

Mind Shift, Green Lift: Six Behavioural Science Trends for Environmental Policy

OECD Public Governance Policy Papers



This work was approved and declassified by the Public Governance Committee on 11.11.2024.

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission Directorate-General for Research and Innovation. Neither the European Union nor the granting authority can be held responsible for them.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Photo credits: Cover © Iryna Inshyna/Shutterstock.com

© OECD 2025



Attribution 4.0 International (CC BY 4.0)

This work is made available under the Creative Commons Attribution 4.0 International licence. By using this work, you accept to be bound by the terms of this licence (<https://creativecommons.org/licenses/by/4.0/>).

Attribution – you must cite the work.

Translations – you must cite the original work, identify changes to the original and add the following text: *In the event of any discrepancy between the original work and the translation, only the text of original work should be considered valid.*

Adaptations – you must cite the original work and add the following text: *This is an adaptation of an original work by the OECD. The opinions expressed and arguments employed in this adaptation should not be reported as representing the official views of the OECD or of its Member countries.*

Third-party material – the licence does not apply to third-party material in the work. If using such material, you are responsible for obtaining permission from the third party and for any claims of infringement.

You must not use the OECD logo, visual identity or cover image without express permission or suggest the OECD endorses your use of the work.

Any dispute arising under this licence shall be settled by arbitration in accordance with the Permanent Court of Arbitration (PCA) Arbitration Rules 2012. The seat of arbitration shall be Paris (France). The number of arbitrators shall be one.

Abstract

Human behaviour is central to the green transition: achieving a sustainable, low-carbon economy requires behavioural changes from individuals, businesses and governments. Governments play a pivotal role in driving these changes and fostering sustainable behaviours across the economy. This policy paper identifies six key trends illustrating how behavioural science is shaping public policy to accelerate the green transition. Drawing on over 100 case studies, it provides policymakers with a practical roadmap to integrate behavioural science into environmental policy. The trends include embedding behavioural science throughout the policy cycle, assessing public acceptability of green reforms, enhancing citizen participation in environmental policies, strengthening resilience against climate misinformation and increasing demand for sustainable goods and services.

Acknowledgements

This policy paper was developed by Mia Drazilova, Chiara Varazzani, Haris Khan, Pradnaya Pathak, and Benjamin Olshin (OECD). This work was completed under the leadership of Chiara Varazzani, Lead Behavioural Scientist, OECD, Marco Daglio, Head of the Observatory for Public Sector Innovation, OECD, Carlos Santiso, Head of the Innovative, Digital and Open Governance Division (INDIGO), OECD and the overall steering of Elsa Pilichowski, Director of the Public Governance Directorate, OECD.

The OECD Secretariat extends its gratitude to the many colleagues who provided peer review comments and feedback on this work, including Joanne Caddy (OECD), James Drummond (OECD), Johannes Klein (OECD), Elina Smetanina (OECD), Simon Callewaert (OECD), Capucine Kerboas (OECD), Killian Raiser (OECD), Cian Montaque (OECD), David Jonason (OECD), Nawel Djaffar (OECD), Mauricio Mejia Galvan (OECD), Robert Addison (OECD) and Andrea Uhrhammer (OECD).

We would also like to thank the members of the OECD Network of Behavioural Insights Experts in Government for their detailed and timely feedback during the consultation stages. Within the network, a special thank you goes to the informal working group on Citizen Climate Attitudes and Behaviours, which played a key role in defining the trends outlined in this paper.

We are especially grateful to the government officials who provided detailed comments on the paper, including Sabrina Artinger and Malte Petersen (Federal Chancellery of Germany); Kieran Findlater, Sarah Wall, and Vivian Li (Canada Privy Council Office); Sharon Rosenrauch, John Reynolds and Amelia Garnett (Department of Climate Change, Energy, the Environment and Water, Australia). Finally, we would like to extend our thanks to Professor Lucia Reisch, who shared her invaluable perspective during the review stage.

This policy paper contributes to the OECD Horizontal Project on Climate and Economic Resilience (Net Zero+). For more information on the OECD's Horizontal Project on Climate and Economic Resilience, please visit: <https://www.oecd.org/en/about/programmes/net-zero-building-climate-and-economic-resilience.html>

Table of contents

Abstract	3
Acknowledgements	4
Executive summary	6
1 Introduction	8
The green transition is a behavioural transition	8
Behavioural science as an enabler of societal transformation	9
2 Trends in applying behavioural science to policies for the green transition	10
Trend 1: Behavioural science informs environmental policies at every stage of the policy cycle.	11
Trend 2: Governments leverage behavioural science in climate adaptation efforts.	14
Trend 3: Governments use behavioural science to predict and account for public acceptability of green reforms.	17
Trend 4: Governments use behavioural science to boost citizen participation in environmental policies.	21
Trend 5: Governments use behavioural science to increase the demand for sustainable goods, services and technologies.	26
Trend 6: Governments harness behavioural science to build resilience to climate misinformation.	29
3 Moving forward	33
1. Leveraging behavioural science to enable positive social tipping points.	33
2. Leveraging behavioural science to improve government decision-making and operations in green agendas.	35
Moving from insights to action	36
References	37

Executive summary

Human behaviour is at the core of the green transition: transitioning to a sustainable, low-carbon economy hinges on behavioural shifts across all individuals, businesses and governments. Individuals must adopt energy-efficient technologies and reduce carbon-intensive consumption, while businesses must integrate sustainable practices.

Governments can help drive these shifts and shape sustainable behaviours across all levels of the economy – from corporations and communities to individuals and policymakers. Using a range of policy tools, such as regulations, financial incentives and public campaigns, they shape the choices of businesses and individuals, guiding behaviour toward long-term sustainability.

Behavioural science is key to making environmental policies more effective. Understanding how people behave can boost policy impact, improve adoption of green behaviours, strengthen public support and maximise the likelihood that policies achieve their desired behavioural outcomes, thereby reducing unnecessary expenditure of public funds. Applying behavioural science to both supply-side and demand-side policies enables governments to drive immediate environmental action while fostering lasting behavioural change.

The OECD has identified six key trends in which behavioural science is driving the green transition in public policy. Based on an analysis of more than 100 case studies, these trends provide a roadmap for policymakers looking to embed behavioural science into their environmental policies.

Six key trends

Trend 1: Behavioural science informs environmental policies at every stage of the policy cycle. Governments are using behavioural science throughout the policy cycle – from problem identification to design, implementation and evaluation. This approach leads to more targeted and effective environmental policies grounded in real-world human behaviour.

