



Demand-side measures for environmental sustainability

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Dr. Shardul Agrawala

Head of the Environment and Economy Integration Division
Environment Directorate, OECD



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.... socio-cultural options, behavior and lifestyle changes supported by policies, infrastructure, and technology can help end-users shift to low-emissions intensive consumption, with multiple co-benefits.We will expand policy measures to promote the development of low- and zero-emissions products and services, and the achievement of energy savings including through digitalization and increasing incentives designed to influence consumer preferences.



Flashback: Growing Bananas in Aspen, Colorado



Built in 1982; 400m²; No Conventional Heating;
99% Passive Solar; Generates more
energy that it uses; Grows tropical fruit



Demand side management is not new – but has renewed urgency today

- The oil crises of the 1970s first peaked interest in both technologies and behaviours to reduce energy consumption
- But large scale systemic change beyond niche examples has proved elusive, while evidence of the importance of such measures in reducing environmental pressures continues to mount
- Some key questions in this context are:
 - What is the **potential** of behaviour change for climate change mitigation and other environmental challenges?
 - What are the documented **barriers** to behaviour change?
 - What kind of **policies** can address these barriers? Where is international coordination most useful?
 - How can demand-side measures be **scaled up** to match the urgency of climate action?



Environmentally Beneficial Behavioural Change

AVOID unnecessary consumption or impactful activity

- Reduce food waste
- Limit the use of heating or cooling

SHIFT consumption or activity towards less environmentally impactful alternatives

- Shift car use to walking or biking and public transport
- Share instead of buying new

IMPROVE the environmental performance of the activity in question

- Use battery electric vehicles, renewable energy



Many demand-side instruments are being implemented

Avoid

- Japan's *CoolBiz* campaign to reduce use of cooling
- United Kingdom's *Love Food Hate Waste* campaign
- France's ban on some national short haul flights

Shift

- Germany's *9-Euro Ticket* for public transport
- Italy's grant for bicycle purchases

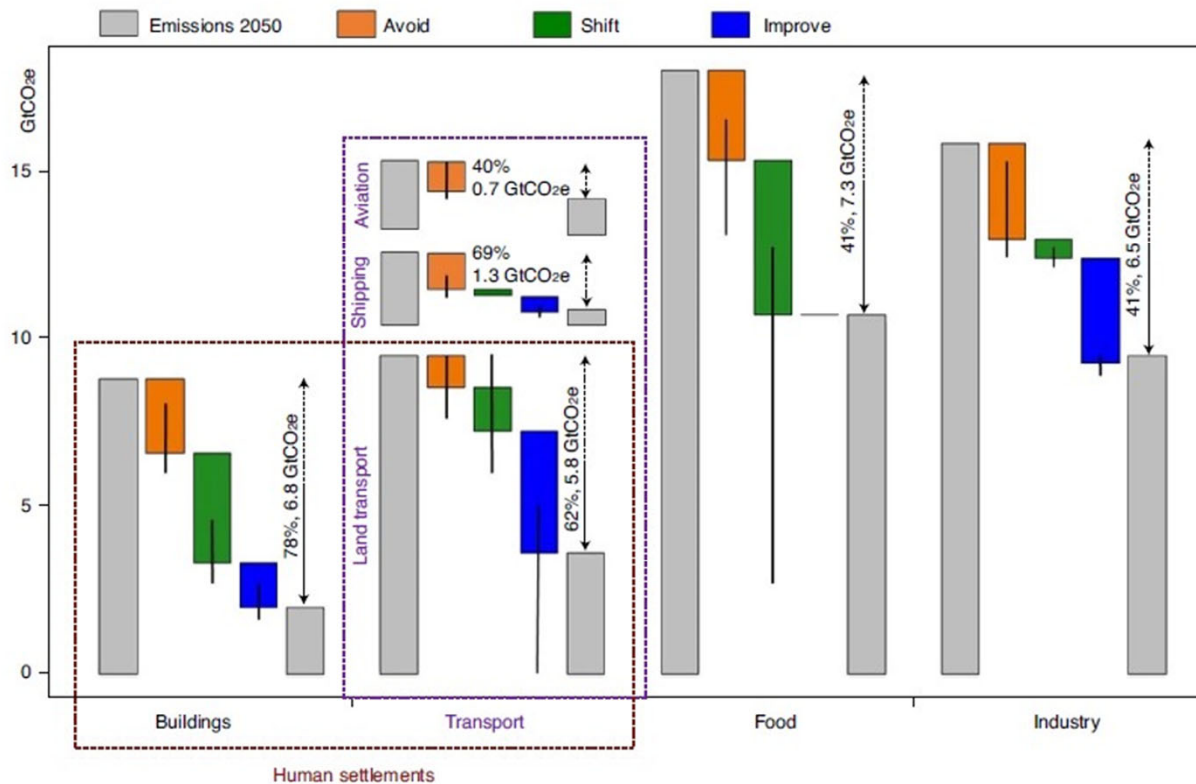
Improve

- Canada's Greener Homes grant for retrofits
- Fuel efficiency labels for new and used vehicles in the United States



