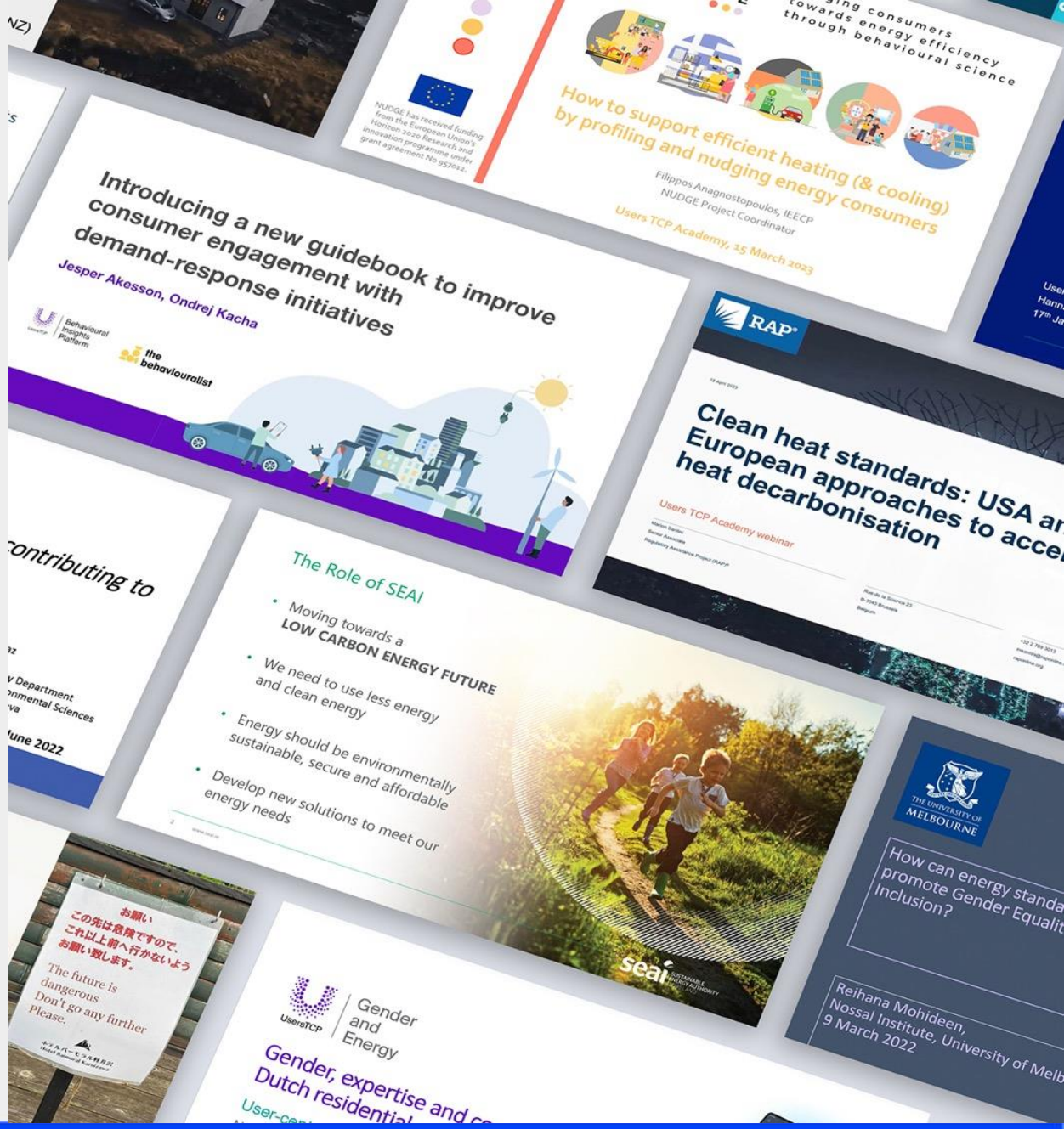
User-Centred Energy Systems Academy

The Users TCP Academy series provides access to the knowledge developed through our research programme and the wider work of our partners. The Academy is active through monthly webinars, with an extensive library of over 100 past presentations available in our webinar library.

- **Next Webinar:** November 5th @ 3pm CEST
- **How engineers think about building occupants** (Users TCP Task & EBC TCP Annex: Human-Centric Buildings for a Changing Climate Task)



Environmental Behaviours and Policy Support Across Sectors in OECD Countries

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David Shipworth, University College London

Behavioural Research UK

BR-UK is supported by the Economic and Social Research Council [grant number ES/Y001044/1]

Overview

- Introduction & methods
- Results: individual-level findings
- Results: cross-sector & region-level findings
- Discussion & takeaways

Challenges

Climate crisis

Energy, transport, food sectors – major contributors

Population segments

What segments of behavioural patterns exist? What predicts them? How do they relate to policy support?