Trend 2: Governments leverage behavioural science in climate adaptation efforts. Behavioural science is increasingly used in climate adaptation efforts, helping governments enhance policy effectiveness and secure stakeholder engagement. Monitoring and evaluating behaviour allows for better integration of adaptive measures across sectors, from businesses to households.

Trend 3: Governments use behavioural science to predict and account for public acceptability of green reforms. Understanding public perceptions is critical for effective environmental policies. Governments increasingly rely on behavioural data to understand citizens' climate knowledge, support for reforms and behaviours. This data helps shape clearer, more accessible policies aligned with public values, fostering greater trust and reciprocity between citizens and the government. By refining policy design and communication based on this data, governments can boost public engagement, support and encourage sustainable behaviours, improving the integrity and effectiveness of green reforms.

Trend 4: Governments use behavioural science to boost citizen participation in environmental policies. Governments are increasingly using behavioural science to enhance citizen participation in environmental policymaking. By leveraging behavioural science, they aim to understand what motivates citizen participation, strengthen trust between citizens and the government, reduce barriers and make policy processes more inclusive.

Trend 5: Governments use behavioural science to increase the demand for sustainable goods, services and technologies. Demand-side policies, which influence technology choices and consumption patterns, are essential for advancing the green transition alongside supply-side measures. Governments increasingly use behavioural science to understand and shape the choices of consumers, users and citizens. This understanding informs policies that promote pro-environmental behaviours, reduce unsustainable consumption and encourage the shift towards sustainable goods, services and technologies.

Trend 6: Governments harness behavioural science to build resilience to climate misinformation. The spread of climate misinformation can undermine efforts to promote individual and collective actions for the green transition. To counter this, governments are increasingly applying behavioural science to build resilience against climate misinformation. This involves measuring susceptibility to misinformation, identifying factors driving its spread and developing behaviourally-informed strategies to prevent its occurrence and mitigate its impact.

What can governments do?

While these trends vary in prevalence and development, they highlight actions governments can take to accelerate the green transition:

Understand and address attitudes and behaviours towards sustainability. By identifying drivers and barriers to sustainable practices, policies informed by real behaviour that the public is more likely to engage in and comply with can be developed.

Incorporate behavioural considerations throughout the policy cycle. Define policy problems, anticipate responses and build a robust evidence base using behavioural science data. Leverage this data to assess, fine-tune, implement and evaluate environmental policies effectively.

Implement demand-side strategies targeting consumers, users and citizens to drive sustainable behaviours. Design interventions informed by behavioural science to promote sustainable behaviours and create a self-reinforcing cycle of change. These actions can shape consumer habits and drive the green transition, producing a ripple effect across society.

Prioritise public involvement, especially for those disproportionately affected by climate change: Use behavioural science to engage a range of stakeholders, building societal support and trust. Design and test interventions with behavioural science and citizen feedback to ensure inclusive, long-term decision-making.

Integrate behavioural science to refine decision-making and policy processes within government. Reduce cognitive biases, optimise governance tools and enhance policy effectiveness through robust monitoring and behavioural evaluation. Ensure adaptive, behavioural, data-driven approaches to emerging challenges and long-term sustainability.

Create conditions for positive social tipping points to accelerate the green transition: Governments should maximise opportunities to accelerate the green transition by creating enabling conditions for positive climate social tipping points. By leveraging behavioural science, governments can identify critical moments when change is possible and create conditions that support behavioural shifts and sustainable transitions.

1 Introduction

The green transition is a behavioural transition

To reduce the world's greenhouse gas (GHG) emissions and achieve sustainable levels of natural resource use, an economic and societal transition is required at an enormous scale and a rapid pace (IPCC, 2023^[1]). International research underscores the need for individual and societal behaviour change to transition to more sustainable economic models successfully. While supply-side and technological solutions have traditionally been the focus of efforts to reduce carbon emissions, considering behavioural science to drive behavioural change is equally important. By leveraging behavioural science to engage individuals, businesses, and government decision-makers, it is possible to accelerate the adoption of sustainable alternatives, decrease demand for carbon-intensive goods and services, optimise resource use, achieve cost savings, and bridge the gap between effective policy design and implementation.

- Individuals and households can significantly reduce global GHG emissions through lifestyle and consumption changes, which are central to demand-side policies. These policies aim to shift consumption patterns and behaviours, particularly in carbon-intensive sectors, to meet environmental goals like reducing emissions. The Intergovernmental Panel on Climate Change (IPCC) estimates sustainable consumption and technology adoption could cut emissions by 40–70% by 2050 (Creutzig et al., 2023^[2]). Individuals can play multiple roles in this transition: as consumers influencing demand for sustainable products; as users interacting with infrastructure; and as citizens supporting policies and combating misinformation. Behavioural science helps policymakers identify impactful behaviours, understand barriers and motivators, and design effective interventions while also considering individual differences like gender that affect consumption preferences toward net-zero goals (Strumskyte, Ramos Magaña and Bendig, 2022^[3]).
- Businesses play a central role in the systems needed for the green transition, especially in high-impact sectors like energy and transport. Together, they account for 51% of emissions across the OECD member countries. While business decisions often follow economic incentives, businesses consist of individuals with behavioural barriers and biases, just like consumers. Behavioural science has been used to promote sustainable behaviours in areas such as hiring, team building, and "green employee behaviour" (Decrinis et al., 2023^[4]). Behavioural science can further enhance the design and communication of government policies aimed at businesses, ensuring they address the role high-impact sectors play in the green transition (OECD, 2024^[5]).
- Governments consist of various decision makers, including leaders, public servants, employees, and contractors. Each of them plays a crucial role in creating effective and impactful policies. Government leaders can consider how changes to their policymakers' processes, systems, incentives and broader decision-making practices might help them identify and implement policies and programmes that address long-term sustainable objectives, while integrating behavioural science approaches throughout their organisations.

Human behaviour is central to environmental policymaking, influencing both policy (decisions by policymakers) and design and delivery (how individuals, businesses, and others implement and adopt sustainable practices) (OECD, 2023^[6]). The role of behavioural science in addressing climate change was recognised in the OECD Action Plan on Governing Green, endorsed at the OECD Public Governance Ministerial Meeting in November 2022. Additionally, the March 2022 OECD Ministerial Declaration called for research into behaviour change to promote sustainable consumption and production (OECD, 2022^[7]). This meeting underscored the need for innovative and whole-of-government approaches to address climate change. Separately, in March 2022, the OECD Ministerial Declaration on a Resilient and Healthy Environment for All called for research on citizens' behaviour change to promote sustainable consumption and production (OECD, 2022^[8]).

