Intermediaries' perspectives on the public's role in the energy transitions needed to deliver UK climate change policy goals.

Abstract

There is now a large body of research into public understanding of climate change and energy challenges. There is however little empirical examination of how actors from politics, government, civil society and non-governmental organisations regard the role of public engagement in climate and energy policy. Research is lacking as to their views on the desirability of active citizen participation or indeed whether they draw on the findings from social science research in forming strategies and policy. This paper presents an analysis of interviews with policy experts and deliberative seminars held with non-governmental stakeholders working in the climate change sphere. A comparison of four policy scenarios was used to explore stakeholders' beliefs about the role of the public in delivering the UK's Climate Change Act targets. The results reveal a general antipathy to policies that seek to 'engage' the public and a lack of knowledge amongst the participants about how insights from the social sciences can be used to build and sustain public engagement. This research exposes the need to assess the means by which public engagement can better be understood, integrated and most effectively utilised for sustainable progression towards climate targets.

1. Introduction

The fourth budget of the UK Climate Change Act requires 50% CO_2e emissions reduction by 2025, in line with a longer-term target of 80% reductions by 2050 (UK Committee on

Climate Change, 2008). This equates to a 3% reduction in emissions every year from 2014 to 2030 (UK Committee on Climate Change, 2015). To meet these targets the UK faces 'an urgent need for completely new energy policy across a range of areas' (UK Committee on Climate Change, 2016). It is thought by many that a reliance upon individual-level voluntary behavioural responses by the wider public can only make a limited contribution to meeting those targets (Capstick *et al.* 2014; Shove, 2010; Capstick *et al.* 2015; Chamberlin *et al.* 2015). At the same time there has, to date, been political reluctance in the UK to introduce more radical top-down policies to structure emissions reduction, such as carbon taxation or personal carbon trading (Chamberlin *et al.* 2015; Lorenzoni *et al.* 2008).

The impasse in climate and energy policy which prevents more radical emissions reductions has been termed the 'governance trap': a situation in which people are concerned about climate change, but feel it is for policy makers to take the lead on implementing the required changes; while, in turn, policy makers expect individuals to act, and are unwilling to implement potentially unpopular measures (Pidgeon, 2012). In this context, an understanding of how the public is viewed by policy makers and intermediaries (for example, stakeholders from civil society), together with the capacity of government and policy to actively engage the public, is central to overcoming the governance trap. By translating scientific knowledge and their own perspectives into popular discourse, as well as by amplifying risk claims (Carvalho and Burgess, 2005) non-governmental and civil society actors are critical to shaping public opinion on climate change and energy topics, and in the setting of assumptions about the nature of public engagement on these issues (Ockwell *et al.* 2009; Carter and Ockwell, 2007; Brulle *et al.* 2012)

The active shaping of both public and policy opinion is particularly important given the continued focus on climate change 'scepticism' among the public and in media reporting, which has, over time, contributed to the impression that civil society is disinterested or

even hostile to climate protection (Howarth and Sharman, 2015). Fluctuations in public opinion, particularly declines in key indicators of risk perception in the late 2000's across Western nations, has led some observers to conclude that climate change had become an issue of secondary importance to many (Kerr, 2011). In addition, the political consensus in the UK about the importance of climate change has waned following the banking crisis of 2008 (Carter and Clements, 2015). Nonetheless, in nationally representative social surveys, climate change consistently emerges as a matter of concern to majorities across Europe (European Commission, 2014; Steentjes *et al.* 2017) In the UK, around three-quarters of the public are in favour of national reductions in energy use, and of decreased reliance on fossil fuels (Butler *et al.* 2015) as well as greater use of renewable energy such as onshore wind (10:10, 2016). A range of research studies likewise suggests that there is a stronger mandate for government intervention than politicians have tended to assume (Pidgeon, 2012; Rickards *et al.* 2014).

