Public Attitudes to Whole Energy System Change

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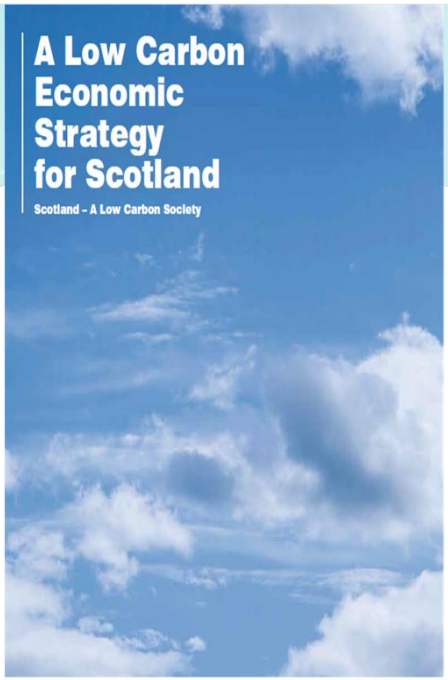
Edinburgh Policy Meeting, December 13th 2013

Project Background

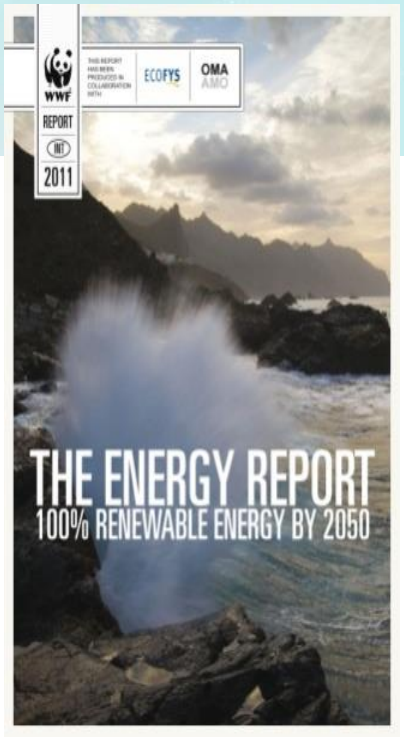
- Multiple long-term national policy goals bring imperatives to transform the energy system
  - Climate change, Energy security, Affordability, Environment

Whole Energy System Transformation

WP1 Many Scenarios

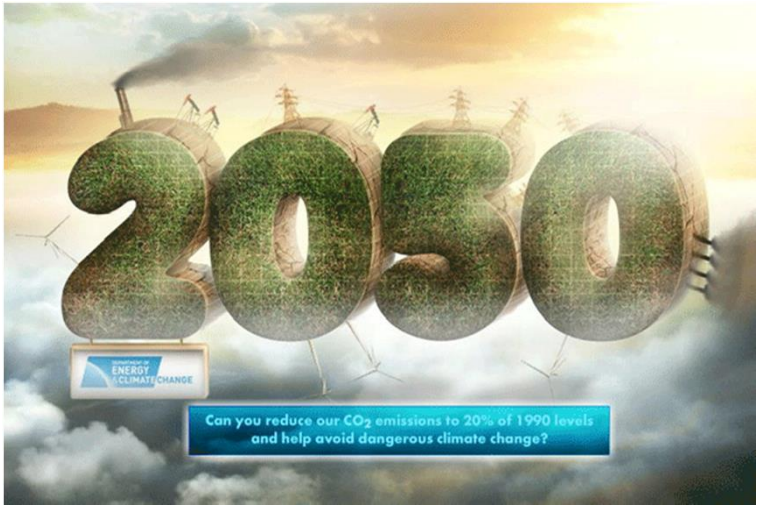


UKERC ENERGY 2050



SEPA · HIE · Scottish Enterprise · The Scottish Government

Energy roadmap 2050



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A Low Carbon Economic Strategy for Scotland

Scotland – A Low Carbon Society

SEPA Scottish Environment Protection Agency

HIE Highlands and Islands Enterprise

Scottish Enterprise

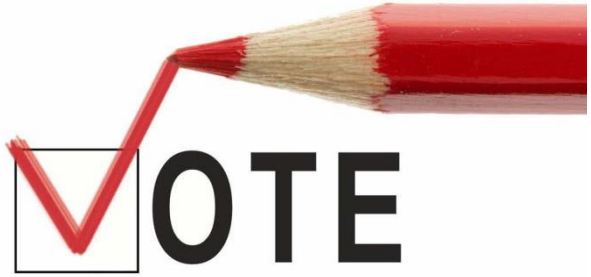
The Scot Governm

Project Background

- Publics are deeply implicated in how energy systems are configured

Energy producers & consumers

Citizens with voting powers



Active proponents & protesters

Objectives

1) To identify key trade-offs in system change & stakeholder & public responses to these

2) To build knowledge and understanding of public attitudes, values and acceptability of energy system change

3) To create qualitative and quantitative data sets for examination of the perspectives of varied publics across the UK on whole energy system

4) To develop and utilise innovative methodological approaches for examining public values, attitudes and acceptability

5) To develop a range of generic materials that can be utilised as a basis for working with varied publics

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Work Packages

WP 1: Scenarios

- Scenario Adaptation, Expert Consultation & Material *Development*

WP 2: Qualitative

- *Deliberating* Energy System Scenarios & Trade-offs

WP 3: Quantitative

- National (UK) Survey: Attitudes on Whole Energy System Transformations

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

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WP3 – Survey Sampling

- Nationally representative for Great Britain (n=2,441) in August 2012
  - Core samples for England, Scotland (n=500) and Wales (n=500)
  - Conducted online 2-12th August by IpsosMORI
  - Weighted by age, gender, geographical region and employment status