Behavioural science as an enabler of societal transformation

To meet the goals of the Paris Agreement, societal transformation is essential, requiring a shift away from high-carbon lifestyles and unsustainable consumption patterns (Moore et al., 2021^[9]). This calls for innovative policy applications that transform societies and economies, including behavioural change (BIT, 2023^[10]). Central government bodies are crucial in facilitating the adoption of advanced practices, which are essential for building trust and enhancing democratic resilience, effectively addressing issues like climate change (OECD, 2024^[11]).

Besides seeking to change individual attitudes and behaviours to reduce carbon emissions, governments need to foster collective support for the transformation of market dynamics on both sides of supply and demand. Support from energy producers, governments, educators and marginalised groups is crucial for a lasting green transition (Moore et al., 2021^[9]). Reaching net zero involves reshaping complex systems. Transforming the food system, for instance, requires adopting sustainable agricultural practices, reducing food waste and changing dietary habits. Transforming the transportation sector requires adopting low-emission vehicles and overcoming behavioural barriers around mobility and car ownership. A pluralistic, multi-level approach that considers individual behaviours and their interaction with social, technical and physical environments is most effective (Kaufman et al., 2021^[12]).

Beyond traditional policy tools like fiscal incentives and regulations, behavioural science in public policy provides a deeper understanding of decision-making, ensuring policies are more aligned with real-world behaviours. Behavioural science helps governments effectively engage citizens, foster public trust and design policies that are perceived as fair and inclusive. Recognised at the OECD Public Governance Ministerial Meeting in 2022, citizen and stakeholder participation is essential for building trust in public institutions. Governments should promote two-way dialogue and meaningful citizen participation in climate decision-making through proactive, inclusive policies that acknowledge the interconnectedness of environmental challenges (OECD, 2022^[7]). They should also promote ways to enhance democratic resilience to address climate change effectively (OECD, 2024^[11]).

Learning how behavioural science has been applied in other jurisdictions not only helps governments align initiatives, coordinate actions and design adaptable green policies for long-term sustainability, but also fosters a common understanding of effective strategies and reduces unnecessary resource expenditure by building on tried-and-tested approaches. This overview of trends aims to guide future applications of behavioural science in public policy, driving people-centred approaches toward achieving net zero.

2 Trends in applying behavioural science to policies for the green transition

This policy paper discusses how pivotal trends in the policy use of behavioural science can help governments catalyse the people-centred transformations needed to reach net-zero goals. The OECD has analysed over 100 initiatives across 30 OECD member and partner countries that apply behavioural science to environmental policies¹. The policy paper has been further enriched with insights from experts and practitioners who incorporate behavioural science when designing, implementing and evaluating environmental policies. Various sources were consulted for this analysis of recent applications of behavioural science to environmental policies:

- A dedicated "Call for Projects: Behavioural Science for Green Transitions" was conducted in April 2024, through which countries submitted case studies and projects leveraging behavioural science for the green transition.
- The OECD's Behavioural Science Knowledge Hub includes a collection of projects that leveraged behavioural science for the green transition conducted between 2021 and 2024. Continuously expanding with submissions of behavioural science projects from around the world, this platform enables policymakers to explore and contribute to the evolving landscape of behavioural science across various policy domains.
- The Working Group on Citizens' Climate Attitudes and Behaviours, part of the OECD Network of Behavioural Science Experts in Government, helped collect case studies for analysis and consult on and prioritise the trends presented in this policy paper.
- Academic and grey literature on the application of behavioural science in environmental policies and applications from private and public organisations was consulted for the purpose of this report.

The case-study analysis was organised using a top-down approach that classified and verified cases based on significant topics identified through exchanges with the network, existing research and previous OECD work, and a bottom-up approach that grouped examples around emerging themes from the cases. Case studies illustrating the six trends in this policy paper were chosen for their novelty and human-centricity. These trends were also established and confirmed by the network. All selected case studies have at least begun implementation. This report does not individually identify every effort included in the analysis, but many projects and case studies are accessible on the OECD Behavioural Science Knowledge Hub.

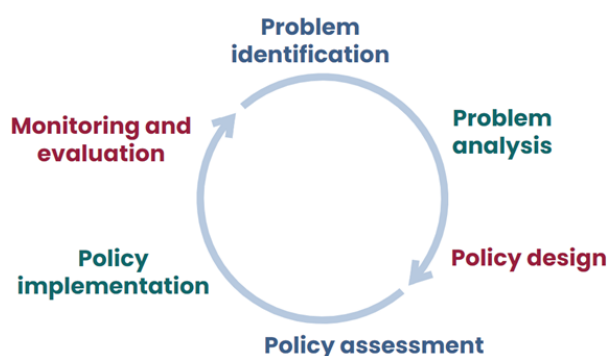
¹ Learn more about some of these projects here: https://oecd-opsi.org/bi-projects/?_bi_policy_area=environment.

Trend 1: Behavioural science informs environmental policies at every stage of the policy cycle.

About this trend

Governments worldwide are increasingly leveraging behavioural science at every stage of the policy cycle (see Figure 1), from problem identification and analysis to policy design, assessment, implementation and evaluation (Lourenço et al., 2016^[13]; OECD, 2024^[14]; OECD, 2017^[15]). By applying behavioural science throughout the process, policymakers enhance the integrity of policymaking by ensuring decisions are grounded in evidence and informed by real-world behaviours. Behavioural science helps policymakers develop effective solutions and enhance policy quality and impact. Traditionally applied late in the process – implementation and evaluation – due to its focus on experimentation, particularly through randomised controlled trials (RCTs), behavioural science has driven many governments to set up dedicated behavioural science units (OECD, 2017^[15]; Hallsworth, 2023^[16]). These units help policymakers develop more effective solutions and ensure that policies have a greater impact (OECD, 2024^[14]). As the practice matures, behavioural science is applied earlier in the cycle to enhance the design and assessment of policies, define problems, reassess actions and drive systemic change (BIT, 2023^[10]; Hallsworth, 2023^[16]).

Figure 1. The policy cycle



Source: (OECD, 2024^[14])

Why this trend matters

In the past, behavioural science often used specific tools to adjust existing programs rather than taking a holistic approach to policymaking (Frame, Milfont and More, 2023^[17]). Interventions aimed at promoting environmental sustainability often encouraged individual behaviour changes, such as more precise waste sorting or adopting sustainable eating habits (Beaumais et al., 2024^[18]; BIT, 2020^[19]). However, limiting the application of behavioural science to individual behavioural changes in specific contexts restricts its potential to drive systemic change and achieve desired outcomes. By the time policies reach the implementation and evaluation stages, critical decisions about policy architecture and problem definitions have already been made (OECD, 2024^[14]). Senior leaders can play a crucial role in driving the uptake of behavioural science in policymaking. By advocating for a people-centred approach and requesting robust evidence base early on, behavioural science becomes a core component of policy design (OECD, 2024^[14]).