Policy intermediaries play a potentially important role in interpreting and using these data in order to provide realistic narratives within which policy makers have the license to act on climate change and the public have the capacity to engage. These narratives are likely to be complex in nature - although members of the public generally endorse a national response to climate change, the level of popular support for specific carbon reduction policies is highly variable, and contingent upon design features. There is only weak public support for policies such as personal carbon trading or carbon taxation in their generic form; however, their acceptability can be substantially increased when, for example, schemes emphasise equity considerations and the re-investment of revenues. Regard for fairness and social justice are similarly found to be important for public appraisals of energy transitions, alongside concerns for affordability, environmental protection and energy security (Butler *et al.* 2015). So, whilst the research indicates there is some appetite amongst the UK public for strong policy leadership on climate change, there is a

lack of understanding about what policy options, commensurate with 80% reductions, intermediaries would be willing to promote, and if, and how, their choices are related to their beliefs about public perceptions and engagement. In short, we know a lot about how the public perceive policy and policy-makers with respect to climate change, but next to nothing about how the intermediaries between the public and policy-makers, perceive the public's role.

1.1 What is the role of public engagement in delivering climate change policy?

The feasibility of implementing ambitious policy is typically assumed to be contingent on the extent to which there is felt to be public engagement on, and concern about, energy and climate change (Carter and Jacobs, 2014). Drawing on principles from psychology and science communication we define public engagement as having three key components (Hilgard, 1980): cognitive (understanding/ knowledge), affective (emotion, interest and concern), and conative/behavioural (motivation for action). This implies that "it is not enough for people to know about climate change in order to be engaged; they also need to care about it, be motivated and able to take action" (Lorenzoni *et al.* 2007: 446).

There are several reasons why public engagement on climate change could be viewed as essential to meeting climate change targets. Firstly, high levels of public concern about climate change and awareness of national energy needs provides both the social licence for policy makers to act and implies the public accepts policy decisions which have already been taken (Whitmarsh *et al.* 2011; Shaw, 2015). In line with aspirations for a healthier democracy, engagement with the policy-making process also helps to enhance the work of current institutions and social relations in the context of energy and environmental concerns, by ensuring that the knowledge and policy created by these institutions is seen to be 'credible, salient and legitimate' (Cash *et al.* 2003: 8086). Secondly, strengthened public engagement can motivate participation in the structural and behavioural changes

required as a result of those policies (Carvalho and Peterson, 2012; Machin, 2013; Thorpe and Gregory, 2010; Shaw, 2014). Thirdly, it has been argued that citizen engagement with climate politics is indispensable to finding effective responses (Castell, 2010) on the basis that the inclusion of alternative problem definitions and forms of knowledge have the potential to generate new thinking about policy (Oppenheimer, 2005; Hampton, 2009; Rayner, 1987; Ravetz, 2006). Fourthly, living in a democracy means people have the right to be given a say in the important climate policy decisions facing a country (Carvalho and Peterson, 2012). Hence, participation is not only necessary in order to solve critical policy problems like climate change but becomes the normative means by which a more democratically accountable, and thereby better society can be built (ibid). Finally, Article 12 of the UNFCCC Paris Agreement explicitly commits parties to enhance public participation in order to improve delivery of the actions detailed by the Agreement (UNFCCC, 2015)

Despite these strong and diverse grounds for public involvement, there appears to be little research as to whether public engagement is a key part of the strategy bringing about changes to climate and energy policy (Gough, 2013; Warren, 2014; Capstick *et al.*, 2015). One of the reasons for this may be implicitly or explicitly held views that public engagement is not, in fact, seen as a desirable, or indeed, necessary part of national transitions. Although the requirement for public engagement is therefore recognised theoretically, to our knowledge there has been no assessment of whether those acting as intermediaries between the policy making process and the public consider citizen involvement a central objective of climate policy, how they view trade-offs between public engagement and other goals of climate policy, and what forms of knowledge are employed in determining those choices. This we argue is a critical oversight: unless those working actively to develop policy themselves view public participation as important, it will gain minimal traction, and social science research on this topic may be disregarded.

2. Using knowledge exchange to develop research questions

This paper provides insights into the perception of public engagement on climate change by intermediaries, based on collaborative research arising from a previous Economic and Social Research Council (ESRC) knowledge exchange (KE) project, - the 'Climate Crunch' (Newell *et al.* 2015) - the aim of which was to promote dialogue between researchers and research users.