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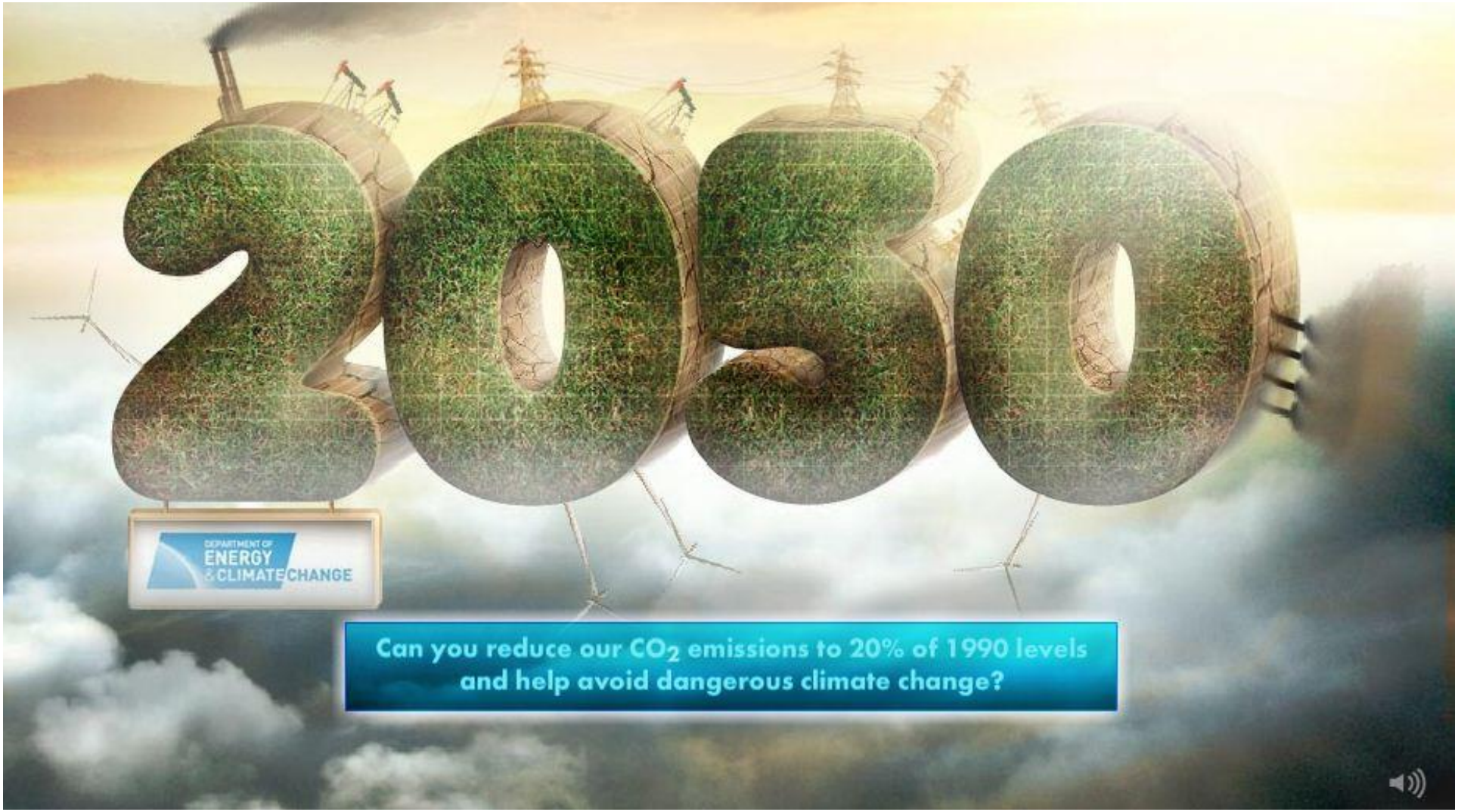