Involving behavioural science experts from the beginning of the policy cycle ensures that policies are grounded in a realistic understanding of human behaviour. Integrating behavioural science across the whole policy cycle provides policymakers with a comprehensive approach to promoting sustainable behaviours (Frame, Milfont and More, 2023^[17]; Diaz Del Valle, Jang and Wendel, 2024^[20]).

Summary of evidence

Understanding human behaviour is essential for identifying climate challenges and designing effective policies. Behavioural science helps **identify key policy problems** and challenges and develop realistic, actionable solutions (Chater N., 2022^[21]). Recognising decision-making patterns and cognitive biases helps tailor policies to maximise their likelihood of achieving intended outcomes and aligning with real-world behaviours (Lourenço et al., 2016^[13]; OECD, 2024^[14]). An example is Canada's Program of Applied Research on Climate Action (PARCA), which harnesses behavioural science and policy analysis to promote climate action and environmental protection in Canada (see Box 1).

Box 1. Harnessing behavioural science and policy analysis to promote climate action in Canada

The Program of Applied Research on Climate Action (PARCA) in Canada, involving Impact Canada within the Privy Council Office, Environment and Climate Change Canada, and Natural Resources Canada, integrates behavioural science with policy analysis to advance climate action. PARCA supports initiatives throughout the policy cycle by generating evidence on Canadian attitudes and behaviours towards climate change, providing context for policy design and implementation. PARCA applies behavioural and social science theories to inform policies, programmes and communications through research, including problem identification, analysis, knowledge translation and testing behaviourally-informed solutions. Research activities include national surveys, in-depth studies, and in-field testing, examining attitudes and behaviours related to climate issues. This research identifies drivers and barriers to systemic issues like climate misinformation and trust in government, organisational challenges like GHG emissions reduction and climate adaptation and individual challenges like adopting eco-friendly technologies and reducing plastic use. Key findings highlight intention-action gaps as well as barriers like awareness and affordability of climate actions. PARCA's evidence guides policymakers in developing targeted strategies to overcome these barriers and leverage drivers, ensuring that policies and programs are designed and implemented more effectively.

Source: (Impact Canada, 2024^[22])

Analysing the policy problem and the targeted behaviours helps identify leverage points and recognise that behavioural changes can have broader systemic effects (Hallsworth, 2023^[16]). For example, the OECD BASIC (OECD, 2019^[23]) and LOGIC (OECD, 2024^[14]) frameworks allow applying behavioural science throughout the entire policy cycle, from initial design to final implementation. It also facilitates behavioural analysis of policy problems. Such frameworks help policymakers break down broad policy goals, such as 'reducing energy use,' into specific strategic domains and actionable behaviours. These behaviours can then be prioritised based on criteria such as importance, ethics, impact and feasibility, enabling policymakers to select the most relevant behaviours to target effectively.

Behavioural science principles, such as loss aversion and choice architecture², can help **design policies** that encourage people to adopt or continue sustainable behaviours, like reducing the carbon footprint of their grocery shopping (Shrum, 2021^[24]; Knobloch, Huijbregts and Mercure, 2019^[25]; Panzone et al., 2021^[26]). Various behavioural design levers, such as changes to the physical environment, default policies, social norms, comparisons, feedback mechanisms, rewards and goal-setting, can be applied to environmental policies in the design phase (OECD, 2017^[27]). An example from pension schemes demonstrates how default options influence behaviour: countries like Australia, Italy, New Zealand, the United Kingdom and the United States, which adopted automatic enrolment, saw participation rates rise

² Loss aversion is the "tendency to prefer avoiding losses to acquiring equivalent gains" and choice architecture is the "deliberate crafting of decision-making environments" (The Decision Lab, 2024^[171])

significantly. This strategy, informed by default bias, highlights the effectiveness of behavioural science in policy design – lessons that can be applied to environmental policies as well (Lunn, 2014^[28]).

Incorporating behavioural science methods, such as experimentation, data collection and analysis, into **policy assessment** provides an evidence-based understanding of policy effectiveness (OECD, 2024^[14]). Small-scale tests and pilot projects allow policymakers to identify and mitigate potential risks before broader implementation. Focusing on interventions with the assessed highest probability of success, behavioural science methods help optimise public funds, leading to responsible and effective policymaking (OECD, 2024^[14]).

Behavioural science supports **policy implementation** by identifying effective methods and enhancing programmes for maximum impact and adoption, while also contributing to cost-effective policy solutions. Behavioural biases can hinder stakeholder participation, obstructing behaviour change. Understanding these drivers is crucial for successful policy implementation (OECD, 2023^[6]). To effectively tackle these challenges, behavioural scientists guide the selection of policy instruments by considering their intended effects and available options, such as legal, regulatory, rights-based, economic, financial, social and cultural tools (IPBES, 2024^[29]; Nova and Lades, 2022^[30]). By selecting and adapting these instruments, they help ensure that policies are effectively implemented and achieve their intended goals.

Policy evaluations using behavioural science can help establish whether existing climate-change policies are achieving their stated policy objectives (Lourenço et al., 2016^[13]). An example of behavioural science applied at every stage of the policy cycle, including the evaluation stage, comes from France, where a “repairability” index was developed for electronic products to promote sustainable consumer behaviour (see Box 2). When policymakers monitor the effects of policies over time, they can also better understand whether the policy has only a one-time effect or if it has contributed to a sustained change in behaviour (OECD, 2017^[27]).

Regular evaluations can help identify any barriers within organisations that systematically hinder sustainable actions, like sludge, ‘excessive or unjustified’ frictions that make it harder for people to follow through on their intentions and achieve their goals. Sludge imposes psychological costs on citizens as they complete a process through the imposition of unnecessary complexity, confusion and stress which slow people down, give them a poor experience or prevent them from engaging at all (OECD, 2024^[31]).

Systematically incorporating an understanding of human behaviour into **impact assessments** can greatly benefit policymakers (Lourenço et al., 2016^[13]). It provides them with a clearer understanding of the behavioural issues they aim to address and the impacts of policy interventions so that they can identify the most cost-effective solutions and minimise risks (OECD, 2024^[14]). Impact assessments should also account for individual differences, such as gender-based environmental behaviours and mobility needs, to ensure equitable and effective policy design. This process ensures that environmental policies remain relevant and effective (Strumskyte, Ramos Magaña and Bendig, 2022^[3]).