The Climate Crunch programme identified key barriers to public engagement and effective action. These were: a) The 'governance trap' - whereby governments place responsibility on citizens, organisations and markets for action on climate change, while these in turn place responsibility back onto governments; b) Governments' failure to address the ways high-carbon lifestyles are shaped and reproduced; c) Limited stakeholder participation in climate policy deliberations, including those establishing the priorities and trade-offs that should govern transitions to a lower carbon society. Two of the solutions proposed in response to these barriers related to the role of public participation in climate policy, namely: 1) Developing a more inclusive and democratic process of deliberation regarding the trade-offs between economic growth and harm from climate change and 2) Ensuring decision making is transparent and procedural rights - rights to information, consultation and democratic inclusion in the decision-making process - are recognised and upheld (ibid).

2.1 *Building Grassroots Engagement with Climate Change. A Knowledge Exchange Partnership with the Fleming Policy Centre*

This KE project sought to develop the *Climate Crunch* findings through engagement with a KE partner active in the area of climate policy where public participation was a core focus of the approach taken. The Fleming Policy Centre was chosen in this respect. This organisation was set up in 1996 to refine and promote a version of personal carbon trading known as Tradable Energy Quotas (TEQs). This scheme is based on harnessing wide scale public innovation and participation in developing low carbon lifestyles, within a strong emissions reduction framework. While the scheme has received significant academic attention (e.g. Fawcett and Parag, 2010; Chamberlin *et al.* 2015) international media coverage and political support, one key obstacle to implementation is likely to be the lack of understanding of the potential role the public could play – and which TEQs could unleash. In the words of the House of Commons Environmental Audit Committee (2008:3) "what is needed, urgently, is a shift in the debate away from ever-deeper and more detailed consideration of how [TEQs] could operate towards the more decisive questions of how it could be made publicly and politically acceptable." Hence the objectives of the Fleming Policy Centre were closely aligned to the goals of the KE project, inasmuch as a key objective was to understand participants' perspectives on the extent to which public engagement is a necessary and/or desirable condition for policy development.

Knowledge exchange workshops were held with the Fleming Centre to co-design a collaborative research agenda and methodology. Our core research questions were agreed as follows:

1) Do those acting as intermediaries between the policy making process and the public consider public involvement a central objective of climate policy?
2) How do intermediaries view trade-offs between public engagement and other goals of climate policy?
3) What forms of knowledge are employed in determining those choices?

3. Methodology

As outlined, climate change policy intermediaries are key to how both policy makers and other actors interpret and integrate the role of public engagement in climate change. They therefore provided the sample under consideration, offering a critical lens on systemic views of public engagement involvement.

The research followed a two-stage qualitative process. The first stage comprised 11 semi-structured interviews with senior actors working on climate change issues, including NGOs, academics and energy businesses - both the renewables sector and from large electricity providers. The design of the second stage of the research was informed by themes arising from these initial interviews; this second stage employed deliberative roundtable seminars with a total of 41 public-facing intermediaries. Participants in this second group differed from the first in being made up largely of people with additional direct experience of working with the public on climate change issues, either as campaigners or businesses.

Table 1: Key features of seminar participants

The frame of reference used for all stages was comparison of policy options with the capacity to meet the targets laid out in the carbon budgets, as produced by the UK's Committee on Climate Change.

3.1 Stakeholder interviews

Interviews were carried out with senior institutional actors from civil service and government (three interviewees); academia (two interviewees); energy companies (two interviewees), senior management of community energy groups (two interviewees) and

environmental non-government organisations (NGOs) (two interviewees). Interviewees were selected on the basis of their seniority and experience and included an ex UK cabinet minister, an ex Chief Executive of one of the largest UK energy companies, a director of a prominent energy consultancy, a senior member of the UK Climate Change Committee, and long serving senior campaigners from well-known environmental NGOs. All interviews were conducted by telephone between September and December 2014, and lasted between 30 and 60 minutes (see Supplemental Information for the schedule used for the semi-structured interviews). Interviewees were identified initially through a process of convenience sampling, via established networks of the research partners, and snowball sampling. Interviews were recorded and transcribed verbatim.

3.2 KE research seminars

Following analysis of the interviews, deliberative format seminars were carried out to provide a space in which to explore the view of a wider group of intermediary participants regarding public engagement in climate policy. Each workshop involved reflection on four policy frameworks: TEQs, carbon taxation, cap-and-dividend, and command-and-control (see *Table 2*).