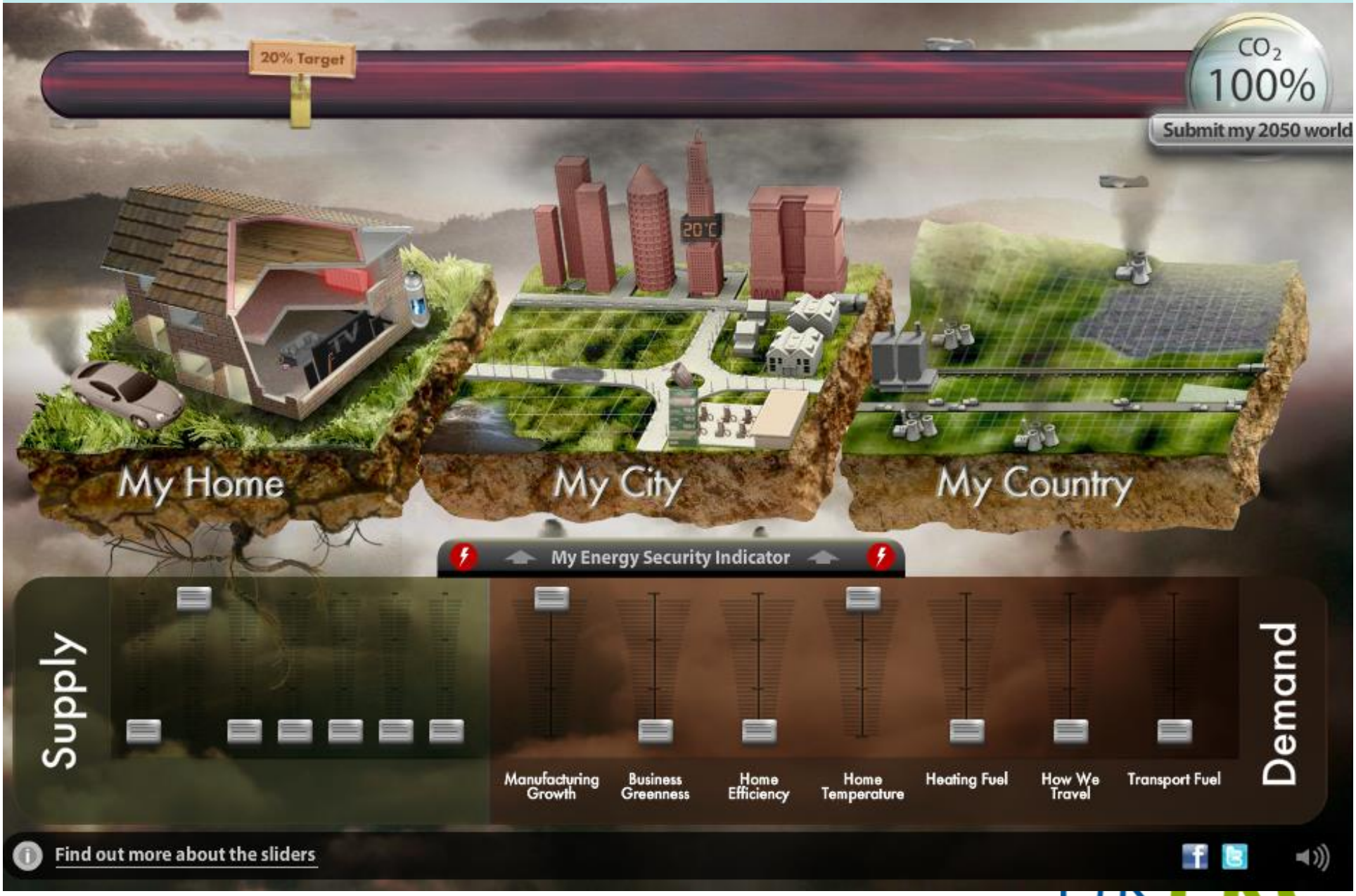
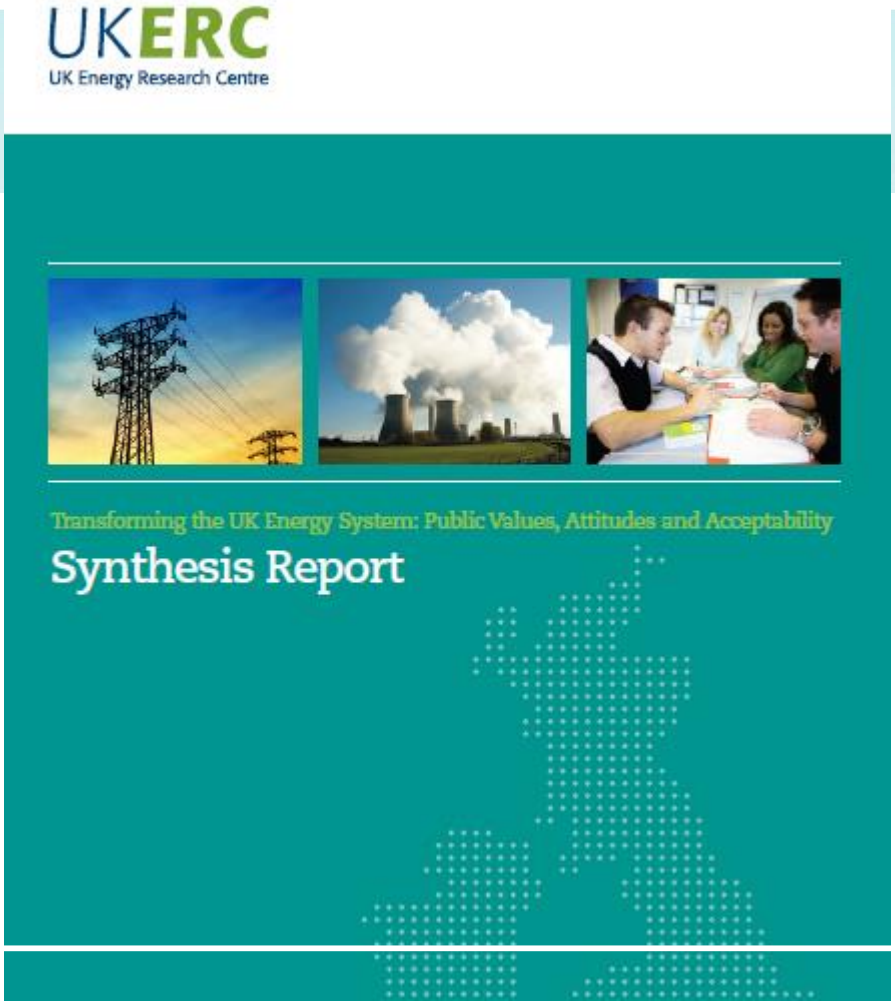
The my2050 tool