But there is a lot of untapped potential of Demand Side Measures globally

- Behaviour changes can reduce 40-70% of GHG emissions across sectors (WG III, IPCC AR6)



Source: Creutzig et al., 2022 (updated from IPCC WGIII AR6)

In addition to reducing GHG emissions, such demand-side measures can have additional benefits for well-being, such as health or lower energy bills.

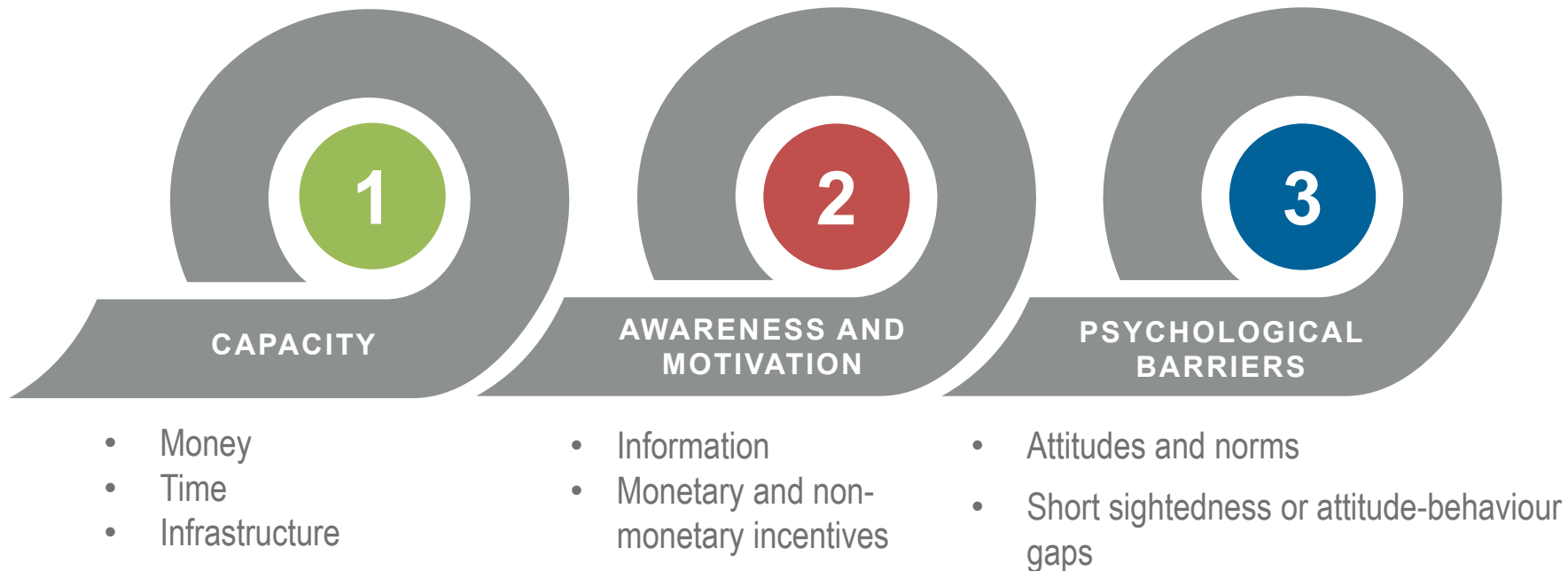


Evidence of the impact of demand-side measures on environmental objectives

- Reducing motorway speed limits by 10 km/h could deliver fuel savings of up to 12-18% and reduce air pollution (EEA, 2020)
- Adopting plant-based diets has the potential to reduce land needed for agriculture by 76% (Poore and Nemecek, 2018)
- Small charges on single-use plastic bags has been shown to reduce disposable bag use by over 40 percent (Homonoff, 2018)
- Reducing heating temperatures by 2°C could save 32 billion cubic metres of gas annually (Creutzig, 2022)



Why are we not seeing more demand-side measures?