Policy dilemma

Policy transfer with population heterogeneity in behaviour

Regional distribution

How are these segments distributed regionally?

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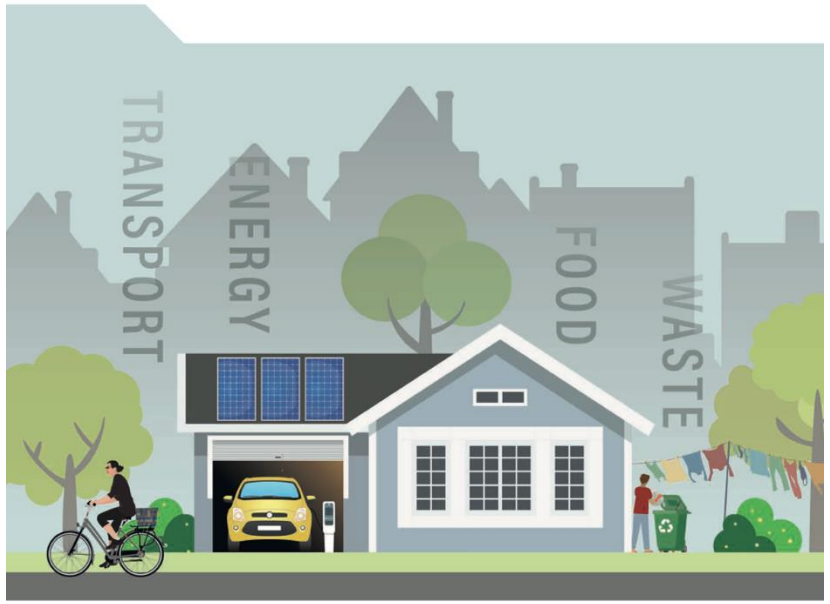
Research data

2022 OECD Survey on Environmental Policies and Individual Behaviour Change (EPIC)



17,215

respondents

9

countries

US, Canada, UK, Sweden, Switzerland, Netherlands, France, Belgium, Israel

Sector-specific behavioural indicators

Energy, transport, and food (respondents assigned to see two sectors each)

OECD

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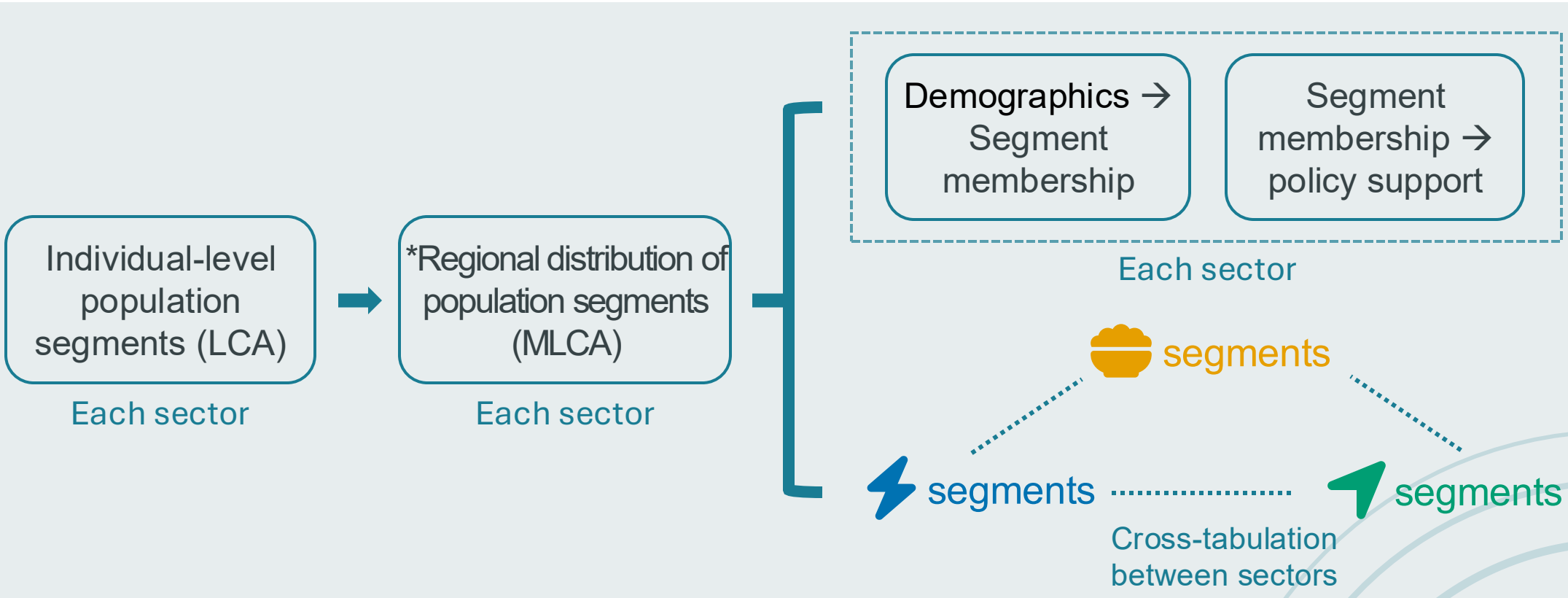
Analysis overview - across regions and sectors