KE research seminars were held in London, Bristol and Brighton with representatives from civil society, the public sector, 'green' industry and environmental NGOs. These were recruited through a mixture of convenience and snowball sampling. London was chosen as a location which maximised the ability to obtain input from senior actors from the above sectors. Bristol and Brighton were chosen because of the high level of knowledge and established networks of climate change and community energy organisations. The formats of the seminars/focus groups were adjusted to the constraints of the time available; a World Café at the half day seminar in London and round table discussions at two shorter evening events in Bristol and Brighton.

To enable a balanced comparison, all four frameworks were presented at the seminars as scenarios which delivered the UK Climate Change Act targets. Although all four policy frameworks take the 80% emissions reduction goal as an immutable outcome, these policy proposals differ substantially in the assumed role of the public. Given the complexities of each approach, they were not presented in full detail. Instead the policies were presented at a level sufficient to articulate their key features, as well as the likely role of public engagement, in order to provoke discussion and deliberation. The summaries in *Table 2* are shorter than the text discussed in the seminars and are provided here for illustration. Full texts are provided in supplemental information to this paper. The full texts were shared with participants prior to the seminars, and they were asked to read them in advance of the seminars.

Table 2: *Policy scenarios considered in deliberative discussions*

As the aim was to elicit normative views on public engagement, which may be subject to socially desirable responding (Paulhas, 2002), discussions in the seminars were structured around the following questions:

- What do you see as the advantages of this approach?
- What do you see as the disadvantages?
- What other features would improve this scenario?

Participants were also asked to complete a short survey where they were asked to indicate levels of favourability for each policy under five key pre-determined criteria: stimulates innovation; compatible with economic growth; progressive and equitable; will reduce energy demand; politically feasible. In addition, participants were asked to rank the policy frameworks overall and give reasons for their choices.

Table 3 summarises the seminar structures.

Table 3: *KE seminar structure*

4. Results

4.1 One-to-one interviews

The interviews revealed a commonly held belief that a 'climate silence' has descended upon the UK, whereby climate change was considered to have been relegated in importance and rarely discussed by policy-makers (Corner, 2014). One participant noted that climate change was: "a more live issue a few years ago, when David Miliband was offering an 'open ear' on the subject" (Academic researcher). Similarly, a senior campaigner noted that:

> "there is zero public visibility for current government climate initiatives,
>
> no public facing narrative that we are in for a long term generational
>
> challenge."

Another senior campaigner suggested governments were marginalising discussions of climate change in favour of an energy security frame. An ex-cabinet minister confirmed that the government wants to keep a low profile on climate change policy. This participant stressed that this wasn't to say the government weren't taking action on climate change, however they were not being explicit that actions were being taken because of climate change. This self-imposed silence was also apparent in interviews with other intermediaries. A business consultant, working in the south west of England, stressed that in the project he was working on, they avoided discussing climate change and carbon reduction, based on the premise that it would not engage and motivate their audience. Instead, their discussions were presented as being much more about greening operations through energy efficiency and waste reduction.

Several respondents suggested that the public conversation around climate change has become so muted and peripheral that there was likely little chance the public would understand why access to energy was being managed through a framework, such as TEQs. This is illustrated by the remark from a private sector participant, who noted that: "We are failing to communicate the need for radical action to reduce emissions. We need to build a narrative from the bottom up" (Business consultant). Consequently, a policy framework with a big impact on the public such as TEQs was seen as "a case of running before we have learnt how to walk" (Ex-cabinet minister). Such is the extent of the climate silence that one interviewee suggested "it would be odd to be talking to the public about any climate policy at the moment" let alone something as radical as TEQs" (Campaigner).

A senior civil servant we interviewed reported that the financial crash of 2008 had changed the political landscape in such a way as to have facilitated this 'climate silence':

> "Things have moved on since we passed the Climate Change Act. Recession, higher energy prices, higher energy bills for households and business, more pressure on households. So discourse reflects this and has moved on. It's more about energy efficiency, keeping bills down, competitiveness. It is less about building a strong case around climate change."

Representatives from business and policy generally supported a top-down approach, which would allow delivery of the Climate Change targets without needing to involve the public in the decision-making process. An ex-Chief Executive of a major energy company said he wouldn't necessarily talk about it as a climate change problem:

> "firstly because that debate is not going anywhere currently, but also because people think wind farms and other undesirable consequences when they think

about climate change, and lastly because sustainable living is about more than just climate change."

