

Public engagement with energy system change in Scotland

Christina Demski & Nick Pidgeon





Scotland's centre of expertise connecting
climate change research and policy

Public Engagement with Energy System Change in Scotland

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Context

The Scottish Government published its draft Energy Strategy in January 2017. The draft Strategy is Scotland's first overarching, system-wide strategy for energy. In the draft, the

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Two Traditions of Public Engagement

Risk Research & Policy (Royal Society Risk Report '92, RCEP '98, National Research Council '96)

Science and Technology Studies (Wynne & Irwin '96, Wilsdon & Willis '04, Royal Society Nanotechnologies '04)

- Post BSE / GM controversy – ER–Sciencewise, dialogue and experimentation, ‘upstream’ engagement, invited vs uninvited publics

Why Engage Publics With Energy and the Environment?

Normative – the right thing to do, inclusive

Substantive – better decisions, ‘social intelligence’,

Legitimation – builds trust, consent (and citizen capacity)

Fiorino (1990), Pidgeon (1998), Stirling (2005)

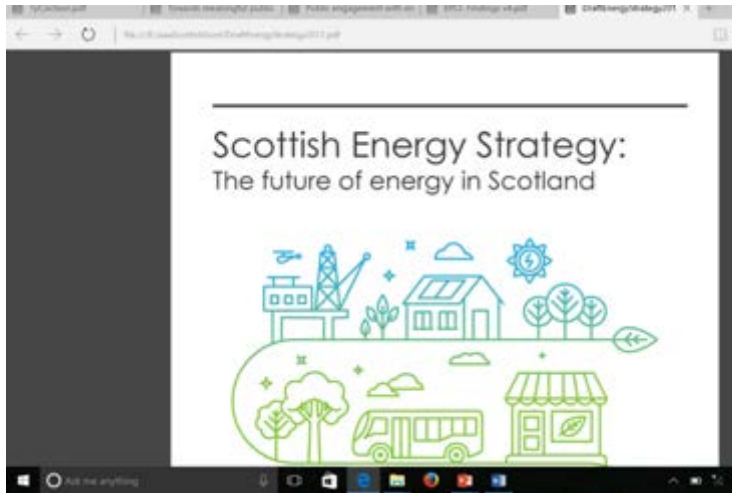
NB: Simon Roberts correctly says the core objective is building consent (an implicit ‘social contract’) and not behaviour change

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Some Means of Engagement

- Scenario methods, participatory TA
- Direct public engagement (citizen juries, consensus conferences)
- Participatory decision analysis
- Multi-stage processes
- Social research (qualitative and quantitative)

Many Scenarios?



December 2011

HM Government



Energy
roadmap 2050

People bring Uncertainty in Transitions

- Publics are deeply implicated in how energy systems are shaped, used and implemented

Energy producers & consumers



Citizens with voting powers



Active proponents & protesters



UKERC Energy System Change Project

Key project frames:

Whole-system, Trade-offs, and Social Contracts



Project Overview (Jan 2011–July 2013)

WP 1: Scenarios

- Scenario Adaptation, Expert Consultation & Material Development
- Review work
- 18 Interviews
- Advisory Panel
- Technical expertise in project team

WP 2: Qualitative

- Deliberating Energy System Scenarios & Trade-offs
- 6 full day deliberative workshops (N = 68) in Edinburgh, London, Cardiff, Cumbria, Glasgow, Merthyr
- Conducted by research team June – Oct 2011

WP 3: Quantitative

- National (UK) Survey: Attitudes toward Whole Energy System Transformations
- GB nationally representative (N = 2,441)
- Conducted online 2-12th 2012 August by Ipsos MORI

Work Package 2: Public Deliberations

- 6 one-day workshops in 2011 (Wales, Scotland, England)
 - Capital Cities plus 'energy locations'
- Diverse sample:
 - Gender
 - Age
 - Ethnicity
 - Educational qualifications
 - SEG



Challenges of National-Level Public Engagement

Pidgeon, Demski, Butler, Parkhill, Spence, *Proc Nat Acad Sci USA*, 2014

- Opening and Maintaining Deliberative Spaces with Diverse Publics
- Systems Thinking and Problem Scale
- Providing (Balanced) Information and Frames
- Accessing Broader Values

PNAS

Creating a national citizen engagement process for energy policy

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This paper examines some of the science communication challenges involved when designing and conducting public deliberation processes on issues of national importance. We take as our illustrative case study a recent research project investigating public values and attitudes toward future energy system change for the United Kingdom. National-level issues such as this are often particularly difficult to engage the public with because of their inherent complexity, derived from multiple interconnected elements and policy frames, extended scales of analysis, and different manifestations of uncertainty. With reference to the energy system project, we discuss ways of meeting a series of science communication challenges arising when engaging the public with national topics, including the need to articulate systems thinking and problem scale, to provide balanced information and policy framings in ways that open up spaces for reflection and deliberation, and the need for varied methods of facilitation and data synthesis that permit access to participants' broader values. Although resource intensive, national-level deliberation is possible and can produce useful insights both for participants and for science policy.

public engagement | national dialogue | energy system transition

Delivering public engagement about science and technology topics is a goal in many areas of current science policy in both Europe and North America. Much of the literature on this topic stresses the importance of early and extensive engagement between the science and policy communities on the one hand, and stakeholder groups and the wider public on the other, particularly when decisions involve contested societal values, complex tradeoffs between risks and benefits, and uncertain science and technology (1, 2). For science communication practitioners, these developments have signaled a methodological as well as a conceptual shift, with more traditional forms of one-way communication making way for dialogic or discursive fora that aim to empower people regarding the issues which might affect them or their communities (3). Increasingly, an additional aim of such dialogue is to reflect useful social intelligence back to scientists, engineers, and policy makers regarding public values and interpretive frames, such that decisions might be achieved that genuinely reflect diverse societal concerns (4, 5).

