to address concerns over the complexity of different tariffs. A portion of the focus group participants also appear to support nationalisation, which could address the more fundamental concerns over the profit-driven nature of the current energy system.

The examination of perceived collusion provides a more nuanced understanding of distrust. This relationship could be especially problematic for trust in the UK context of privatisation, with increased shifting of responsibility for cost savings and energy efficiency from the state to the individual. These changing relationships between actors in the energy system and associated uncertainties could potentially negatively impact energy transition processes. While the present analysis examines the UK context, liberalisation is happening in other countries too (Pollitt, 2012; Thomas, 2005) and these findings could also be relevant to those cases. Future research could investigate other country contexts, as well as study the views of other energy system actors.

Critical versus deep distrust

With regards to concepts of trust, participants thought that energy companies and government have the competence to implement energy transitions, but were distrustful of their motives and interests, due to their pursuit of profits (Hovland et al., 1953; Metlay, 1999). These findings highlight that intentions and motives are particularly relevant for the second component of trust (sometimes referred to as trustworthiness or care) and also supports the inclusion of concepts of vested interests (Frewer et al., 1996; Poortinga & Pidgeon, 2003). Participants' relationship with energy related institutional actors could be characterised as a 'reluctant reliance', since they depend on energy companies and government to run and renew the system, but do not trust them to implement necessary energy system changes (Bickerstaff et al., 2008; Walls et al., 2004).

While critical trust can be important for ensuring that institutions are held to account (Poortinga & Pidgeon, 2003; Walls et al., 2004), the present findings seem to suggest a tendency towards deep public distrust of institutional actors in the energy sector. Deep distrust has been characterised as scepticism towards an institutions' intentions and to result in the outright rejection of output from such institutions (Poortinga & Pidgeon, 2003). This is in line with the current results where participants were very distrustful of information and

actions by energy companies and Ofgem. Consequently, they may be less inclined to accept a share of the cost of energy transitions, if their distrust is not addressed. O'Neill (2002) has argued that distrust is only a symptom of a more underlying problem, whereby trust ought only to be placed in those who are trustworthy. For example, there are valid reasons for public distrust over the management of radioactive waste from commercial reactors and development of nuclear weapons, which previously the Department of Energy attempted to address through the establishment of a task force on public trust (Metlay, 1999). Hence, the focus should not be on merely rebuilding trust, but on addressing the origins and reasons of distrust. In the participants' views the government and energy companies are not currently trustworthy. One way to address this is to consider the issues that participants have pointed out in relation to profits, transparency and collusion.

One policy recommendation that might align with participants' interest in a fairer distribution of costs could be achieved through general taxation. Barrett et al. (2018) examined how general taxation could contribute to funding a low carbon energy system, showing that it would distribute costs more proportionately to income levels, than would an increased levy on bills. A key point is that even though participants do not highly trust government, they trust government more than the energy companies, and (importantly) some of their distrust in government seems to be due to the collusion with the energy industry.

Nonetheless, distrust is unlikely to be addressed through one simple policy change. The interconnectedness of issues such as the profit-motive and transparency means that there is no single factor that can help increase trust. Gaining trust requires a larger and longer-term shift in how energy companies and government conduct themselves, as well as actions which show evidence of change towards a low carbon and affordable energy system.

It is also worth questioning whether the findings of distrust represent a more general societal distrust towards elites that is manifesting across different sectors in society (energy, transport) and across different countries. This might well be the case, however, we are interested in why and how this distrust manifests in the specific case of energy transitions and to what extent it might be problematic for these.

Finally, there are some limitations with focus group methods that are worth noting. Generally, in face to face qualitative research methods, there is the possibility that participants provide biased responses, which they think are socially desirable, in order to 'please' the researcher or other participants in the focus group (Sovacool et al., 2018). Some

participants are likely to have been influenced by what other participants said and therefore the findings are a result of group dynamics (Gailing & Naumann, 2018), rather than a representation of pre-existing views. However, this can also be seen as one of the benefits, since views are socially discussed and shared in society more generally as well. Although focus groups allow more in-depth exploration of participants' perspectives (Sovacool et al., 2018), we cannot claim to have represented all views in society. Additionally, as Gailing and Naumann (2018) summarise, focus groups are not an inherently participatory research method, since the researcher still defines the questions and moderates participants' interactions. Further, in terms of our analysis, we did not carefully compare the results across locations and might have found location specific results if we had made this the focus of our analysis.