Energy Transport Food



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* Country regions: e.g., Greater London, East Anglia, Scotland, Northern Ireland… in UK

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Results

Energy behavioural indicators analysed

Has smart meter. Reported having actively chosen to install a smart meter. (Yes/No)

Energy-saving behaviour. Reported often turning off lights and minimising heating/cooling, washing machine/dishwasher, & hot water use. (Yes/No)

Efficiency installation behaviour. Reported having installed energy-efficient appliances or windows, thermal insulation, solar panels or water heating, battery storage, or heat pumps. (Yes/No)

Electricity bill. Reported average monthly electricity bill was high (EUR 76-200+), low (EUR 75 or less), or unknown.

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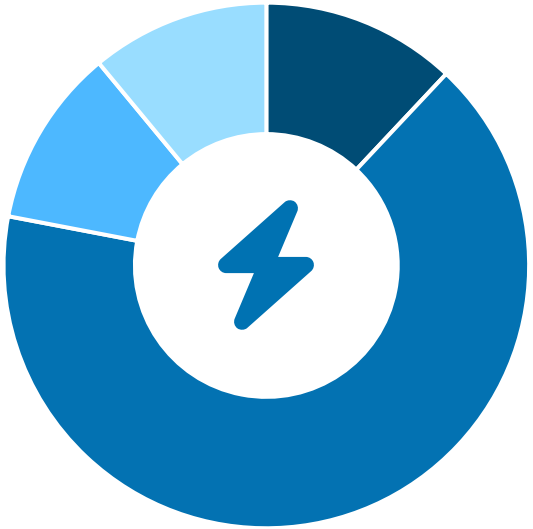
Individual-level population segments - Energy



12% Disengaged energy users

✕ smart meter/efficiency installations, ✕ energy-saving behaviours

66% Energy investors

Efficiency installations, likely energy-saving behaviours, likely high bills

11% Energy conservers

Energy-saving behaviours, likely efficiency installations, low bills

11% Engaged energy users

Smart meters, energy-saving behaviours, efficiency installations, likely high bills

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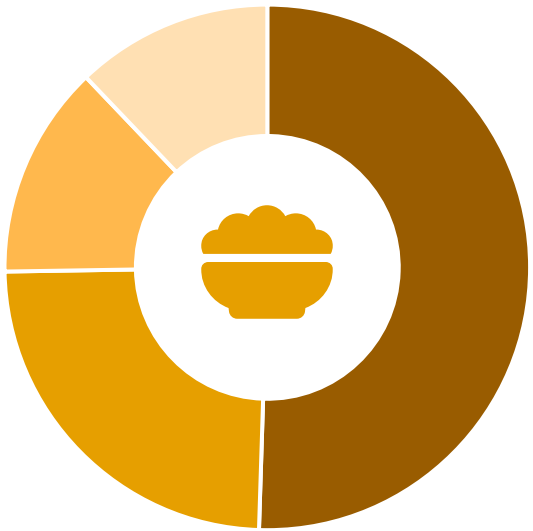
Individual-level population segments - Transport & Food



Meat consumption & purchases of in-season or minimally packaged products

4 food segments

Primary mode of transport, household car use, long-distance high-emission trips

5 transport segments

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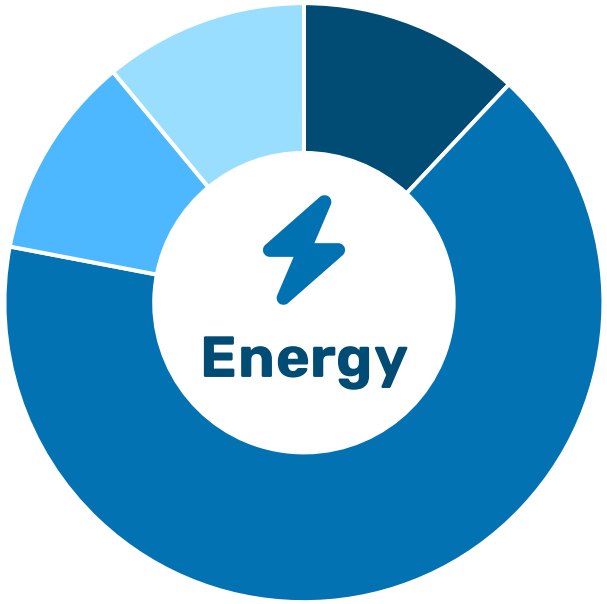
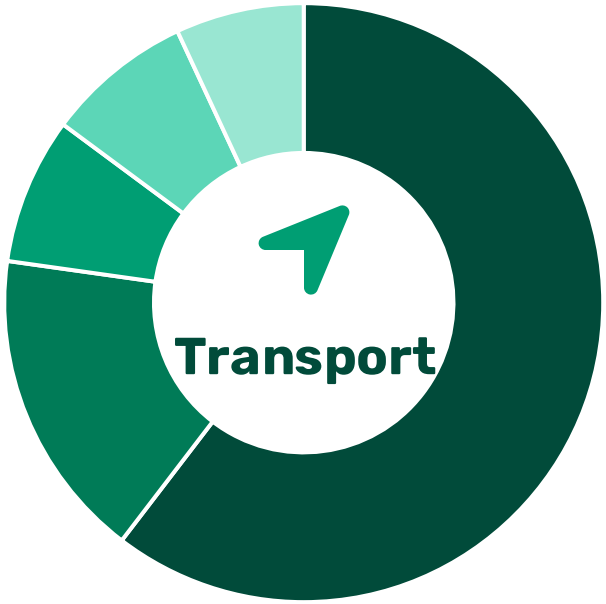
Most people fall into the LEAST sustainable segments