A clear conclusion to be drawn from experience with deliberative science communication to date is that members of a varied cross-section of publics are perfectly capable of debating quite complex issues of environmental science, technology, and policy with which they have little day-to-day familiarity given the

involved and on the promise and perils of scientific progress. In this respect people often focus less on the technology or science per se, than on the social context within which it is to be deployed, including complex arguments about the regulatory or governance conditions surrounding the application of science. However, designing successful deliberative fora is not a simple matter, and in this paper we outline a series of interlinked science communication challenges associated with conducting public deliberation on national-level topics. We use as our illustration a recent citizen dialogue about energy system change for the United Kingdom.

Moving Citizen Engagement to the National Level: The Case of Energy System Change

At the first Sackler Science of Science Communication Colloquium, Thomas Dietz observed (6) that, although the existing base of empirical evidence on public deliberation in many countries is rich and diverse, much of that experience derives from cases involving local or regional issues (10). Particularly in the United States, national-level public deliberation is relatively rare, and where it does occur is often restricted to policy-focused questions with professional stakeholder representatives and groups as participants. Outside of North America there is more experience with national-level issues, with examples evident in a number of European countries; e.g., Danish consensus conferences, Swiss referenda, and the UK Sciencewise-Expert Resource Centre (ERC) program.

Dietz (9) makes the related methodological point that scale also matters for national-level issues. At the local level, deliberation often emerges around a specified problem for which relatively bounded sets of options, attributes, risks, and benefits can be defined—the local siting of a waste incineration facility for example, or proposals to alter water abstraction and flow in managed wetlands. National-level issues by contrast typically bring with them significant additional layers of complexity and uncertainty, alongside a need to frame issues in terms of wider policy goals and system linkages. A local public engagement process for siting a single wind farm might consider such things as impacts on wildlife, visual intrusion into the local landscape, and community compensation or coownership. Debating the question of an appropriate future share of renewable energy for a nation or region as a whole, by contrast, would need to

The paper results from the Arthur M. Sackler Colloquium of the National Academy of Sciences, "The Science of Science Communication," held September 20–25, 2013, at the National Academy of Sciences in Washington, DC. The complete program and video recordings of most presentations are available on the NAS website at www.nas.edu.

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WP3 – Survey Sampling

- **Nationally representative for Great Britain (n=2,441) in 2012**
 - Core samples for England, Scotland and Wales
 - Conducted online 2–12th August by IpsosMORI
 - Weighted by age, gender, geographical region and employment status
 - Information Provision (where deemed necessary)

The my2050 tool



DEPARTMENT OF
**ENERGY
& CLIMATE CHANGE**

Can you reduce our CO₂ emissions to 20% of 1990 levels
and help avoid dangerous climate change?



20% Target

CO₂
100%

Submit my 2050 world

My Home

My City

My Country



My Energy Security Indicator



Supply

Demand

Manufacturing Growth

Business Greenness

Home Efficiency

Home Temperature

Heating Fuel

How We Travel

Transport Fuel

[Find out more about the sliders](#)



Workshop (Qualitative) Report

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Transforming the UK Energy System: Public Values, Attitudes and Acceptability

**Deliberating Energy System
Transitions in the UK**

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Survey (Quantitative) Reports

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Transforming the UK Energy System: Public Values, Attitudes and Acceptability

Summary findings from a survey
conducted August 2012

Transforming the UK Energy System: Public Values, Attitudes and Acceptability – Scotland Survey Results

Christina Demski, Alexa Spence, and Nick Pidgeon

This document should be cited as: Demski, C., Spence, A. and Pidgeon, N. (2013) Transforming the UK Energy System: Public Values, Attitudes and Acceptability – Scotland Survey Results. (Cardiff University: Cardiff).

This reference document summarises topline findings of the *Scotland* specific sample (n=502), collected as part of a wider nationally representative British survey carried out in August 2012. This survey was conducted as part of an interdisciplinary UKERC research project: Transforming the UK energy system - Public values, attitudes and acceptability.

This document has been produced in addition to the full report which summarises the national sample, including full data tables and methodological details. This document should be considered in addition to the full report:

Demski, C., Spence, A. and Pidgeon, N. (2013) Transforming the UK Energy System: Public Values, Attitudes and Acceptability – Summary findings of a survey conducted August 2012. (UKERC: London).

Also see:

Parkhill, K.A., Demski, C., Butler, C., Spence, A. and Pidgeon, N. (2013) Transforming the UK Energy System: Public Values, Attitudes and Acceptability – Synthesis Report (UKERC: London).

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Synthesis Report and Papers

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Transforming the UK Energy System: Public Values, Attitudes and Acceptability
Synthesis Report

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Public values for energy system change

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ABSTRACT

In this paper we discuss the importance of framing the question of public acceptance of sustainable energy transitions in terms of values and a 'whole system' lens. This assertion is based on findings arising from a major research project examining public values, attitudes and acceptability with regards to whole energy system change using a mixed-method (six deliberative workshops, n=68, and a nationally representative survey, n=2441), interdisciplinary approach. Through the research we identify a set of social values associated with desirable energy futures in the UK, where the values represent identifiable cultural resources people draw on to guide their preference formation about particular aspects of energy system change. As such, we characterise public perspectives as being underpinned by six value clusters relating to efficiency and wastefulness, environment and nature, security and stability, social justice and fairness, autonomy and power, and processes and change. We argue that this 'value system' provides a basis for understanding core reasons for public acceptance or rejection of different energy system aspects and processes. We conclude that a focus on values that underpin more specific preferences for energy system change brings insights that could provide a basis for improved dialogue, more robust decision-making, and for anticipating likely points of conflict in energy transitions.