Conclusions

The perceived lack of distributive (e.g. issues discussed around profits) and procedural justice (e.g. lack of transparency and collusion between institutional actors) resulted in participants continually questioning energy companies' and government's motives and interests, which were not perceived to correspond with their own, resulting in pervasive distrust. Until distrust is dealt with, it is unlikely that participants will find taking on a larger share of the cost themselves acceptable, because they do not have reassurance that government and energy companies will also pull their weight. Moreover, participants lacked certainty that any extra money will actually contribute towards energy system change when the current profits are not perceived to be put to such use and there is little transparency to trace how profits and levies are currently being spent.

The findings could be treated not as a deferral of responsibility, but as a demand for a fairer distribution of costs and benefits, and fairness in the process, such as addressing profit levels and motives, transparency and collusion. These might ultimately not only increase public willingness to contribute financially towards the cost of energy transition, but also further public engagement with energy transitions at large.

References

- Barrett, J., Owen, A., & Taylor, P. (2018). Funding a low carbon energy system: A fairer approach? UK Energy Research Centre (UKERC). Retrieved on 09.08.18 from: <http://www.ukerc.ac.uk/publications/funding-a-low-carbon-energy-system.html>.
- BBC (2013, 29th October). Energy boss calls for competition inquiry into market. Retrieved on 24.07.18 from <https://www.bbc.co.uk/news/business-24730122>
- BBC (2014, 27th March). 'Big six' energy firms face competition inquiry. Retrieved on 24.07.18 from <https://www.bbc.co.uk/news/business-26734203>
- Bellaby, P. (2010). Uncertainties and risks in transitions to sustainable energy, and the part 'trust' might play in managing them: A comparison with the current pension crisis. *Energy Policy*, 38, 2624-2630. doi:10.1016/j.enpol.2009.05.036
- Bickerstaff, K., Simmons, P., & Pidgeon, N. (2008). Constructing responsibilities for risk: negotiating citizen – state relationships. *Environment and Planning A*, 40, 1312-1330. DOI:10.1068/a39150
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research In Psychology*, 3(2), 77-101. <http://dx.doi.org/10.1191/1478088706qp063oa>
- Butler, C., Demski, C., Parkhill, K., Pidgeon, N., & Spence, A. (2015). Public values for energy futures: Framing, indeterminacy and policy making. *Energy Policy*, 87, pp.665-672.
- Butler, C., Parkhill, K.A., & Pidgeon, N. (2013). *Deliberating energy transitions in the UK – Transforming the UK Energy System: Public Values, Attitudes and Acceptability* (UKERC: London).
- Butler, C., Parkhill, K. A., & Pidgeon, N. (2013). *Deliberating energy transitions in the UK – transforming the UK energy system: Public values, attitudes and acceptability*. UKERC: London.
- Climate Change Act (2008). Retrieved on 15.02.18 from http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf
- Committee on Climate Change (2010). The Fourth Carbon Budget – Reducing Emissions through the 2020s. Retrieved on 01.03.19 from

<https://www.theccc.org.uk/publication/the-fourth-carbon-budget-reducing-emissions-through-the-2020s-2/>

Committee on Climate Change (2016). UK Climate Action Following the Paris Agreement. London. Retrieved on 18.07.18 from <https://www.theccc.org.uk/publication/uk-action-following-paris/>

Committee on Climate Change (2017). Energy prices and bills - impacts of meeting carbon budgets. Retrieved on 09.08.18 from <https://www.theccc.org.uk/wp-content/uploads/2017/03/Energy-Prices-and-Bills-Committee-on-Climate-Change-March-2017.pdf>

Dal Bó, E. (2006). Regulatory capture: A review. *Oxford Review Of Economic Policy*, 22(2), 203-225. doi: 10.1093/oxrep/grj013

Deller, D., Waddams Price, C., Errington, E., Fletcher, A., Hargreaves, T., Harker, M., Longhurst, N., Reader, D., & Turner, G. (2018). Fairness in Retail Energy Markets? Evidence from the UK. A report by the Centre for Competition Policy.