Box 2. Behavioural Science at every stage of the policy cycle in France

A “repairability” index for electronic products to promote sustainable consumer behaviour was developed by the Behavioural Science Team at France’s Interministerial Directorate for Public Transformation (DITP). In collaboration with the Department of the Commissioner-General for Sustainable Development, the team first analysed and identified the policy problem – 62% of consumers discard broken electronic devices without considering their repair options, a behavioural pattern which is often encouraged by industry. The team applied behavioural science to help develop and contribute to policies addressing this issue. A variety of labels to improve consumer choices was designed and tested. An indicator of the repairability of laptops was developed to help consumers make informed

purchasing decisions based on how repairable their devices would be. The clarity and impact of the indicator on consumers' purchase decisions was evaluated and the most successful labels were implemented. Two years after the policy was successfully implemented, its impact was evaluated and two main results were observed: first, online consumers opt more often for laptops with higher repairability scores; second, market data revealed that a greater number of laptops with a higher repairability score were brought to market. These results show that the behavioural intervention affected both the supply and demand sides of consumption.

Source: (French Ministry of Ecological Transition and Territorial Cohesion, 2021^[32])

Trend 2: Governments leverage behavioural science in climate adaptation efforts.

About this trend

As global temperatures rise and extreme weather events like heavy rainfall, heatwaves, flooding and landslides become frequent, governments are turning to behavioural science to enhance their climate adaptation strategies. The changing climate is disrupting ecological systems and influencing the well-being of people living in affected areas (Klein, Schipper, & Dessai, 2005). Effective adaptation requires not only government intervention but also sustained engagement from local communities, citizens, governments at all levels and the private sector. To foster adaptive behaviours, governments are using behavioural science to better understand and monitor factors influencing people's adaptive decisions and behaviours. By integrating behavioural science, they can design adaptation strategies that promote sustainable change, enhance effectiveness and ensure broader stakeholder participation (IFAD, 2022^[33]).

Why this trend matters

Despite efforts to limit global warming within the target of 1.5°C to 2°C, mitigation is falling short (IPCC, 2023^[11]), making adaptation increasingly urgent – particularly as climate impacts worsen for communities already facing severe climate-related challenges. Adaptation requires shifts in behaviour, such as changing agricultural practices (e.g. changing crops or crop rotations), reducing water use and preparing for extreme weather events (IPCC, 2023^[11]). However, adaptation strategies must recognise that individuals do not always act in their own best interests or respond rationally to climate risks. Clear communication and empowerment are crucial for driving effective adaptation. Monitoring and evaluating behaviour ensures that adaptation efforts resonate with individuals and communities (Walawalkar and Hermans, 2022^[34]).

Behavioural biases and social influences play a critical role in shaping how people respond to adaptation strategies. Integrating behavioural science principles into adaptation strategies can enhance the effectiveness of these strategies and ensure broader public engagement (Taberna et al., 2023^[35]). Limited financial resources further constrain adaptation efforts, especially in developing countries. Adaptation costs could rise to USD 300 billion annually (IFAD, 2022^[33]). In these contexts, applying behavioural science is essential for overcoming barriers such as mistrust and low perceived risk, optimising resources and encouraging more impactful adaptation actions.

Summary of evidence

While government actions have been central to climate adaptation, they are insufficient on their own. Adaptation requires engagement from all sectors, including the private sector, civil society and citizens and households. Understanding what motivates or hinders adaptive behaviours is therefore essential (Valkengoed and Steg, 2019^[36]). Even when adaptation measures are available and cost-effective, individuals in high-risk areas frequently fail to adopt them (Botzen, Deschens and Sanders, 2019^[37]).

Optimism bias leads people to underestimate risks; status quo bias causes resistance to change and loss aversion makes them prioritise short-term costs over long-term benefits. Adaptation decisions frequently involve immediate costs for uncertain future benefits (Bernedo and Ferraro, 2016^[38]). For example, investing in flood defences or energy-efficient homes today can reduce future damage and costs, even if the timing of those benefits remains uncertain.

Key psychological adaptation factors include self-efficacy, outcome-efficacy, norms, negative effects (emotions) and beliefs. Self-efficacy, the belief in one's ability to adapt, plays a critical role in motivating adaptive behaviour (Grothmann and Patt, 2005^[39]). Individuals who believe they can adapt are more motivated to act and succeed to adapt (Bechtoldt et al., 2021^[40]). Outcome efficacy, the belief that adaptation will be effective, also influences whether one adapts. Lower perceived personal responsibility negatively influences adaptive behaviour (Valkengoed and Steg, 2019^[36]). Negative emotions such as guilt, anger or fear can also influence adaptation behaviour (Bechtoldt et al., 2021^[40]).

Box 3. Adapting to the increasing problem of severe drought in Australia

From 2017 to 2019, Australia experienced a severe drought, particularly in the eastern regions. Despite available support, farmer uptake of assistance was low. To address this, the Australian Government's Behavioural Economics Team (BETA) conducted a study to identify barriers and motivators influencing farmers' willingness to seek help, which could help them cope and adapt to the increasing problem of severe drought. The team conducted 19 semi-structured interviews to explore effective communication methods and incentives. The study found several behavioural barriers: while farmers were generally aware of available government assistance, they did not know how to access help. The application process was also found to be overly complicated and lengthy, causing struggles for the farmers. Typically, farmers waited until their situation became critical before seeking help due to the stigma attached to requesting assistance. The information on government assistance provided also often lacked personal relevance to farmers' specific circumstances. As a result, BETA recommended reframing support programmes to encourage farmers to seek assistance before reaching a crisis point. Establishing trusted local contact points could also encourage farmers to access help sooner.

Source: (BETA, 2019^[41])

Beliefs about what others are doing can strengthen motivation to adapt (Cialdini, 2007^[42]). Boosting group-based beliefs about how effective an adaptation is can strengthen effectiveness, for instance, by involving relevant social groups to motivate adaptation behaviour (Bechtoldt et al., 2021^[40]). Risk perception, that is, the perception of how severe climate-change impacts are compared to other issues in life and one's probability of being exposed to them, influences the readiness to adapt behaviour (Grothmann and Patt, 2005^[39]). Reducing uncertainty about the effectiveness of adaptation options is more impactful than emphasising the certainty of climate-change damages (Bernedo and Ferraro, 2016^[38]). Cultural factors and geographical place attachment are vital in shaping effective adaptation strategies. Integrating these considerations into policymaking can enhance their impact (Valkengoed and Steg, 2019^[36]). Past experiences with extreme weather events such as droughts play a significant role in motivating adaptation efforts (Power et al., 2020^[43]). The framing and communication of climate risks also shape public response and acceptance of adaptation policies (O'Neill et al., 2022^[44]).