Table 4*: Summary of core themes from interviews*

4.2 Knowledge Exchange Seminars

The following sections outline the results from a thematic analysis of the data from across the three seminars, addressing each of the research objectives in turn. The data is comprised of transcriptions of recordings of the discussions combined with written comments provided when participants were completing the surveys. Themes emerging from the analysis are introduced and then selected quotes are provided which exemplify the emerging perspectives.

4.2.1 Do those acting as intermediaries between the policy making process and the public consider public involvement a central objective of climate policy?

Overall, public involvement was not considered to be a central or desirable objective of climate policy. Three reasons emerged. The first was the perception that sustained support and engagement from the public was not something that could be built from the bottom up. Rather, public opinion is merely a reflection of media discourses and the appropriate political cues

"TEQs are open to abuse – you can see the Daily Mail headline 'Asylum seekers stole my carbon.'" *Campaigner, Brighton*

"I'm afraid it's driven by political perception more than the reality amongst the ordinary population. The politicians are the thing that make [policy proposals] publicly acceptable or not." *Business person, Bristol*

The second reason that public involvement in climate policy was seen as undesirable related to a lack of trust between experts and the public. In relation to TEQs a participant noted:

"It feels like big brother are watching you again and I don't think people are going to like it, having to clock-in and clock-out every time you do something." *Campaigner, Bristol*

The third reason for avoiding public involvement was the perceived lack of readiness of the public for accepting strong policy interventions.

"The options are more likely to frighten people than solve the problem."
Campaigner, Bristol

"I'm not sure I necessarily go along with the idea that the public are pushing for change and the politicians are misreading the public movement".
Campaigner, London

One participant, whose work involved running public engagement activities, re-framed TEQs, which is intended to achieve increased public ownership of decisions, as feasible only under the condition that it simplified decision-making for people by reducing choice:

"We see time and time again the public saying 'just tell us what to do!'
It's not education with lots of bits of paper - just tell me what to do and if
it is giving me a card, is that my one thing? Well I'll do it!"
Researcher, Bristol

4.2.2 How do intermediaries view trade-offs between public engagement and other goals of climate policy

Reflecting the views expressed in the one-to-one interviews, public engagement as a specific policy ideal was seen to be largely irrelevant compared to issues of feasibility. Here themes of political feasibility (political will), economic feasibility and technical feasibility emerged. As the same time, divergent views on the role and nature of desirable public engagement could be inferred from these feasibility discussions.

Political feasibility

Unsurprisingly, there was felt to be little incentive for political leaders to implement policies that may be perceived to create adverse reactions from business and the public. This was judged to be related to the perception of policy–makers regarding what the public wanted as well as fears of public response based on past experiences:

"My concern would be that, in a sense, all of these would require quite
heavy-handed government intervention and legislation. As such, it is
hard to see how any present government (or any likely alternative in
2020) would go for them." *Policy/science advisor, London*

"I'm afraid it's (*the agenda for delivering on climate targets)* driven by
political perception more than the reality amongst the ordinary
population." *Campaigner, Bristol*

> "They have tried to do this before on a European level, and it turned into the Emissions Trading Scheme. Economists said they had never seen a business lobby react with such ferocity as in response to the ETS".
> *Economist, London*

Justice and equity were also identified as core political principles which should not be compromised, and in many ways were the issues generating most comment. The primary concern regarding public acceptability was fairness. Successful public engagement was viewed as dependent on identifying a scheme that would not exacerbate disadvantage. All the policy scenarios were seen as lacking the ability to deliver just and equitable outcomes but it was TEQs, which is designed to address hidden issues around social justice and emissions, which was singled out for criticism.

> "So if you're rich enough you could drive your SUV everywhere, you could leave it running all night, it wouldn't matter that would be fine".
> *Campaigner, Brighton*

> "This is using a mechanism where the rich can escape from those who can't. It feels like it's even magnifying the situation we have now rather than actually changing something." *Campaigner, Bristol*

Concerns about fairness were also expressed in relation to the UK acting unilaterally on carbon emission programmes:

> "Why are we doing this [taking ambitious action on climate change] when someone else isn't? There's always going to be that issue."
> *Researcher, Brighton*

As one participant noted, when reflecting on her work with the public, what she heard discussants say was the most important consideration in discussing policy "was always fairness - in every single project I do fairness is maximum. It's right up in the top 3."