Demski, C., Butler, C., Parkhill, K., Spence, A., & Pidgeon, N. (2015). Public values for energy system change. *Global Environmental Change*, 34, 59-69.
<http://dx.doi.org/10.1016/j.gloenvcha.2015.06.014>

Demski, C., Evensen, D., Pidgeon, N., & Spence, A. (2017). Public prioritisation of energy affordability in the UK. *Energy Policy*, 110, 404-409.
<http://dx.doi.org/10.1016/j.enpol.2017.08.044>

Demski, C., Poortinga, W., & Pidgeon, N. (2014). Exploring public perceptions of energy security risks in the UK. *Energy Policy*, 66, 369-378.
<http://dx.doi.org/10.1016/j.enpol.2013.10.079>

Demski, C., Spence, A., & Pidgeon, N. (2013). Transforming the UK Energy System: Public values, attitudes and acceptability – Summary findings of a survey conducted August 2012. UKERC: London. Retrieved on 10.08.18 from <http://www.ukerc.ac.uk/publications/transforming-the-uk-energy-system-public-values-attitudes-and-acceptability-summary-findings-from-a-survey-conducted-august-2012.html>

- Demski, C., Thomas, G., Becker, S., Evensen, D., & Pidgeon, N. (2019). Acceptance of energy transitions and policies: Public conceptualisations of energy as a need and basic right in the United Kingdom. *Energy Research & Social Science*, 48, 33-45. <https://doi.org/10.1016/j.erss.2018.09.018>
- Department for Business, Energy and Industrial Strategy (BEIS, 2017). The Clean Growth Strategy. London. Retrieved on 18.07.18 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf
- Department of Energy and Climate Change (DECC, 2016). Department of Energy and Climate Change Public Attitudes Tracker – Wave 17. Retrieved on 15.02.18 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/602458/PAT_wave_17_Summary_of_key_findings.pdf
- Dwyer, J. & Bidwell, D. (2018). Chains of trust: Energy justice, public engagement, and the first offshore wind farm in the United States. *Energy Research & Social Science*, 47, 166-176.
- Eden, S. E. (1993). Individual environmental responsibility and its role in public environmentalism. *Environment and Planning A*, 25, 1743-1758.
- Evensen, D. (2016). Ethics and ‘fracking’: A review of (the limited) moral thought on shale gas development. *WIREs Water*, 3, 575-586. <https://doi.org/10.1002/wat2.1152>
- Evensen, D., Demski, C., Becker, S., & Pidgeon, N. (2018). The relationship between justice and acceptance of energy transition costs in the UK. *Applied Energy*, 222, 451-459. doi: 10.1016/j.apenergy.2018.03.165
- Fox, J. (2007). The uncertain relationship between transparency and accountability. *Development in Practice*, 17, 663-671.
- Foxon, T. (2013). Transition pathways for a UK low carbon electricity future. *Energy Policy*, 52, 10-24. <http://dx.doi.org/10.1016/j.enpol.2012.04.001>
- Frewer, L. J., Howard, C., Hedderley, D., & Shepherd, R. (1996). What determines trust in information about food-related risks? Underlying psychological constructs. *Risk Analysis*, 16, 473-486.

- Gailing, L. & Naumann, M. (2018). Using focus groups to study energy transitions: Researching or producing new social realities?. *Energy Research & Social Science*, 45, 355-362. doi: 10.1016/j.erss.2018.07.004
- Gosden, E. (2018, 1st June). Energy firms ‘in collusion to avoid competing’. *The Times*. Retrieved on 24.07.18 from <https://www.thetimes.co.uk/article/energy-firms-in-collusion-to-avoid-competing-sfdqg7371>
- Gölz, S. & Wedderhoff, O. (2018). Explaining regional acceptance of the German energy transition by including trust in stakeholders and perception of fairness as socio-institutional factors. *Energy Research & Social Science*, 43, 96-108.
- Grubb, M. & Newbery, D. (2018). UK Electricity Market Reform and the Energy Transition: Emerging Lessons. Energy Policy Research Group Working Paper. Retrieved on 09.08.18 from <https://www.eprg.group.cam.ac.uk/wp-content/uploads/2018/06/1817-Text.pdf>
- Guardian (2016, 23rd June). CMA energy market report expected to whip up storm of criticism. *The Guardian*. Retrieved on 24.07.18 from <https://www.theguardian.com/business/2016/jun/23/cma-energy-market-report-expected-criticism-overcharging-uk-consumers-big-six-suppliers>
- Heffron, R., & McCauley, D. (2017). The concept of energy justice across the disciplines. *Energy Policy*, 105, 658-667. doi: 10.1016/j.enpol.2017.03.018
- Helm, D. (2017). Cost of energy review. Retrieved on 09.08.18 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/654902/Cost_of_Energy_Review.pdf
- Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and Persuasion. Psychological Studies of Opinion Change*. New Haven: Yale University Press.
- IPCC (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