Although cost-effective measures exist, social, financial and infrastructural barriers still hinder widespread adoption. For instance, low awareness of the effectiveness and feasibility of adaptation measures prevents citizens from engaging, highlighting the need for community education (Power et al., 2020^[43]). Further

barriers to adaptive behaviour may include procedural challenges, such as difficulties navigating complex systems or uncertainty about how to take action (see Box 3).

Communication is crucial to adaptation strategies, but providing information alone is not enough. Effective adaptation communication should blend technical content (e.g. scientific data) with human-centred elements like emotions and norms and be delivered by trusted messengers (Wirth, Prutsch and Grothmann, 2014^[45]). These communications should be targeted and appropriately framed and use visuals to raise knowledge, motivate action and increase policy support (Power et al., 2020^[43]). Research shows that locally-focused adaptation advice increases people's intention to adapt, even among uncommitted audiences (Hine et al., 2016^[46]). Social approaches, such as showcasing others' new behaviours, engaging in discussions with peers, strengthening the sense of belonging can also be effective (see Box 4). For example, research conducted on Scottish farmers shows that they were more likely to engage in adaptation efforts when influenced by their social networks (Hallam, Bowden and Kasprzyk, 2012^[47]).

Box 4. Inclusive approach to forest conservation and land policy in Thailand

Policymakers in Thailand are addressing a serious air pollution problem, primarily caused by field burnings and forest fires. Conventional conservation efforts to protect rainforests have exacerbated this issue, not taking into account the behaviours of the Indigenous communities and causing them harm. Researchers from Chiang Mai University and Warwick University analysed satellite images and case studies from Southeast Asia to inform policymakers about effective forest conservation and land policies. The findings revealed that conservation policies excluding local communities can increase forest fires. This exclusion stems, for instance, from bans on forest use and rigorously enforced zoning policies that prevent Indigenous groups from using their traditional and effective environmental practices to prevent fires and maintain forest health. The results underscore the importance of policymakers working with Indigenous communities to understand their needs and behaviours. By integrating community-led conservation into adaptation policies, Indigenous knowledge can help to reduce forest fires and improve forest health. Behavioural science is key to reinforcing social norms around fire prevention. Effective strategies from the study included recognising those who create fire breaks; activating positive emotions of belonging and attachment by supporting environmental and cultural heritage practices; and building trust between authorities and communities through public pledges from Indigenous people to prevent fires. Key policy recommendations included: developing bottom-up initiatives to identify and promote sustainable practices; using behavioural design tools to support engagement and compliance; encouraging everyday environmental heritage to strengthen cultural conservation practices and creating opportunities for cross-sector collaboration.

Source: (Haenssger et al., 2023^[48]; Haenssger et al., 2023^[49]; Haenssger et al., 2022^[50]).

Upstream measures that not only encourage adaptive behaviours but remove barriers to adaptive investments are essential for improving effective climate resilience. For example, updating housing standards and regulations to promote climate-resilient buildings and communities can facilitate these adaptive changes (Power et al., 2020^[43]). Large-scale decisions on infrastructure and climate adaptation also require active stakeholder involvement for both social and economic reasons. These investments directly impact the well-being of communities and the productivity of businesses. As climate change increases financial pressures, it is crucial for governments to engage citizens in discussions about the risks they are willing to bear and the costs of mitigating them. These factors will shape their behavioural responses and willingness to engage with adaptation efforts.

Trend 3: Governments use behavioural science to predict and account for public acceptability of green reforms.

About this trend

Climate policies can only be enacted and sustained with public acceptance. Public acceptability refers to the likelihood that a policy will be accepted and adopted (Schuitema and Bergstad, 2019^[51]). Many green reforms, like carbon pricing, often face low public support when first proposed, which can hinder implementation (Carattini, 2018^[52]). Achieving the scale of behavioural and societal change required for the green transition depends on securing public buy-in and support (IEA, 2021^[53]). By applying behavioural science, governments can better understand, predict and monitor public attitudes so that they design, implement and communicate reforms that foster public acceptability. Many OECD member countries use longitudinal and serial cross-sectional surveys to track public knowledge of climate change, support for reforms and sustainable behaviours. These initiatives enhance the evidence base for factors influencing policy support and shape green reforms that consider human behaviour.

Why this trend matters

In democratic countries, broad public support enables governments to enact necessary and challenging reforms. In Europe, pressure from citizens to prioritise environmental preservation has significantly accelerated the adoption of renewable energy policies (Anderson, Böhmelt and Ward, 2017^[54]). Public awareness of climate change is growing – 80% of respondents across 50 countries in the Global Trends Survey agreed that we are headed towards environmental disaster unless habits change. People in developing countries, who are more directly impacted, expressed greater concern about climate change and its effects (Ipsos, 2023^[55]).

However, concern for climate change does not always translate into support for environmental policies. People are often unwilling to incur new costs (such as higher prices or taxes or more effort or inconvenience) that result from these reforms. Individual differences also matter. Reforms can be publicly criticised by interest groups or sectors that have an interest in less environmentally friendly economic models, potentially influencing citizens' support. Policies with lower public acceptability are likely to receive less support from politicians. Therefore, policymakers must be informed about the acceptability of the various policies they propose. Anticipating likely public reactions to reforms helps governments design, communicate and implement changes more effectively. Understanding the drivers of public acceptability is the first step (Carattini, 2018^[52]). Early and ongoing measurement of public sentiment, along with incorporating these insights into policy design, can ensure policies remain relevant, meet the needs of citizens and prevent significant opposition.

Summary of evidence

To secure broad support for climate policies, it is essential that people believe green policies will be effective, provide necessary protections for those in need and ensure personal interests are preserved. An OECD survey across 20 countries identified the biggest determinants of citizens' support for a particular climate policy as self-interest, perceived effectiveness and perceived distributional impacts on lower-income households (Dechezleprêtre et al., 2022^[56]). The results showed that providing information about how a policy worked and its distributional impacts increased people's support for that policy. For instance, public support for carbon pricing is stronger when the generated revenues are directed towards environmental infrastructure projects or subsidies for low-carbon technologies (Dechezleprêtre et al., 2022^[56]). However, dedicating revenues specifically to environmental purposes does not always enhance public acceptance of green reforms. In the case of carbon pricing, a separate study shows that the public often doubts politicians' intentions regarding the proper use of generated revenues (Carattini, 2018^[52]).

Findings from a study on Australian attitudes toward the renewable energy transition point to a reluctance to bear additional personal costs, such as higher electricity or gas prices, to accelerate the energy transition, as well as unwillingness to accept more negative blackouts for a faster transition (Poruschi et al., 2023^[57]). A recent meta-analysis shows that effectiveness and distributional fairness are the two biggest determinants of public support for climate reform, followed by the person's concern about climate change and their trust in the implementing institution (Bergquist et al., 2022^[58]). Since governments must make trade-offs when implementing climate policies, trust that governments will make fair decisions in how these policies are created is key to working towards climate action (OECD, 2022^[7]).