→ Demand-side measures require behavioural change, enabling infrastructure and incentives for technology adoption

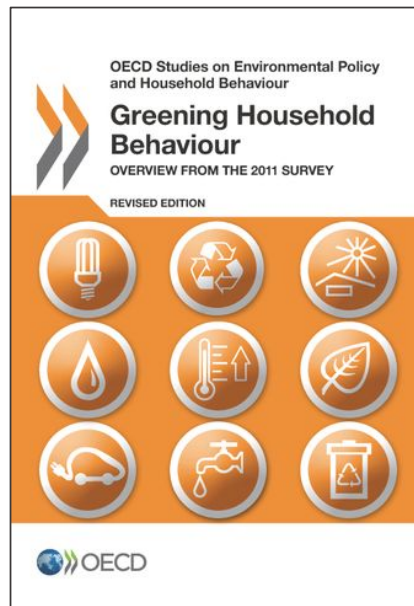


OECD work on Environmental Policies and Behaviour



2002

Conceptual Framework;
Sector case studies



2008; 2012; 2023

Large Scale, Multi-country
Household Surveys



~ 2010 onwards

Behavioural Insights,
Experiments and
Empirical Studies



Lowering thermostats for OECD employees: Why Defaults Matter

Energy Economics 39 (2013) 128–134



Contents lists available at SciVerse ScienceDirect

Energy Economics

journal homepage: www.elsevier.com/locate/eneco



Testing the effect of defaults on the thermostat settings of OECD employees

Zachary Brown*, Nick Johnstone, Ivan Haščič, Laura Vong, Francis Barascud

Organisation for Economic Cooperation and Development (OECD), 2 Rue André Pascal, 75116 Paris, France

We describe a randomized controlled experiment in which the default settings on office thermostats in an OECD office building were manipulated during the winter heating season, and employees' chosen thermostat setting observed over a 6-week period.

- 1 °C decrease in the default caused a reduction in the chosen setting by 0.38 °C, on average.
- Small decreases in the default (1°) led to a greater reduction in chosen settings than large decreases (2°)

Cited in ...



Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2017

RICHARD H. THALER: INTEGRATING ECONOMICS WITH PSYCHOLOGY

The Committee for the Prize in Economic Sciences in Memory of Alfred Nobel



Insights from OECD's Third EPIC Household Survey

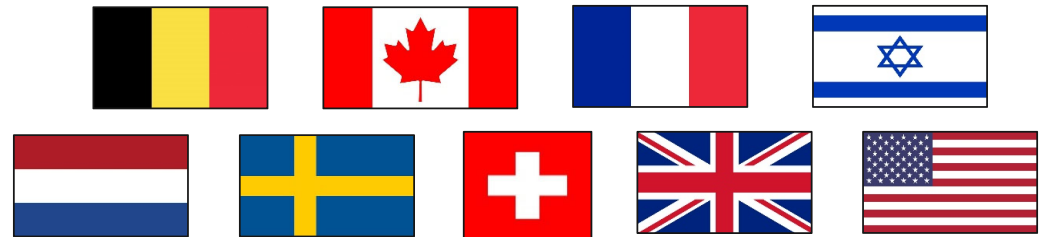
- Third round in 2022, previous rounds in 2008 and 2011