- Jenkins, K., McCauley, D., Heffron, R., Stephan, H., & Rehner, R. (2016). Energy justice: A conceptual review. *Energy Research & Social Science*, 11, 174-182. doi: 10.1016/j.erss.2015.10.004
- Kent, J. (2009). Individualized responsibility and climate change: 'If climate protection becomes everyone's responsibility, does it end up being no-one's?'. *Cosmopolitan Civil Societies: An Interdisciplinary Journal*, 1(3), 132. <http://dx.doi.org/10.5130/ccs.v1i3.1081>
- Lorenzoni, I. & Pidgeon, N. (2006). Public views on climate change: European and USA perspectives. *Climatic Change*, 77, 73-95. DOI: 10.1007/s10584-006-9072-z
- Macalister, T. (2014, 20th June). Ofgem to unveil biggest ever energy sector investigation. *The Guardian*. Retrieved on 24.07.18 from <https://www.theguardian.com/business/2014/jun/20/ofgem-biggest-every-energy-sector-investigation-big-six-gas-electricity>
- Metlay, D. (1999). Institutional trust and confidence: A journey into a conceptual quagmire. In G. Cvetkovich & R. E. Löfstedt (Eds.), *Social Trust and the Management of Risk*. London: Earthscan.
- Moylan, J. (2015, 18th February). Energy customers miss big savings, says CMA inquiry. *BBC*. Retrieved on 24.07.18 from <https://www.bbc.co.uk/news/business-31512878>
- Newbery, D. (2005). Electricity liberalisation in Britain: The quest for a satisfactory wholesale market design. *The Energy Journal*, 26, 43-70. doi: 10.5547/issn0195-6574-ej-vol26-nosi-3
- Ofgem (no date). State of competition in the energy market assessment. Retrieved on 24.07.18 from <https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/implementation-cma-remedies/state-competition-energy-market-assessment>
- Ofgem (2014). State of the Market Assessment. Retrieved on 24.07.18 from https://www.ofgem.gov.uk/sites/default/files/docs/2014/03/assessment_document_published_1.pdf
- Ofgem (2018). Default tariff cap: Policy consultation – overview. Retrieved on 12.07.18 from <https://www.ofgem.gov.uk/publications-and-updates/default-tariff-cap-policy-consultation-overview>
- O'Neill, O. (2002). *A Question of Trust*. Cambridge: Cambridge University Press.

- Packer, G. (2013). *The Unwinding: An Inner History of the New America*. London: Faber and Faber.
- Parkhill, K.A., Demski, C., Butler, C., Spence, A., & Pidgeon, N. (2013). Transforming the UK Energy System: Public Values, Attitudes and Acceptability – Synthesis Report (UKERC: London).
- Parkhill, K. A., Henwood, K. L., Pidgeon, N. F., & Simmons, P. (2011). Laughing it off? Humour, affect and emotion work in communities living with nuclear risk. *British Journal of Sociology*, 62, 324-346. doi: 10.1111/j.1468-4446.2011.01367.x
- Pidgeon, N. (2012). Public understanding of, and attitudes to, climate change: UK and international perspectives and policy. *Climate Policy*, 12, S85-S106. doi: 10.1080/14693062.2012.702982
- Pidgeon, N. (2014). Complexity, uncertainty and future risks. *Journal Of Risk Research*, 17, 1269-1271. doi: 10.1080/13669877.2014.940599
- Pidgeon, N., Demski, C., Butler, C., Parkhill, K., & Spence, A. (2014). Creating a national citizen engagement process for energy policy. *Proceedings Of The National Academy Of Sciences*, 111(Supplement_4), 13606-13613. <http://dx.doi.org/10.1073/pnas.1317512111>
- Pollitt, M. G. (2012). The role of policy in energy transitions: Lessons from the energy liberalisation era. *Energy Policy*, 50, 128-137. <https://doi.org/10.1016/j.enpol.2012.03.004>
- Poortinga, W., Bickerstaff, K., Langford, I., Niewöhner, J., & Pidgeon, N. (2004). The British 2001 Foot and Mouth crisis: A comparative study of public risk perceptions, trust and beliefs about government policy in two communities. *Journal Of Risk Research*, 7(1), 73-90. doi: 10.1080/1366987042000151205
- Poortinga, W. & Pidgeon, N. (2003). Exploring the dimensionality of trust in risk regulation. *Risk Analysis*, 23, 961-972.
- Rayner, S. (2010). Trust and the transformation of energy systems. *Energy Policy*, 38, 2617-2623. doi:10.1016/j.enpol.2009.05.035
- Roberts, C., Geels, F. W., Lockwood, M., Newell, P., Schmitz, H., Turnheim, B., & Jordan, A. (2018). The politics of accelerating low-carbon transitions: Towards a new research agenda. *Energy Research & Social Science*, 44, 304-311.

- Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Introduction to special topic forum: Not so different after all: A cross-discipline view of trust. *The Academy of Management Review*, *23*, 393-404.
- Shove, E. (2010). Beyond the ABC: Climate change policy and theories of social change. *Environmental Planning A*, *42*, 1273-1285. doi:10.1068/a42282
- Simcock, N. (2016). Procedural justice and the implementation of community wind energy projects: A case study from south yorkshire, UK. *Land Use Policy*, *59*, 467-477.
- Sovacool, B. (2014). What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Research and Social Science*, *1*, 1-29, <https://doi.org/10.1016/j.erss.2014.02.003>.
- Sovacool, B., Axsen, J., & Sorrell, S. (2018). Promoting novelty, rigor, and style in energy social science: Towards codes of practice for appropriate methods and research design. *Energy Research & Social Science*, *45*, 12-42. doi: 10.1016/j.erss.2018.07.007
- Sovacool, B., Burke, M., Baker, L., Kotikalapudi, C., & Wlokas, H. (2017). New frontiers and conceptual frameworks for energy justice. *Energy Policy*, *105*, 677-691. doi: 10.1016/j.enpol.2017.03.005
- Stentjes, K., Pidgeon, N., Poortinga, W., Corner, A., Arnold, A., Böhm, G., Mays, C., Poumadère, M., Ruddat, M., Scheer, D., Sonnberger, M., Tvinnereim, E. (2017). European Perceptions of Climate Change: Topline findings of a survey conducted in four European countries in 2016. Cardiff: Cardiff University.
- Stewart, D. W., Shamdasani, P. N., & Rook, D. W. (2007). *Focus Groups: Theory and Practice*. London, UK: Sage Publications Ltd.
- Stoll-Kleemann, S., O'Riordan, T., & Jaeger, C. (2001). The psychology of denial concerning climate mitigation measures: Evidence from Swiss focus groups. *Global Environmental Change*, *11*(2), 107-117. doi:10.1016/s0959-3780(00)00061-3
- Thomas, S. (2005). British experience of electricity liberalisation: A model for India? *Economic and Political Weekly*, *40*, 5260-5268.
- Vaughan, A. (2017). Energy bills: What's the difference between Tory cap and Miliband freeze? *The Guardian*. Retrieved on 16.02.18 from <https://www.theguardian.com/money/2017/apr/23/energy-prices-tory-cap-miliband-freeze>

- Vaze, P. & Hewett, C. (2012). Who pays? Consumer attitudes to the growth of levies to fund environmental and social energy policy objectives. *Consumer Focus*. Retrieved on 10.08.18 from <https://www.bl.uk/collection-items/who-pays-consumer-attitudes-to-the-growth-of-levies-to-fund-environmental-and-social-energy-policy-objectives>
- Walls, J., Pidgeon, N., Weyman, A., & Horlick-Jones, T. (2004). Critical trust: Understanding lay perceptions of health and safety risk regulation. *Health, Risk & Society*, 6(2), 133-150. doi: 10.1080/1369857042000219788
- Wüstenhagen, R., Wolsink, M., & Bürer, M. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35(5), 2683-2691. doi: 10.1016/j.enpol.2006.12.001