12% Disengaged energy users

66% Energy investors



61% Auto travellers

17% Active & Auto travellers

51% Non-sustainable food consumers & purchasers

24% Sustainable purchasers

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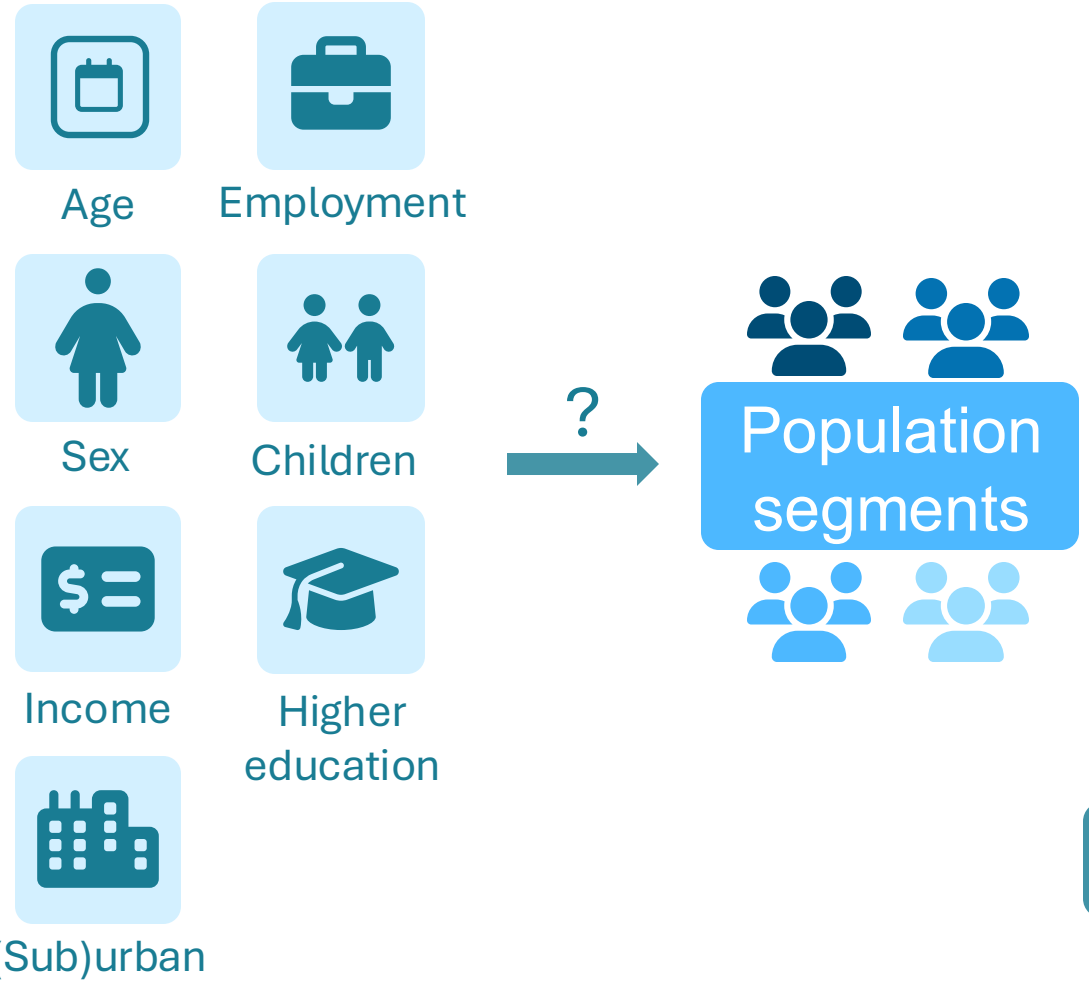
Determined by latent class analysis for each sector and OLS logistic regression

Inconsistent relationships with socio-demographics



- **Sex:** non-significant
- **Income:** inconsistent
- **Age 18-24:** more likely 'Disengaged energy users'
- **Having children**: mixed effects
  Energy conservers > Disengaged energy users > Energy Investors > Engaged energy users
- **(Sub)urban areas**: only more likely for 'Energy conservers'
- **Education and employment**: little association

These patterns did not hold for transport and food.

