Perceptions of energy security across Europe

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The concept of energy security

- Multifaceted, multi-scalar
- Key: ‘access’ (to energy)

“the uninterrupted availability of energy sources at an affordable price” (IEA)
Public perceptions

• Not been studied extensively and not theoretically informed

Key findings
• High concern for import and fossil fuel dependence, and affordability
• Lower concern for actual disruptions/reliability
• Unfamiliar concept!

Country comparisons
• Policy priorities in different countries
• Import reliance & fossil fuel dependency as important national context?

Corner et al. (2011) – UK
DeCicco et al. (2015) – US
Jones et al. (2017) – Greece & Turkey

Understanding attitudes toward energy security: Results of a cross-national survey
Janelle Knox-Hayes*, Marilyn A. Brown*, Benjamin K. Sovacoolb, Yu Wang*
*School of Public Policy, Georgia Institute of Technology, Atlanta, GA, United States
bVermont Law School, United States

Also see Sovacool (2012, 2016); Sovacool & Tambo (2016)
European Social Survey Round 8

• Specific module led by Prof Wouter Poortinga

• Fielded in 2016/2017 in 22 European countries + Israel

• High-quality face-to-face interviews

• Probability samples

• Major efforts on response rates
Measuring energy security concerns

Meaningful measures to account for:
- ‘Energy security’ concept has low familiarity
- People unlikely to have extensive technical knowledge about risks and operations of energy systems

Risk perceptions – theoretical background
- Driven by affective responses to a threat
- Not statistical calculations of risks (e.g. likelihood)

• → Concern operationalised as ‘worry’
Measuring energy security concerns

How worried are you …

• ...that there may be power cuts in [country]? Reliability

• ...that energy may be too expensive for many people in [country]? Affordability

• ...that energy supplies could be interrupted (a) by natural disasters, (b) by insufficient power being generated (c) by technical failures, and (d) by terrorist attacks? Vulnerability

• ...about [country] being too dependent on energy imports from other countries? Energy import dependency

• ...about [country] being too dependent on energy generated by fossil fuels such as oil, gas and coal? Fossil fuel dependency
Energy security concerns
Affordability

![Graph showing affordability concern levels for various countries, with Portugal and Spain at the highest concern level, and Sweden at the lowest.](Image)
Climate Change and Energy Security

% very/extremely worried
National context and concerns about energy security

• ESS perception data & PAWCER national indicators

National context is a key determinant of energy security concerns across Europe

Christina Demski, Wouter Poortinga, Lorraine Whitmarsh, Gisela Böhm, Stephen Fisher, Linda Steg, Resul Umit, Pekka Jokinen and Pasi Pohjolainen
Background & Method

What informs people’s concerns about energy security? What heightens or attenuates concerns?
What role does national context play?

- Individual differences e.g. socio-demographics
- National contexts

Multi-level modelling
- Enables distinction between variance at individual and country level
- N=44,387 individuals (level 1), n=23 countries (level 2)
- Level 1 = age, gender, education and income
- Understanding cross-country differences beyond individual socio-demographic make up of populations
National contextual indicators

**Energy**

- Household electricity prices (USD/MWh)
- Net energy imports (% of energy use)
- Fossil fuel consumption (%)
- Per capita electric power consumption

**Climate change/Low-carbon transition**

- CO2 emissions (metric tonnes per capita)
- Climate and energy wellbeing index (energy use, energy savings, greenhouse gases, renewable energy)

**Economic and human wellbeing**

- Per capita GDP
- Human wellbeing index (basic human needs, personal development and health, well-balanced society)
### National context - energy

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<thead>
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<td>Electricity prices</td>
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<td>+ (Vulnerability)</td>
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<td>Net energy imports</td>
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Reliability (+)  
Vulnerability (+)  
Import dependency (+)          |
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Affordability (+)  
Fossil fuel dependency (+)     |
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National context – climate change

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No relationships found
National context – climate change

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National context - wellbeing

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human wellbeing index

- Reliability
- Vulnerability
- Affordability
National context - wellbeing

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| Per capita GDP     | Reliability (-)  
Vulnerability (-)  
Affordability (-)  |
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Public energy security concerns - Summary

- People’s concerns reflect the energy context of their country
- Effectively managing prices, imports and fossil fuel dependency will help attenuate people's concerns.
- Concerns around affordability high, reliability low.
- Moving towards a low-carbon energy system presents opportunities and pitfalls...
- People in countries with higher economic and human wellbeing felt more secure (energy reliability, affordability, vulnerability).
- Considerations and interconnection with policy areas beyond energy important (e.g. Butler et al., 2018)
Public acceptance of energy transitions

Public perspectives on energy futures – technologies, ways of living, governance...

Values that underpin preferences and views – guiding principles inform how people evaluate new technologies, ideas, policies, changes.