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energy

ARTICLES

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Effects of exemplar scenarios on public preferences for energy futures using the my2050 scenario-building tool

Christina Demski^{1*}, Alexa Spence² and Nick Pidgeon¹

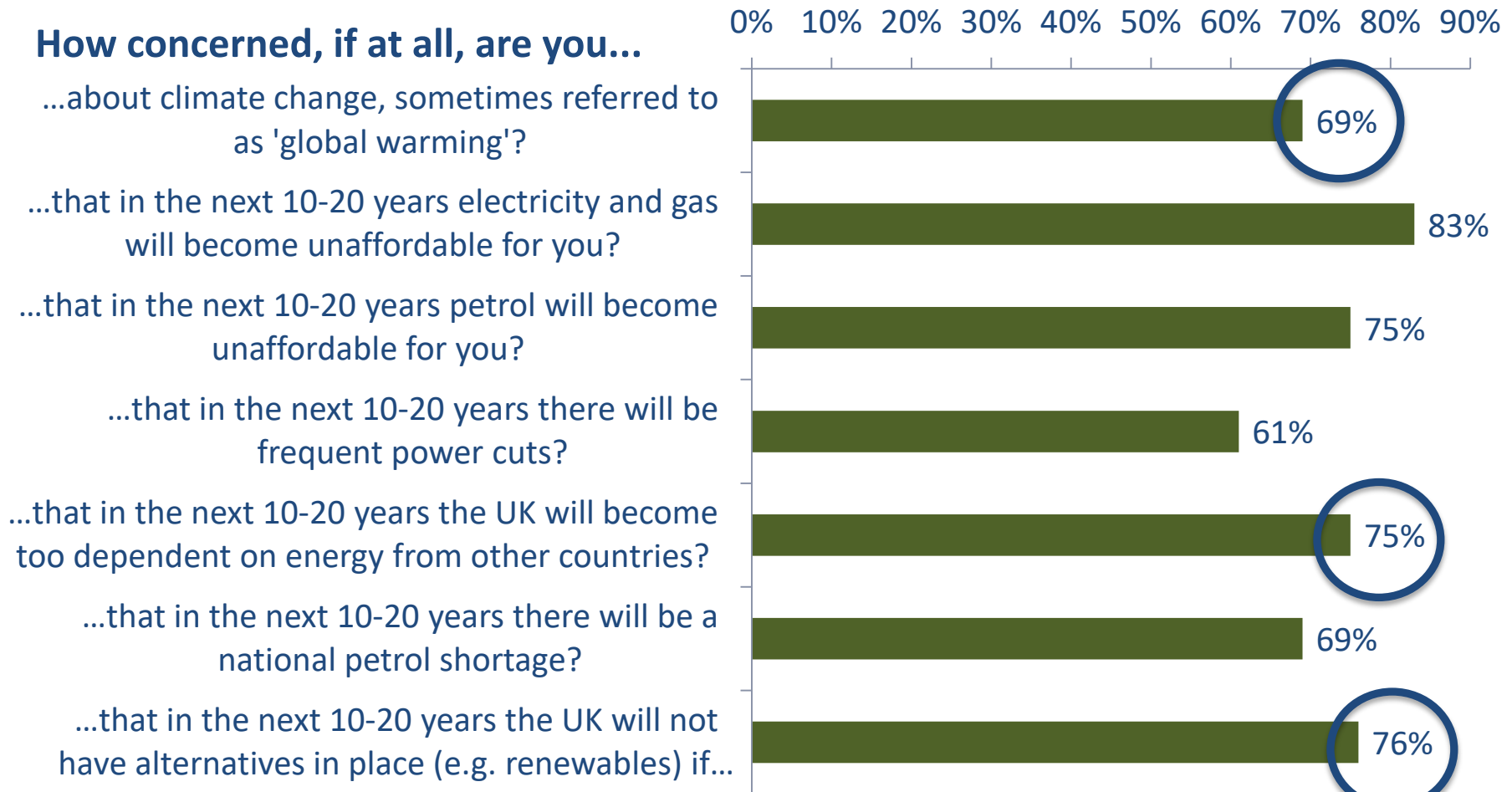
Understanding which energy future configurations provide publicly acceptable levels of energy security, affordability, and environmental protection is critical for institutional decision-making. However, little is known about how scenarios influence energy preferences. Here we present nationally representative UK data on public preferences for energy futures using the my2050 scenario-building tool that encourages engagement with the holistic complexities of system change. Engagement with the tool strengthened existing preferences for renewable energy and intentions to take personal action. Importantly, patterns of energy preferences were influenced by exemplar scenarios, which served as reference points that anchored choices. Carbon capture and storage, nuclear power, biofuels, and changes to heating and travel were particularly impacted by scenarios indicating uncertainty and ambivalence regarding these options. Scenarios (and scenario-building tools) are valuable for engaging citizens about future energy systems. However, care is required in their design and interpretation to reach robust conclusions about underlying preferences and acceptance.