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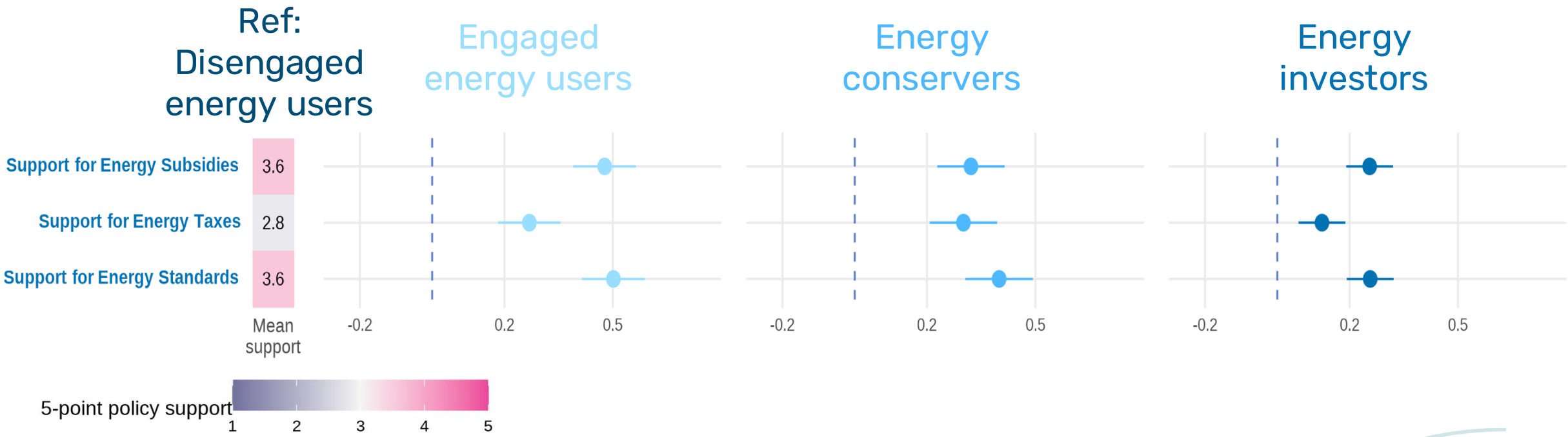
Determined by multinomial logistic regressions with socio-demographics as covariates and segment membership as a nominal dependent variable

Sustainable population segments show more policy support
(despite small differences)



Similar patterns were found in sustainable transport and food population segments

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Behaviours associated across sectors

Membership in the least sustainable segment in one sector more likely to be a lesser sustainable segment in another

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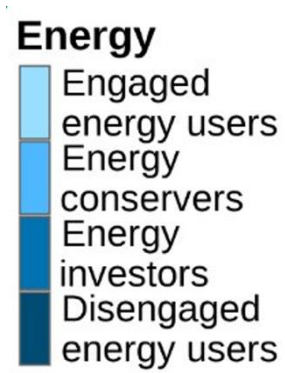
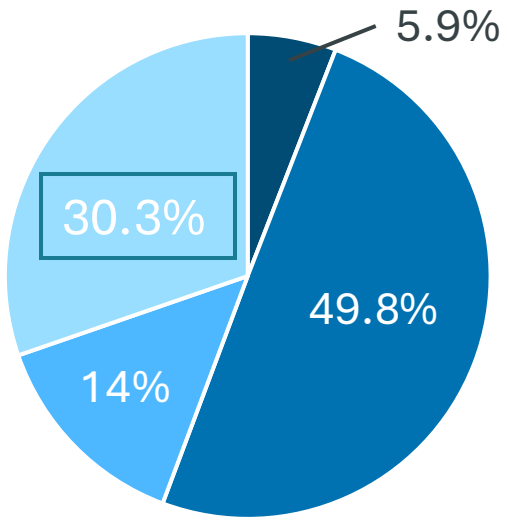
Determined by OLS logistic regression and chi-square test of independence