Contribution

Domains



Coverage: 17,670 respondents



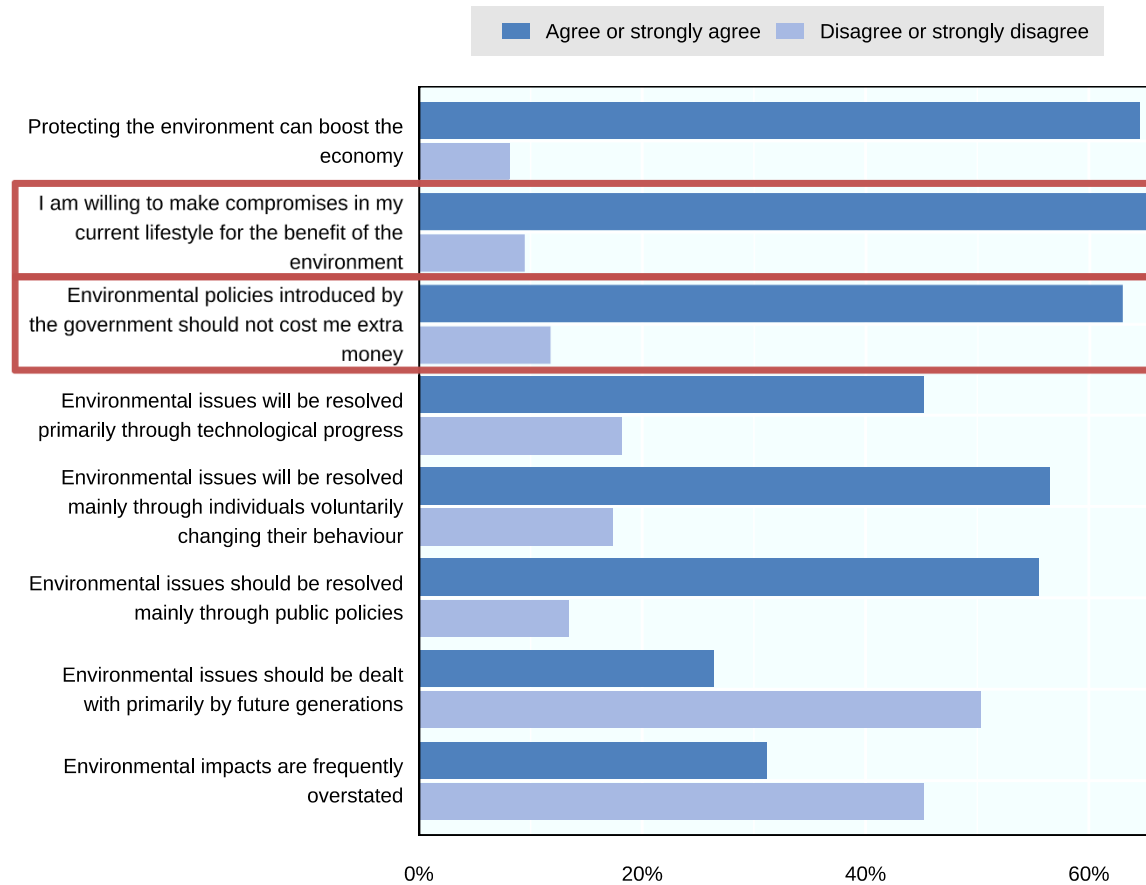
Research questions

- What drives environmentally relevant behaviours?
 - What is the role of different types of policy measures?
 - Do drivers differ across domains or country contexts?



Most respondents would make lifestyle compromises to benefit the environment if they do not cost them extra money