Communication for gaining public support

Effective communication can reduce the possibility of misperceptions. Survey research on public discontent with France's 2018 fuel tax found that citizens perceived the policy to be more regressive than it would have been in practice (Douenne and Fabre, 2020^[59]). Public perception often exaggerates the negative effects and regressiveness of a carbon tax, whereas, in practice, the proposed tax-and-dividend scheme is progressive (Douenne and Fabre, 2022^[60]). While effective communication is key, access to accurate and timely information is equally crucial for shaping behaviours towards green consumption and fostering public engagement with government measures (OECD, 2022^[7]). In many developing countries, however, a gender gap in access to information – often driven by social norms and limited access to online content – can hinder citizens' ability to adopt sustainable behaviours.

The way messages are presented to citizens can also affect how much people are willing to support climate reform. One accessible summary of the evidence on improving public understanding of climate change recommends simple, clear and factual messages, repeated often, by a variety of trusted and caring messengers (Maibach et al., 2022^[61]). More specifically, one large cross-country study found that framing climate change differently affected support for policies to tackle climate change. In particular, public support was bolstered by framing climate change in terms of opportunities (rather than threats), focusing on health and environmental themes (over economic ones), and emphasising the global and immediate nature of the issue (Dasandi et al., 2022^[62]). To improve the acceptability of green reforms such as carbon pricing, policymakers should communicate both the primary and ancillary benefits to citizens in a way that is credible and convincing, making the benefits more salient (Baranzini and Carattini, 2017^[63]).

Social norms can be powerful drivers of public support and acceptability of green reforms. If people believe a climate reform is unpopular, they are less likely to support it themselves and change their behaviour (de Groot and Schuitema, 2012^[64]). The Planetary Health Action Survey (PACE) in Germany has explored how factors such as social norms, risk perception and trust can predict and account for readiness to act and public support for climate policies (see Box 5).

Citizens often adjust their views to align with their perceptions of others' positions, a dynamic that governments can influence by correcting these perceptions. For example, an Irish study found that youth adjusted their support for climate policies based on how concerned they believed older generations were about climate change, raising or lowering their support accordingly (Timmons, Andersson and Lunn, 2022^[65]). Additionally, studies have shown that societal norms and gendered value systems influence individual attitudes about green consumption. Women, often associated with care work, tend to exhibit higher levels of environmental concern. In contrast, men, traditionally linked to competitive roles, may be less engaged in green behaviours (Brough, 2016^[66]). In the context of building support for climate reform, some effective norm-based strategies can be to:

- Appeal to values shared across ideological spectrums or reframe the reform as consistent with resistant subgroups' values.
- Emphasise both the prevalence and social desirability of supporting the reform (i.e. use both descriptive and injunctive norms).

- Use messengers and information sources that are trusted within particular communities the government is trying to reach.
- Encourage people to internalise new norms by making them easy to follow and giving people opportunities to showcase their adoption of the norm to others (Raymond, Kelly and Hennes, 2021^[67]).

Box 5. Planetary Health Action Survey (PACE) in Germany

The Planetary Health Action Survey (PACE) in Germany examines how ready people are to take action on climate change. It looks at individual behaviour, policy acceptance, and political participation as key indicators. PACE identifies factors influencing this readiness, including risk perception, trust, social norms, perceived response accuracy, self-efficacy and knowledge. The survey aims to develop an integrated model of readiness to act, create valid measurement tools and apply them in practical monitoring. It tracks people's knowledge, risk perception, trust, attitudes, and behaviours concerning climate change and protection. PACE also supports large-scale online experiments, like randomised control trials, to test different climate communication strategies.

Past studies have examined policy areas such as carbon taxation, meat tax, heat protection and carbon capture and storage. PACE helps us understand how to address climate change and related health risks by considering various societal factors. It tracks changes over time, updates the readiness-to-act model and includes current topics and debates (e.g. on carbon capturing and storage or civil disobedience as a form of protest). The survey provides a broad foundation for future climate and crisis communication.

The PACE Explorer function provides users with a platform to visualise and analyse survey data on key variables. This tool allows users to tailor their exploration of data based on their specific research questions, making it accessible and practical for understanding climate attitudes within the German population. Current findings indicate that the perceived effectiveness of climate protection measures plays a significant role in influencing people's willingness to act. However, political measures are often seen as less effective compared to individual climate efforts. This highlights a critical need for improved communication to address these perceptions.

Source: (PACE, 2023^[68])

Policy drivers of public support

Beyond communication strategies, governments can use pilots, trials and field experiments to allow citizens to learn about a policy's effectiveness, benefits and costs (Drews and van den Bergh, 2015^[69]). Lived experience with environmental reforms appears to dispel at least some ex-ante public resistance, which could be partially grounded in change aversion or status quo bias. For example, attitudes towards congestion charges become more positive after they are introduced (Börjesson, Eliasson and Hamilton, 2016^[70]) and people who have been exposed to pay-as-you-throw charges for mixed waste collection tend to be significantly more supportive of them (Brown and Johnstone, 2014^[71]).

Other policy-specific drivers of public support include the policy's perceived costs and its coerciveness. There is broad consensus across many countries that government environmental policies should not have additional costs for individuals. Support for information-based or structural measures (e.g. a shift to low carbon-emitting public transport) is consistently higher than for policies that involve additional fees, charges, or taxes on the population (OECD, 2023^[72]). Opposition to climate policies is stronger when individuals perceive that their own households will bear the financial burden, such as through higher fees,

charges, or taxes, rather than when they believe the impact will primarily affect others, including low-income groups (Dechezleprêtre et al., 2022^[56]). People are more likely to support climate policies if the perceived burden falls on others rather than on their own household.

Citizens require more convincing when a policy is perceived as particularly coercive, especially when it encourages behaviour that is more costly for the individual, whether in terms of financial burden or effort, and is perceived to be broadly unpopular (de Groot and Schuitema, 2012^[64]; Drews and van den Bergh, 2015^[69]). Research from over 20 countries shows that more coercive policies tend to be less accepted even though they are often more effective (Sunstein and Reisch, 2019^[73]). To navigate this, governments should aim to find the right combination of measures, such as blending structural reforms with behaviourally-informed interventions like nudges. They should carefully frame policies to improve acceptance and actively involve the public in designing these interventions.