Regional patterns: National contexts matter

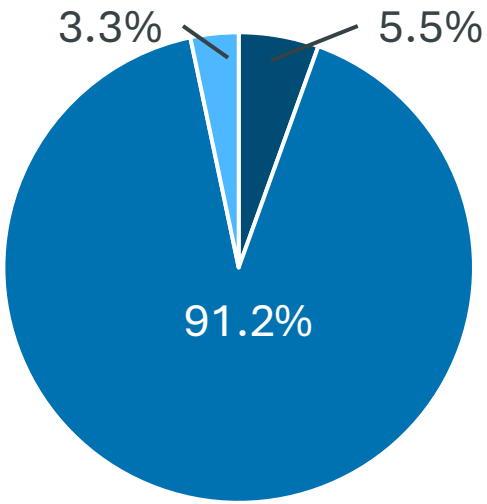


Energy Region Group D



UK, France, Netherlands: smart metering policy & advanced infrastructure

Energy Region Group A



Belgium: had no set target for smart-metering

Having a smart meter is a key behaviour of **engaged energy users**

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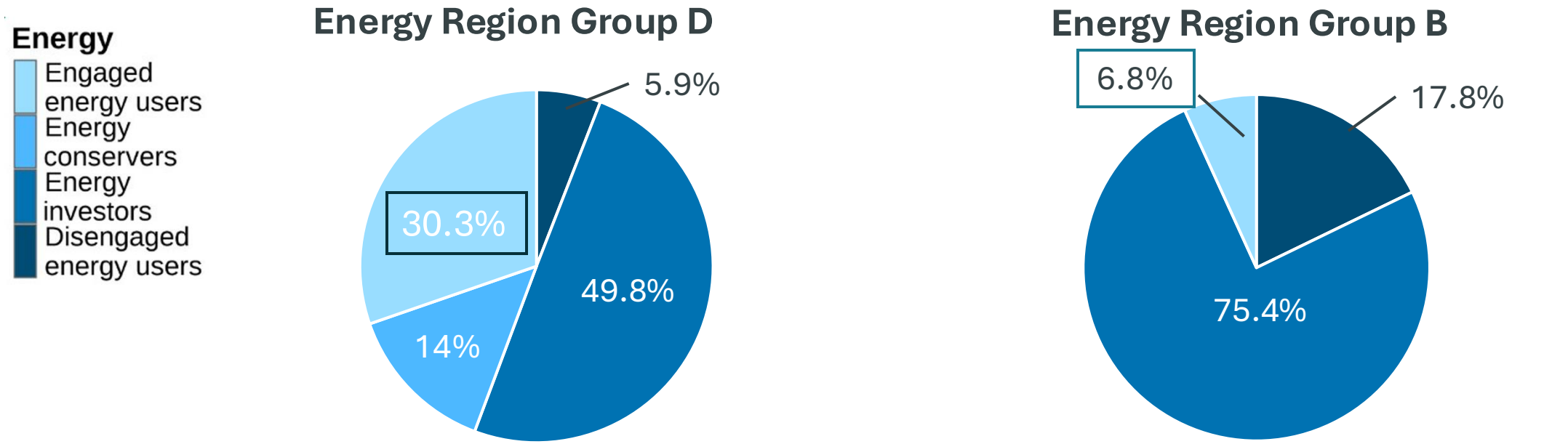
Regional patterns: Within-country differences exist



British Columbia: more advanced smart-meter roll-out infrastructure

Other Canadian Regions: despite smart grid policy strategy

Having a smart meter is a key behaviour of **engaged energy users**

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Discussion & Takeaways

Limitations & Future research

Self-reported measures

Potential reporting biases in behavioural data.

Cross-sectional design

Cannot confirm causal relationships or behavioural spillover.

Model constraints

Regional factors like economics and climate not included.

Future direction

Need longitudinal designs with objective, repeated measures.

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Policy implications

Tailored approaches

Behaviour change for non-sustainable majority

Maintenance for sustainable minority

Cross-sector coordination

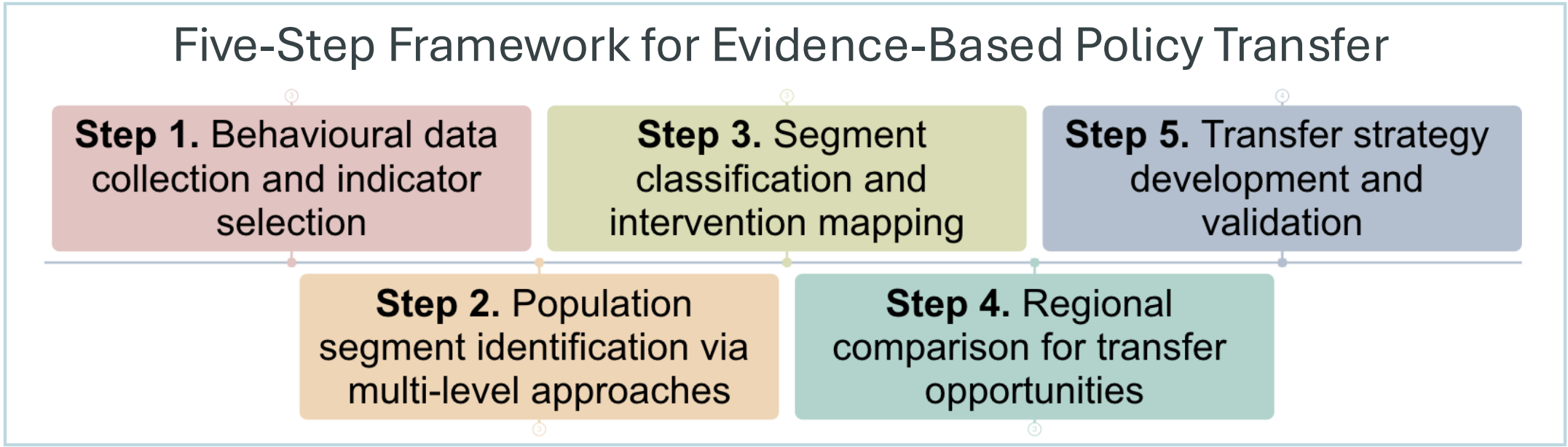
Sustainable/unsustainable behaviours cluster together