This suggests that as fairness was a critical consideration, any aspect of policy that was lacking in this regard was seen as lacking the potential for public involvement.

Technical feasibility

The concerns here were that for a policy framework such as TEQs, the country, and its institutions, simply were not in a position to create a system capable of managing such a complex policy intervention. Not only was it unlikely that such a system could be created, past failures meant there would likely not be the willingness to even try.

> "For 20 years the NHS tried to organise a centralised IT system. An IT system that's going to be at every point of sale for every person is a logistical nightmare. It's doomed to fail from the outset." *Business person, Brighton*

Following the publicised failings of the Green Deal, concerns were expressed over assumptions made about the technical feasibility of improving energy efficiency within homes and buildings.

> "In practical terms the number of houses that can be insulated correctly is much lower than we like to think it is, at the moment the technologies just aren't there." *Community activist, Bristol*

Although technical feasibility was considered in its own right, the sense was also expressed that such issues could lead to a lack of trust that could undermine any policy approach that sought public engagement and support.

Economic feasibility

Extending the discussions of fairness and equity, many participants saw the ability to live a low-carbon lifestyle as simply beyond the financial means of many people, or at least, that this would be the perception of many on low incomes. This indicates a view that the public cannot afford to engage and that this needs to be addressed first:

> "The same person who can't even afford the change to lower energy light bulbs, let alone changing all their light fittings to halogens isn't going to be able to take advantage of schemes for reducing energy, even if they've got a real passion for this stuff". *Local Government Officer, London*

> "We saw this with the way in which the opposition and then the government undermined the confidence in carbon taxes by saying this is adding to your price; we suddenly saw the environment being a burden on people rather than actually something worth protecting and I think we will see a scenario frighteningly saying you will have a quota you will be taxed, people will turn around and say well I'm not going to do anything about it you put it off for one year, two years, three years anyway." *Economist, London*

Democratic ideals

The desire for any climate policy framework to embody the principles of public engagement was cited as an important goal, despite the tensions this created with the notion that the public were not up to the task of participating in the decisions about the UK's energy choices.

> *"These tools are all a means to an end. The 'end' is a sustainable future, but this is contested, so we need as much conversation and delineation about the future we want as possible. The tax and dividend approaches don't facilitate this, whereas the TEQs and Command and Control do."*
> *Campaigner, Brighton.*

> "An overarching question for me is how the public(s) would be engaged in these options. Fundamentally it's a political challenge and the need to catalyse political leadership. This needs to be looked at in a pragmatic way – what's going to make sense to politicians and policymakers?" *Researcher, London*

4.2.3 What forms of knowledge are employed in determining the choices made by workshop participants?

In comparison to Bristol and Brighton the London seminar saw participants draw on specific examples from policy initiatives and campaigns to justify their perspectives on the feasibility of the scenarios being discussed, for example:

> "We did propose this ages ago with the Centre for Clean Air Policy and other people for the EU emissions trading scheme where you basically stick your

caps on energy imports or rather fossil fuel imports or where the stuff came
out of the ground and when we took it to the European Commission they all
said no, partly because you can't tinker with it and the governments like to
be able to tinker with things…" *Civil servant, London*

The participants in Bristol and Brighton, many of whom were on the front line of
campaigns, expressed the view that the policy frameworks were too complex to
understand and compare, a sentiment voiced by some participants in London. They
were more likely to draw on their own experiences or values when judging policy
options.

"I think the consequences and ripple effects of all four options are
probably too complex to give clear answers to the questions. The quick
answers are therefore first order responses – emotional." *Consultant,
Brighton*

Hence, there was a sense that preferences would be informed less by deliberation on
evidence from the relevant social sciences on public attitudes to climate policy, in favour
of participant's own values:

"I am in favour of TEQs but I may be the sort of person that would. A
group of [campaigners] might be unrepresentative." *Campaigner,
Brighton*

Other responses indicate that knowledge of the factor shaping public
perceptions and attitudes around climate change were limited amongst
many working in environmental campaigns.

"I don't have the knowledge and don't feel any of these offer a real
solution." *Campaigner, Bristol*

> "I can't speak to the technical side of things to that degree and I
> wouldn't attempt to." *Researcher, Bristol*

Although this may be a consequence of the limitation of a seminar format, this replicates the reality of how even relatively informed people might view climate change policy options.