Survey findings:

Perceptions of energy system change issues in Scotland

Climate change, affordability, energy security

How concerned, if at all, are you...



Energy system change

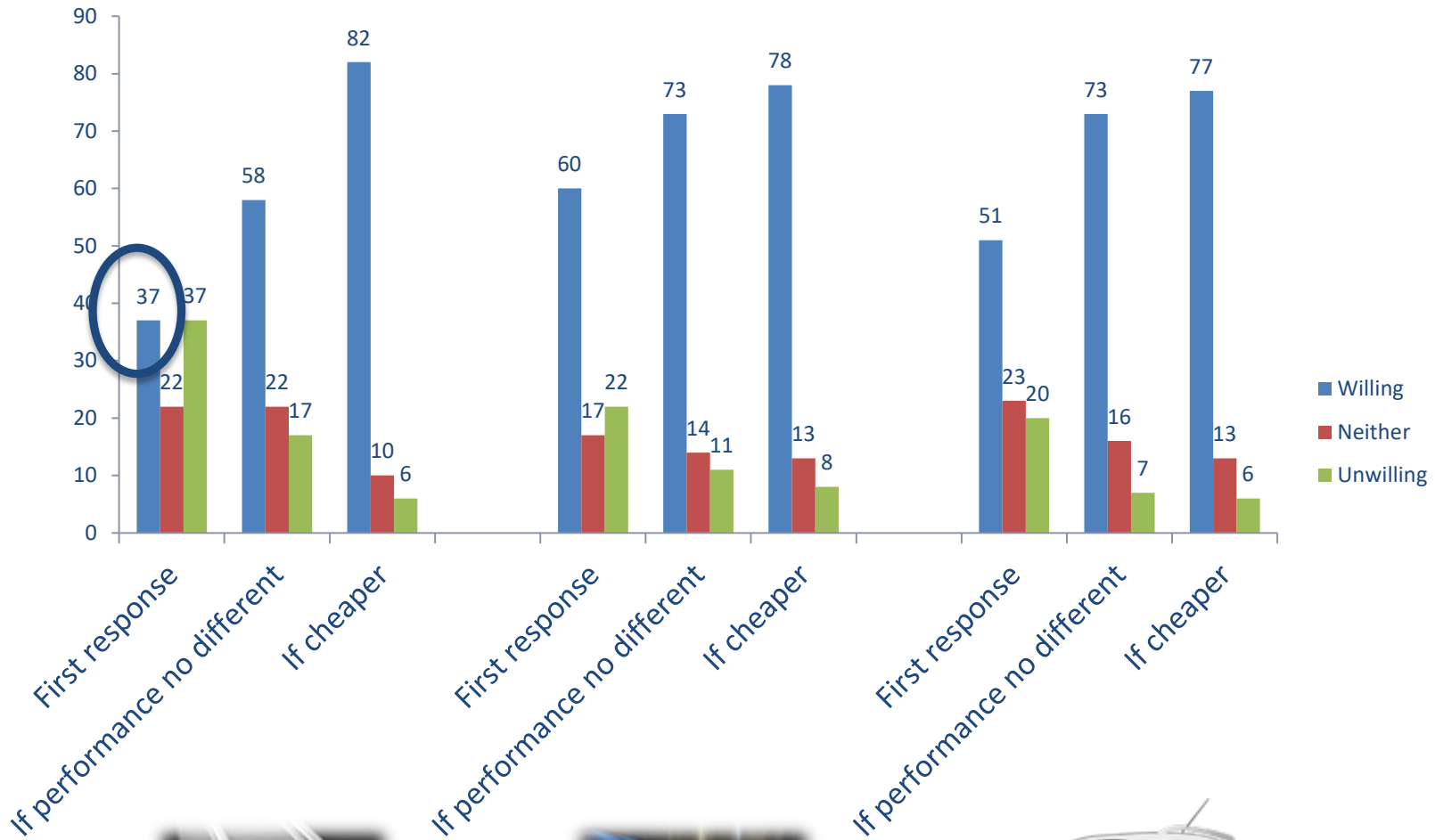


86% agree that we need to radically change how we produce and use energy by 2050

83% agree changes needed to supply and demand

54% hold national governments as mostly responsible

Electrification



Energy use

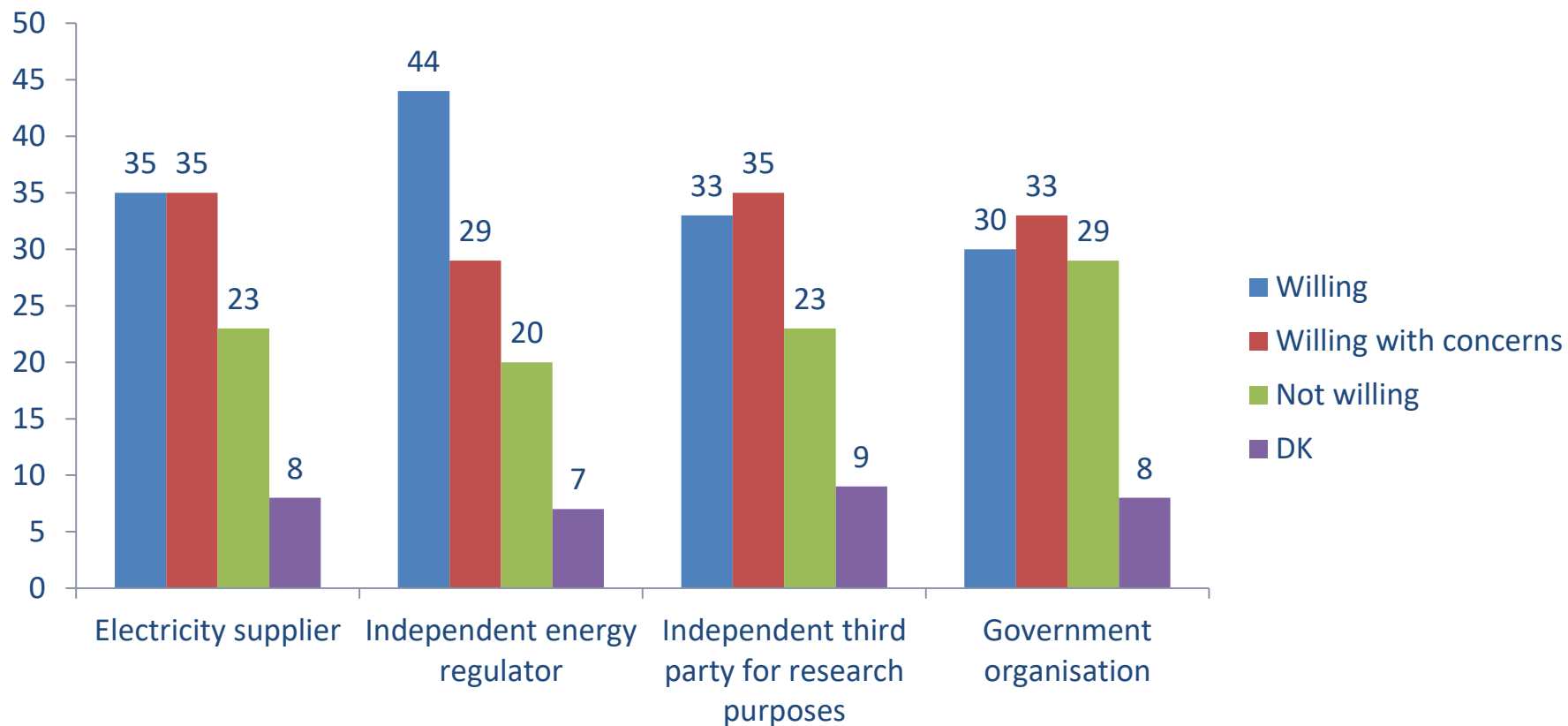
71% thought Britain should reduce its energy use