Interconnected value clusters:
- **SECURE & STABLE**: affordability, reliability, safety
- **AUTONOMY & POWER**: control, autonomy, choice
- **ENVIRONMENT & NATURE**
- **EFFICIENT & NOT WASTEFUL**
- **PROCESS & CHANGE**: improvement, quality, long-term
- **JUST & FAIR**: social justice, fairness

Need for urgent social change

- Climate change is urgent issue (IPCC, 2018)
- Social and behavioural change is essential and a *large* component of mitigating climate change (CCC, 2019)
Excellent progress in reducing emissions from electricity generation masks failure in other sectors

The UK’s greenhouse gas emissions have reduced by 43% compared to 1990 levels, on the way to a target of at least an 80% reduction by 2050.

Emissions from power have fallen fast

... but all other sectors are flat

75% of emissions reductions since 2012 have come from the power sector

Clear goals, ambitious strategy and well-designed policies have been effective. These lessons must now be applied to other sectors.
Personal choices to reduce your contribution to climate change

Cumulative emissions from descendants decreases substantially if national emissions decrease.

Average values for developed countries, based on current emissions.

Upgrade light bulbs
Hang dry clothes
Recycle
Wash clothes in cold water
Replace typical car with hybrid
Eat a plant based diet
Switch electric car to car free
Buy green energy
Avoid one roundtrip transatlantic flight
Live car free
Have one fewer child

Low Impact
< 0.2 tCO₂e

Moderate Impact
0.8-0.2 tCO₂e

High Impact
> 0.8 tCO₂e

Wynes & Nicholas, 2017
Citizen engagement vital for radical change... also builds political mandate

1.5° future?
4° future?

Demsli et al., 2015; Willis, 2018
### Urgency and emergency

**Perceived level of urgency required to address climate change**

<table>
<thead>
<tr>
<th>Level of Urgency</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>An extremely high level of urgency</td>
<td>31.5%</td>
</tr>
<tr>
<td>A high level of urgency</td>
<td>30.5%</td>
</tr>
<tr>
<td>A moderate level of urgency</td>
<td>19.3%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>9.2%</td>
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"Which of these best describes your views about the way in which climate change needs to be addressed?"

Addressing climate change requires...
The UK Parliament, as well as some cities and organisations, have recently declared a state of 'climate emergency', a motion that recognises the need to take urgent steps to tackle climate change.

To what extent do you support or oppose the UK Government declaring a ‘climate emergency’?
Generally speaking, would you say that you have become more or less worried about climate change over the past 12 months, or have your views remained about the same?
Rising public concern...

BEIS, 2019
... but limited behaviour change

*In the past 12 months, have you...?*

- Turned off lights when not in use
- Recycled household waste (e.g. glass)
- Turned off the tap when brushing teeth
- Bought environmentally-friendly products
- Encouraged other people to save energy
- Avoided buying new things (e.g. clothes, luxury items)
- Avoided eating meat

**Regularly**: once/month or more

*Whitmarsh et al., 2017*
Centre for Climate Change & Social Transformations (CAST)

- £5m ESRC funding for yrs 1-5 (+ significant institutional commitment)
- May 2019 start
- Director: Prof. Lorraine Whitmarsh
Aim & focus

How can we as a society live differently and better to achieve systemic, deep and rapid emission reductions?

To achieve a step change in understanding how to transform lifestyles and systems of governance for sustainable, very low-carbon futures.
CAST: People as agents of change

- Social/behavioural change is not just about citizen/consumer action
- Individual and collective action across a range of contexts and roles
- Co-benefits to motivate change
Our expectations...

• Technology + lifestyle change – both required
• No silver bullets, but some underlying principles:
  • People can exert influence through variety of roles (e.g. citizen, consumer, community member)
  • Low-carbon futures must address core principles and values (e.g. fairness, wellbeing)
  • Co-benefits can mobilise people and policy
  • Multiple intervention points needed, from household to national level
  • Timing is critical: habit disruption, policy windows, infrastructure change
  • This will not be easy: no more ‘simple and painless’!
Theme 1. Visioning

What could low-carbon transformed futures look like?

- Public & SH visions
- Comparing visions
- Scenarios & modelling
- Tracking discourse change
- Media representations

- International comparative component!
Theme 2. Learning

How and why have transformations occurred?

• Government-led
• Society-led
• Moments of change
Theme 3. Triallling

How can we accelerate transformations?

- Individual
- Household
- Organisations
- City-level
- Government-led
Theme 4. Engaging

How can transformation be embedded within society?

- Novel communications
- Decarbonising research
- Upscaling + engaging
- Synthesis + learning
People at the heart of transformations

We want to understand how people can participate in transformation in their multiple roles as citizens, consumers, parents, employees, business leaders, policy-makers. This means recognising that people can act both directly to reduce emissions – like driving less – but equally have the ability to shape wider structural change – like changing organisational practices and shaping policies.