Table 1. Responsibility to contribute financially – illustrative quotations

Participant(s)	Quotation
Laura, Birmingham	Well the general public – nil.... Because we pay enough as it is and.... I just think energy companies could take more of the share of everything in the future, I don't know how many millions of profit they make.
Alexander, Birmingham	I think it should be the government and the energy companies that should pay, without a doubt.... They charge us exuberant prices, so it's high time the government acted and made these companies contribute to your new power station.
Caroline, Thomas, Cardiff	C: Ultimately, it comes back to the UK government every time, for responsibility as a whole for energy supply in the UK.... Because I can't see how else it can be policed rather than at that level, the high level.... T: Yeah, we employ the government and the energy minister to do this.
Susie, Cardiff	I think the issue will be the general public, we already pay over the odds for it. UK government, like I've said, if they get the taxes and even introduce new taxes, that's us anyway.... So it should really come from the energy companies who are making so much money from us anyway....
Nathan, Glasgow	Primarily the energy companies because they make the most money from it, so it's in their interest for them to have the structure as good as they can.... And then the government, through your taxes you'll pay and then maybe third, the public because I think at the end of the day.... you want a better society, you want warmer houses, less costs.
Monika, London evening	Well I think the energy companies are making so much money that they can stock up some of it instead of asking us to contribute more to their profits, they can put some of their profits towards it. I don't mind paying a small amount towards it, but they are making such huge amounts.
Paul, London afternoon	Whichever one you choose, we're going to pay, aren't we?.... Well, the general public are going to pay one way or the other.... Either your bill is going to go up or your taxes are going to go up or children are going to pay (Overlapping Conversation). The money's not coming from anywhere else, is it?

Table 2. Theme 1) Views on profits – illustrative quotations

Participant(s)	Quotation
1.1 Conditions placed on profits	
Lindsay, Cardiff	It depends what they do with it (profit) I suppose.... because if we knew that they.... invested into infrastructure or to help the disadvantaged.... (if) it just goes into shareholders' pockets then it's quite high because what have they done to deserve that 9% (profit per energy bill), because we're all paying it.
Caroline, Cardiff	As long as I knew.... the energy company profits are reducing at the same rate my bill is going up.... what needs to be paid then I'm all for giving an extra, but I don't want it to be at the energy companies' gain.
Lukas, London evening	I would be interested to see in actual money terms what kind of profit they actually make, I know it's 9%, but 9% of what?.... The volume of everybody's bill together, it could be billions.... The percentage sounds low but the actual amount of money they make.... if you had that, I'm sure that would be shocking.
Nathan, Glasgow	There's also the perception that it's (prices) going up every year, you presume that the profits are going up.
1.2 Systemic nature of the profit drive	
Emilia, Glasgow	Surprised.... Especially on the (9%) profits.... Because I thought their whole game was to make as much profit as possible for themselves.
Martha, Cardiff	So, we kind of need some more ethical investors really, who were prepared to accept a lot lower profit and to be happy for the money to go in the environmental and social levies and things.
David, Cardiff	Or we could have more government regulation, couldn't we, controlling them.
Simon, London afternoon	Because they're there to make a profit and as a commercial company they have to make a profit. They're not going to want to give (it to) disadvantaged people.
Simon, London afternoon	If the energy was nationalised, the shareholders that get the profit are us, the taxpayers. Because if it's nationalised, profit they make goes into the exchequer.... So that can be then used for social things and whatever infrastructure.
Jake, London evening	Because let's face it people, these companies aren't charities. If I invest in a company I want a return on my investment, however ethical or unethical that seems.... I'm not doing it to benefit you.
Lukas, London evening	Energy is one of those things which shouldn't be privatised, one of the things – everybody needs to use it, it's an essential everyday thing that should be government-owned, government run, or not-for-profit.