59% prepared to greatly reduce own energy use

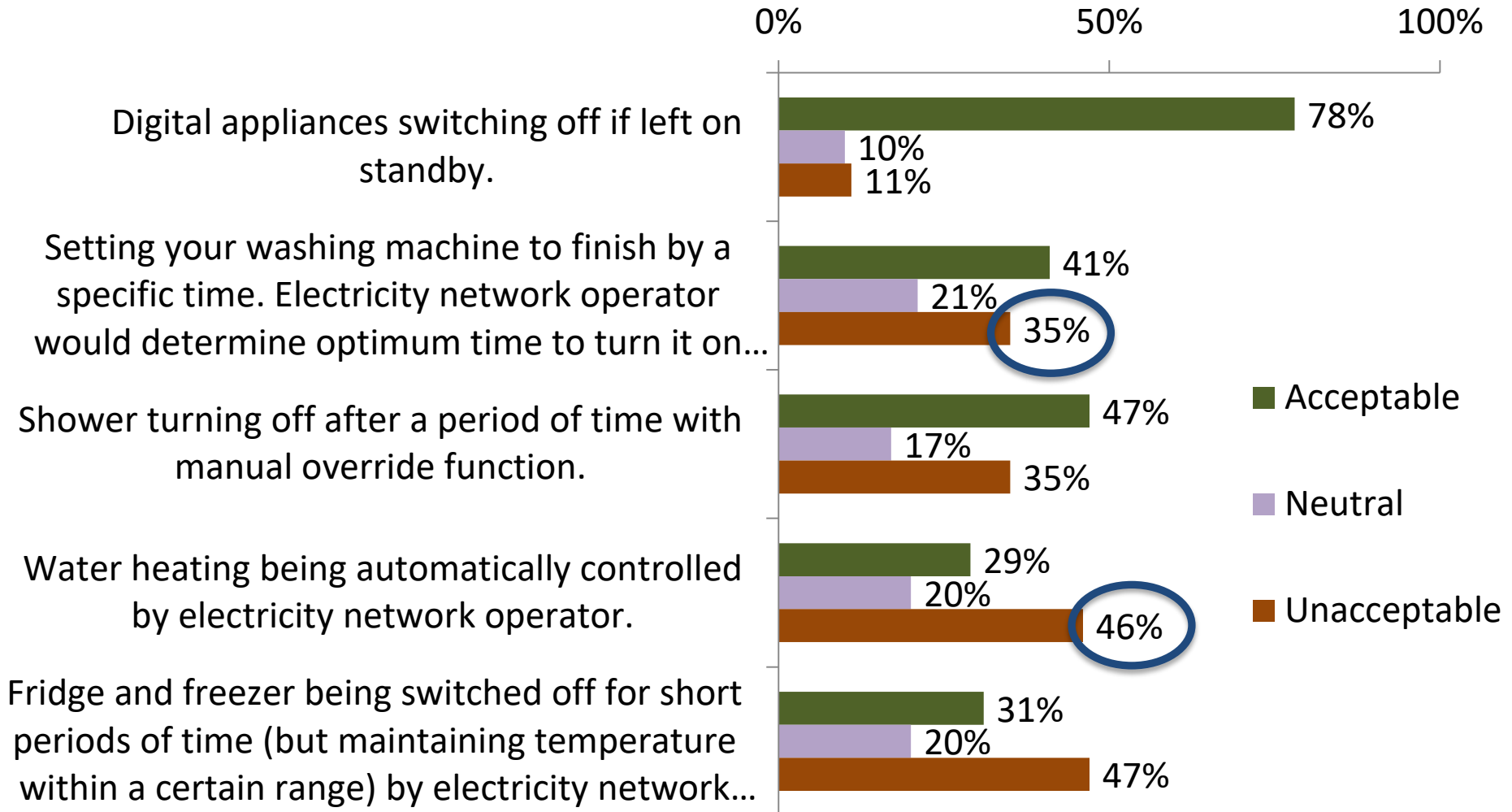
77% want to reduce their own energy use



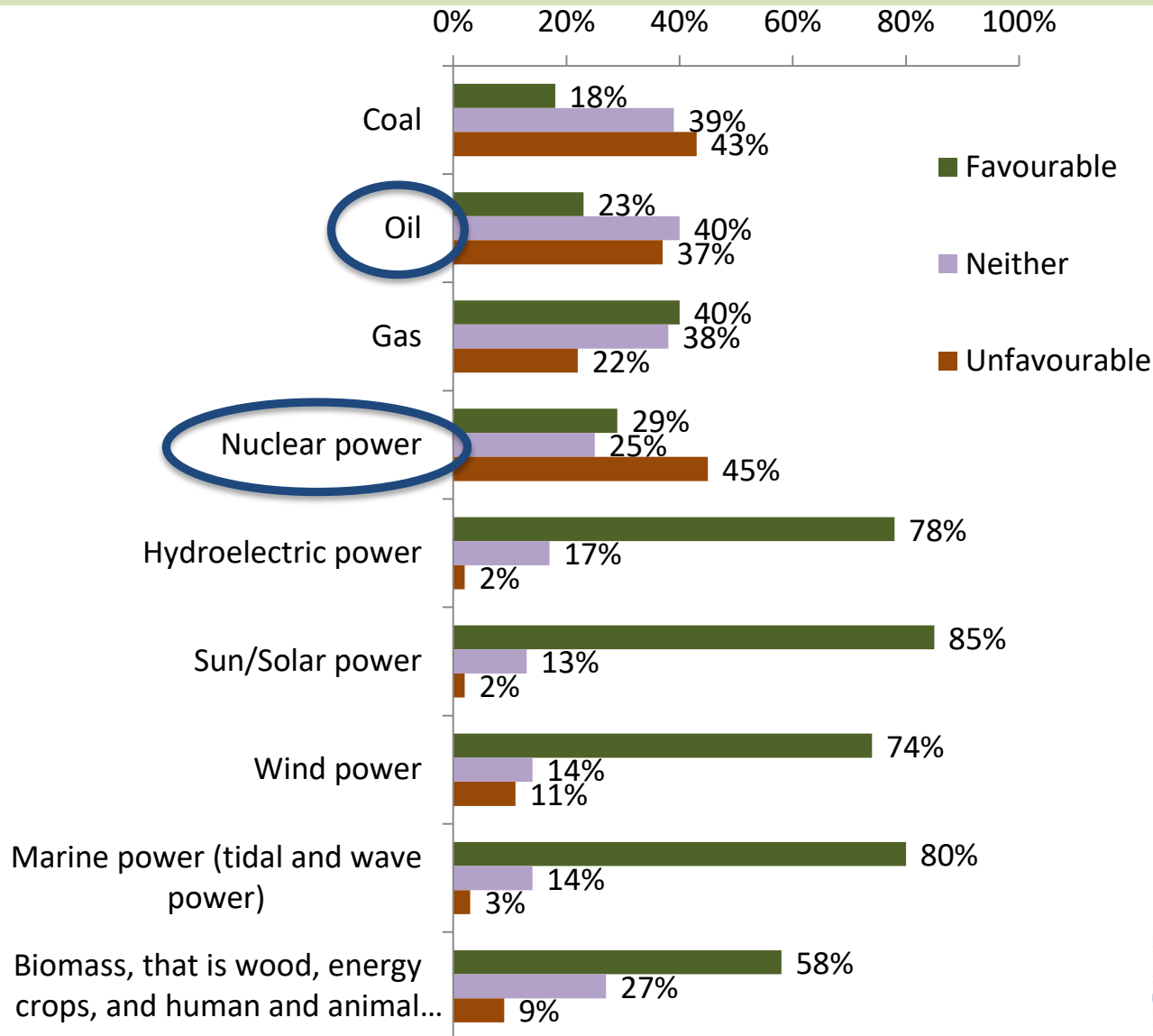
Sharing data



DSM scenarios



Energy sources favourability



Nuclear power

...is (not) clean, safe, good for the economy

...opposed in local area (61% vs. 54%)

...should be phased out (37% vs. 32%) or stopped immediately (14% vs. 9%)
vs. existing stations replaced (21% vs. 26%) or increased (18%)

I am willing to accept the building of nuclear power stations if it would help to tackle climate change (39% vs. 47%)

We need nuclear power because renewable energy sources alone are not able to meet our electricity needs (47% vs. 54%)