4.3 Results: Policy scenario preferences

After the seminar discussions, participants were asked to grade each of the four scenarios on a Likert scale from 1 to 7 against five criteria derived from the expert interviews and research literature. *Figure 1* shows the results of the combined scores. These are not intended to provide statistically generalisable results, but as an indication of views of the participants. Responses (provided anonymously) indicate that the four policies in general were scored similarly for their potential to maintain economic growth and reduce energy demand, but that they were rated with more variability in terms of their political feasibility, equity and potential to stimulate innovation. In particular, the policy framework requiring least public engagement (command and control) was rated as most politically feasible, whereas the policy framework requiring most engagement (TEQs) was rated the least politically feasible.

Figure 1: *Results from 3 seminar: average participant ratings of the four scenarios on a Likert scale 1-7*

The participants were also asked to consider the four policy scenarios against two questions: 'Which policy will be most assured at meeting the fourth carbon budget?" and "Which policy do you prefer"?

No strong preferences for any one policy proposal emerged from analysis of the answers given. Some participants felt that the current economic and political context meant that none of them could work alone, and that overall a mix of policies was required:

> "The ability of any one policy to meet carbon budgets depends on how well policies are structured. Each policy has different positive attributes. Mixes are needed, not mutually exclusive." *London*

> "These schemes are compatible together but TEQs is the least feasible from a media/public perception point of view" *Bristol*

5. Discussion

Calls for participatory decision making and dialogue-based engagement on environmental science now date back more than 20 years (UNEP 1992). Since that time there has emerged a widespread acceptance that effective climate policies cannot exist independently of public engagement and debate about the societal implications of climate change, such that engagement has become a 'buzzword' (Carvalho *et al.* 2016)

The knowledge exchange project discussed in this paper sought to take the temperature of the appetite for public participation amongst those acting as intermediaries between the public and policy in the UK, by asking to what extent intermediaries consider public involvement a central objective of climate policy, what were seen as acceptable compromises between the aspiration for public engagement and other goals of climate policy, and the forms of knowledge employed in determining those choices.

The findings from both the seminars and the interviews failed to unearth any sense of enthusiasm for increasing public participation in climate policy decision-making. This

echoes the conclusions emerging from a large scale analysis of public attitudes to energy system change in the UK, namely that in respect of major energy transformations, an alternative to participatory forms of decision making are required (Butler *et al.* 2015). The reason given for reaching that conclusion that "public opinion is too susceptible to change to form a basis for decision-making. represents an indeterminate form of uncertainty." (Butler et al, 2014: iii). This description characterises what seminar participants and interviewees told us – public support would be hard to win and easy to lose in the face of sustained political and media attacks on the policy.

Trust has been identified as a 'key perceptual short cut' used by the public when forming opinions about complex and controversial topics such as climate change and climate change policy (Steentjes *et al.* 2017) and trust was identified as a key factor in the generation and maintenance of public support. The public were seen as unlikely to trust the intentions behind radical lifestyle changes that may be imposed on them. Nor was it felt that the public would trust the people who were asking them to make the changes. Businesses and the media could not be trusted to not distort the debate and undermine the case for taking action to reduce carbon emissions. Politicians and the public were unlikely to trust in the technical feasibility of the frameworks being discussed or the ability of the government to implement schemes effectively and equitably. This lack of trust worked both ways; the senior stakeholders interviewed at the beginning of this research did not trust the public to willingly and voluntarily adopt the attitudinal and behavioural changes needed to drive large scale reductions in energy use.

Fairness, though not seen as a particularly strong feature of the four frameworks, was considered something of an antidote to the sense of mistrust permeating the public sphere. However, the relationship between these two concepts was at times tautological, in so much as it wasn't clear what needed to come first: increased trust such that people accepted claims of fairness, or demonstrations of fairness which would lead to increased levels of trust. Butler *et al.* (2015) found that the process of developing new low carbon

systems needed itself to be open, fair and attentive to the impacts of the proposed changes on people's lives. In this sense none of the four frameworks were considered to be capable of solving this puzzle by virtue of being delivered as a fait accompli. Instead of delivering a fully worked out new framework for generating and using energy, policies for meeting climate targets should attend to the advantages conferred by a process of upstream engagement, that is engagement before significant research and development of a new technology has begun, public controversy about the topic is not currently present, and entrenched attitudes or social representations have not yet been established (Nisbet and Markowitz, 2016; Pidgeon and Rogers-Hayden 2007).