Better coordination across sectoral departments

Policy implications

Policy transfer framework

Use multilevel segmentation to identify opportunities



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www.br-uk.ac.uk

Find out more in our preprint

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User-Centred Energy Systems

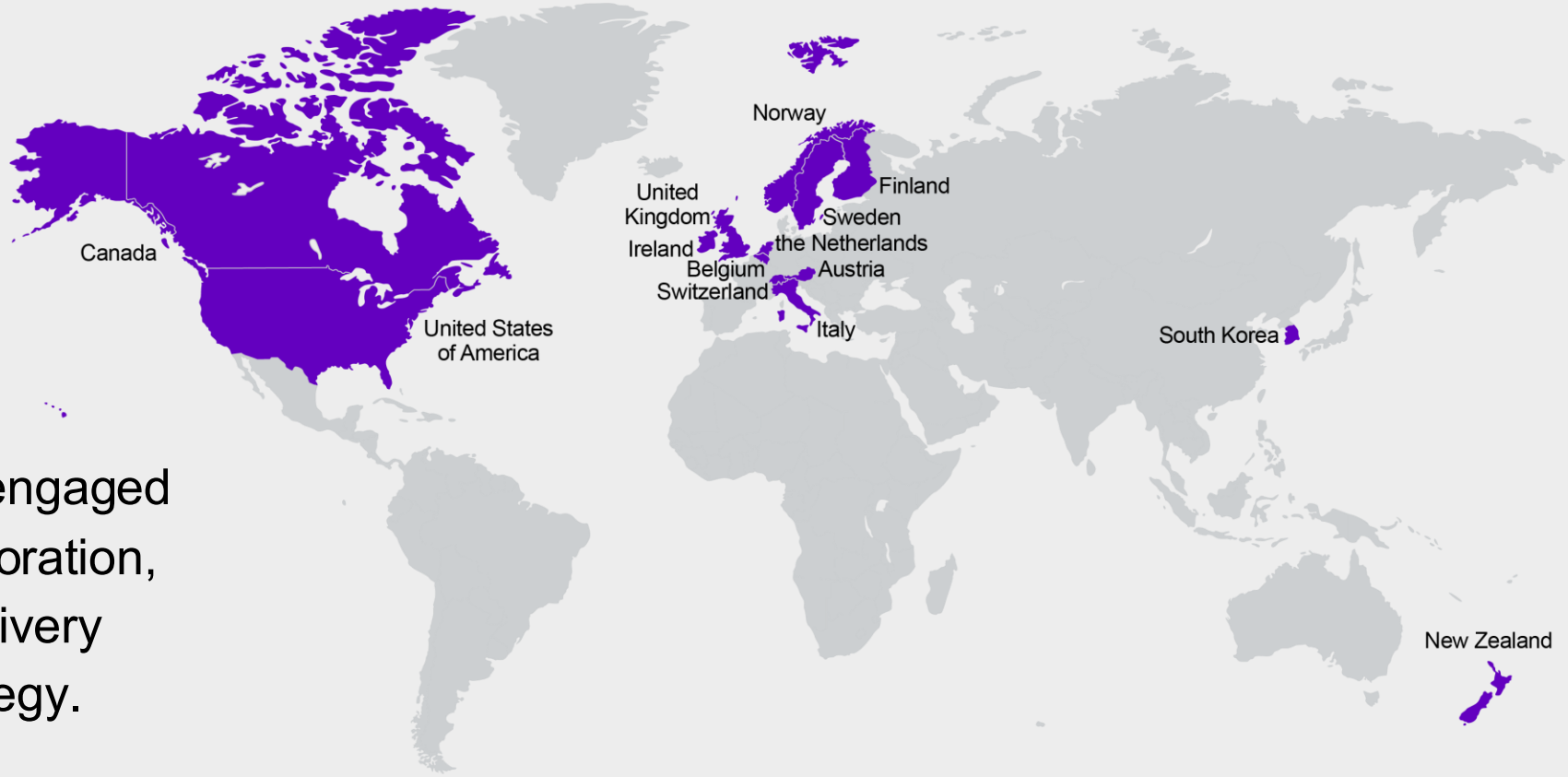
A Technology Collaboration Programme by IEA

Technology Collaboration Programme
by IEA

UsersTCP

Membership

We have **14 Member governments** positively engaged in this international collaboration, and our Tasks are the delivery mechanisms for our Strategy.