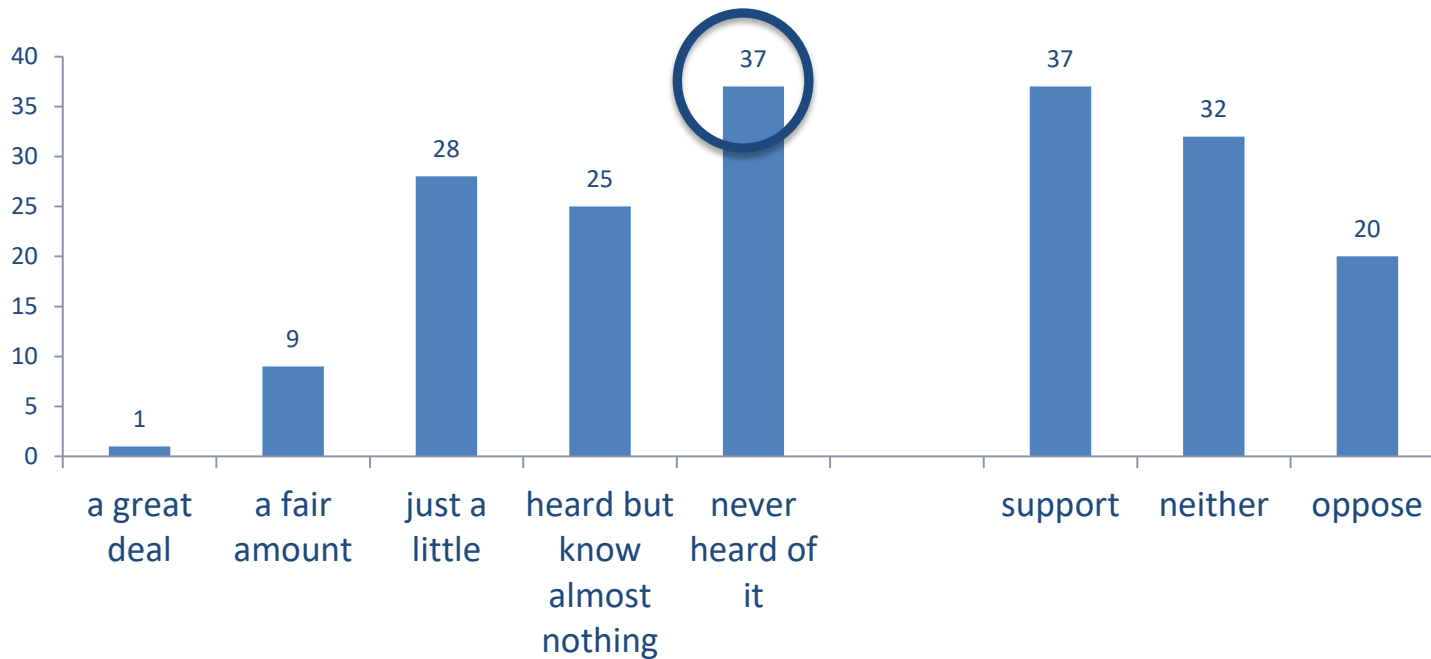
Britain needs a mix of energy sources to ensure a reliable supply of electricity, including nuclear power and renewable energy sources (61% vs. 66%)

I am willing to accept some nuclear power as long as we also focus on increasing renewable energy sources (60% vs. 66%)



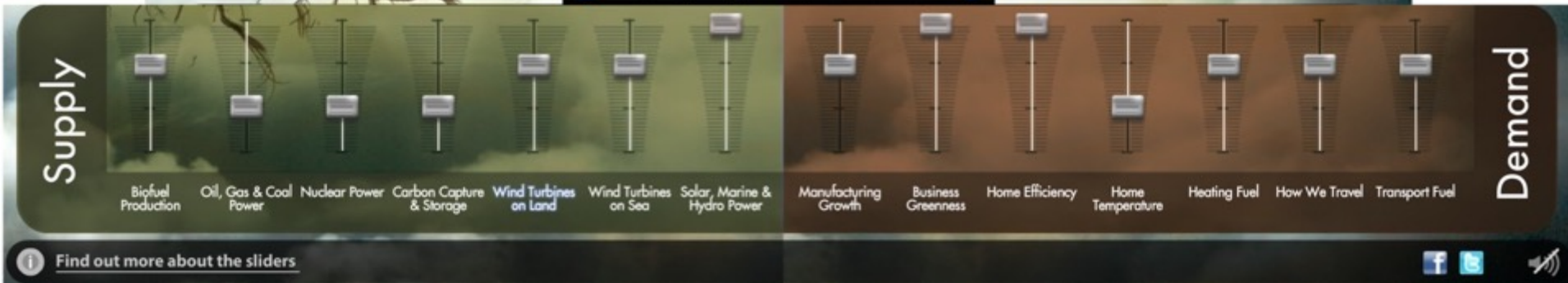
73% agree that Britain should reduce its use of fossil fuels