In sum, the answer to the question, to what extent intermediaries consider public involvement a central objective of climate policy, is (asides from the one participant with experience of working in public engagement on complex policy issues), not a great deal. Instead, it was felt that the government needed to continue to lead efforts to decarbonise the energy system 'behind the scenes' whilst supporting the public in improving energy efficiency.

As to the second research question, on what compromises between ideals of public engagement and the goals of climate policy were deemed acceptable, it is apparent that the compromise should be in favour of delivering targets at the expense of building public engagement.

Regarding the forms of knowledge brought to bear on deliberating about the value of greater public involvement in delivery of climate targets, the majority of seminar participants drew not on professional experience but generic (largely negative) mental models of human nature and the political context. As noted at the beginning of this paper some three-quarters of the UK public favour reductions in energy use, decreased reliance on fossil fuels (Butler *et al.* 2015) and greater use of renewable energy such as onshore wind (10:10, 2016). Research also indicates a strong mandate for government

intervention (Capstick et al. 2015). Yet what has emerged from the participants is a set of preferences which suggest governments will have to take action without waiting for the public to demand it. There was general recognition that the public, although perhaps not campaigning for action, indicate concern about the climate change when prompted. Yet this was not interpreted as meaning the public were seen as willing and able to take the lead in mitigating emissions, but instead are looking to and waiting for governments to take that role. It currently appears that intermediaries have strong reservations about any policy proposals in which the public are expected and intended to play more than a cursory role in addressing the climate change challenge. This runs counter to a wide range of research on the topic. That the one workshop participant with extensive experience of working with the public in deliberative forums was the only one to express a positive position on the ability of the public to participate in this process, indicates this. Consequently, an important goal of future engagement activities may be to bring facilitators and public engagement practitioners together with campaigners and other opinion formers to improve understanding of opportunities and challenges in improving public engagement with climate change, and of feasible policy options and their implications.

5.1. Limitations of the research

It must be acknowledged that the policy options presented in the seminars required difficult decisions to be made about what level of detail to include and what assumptions to make about elements of the scenarios, such as what technologies to include (for example excluding CCS), or what level to set carbon taxes. All these aspects were contested within the research team. However, as texts for elucidating participants' perspectives on the desirability and feasibility of generating the levels of public engagement generally seen as desirable in much of the literature and documents

outlined previously, the frameworks functioned well. The process did not, however, create the conditions for reliable comparisons between the four diverse policy frameworks.

The project was funded and designed as a Knowledge Exchange activity, rather than a research project. This has implications for the volume of data it was possible to accrue within the funding constraints. A full research project would have employed a mixed methods approach that combined these qualitative insights with a statistically representative survey. Despite these limits this analysis articulates an important but unexplored aspect of the participatory paradigm; namely that what is considered a positive ideal in the research community remains anathema to many outside of academia. This finding represents a concerning barrier to international governance bodies' call for improved communication (e.g. as articulated in the COP21 Paris Agreement) and engagement activities at all levels of society.

6. Conclusion

These findings indicate that research on improving public engagement with the political process of formulating climate policy may be a fruitful avenue. Whilst a wealth of survey studies have shown widespread awareness and concern about climate change (Pidgeon, 2012; Capstick *et al.* 2015) there is little research into how the public relate to the problem's politics (Carvalho *et al.* 2016). Given that the issues emerging in this research were focused on themes of trust and fairness (essentially political issues) this is a neglect that should be addressed. Currently, the public report that formal political processes of knowledge and political structures are rather inaccessible to them (ibid). A way to spur engagement with the political dimensions of climate change will therefore be necessary if the current stand-off defined by the governance trap is to be overcome.

Whilst this work has provided important insights into how academic and international policy claims of the need for greater public participation in climate policy are rejected 'on the ground', it provides just a snapshot of the perceptual barriers to public engagement on climate change that may exist. We feel there would be a lot of value of repeating this work now following the Brexit vote and the election of Trump, with a specific focus on how to build the levels of trust needed to create durable, broad and deep public support for the policies needed to deliver the goals of the Climate Change Act.

Acknowledgments

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