Fees

ANNUAL MEMBERSHIP FEE PER COUNTRY

€10,000

€0 - 30,000

PER MEMBER PER TASK

Funding of our Tasks comes from a combination of voluntary financial contributions and substantial in-kind support from national experts and research groups.

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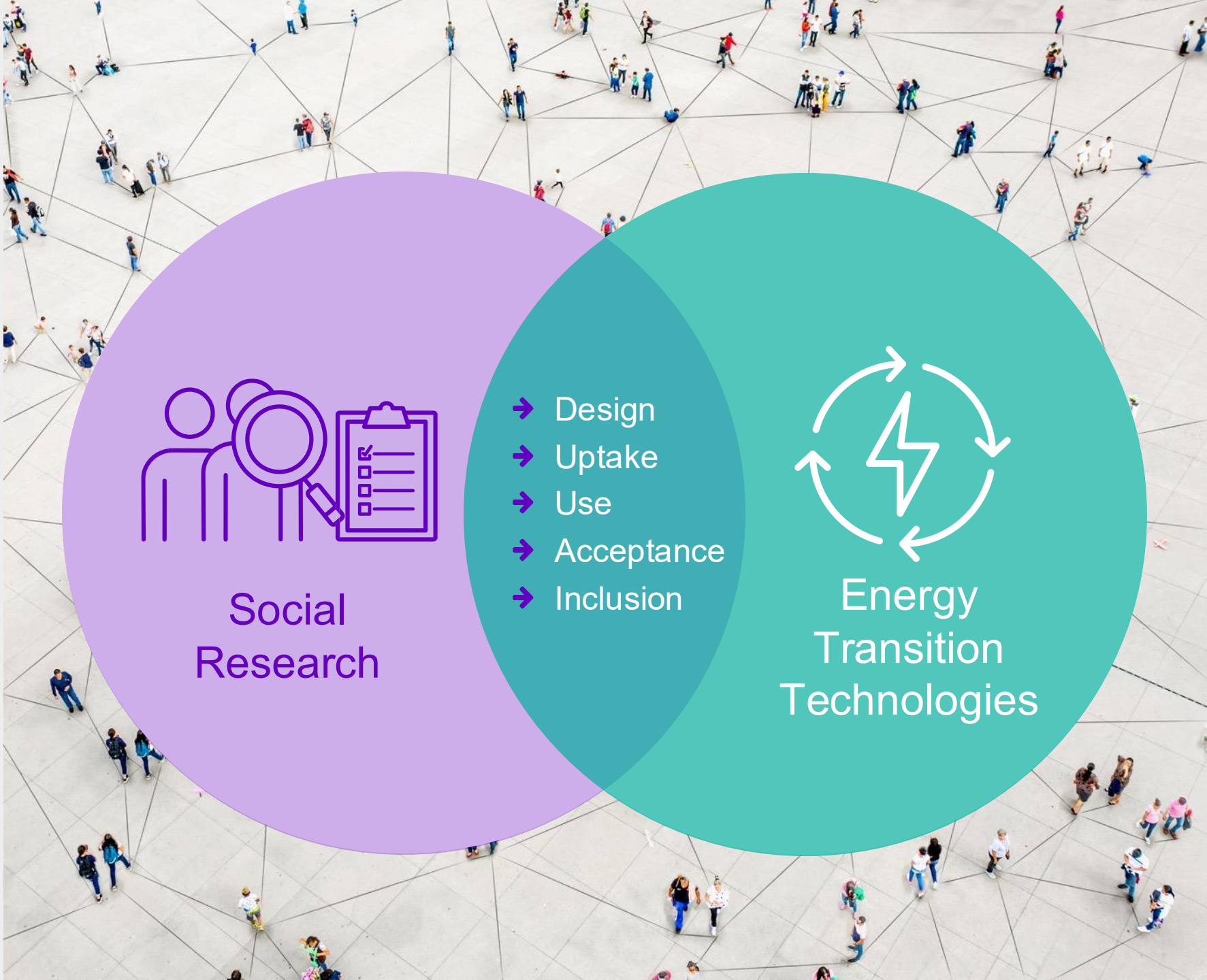
What we do

Social research to support energy transition policy goals



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