CCS

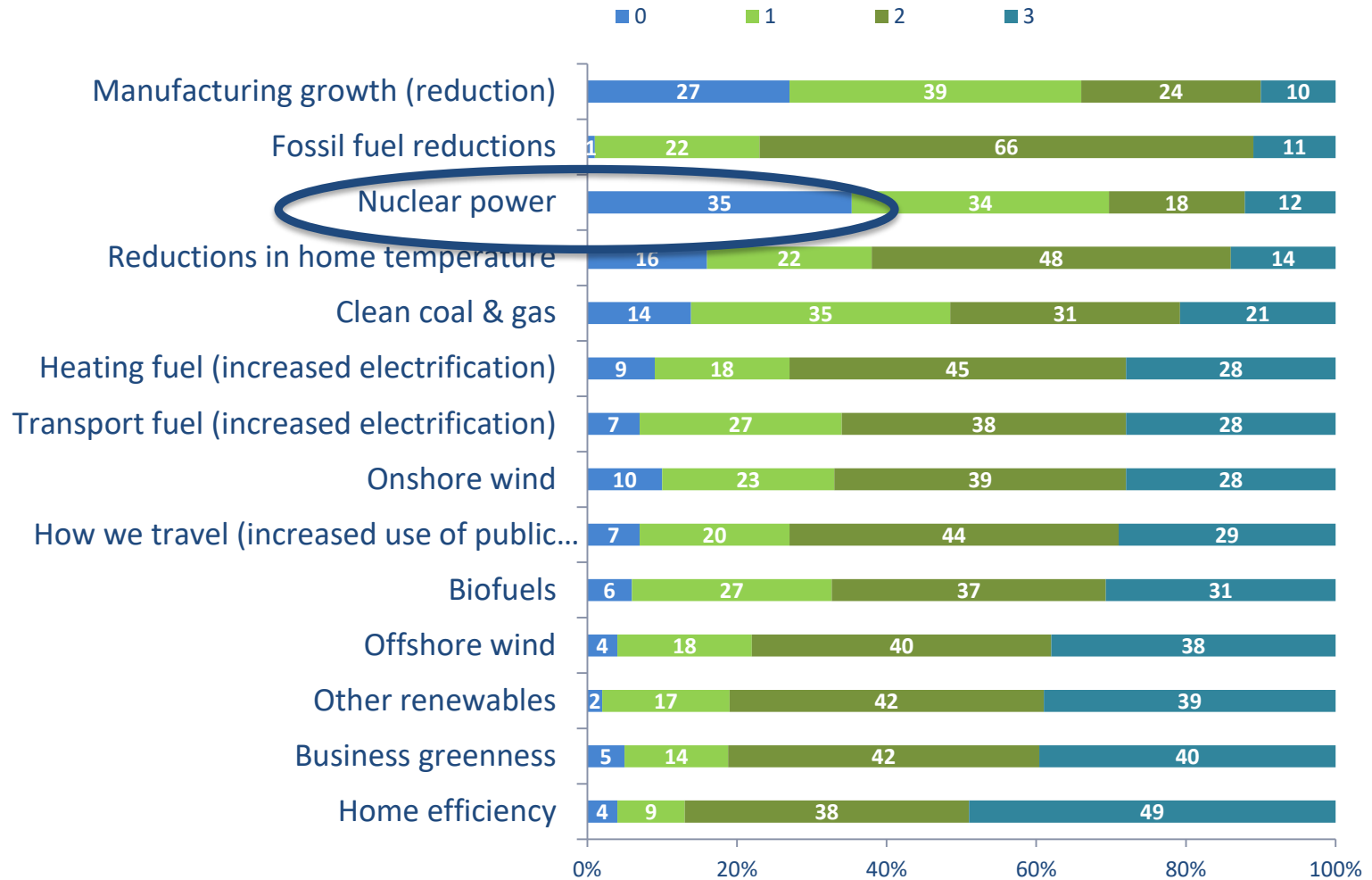


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My2050



My2050



Deliberative workshops: Marginalisation

- Participants struggled to see what benefits the industry would bring to Scotland
- Unfair burden on the country

P: I really don't think we want to be the dustbin of the world for that kind of thing... [several lines omitted] ... keeping all this carbon for the rest of the world. (Glasgow)

Deliberative workshops: Opportunities

P: Wave power and wind power, these are the big thing now for Scotland, they are massive [murmurs of agreement from others] so I don't know what England is doing but we are into it big time... Now the [wave] technology is not complete or anything but they think they could take over Europe that's what Alex Salmond [Scottish First Minister] is talking about. (Edinburgh)

P: If the wind turbines are for Scotland, let Scotland make them. Not Japan or Canada or Timbuktu. (Glasgow)

Public Vision

The public vision of the future energy system is one that contributes to a broader vision of a sustainable future



strong commitment to renewable forms of energy production and a corresponding shift away from fossil fuels.



overall improvement in energy efficiency and reductions in energy demand.

The importance of values

Examining what UNDERLIES preferences and views

- Public perceptions and acceptability as highly complex
- Preferences may shift and change
- Especially important for topics of low-salience in everyday life, new and emergent issues, and views that are not yet fully formed.

Formulation of a preference or perception occurs through connecting up new information and experiences with existing values and ideas

Public VALUES

Avoiding waste

Efficient

**Capturing
opportunities**

**Environmental
protection**

**Naturalness and
Nature**

**Availability and
Affordability**

Reliability

Safety

Social Justice

**Fairness, Honesty
& Transparency**

**Long-term
trajectories**

Interconnected

**Improvement
and quality**

Autonomy and Freedom

Choice and Control

Some Immediate Issues for Engagement

Shape of System Change in

Energy Storage Technologies

Paying for Transitions and

Bioenergy and Landscapes

Implications of Multi-vect

Lifestyles and Hard to Change Practices



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Longer Run Questions for Engagement

Renewables and Interconnection
(storage/flexibility)?

Community Energy and Multi-vector Imaginaries,
plus City and Rural Decarbonisation (especially
around heat to meet 4th and 5th carbon budgets)

Future for Fossil Fuels, Carbon Capture, and
Negative Emissions, Marine Renewables



Scotland's centre of expertise connecting
climate change research and policy



Thank you

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