20% Target
CO_2
100%
Submit my 2050 world
My Home
My City
My Country
My Energy Security Indicator
Supply
Demand
Biofuel Production
Oil, Gas & Coal Power
Nuclear Power
Clean Coal & Gas Power
Wind Turbines on Land
Wind Turbines on Sea
Solar, Marine & Hydro Power
Find out more about the sliders


20% Target
CO_2
100%
Submit my 2050 world
20°C
TV
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



Parkhill, K., Demski, C., Butler, C., Spence, A. and Pidgeon, N.F (July 2013) ***Transforming the UK Energy System: Public Values, Attitudes and Acceptability - Synthesis Report*****. Cardiff University and UK Energy Research Centre.**

Available from õReportsõ section at www.understanding-risk.org

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Key Finding

The British public wants and expects change with regard to how energy is supplied, used and governed.

They do not prioritise the demand over the supply side, or vice versa, in terms of being a greater priority for change.

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Key Finding

> *P: I'm sure we would have done something about it in 40 years. It is a depressing thought that we are going to continue with the way we are without doing any changes.*

88% agree that Britain needs to radically change how it produces and uses energy by 2050.

86% Scotland

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Findings: Energy Supply

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

79% believe the UK should reduce its use of fossil fuels.

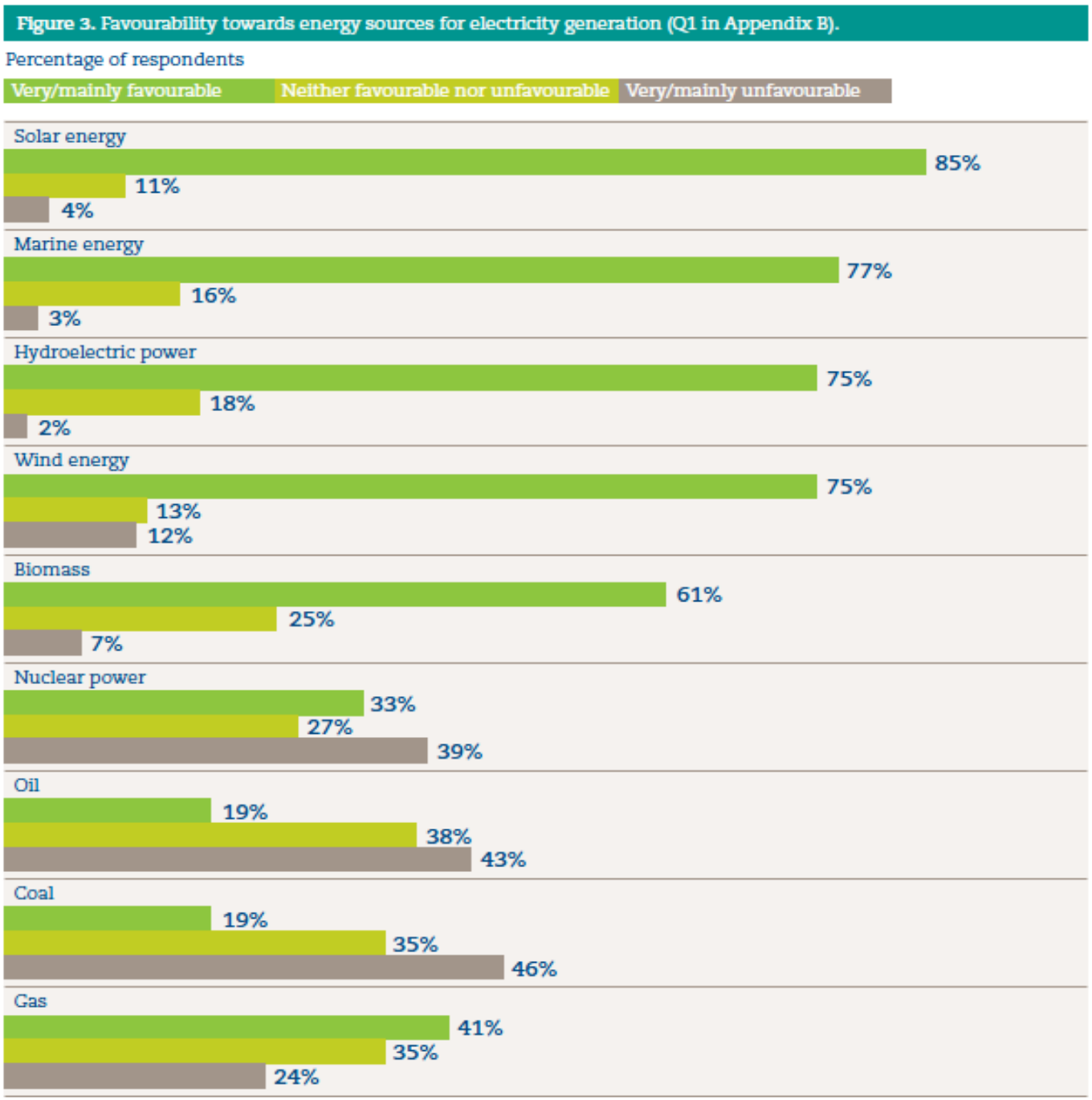
73% Scotland

> *Moderator:* What sort of energy sources would you like us to pursue for the future? So how do we want to generate our energy?
>
> *Male P1:* Wind turbines
> *Male P2:* Waves
> *Male P3:* Solar
> *Female P1:* Wood
> *Female P2:* Wind
> *Female P3:* I think with the wind and stuff, anything to do with the weather, we get enough of it here.

> *Male:* Hydro carbons should not be used – not as a source of energy. Burning stuff to make energy is the wrong thing to do.

Nearly 80% include high levels of renewables including offshore wind in their energy pathways.

Figure 3. Favourability towards energy sources for electricity generation (Q1 in Appendix B).



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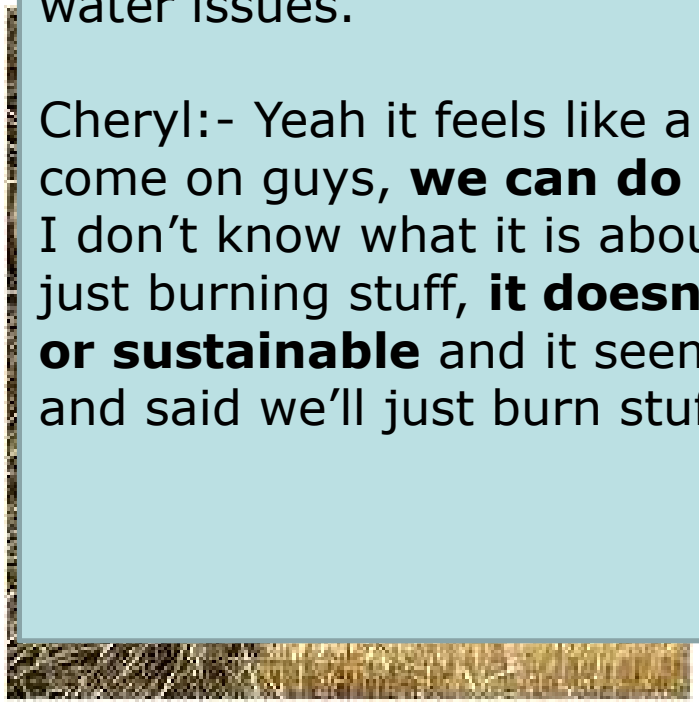
Imagining Change – Non-Transition

Non-transition - Biomass…

Fiona - **It's another oil** and you would exploit countries who will allow you to have land and everyone else wants that land so I think you would end up with more wars and water issues.

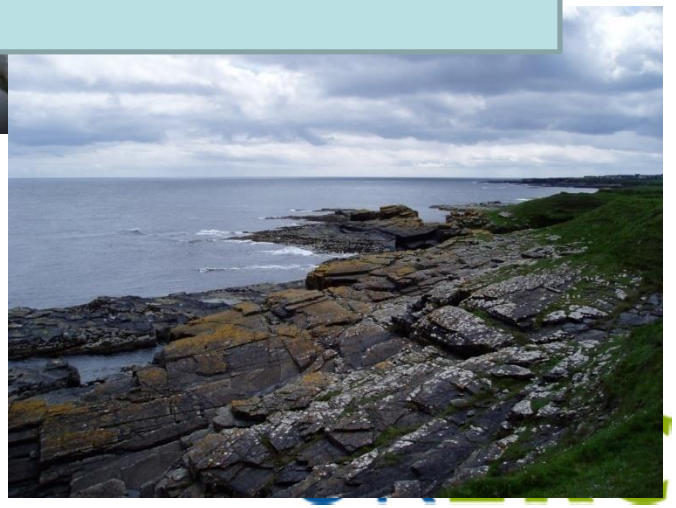
Cheryl:- Yeah it feels like a **step backwards**… it feels like come on guys, **we can do something better than that**. I don't know what it is about it, maybe it is because it's just burning stuff, **it doesn't seem very sophisticated or sustainable** and it seems like they have just panicked and said we'll just burn stuff. (Cumbria)



Technological Realism – and Politics of Place

On Carbon Capture and Storage

Jeff:- "See, I worry about that whenever humans try and transport something dangerous, they always make an arse of it somewhere along the line, like oil. The damage we have done with big oil tankers spilling out, we would have to transport this and store it and obviously I don't know how that gets out, is it like a vapour or liquid or ice I don't know, but **if you leave humans to transport something from *a to b* at some point of them doing that they will make a balls up and it could end up back in the environment. That is just my opinions on humans, but we always make an arse of it somewhere".** (Edinburgh)



Politics and history…

Olivia:- It is not as bad, but I really don't think we want to be the dustbin of the world for that kind of thing (carbon emissions) (Glasgow)

Overall, to what extent would you support or oppose the continued use of fossil fuels with 'carbon capture and storage'