Attitudes towards environmental issues

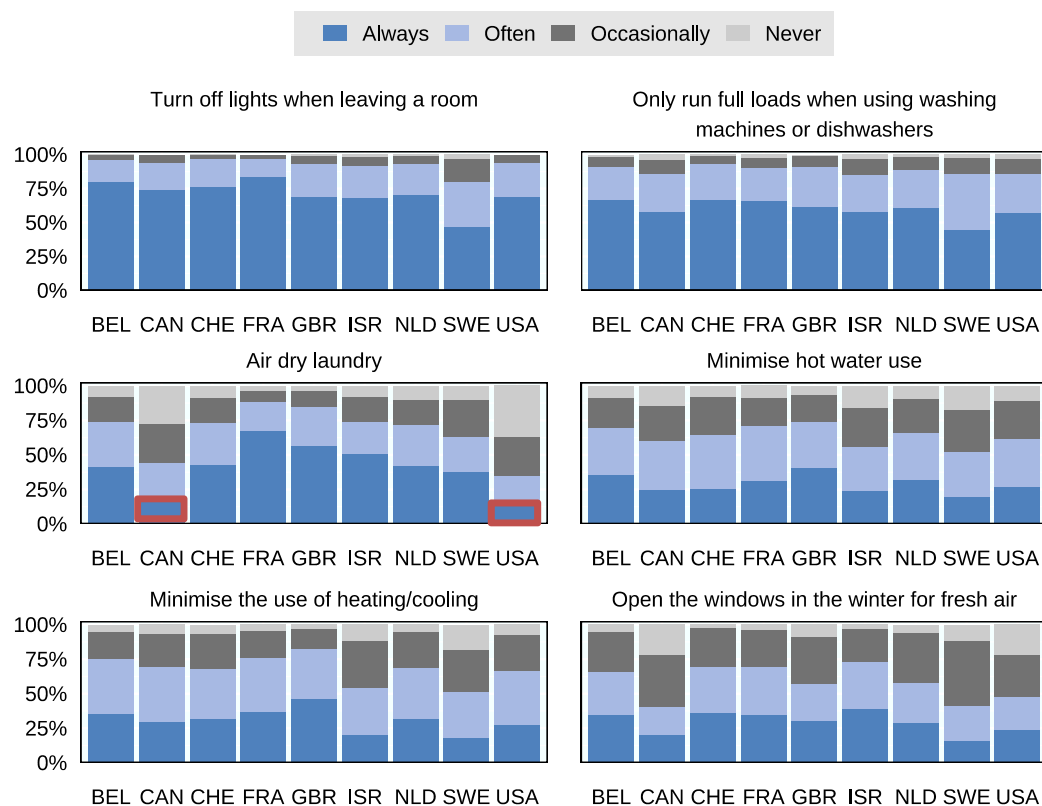


Source: OECD (2023, forthcoming), *Overview of Results from the Third Round of the OECD Environmental Policies and Individual Behaviour Change (EPIC) Survey*

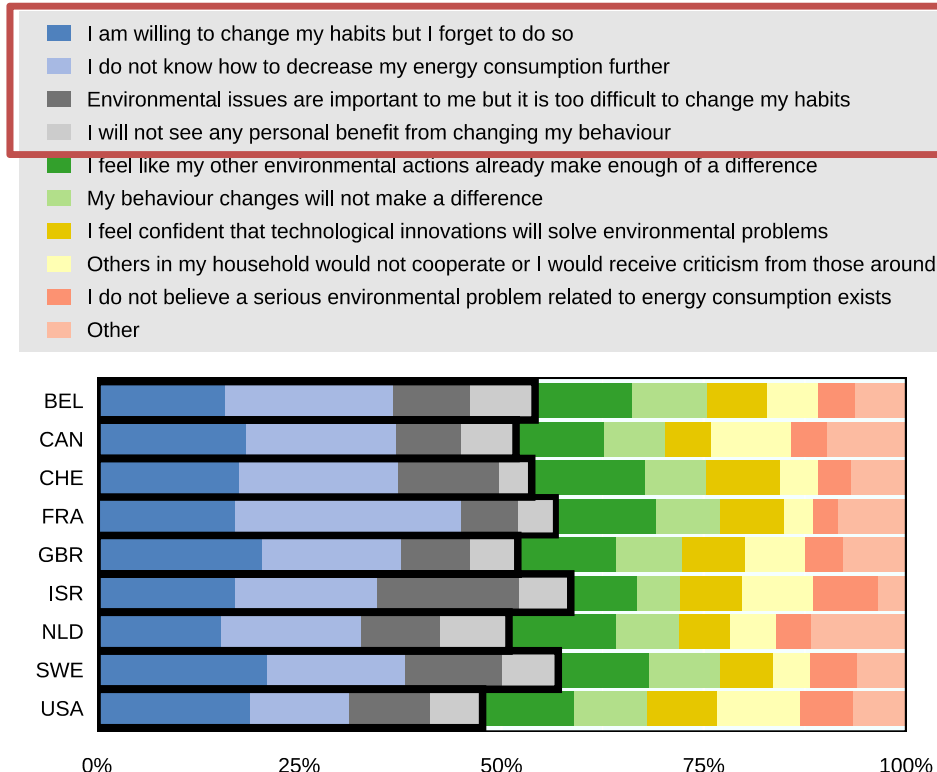


There is opportunity for policies (e.g. more information) to support *avoid* behaviours such as energy conservation

Turning off lights and running full loads are the most common energy conservation behaviours



Habit and lack of knowledge are holding back energy conservation actions



Source: OECD (2023, forthcoming), *Overview of Results from the Third Round of the OECD Environmental Policies and Individual Behaviour Change (EPIC) Survey*



Cross-cutting findings

Affordability and convenience are key household priorities

- E.g. uptake of green energy options, public transport use, sorting recyclable waste, food purchases

Environmental behaviour in one domain is associated with similar behaviour in other domains

- E.g. energy conservation and reduce/reuse behaviours, electric vehicle use and green electricity options

Environmental concern does not play a role in some behaviours

- E.g. conventional car use and red meat consumption



Final Remarks

- Demand-side management is central to an effective response to the climate and other environmental crises.
- Recent crises have demonstrated the public's capacity for behavioral change may be much higher than previously envisaged
- Governments should use this opportunity to scale up action
 - increasing policy stringency for avoid policies and increasing the affordability and availability of sustainable options
 - G7 can lead the way by raising the profile and facilitating coordination



Thank You!

shardul.agrawala@oecd.org