Table 3. Theme 2) Lack of transparency – illustrative quotations

Participant(s)	Quotation
2.1 Not understanding energy system costs	
Lewis, London afternoon	L: This is where I think these companies have got to be more transparent. It's what they're paying their CEOs and their high managers and what they're investing in. If people knew what they were investing in, we might look at it completely differently. But we don't know, there's no transparency.
Adam, London afternoon	It's (different tariffs) designed to confuse and manipulate you.
Michael, London evening	I find it difficult to understand. If you get your water bill – this is what the bill is. On the electricity one it's got 'you used x kilohertz, this is converted into a plus with blah, blah' and I can't make any sense of it and I can't understand the meter either because it's one of the ones with wheels.
Amanda, Birmingham	But how much have energy bills gone up?... And what justification do the energy companies give for that?... I think that's where the transparency comes in... we just do not know.
Thomas, Martha, Cardiff	T: Who is the cheapest? Nobody ever knows. You think you've got the right one on the day, but tomorrow, it could be somebody else. You don't know, do you? M: And you get a contract that you sign for two years and then, within two weeks, the energy prices change and you think, hang on a minute, I thought this was supposed to be fixed.
Martha, Cardiff	It should be a lot more open, a lot clearer and less salespeople being involved who are just thinking about themselves.... And you get told what's in this contract, but you don't actually see it, and you don't see the other options. You're having to trust and believe this person with part of your life, on the phone" (Martha, Cardiff).
2.2 Distrust of information	
Susie, Cardiff	And there's obviously a lot of money that we don't even see.... just like their profits and the amount of money they actually make.... We're just told what they want us to hear.
Martha, David, Cardiff	M: I want to see the whole picture and not just a bit.... D: But they don't want you to see the whole picture, do they?
Nathan, Glasgow	If your energy company did give you that (more information), would you really trust it, would you be back to thinking 'why are they telling me that?' It's all a bit cynical.... You'd always feel it was geared towards what they want you to perceive and how they want to be portrayed, so I think you would take it with a bit of a pinch of salt.

Andrew, Glasgow	I want it done efficiently and I think the test of that is if the government or the energy companies do that, you then <i>see the evidence</i> that it's done, 'here's a thousand houses that have.... lofts insulated.
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Lewis, Simon, London afternoon	<p>L: It's called having a good accountant, isn't it?....</p> <p>S: Who said about clever accountants? Nine per cent profits, if they've got an accountant worth his salt, he will say, "Ah, but we've put that money into that pot, so that's cost.... Our profits are actually below 9%", but in reality, they might be making 25% profit....</p>
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Monika, London evening	You're told that that's going to do that, but you never really know if it's just going for profit.... I just don't believe them.... I don't trust them.... They need to be absolutely open and we need to know that that ten pounds that we are giving them is not going to their Christmas fund.... that it's going for what we're paying it for, so it needs to be traceable.
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Monika, Jake, London evening	<p>M: I just think they've fixed it, they've got good accountants, they get them in, make it look as though this is it, but really I don't believe that, I don't believe it.</p> <p>J: Well Ofgem is a bit of a toothless giant anyway, isn't it?....</p> <p>M: Transparency, show me and I'll absolutely believe it, if I can see it with my own eyes, then I'll believe....</p>
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Table 4. Theme 3) Perceived collusion between energy companies and government – illustrative quotations

Participant(s)	Quotation
David, Cardiff	It's the government, they could tell them (energy companies) what to do, but they won't. Why? Because they're lobbied.
Melanie, London afternoon	These regulators are hired by the government and often they are executives of the power companies. So we're in a no-win situation. The public is... being abused by the politicians and... by the energy companies.
Tony, Birmingham	They (Ofgem) don't seem to be regulating the industry in nearly as good a fashion that it needs to be invigilated to make it more transparent.
Jake, Lukas, London evening	J: They're (energy companies) a cartel aren't they? L: That's right.... maybe the regulator is not doing their job right, maybe they should go audit these companies – what's really going on. J: Well, there is no competition.... I believe they all sit around and say 'let's fix it within a decimal point of this, that and the other'.
Jake, London evening	Think of the government for a moment, once they are voted out, whether they get seats on the boards of these bloody energy companies.
Joanna, London evening	[Government] are played by the energy companies because they have so much power.... there is much more trust now because they've got more interest in the public but...they are driven by wherever the profit comes from.

Appendix A. Demographic information for focus group participants (table reproduced from Demski et al., 2019).

Location	Participants (total)	Males/Females	Age range	Occupations represented (as defined by participants)
Cardiff	9	4/5	Not available	Not available
London 1	7	5/2	37-64	Unemployed, skilled manual, retired engineer, lawyer, heavy goods vehicle driver, sales promotion, manager
London 2	7	6/1	25-71	Personal assistant, retired, self-employed, local government officer, electronics engineer
Birmingham	6	2/4	40-68	Unemployed, retired, unemployed, retired, teacher
Glasgow	8	5/3	21-72	Museum assistant, bank worker, retired engineer, housekeeper, housewife, ex-coalminer
TOTAL	37	22/15	25-72	