	Wtd. Total	Country		
	(z)	England (a)	Scotland (b)	Wales (c)
Unweighted Total	2441	1432	502	507
Weighted Total	2441	2102	215	124
Strongly support	131 *5%*	110 *5%*	13 *6%*	7 *6%*
Tend to support	749 *31%*	646 *31%*	67 *31%*	36 *29%*
Neither support nor oppose	752 *31%*	644 *31%*	69 *32%*	39 *32%*
Tend to oppose	418 *17%*	365 *17%*	33 *15%*	20 *16%*
Strongly oppose	100 *4%*	85 *4%*	11 *5%*	4 *4%*
Don't know	291 *12%*	251 *12%*	22 *10%*	17 *14%*
Support	**880** ***36%***	**757** ***36%***	**80** ***37%***	**43** ***35%***
Oppose	**518** ***21%***	**450** ***21%***	**44** ***20%***	**24** ***19%***

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Public Acceptability of Energy Futures
Demand Futures

- Demand Management
  - Intervention v Interference
  - Active management and control

Rose:-… I don't want somebody coming in and saying, "you can't run that, you're going to jail for putting that heater on all night", but I do think something will need to be done because we need to stop, we know this, we know what we're damaging… (Glasgow)

Active Management…

Ann:- That would force people to be more aware, like I'm terrible for leaving the monitor from the computer running when it could be switching it off. If I knew there was only so much electricity I would go around switching things off, if I wasn't needing them. So it would probably be better… (Edinburgh)

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Social Contracts Values and Intangibles

…in my eyes it may be a silly thing to say, why have a world when you can't visit it? Why have other counties when you can't go there. It seems silly that we can't visit other countries and cultures and actually learn. What is there to learn in life? (Nigel, London)

Jeremy:- And no way in the world will I give up eating meat, I don't care, may the world come to an end

On flying…
Amy:- …Tenerife, I go a lot and my family used to live in the states and I went a lot out there, so here there and everywhere, **I am a retired lady now and I worked all my life, every day of my life, and now I think, "well I should just enjoy myself" so I do**. (Glasgow)

Irene:- Something I wouldn't change is not eating meat [laughter and agreement from group] (Merthyr)

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Public VALUES for Energy System Change

Reducing the use of finite resources

Reducing overall levels of energy use

Avoiding waste

Efficient

Capturing opportunities

Environmental protection

Naturalness and Nature

Availability and Affordability

Reliability

Safety

Long-term trajectories

Interconnected

Improvement and quality

Social Justice

Fairness, Honesty & Transparency

Autonomy and Freedom

Choice and Control

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We stipulate that acceptability of any particular aspect of energy system transformations will, in part, be conditional upon how well it fits with the value-system.

↓

Importance of long-term trajectories commensurate with these values

Technological Realism – and Politics of Place

Politics and history…

Olivia:- It is not as bad, but I really don't think we want to be the dustbin of the world for that kind of thing (carbon emissions) (Glasgow)

	PRINCIPLE/VALUE	DESCRIPTION
Reduced energy *use* overall **Reduced use of *finite* resources**		Reducing overall energy usage while simultaneously reducing the use of finite resources (as compared to the current state) will have positive consequences in terms of attaining the values outlined below.
EFFICIENT AND NOT WASTEFUL	**Avoiding Waste** **Efficiency** **Capturing opportunities**	A system that does not involve wasting and/or produce waste products and that is efficient. A system that does not waste opportunities arising from energy system change, and capitalises on the resources and capacities of the UK.
ENVIRONMENT AND NATURE	**Environmental protection** **Nature and naturalness**	A system that uses and produces energy in an environmentally conscious way and does not unnecessarily interfere with or harm nature.
SECURE AND STABLE	**Availability and affordability** **Reliability** **Safety**	A system that ensures access to energy services both in terms of availability and affordability. A system that is reliable and safe both in the production and delivery of energy services.
AUTONOMY AND POWER	**Autonomy and freedom** **Choice and control**	A system that is developed in ways that do not threaten autonomy, infringe upon freedoms, or significantly compromise abilities to control personal aspects of life.
JUST AND FAIR	**Social justice** **Fairness, honesty, and transparency**	A system that is developed in ways which are mindful of implications for people's abilities to live healthy lives. A system that is fair and inclusive and where all actors are honest and transparent about their actions.
PROCESS AND CHANGE	**Long-term trajectories** **Interconnected** **Improvement and quality**	A system that is developed with a focus on the long-term trajectories being created; that takes into account system interconnections and interdependencies; and represents improvement both in terms of socio-technological advances and quality of life.

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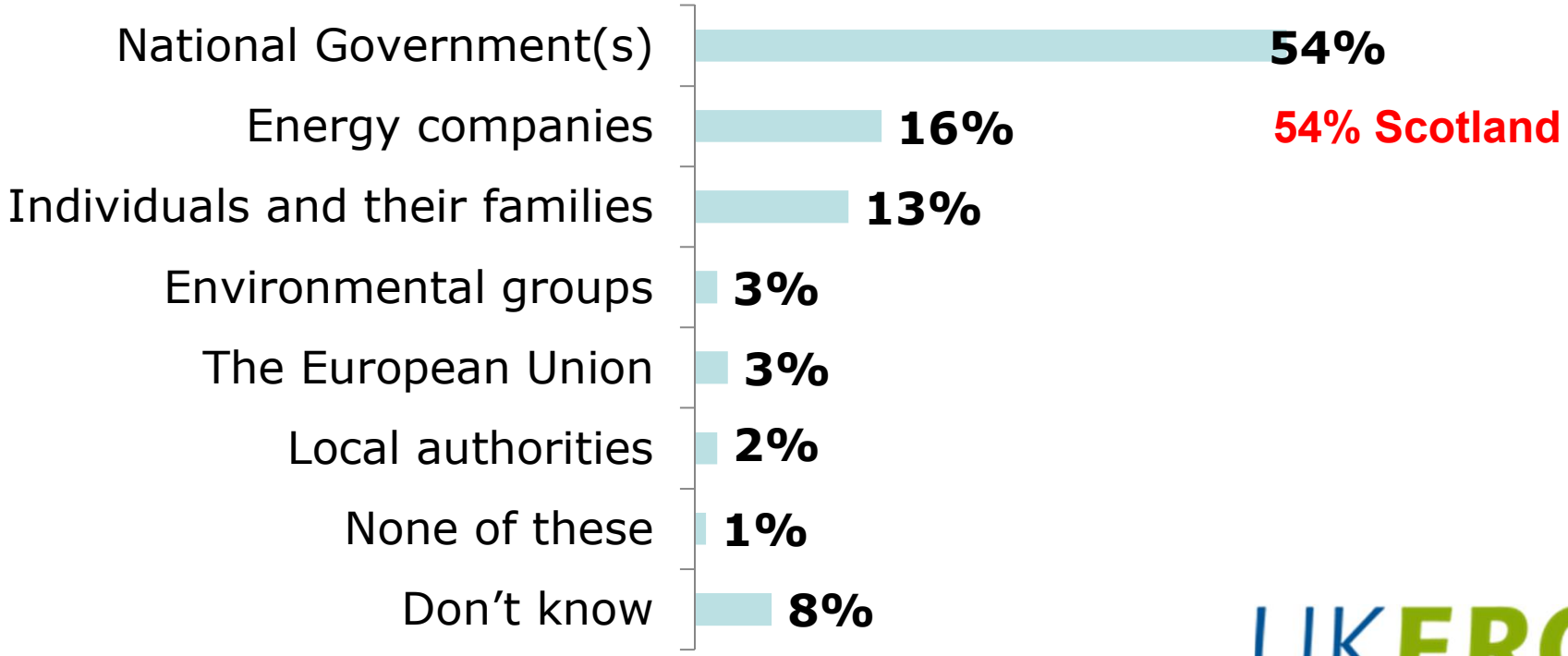
System Transformation

National Government(s) are seen to play a large role in bringing about these change.



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Concluding Comments

- Successful Engagement – Rich Set of Public Discourses
- Value of Multiple-Methods and 'Whole System'
- Public(s) Values – transitions need to address the public(s) Long Term vision
- Use of Interactive Tools (e.g. MY2050)
- Future Priorities

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Consortium

Psychology, Cardiff University

- PI: Prof Nick Pidgeon
  - Researcher Co-I: Dr Catherine Butler
  - Researcher Co-I: Dr Karen Parkhill
  - Researcher: Dr. Christina Demski
  - Co-I: Dr. Lorraine Whitmarsh

Engineering, Cardiff University

- Co-PI: Prof Nick Jenkins
  - Researcher: Dr Tracy Sweet
  - Researcher: Dr Modassur Chaudry
  - Researcher: Brian Drysdale

Architecture, Cardiff University

- Co-PI: Prof Peter Pearson

Psychology, Nottingham University (attached to Psych, Cardiff)

- Researcher Co-I: Dr Alexa Spence

Understanding Risk

Cardiff University
Prifysgol Caerdydd

Research Councils UK
Energy
For a Low Carbon Future

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Researching pathways to a low carbon future

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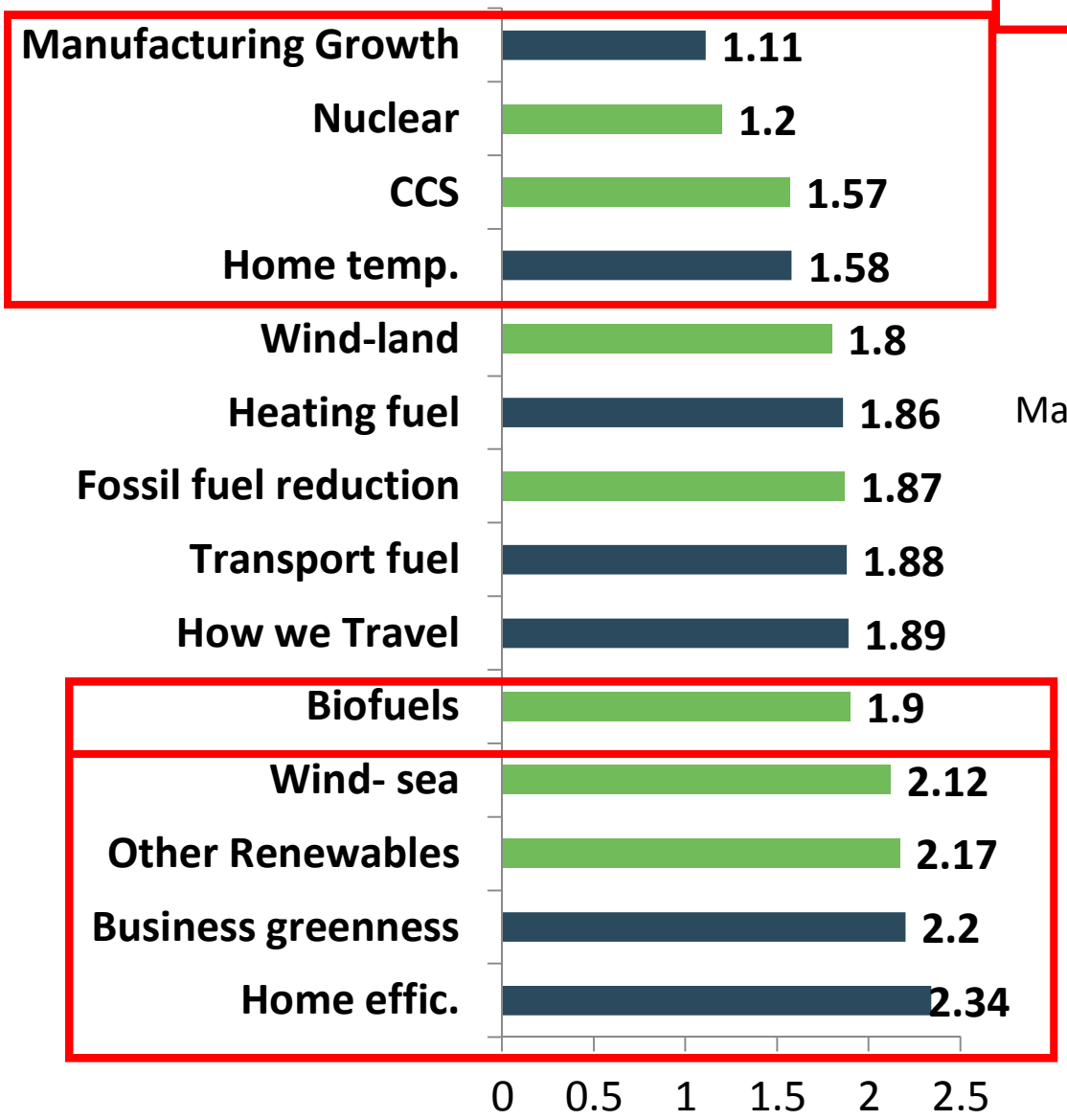
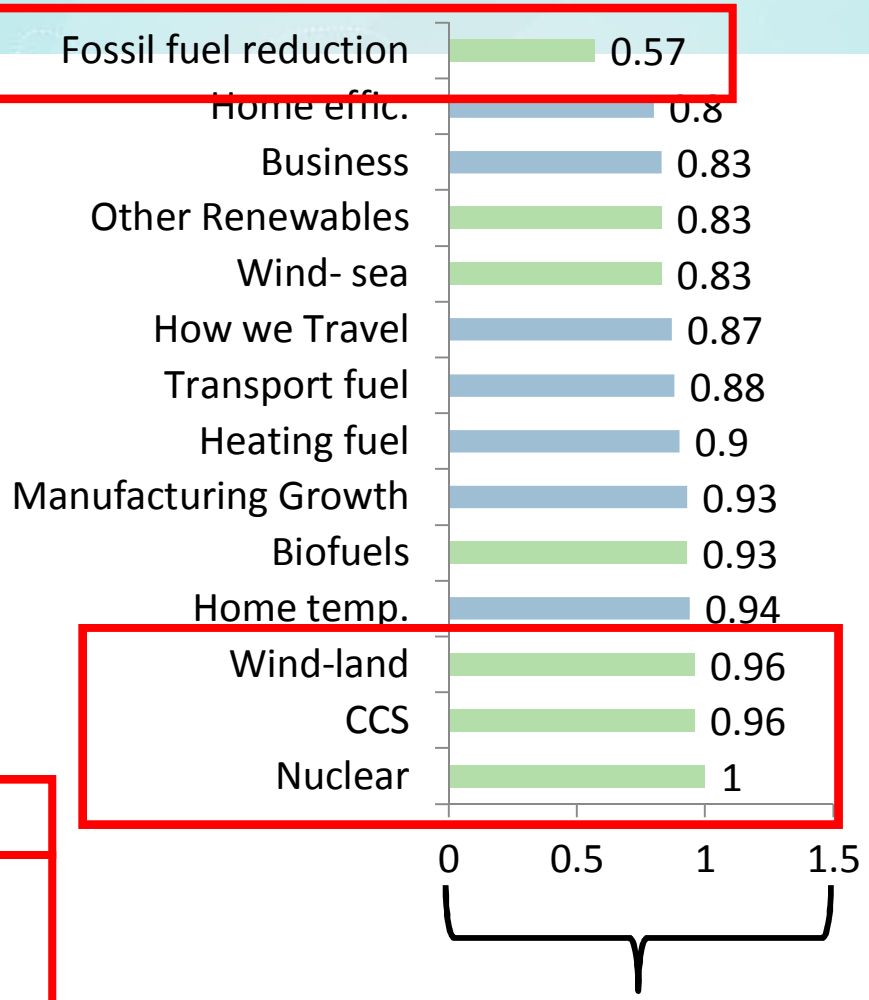
MY2050 Worlds. Mean inclusion level (0-4 scale)





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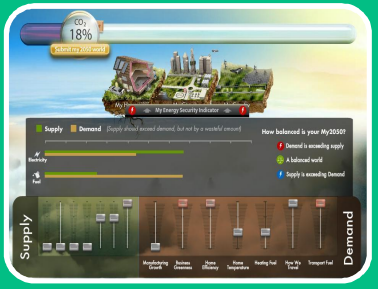
Deliberative Groups: Day Format

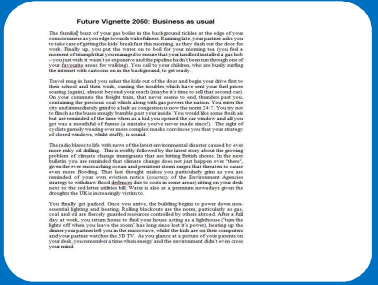
Introducing reasons for whole energy system change

- Presentation
- Short surveys & Discussion



Creating a scenario in small groups

- DECC My2050 web tool & extra components omitted from tool
- Guided discussion to prompt conditions, trade-offs, agreements, disagreements to form basis of social contracts.


Future Vignette 2050: Business as usual

Reflecting on scenarios: Scenario narratives - "BAU", "Mixing it up" & "Low carbon living"

- Small group discussions of each
- Reflections on My2050 discussions to amend social contracts

WP3: Survey & my2050

- Climate change, energy security and affordability
- Key energy supply options: fossil fuels, nuclear power & wind energy
- Electrification of heating, cooking and driving
- Demand reduction
- Demand side management
- Overall system change

my2050

- About my2050
- Repeated questions
- Environmental values & technol. optimism
- Sample characteristics

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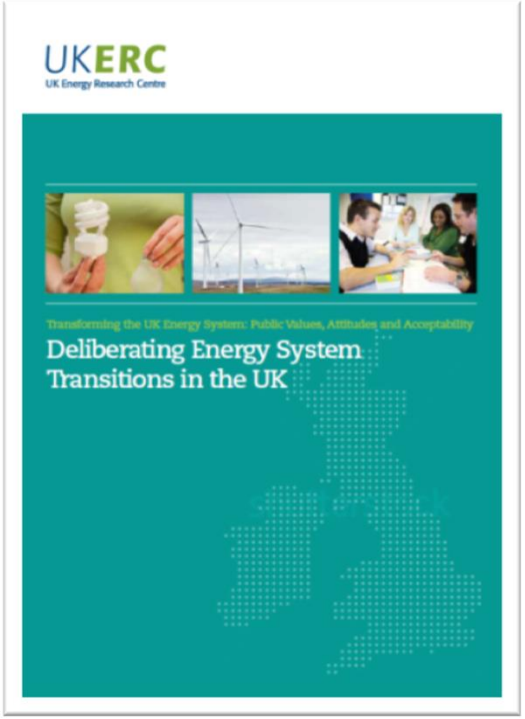
Project Reports

Butler, C., Parkhill, K.A. & Pidgeon N.F.



Demski, C., Spence, A. & Pidgeon N.F.

Available from the Reports section at www.understanding-risk.org

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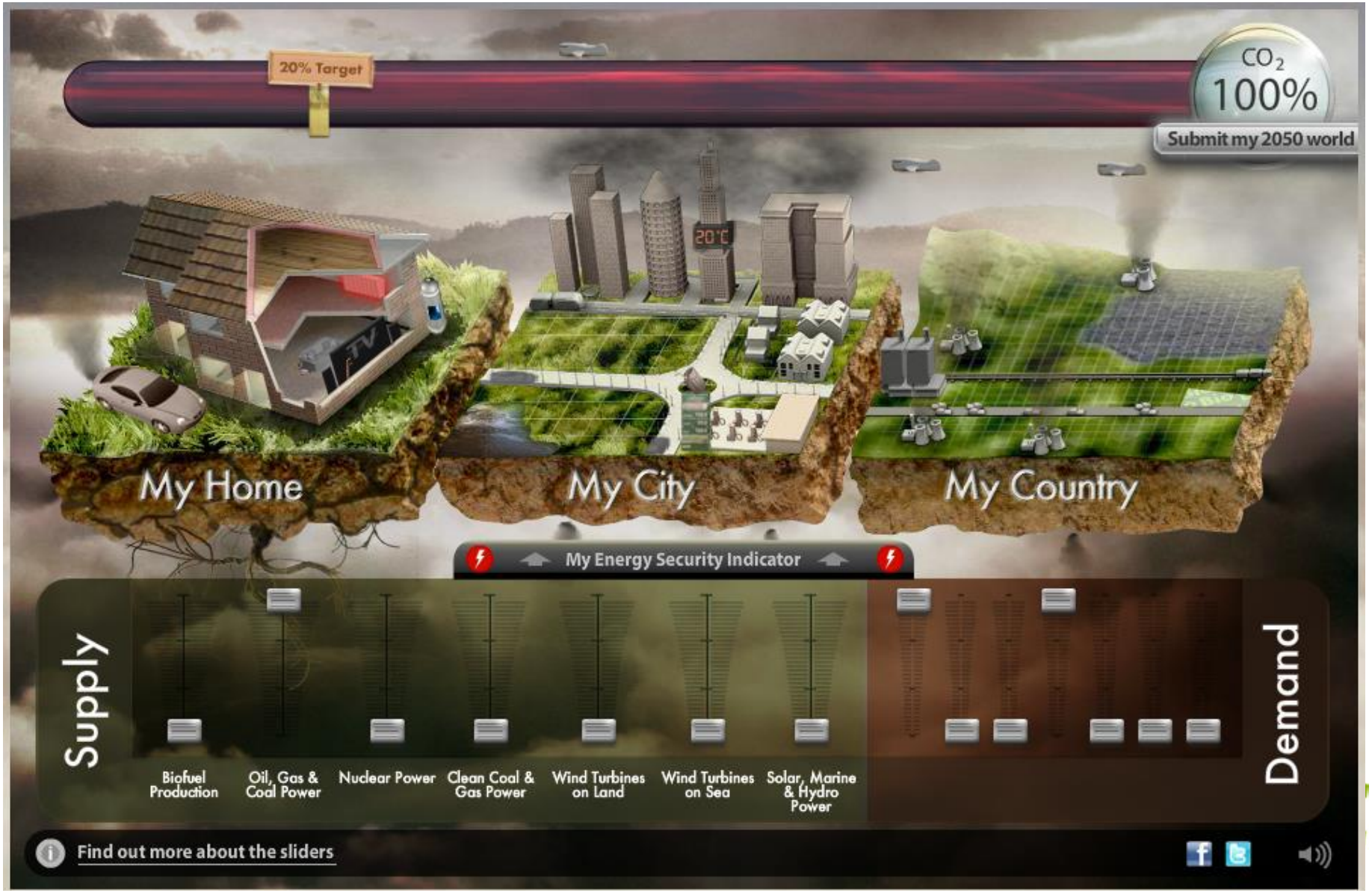
20% Target
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Submit my 2050 world
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My Home
My City
My Country
My Energy Security Indicator
Supply
Demand
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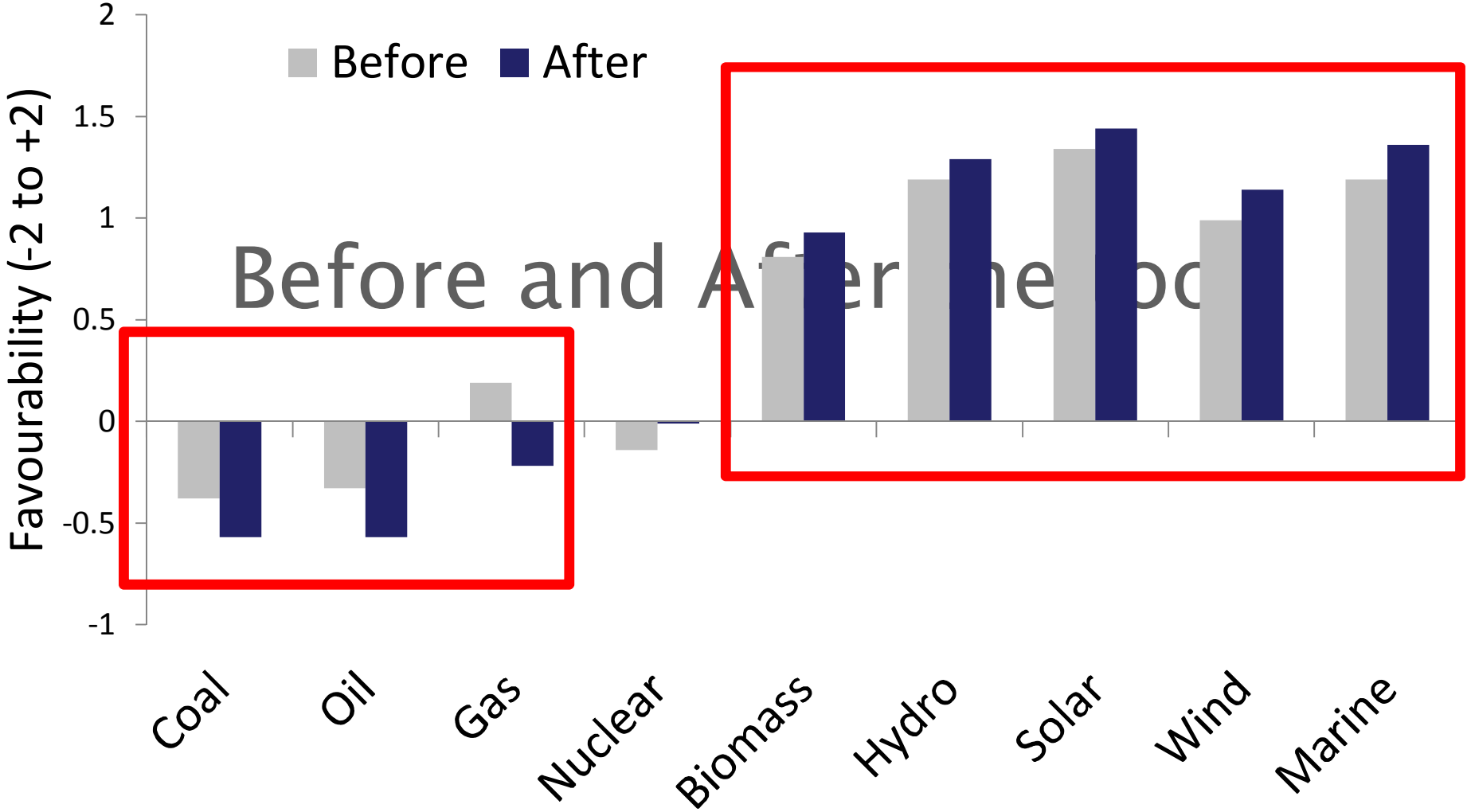
Oil, Gas & Coal Power
Nuclear Power
Clean Coal & Gas Power
Wind Turbines on Land
Wind Turbines on Sea
Solar, Marine & Hydro Power
Find out more about the sliders



Before and After the Tool

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