Studies find that people's beliefs about the human causation of climate change, their risk perceptions and their assessed knowledge of climate change contribute to their support for government climate policies (Drews and van den Bergh, 2015^[69]). For example, one Irish study found that providing scientific information on the causes, effects and ways to tackle climate change led to 25% more people believing carbon taxation to be a highly effective way of motivating behavioural change. Information on how the revenue was used, however, had no effect (Timmons and Lunn, 2022^[74]). Additionally, a recent study from Spain found that households with a majority of men tend to have a higher household carbon footprint and greater carbon intensity (Osorio, Tobarra and Tomás, 2024^[75]). Meanwhile, an OECD survey found that knowledge about climate change and concern about the impacts of climate change may drive people's willingness to privately adopt climate-friendly behaviours but they are weaker predictors of support for government climate policies (Dechezleprêtre et al., 2022^[56]).

Trust in government and its climate policies

There is a risk of a negative feedback loop in which low levels of citizen trust impede governments' ability to implement effective policies and this lack of action further erodes trust. People's trust in public institutions can create space for government to introduce reforms that have concentrated costs but diffuse benefits or immediate costs but long-term or intergenerational benefits. It also encourages social consensus, new norms and broad coalitions that transcend electoral cycles (Brezzi et al., 2021^[76]).

Evidence from many OECD countries shows that trust in government is a significant factor in citizens' willingness to support climate policies (Drews and van den Bergh, 2015^[69]; OECD, 2022^[7]). Key components include trust in government competence (citizens believing they can rely on public institutions to effectively mitigate climate change) and trust in government values (citizens believing institutions will demonstrate high integrity while delivering policies that distribute costs fairly) (OECD, 2022^[7]). Statistical analysis across European countries found that awareness of and concern about climate change is strongly associated with support for fossil-fuel taxes only among those who trust their country's politicians and parliament (Fairbrother, Johansson Sevä and Kulin, 2019^[77]). The results from 2023 OECD Trust Survey of 30 OECD Member countries show there is a widespread distrust of the government's ability to deal with climate change: while around 70% of respondents think that governments should prioritise climate change and reduce GHG emissions, only one in four think that their government will actually succeed in reducing their country's GHG emissions (OECD, 2024^[78]). The survey also revealed an eight-point gender gap, with women more sceptical of their government's ability to address complex challenges, including climate change.

For the green transition to succeed, industry co-operation and engagement of various stakeholders are equally critical as effective policymaking requires not only public buy-in but active involvement from stakeholders across sectors (OECD, 2021^[79]). Given that public opposition significantly influences policy preferences, it is imperative to consider and measure people's diverse viewpoints when designing and implementing policies. Insights into the attitudes and behaviours of citizens and key industry stakeholders,

such as small and medium-sized enterprises (SMEs) (see Box 6), can inform future climate and crisis communication and behaviourally-informed interventions to enhance the acceptability of green reforms.

Box 6. Identifying behavioural drivers and barriers for small and medium-sized enterprises in the Netherlands

Over the past two years, the behavioural science team at the Ministry of Economic Affairs and Climate Policy in the Dutch government has conducted four research projects using surveys, focus groups, interviews and an online experiment to investigate SMEs' behavioural drivers and barriers to investing in sustainability. In the Netherlands, 99.8% of businesses are SMEs, representing a highly heterogeneous group. Key findings from this study of SMEs with 10-250 employees have been instrumental in shaping the policy approach. These include:

- SMEs exhibit a strong inclination towards sustainability; 64% indicate the opportunity to make their company (further) more sustainable while maintaining profitability. Yet actual implementation lags, with only 5-18% having taken all feasible measures.
- However, only 17% of SMEs have concrete plans to adopt new sustainability measures on average within the next five months.
- The primary drivers for adopting sustainability initiatives among SMEs include high energy prices (78%), cost savings (76%) and compliance with legal obligations (73%).
- Significant barriers identified include the perceived high costs in terms of time (51%) and money (51%), alongside a preference to allocate resources to other priorities (44%).
- Awareness of existing regulatory requirements is low, with 50% of SMEs unaware of their regulatory obligations despite being subject to them.

Source: (Dutch Ministry of Economic Affairs and Climate, 2023^[80])

Trend 4: Governments use behavioural science to boost citizen participation in environmental policies.

About this trend

Governments are increasingly using behavioural science to enhance citizen participation in environmental policymaking. Engaging the public is essential for creating policies that reflect people's needs. The OECD Trust Survey reveals that many citizens feel they lack opportunities to participate in policymaking (OECD, 2024^[78]). Incorporating behavioural science helps better align policies with public expectations, making policymaking more inclusive and fostering broader public support (Irvin and Stansbury, 2004^[81]; OECD, 2022^[82]). This approach bridges the gap between policymakers and the public, improving trust and ensuring effective policies.

Why this trend matters

Effective citizen participation in environmental policymaking enhances trust in government, supports decision-making and strengthens the relationship between the public and policymakers (OECD, 2020^[83]; OECD, 2022^[82]). Inclusive processes are especially important for underrepresented groups like women, youth and Indigenous communities. Inadequate public consultation can hinder policy implementation, such

as delaying low-emissions infrastructure projects where citizen participation is often a legal requirement (Addison et al., 2024^[84]). Behavioural science provides effective strategies to boost participation and build trust, using transparent communication, clear accountability and consistent engagement (Lunn, 2014^[28]). Techniques like co-designing policies with stakeholders and explaining decision-making processes foster trust by demonstrating openness and responsiveness to public input (Blomkamp, 2018).

Trust is crucial for sustained long-term public support and cooperation. When the public trusts their government, they are more likely to engage in community initiatives and adhere to policies. Trust and citizen participation reinforce each other: trust encourages engagement, while inclusive participation builds trust. Inclusive policymaking is key to effective environmental governance, as it ensures that diverse perspectives are considered. People are more likely to support policies, even those not in their favour, if they feel they had a say in the process (OECD, 2024^[78]; Lind and Arndt, 2016^[85]). According to the 2023 OECD Trust Survey, trust in government is more strongly linked to citizens' sense of having a say in government decisions than to socio-economic or demographic factors such as financial stability, education, or gender (OECD, 2024^[78]). Public involvement is crucial because citizens' acceptance of laws, regulations and government decisions is closely tied to their perception of fairness in interactions with officials (Lind and Arndt, 2016^[85]). When people feel they have been treated unfairly, they may resist complying with regulations, sometimes even opting for negative outcomes – like financial penalties – over following rules they perceive as unjust. Therefore, ensuring that policy processes are inclusive and fair helps foster engagement and long-term trust in government institutions (OECD, 2024^[78]).

Beyond trust, citizen participation provides valuable insights that can improve policymaking by incorporating citizens' first-hand experiences and addressing their most pressing needs (OECD, 2022^[82]). Engaging people in policymaking is a cost-effective way to boost policy awareness and increase public support. Citizen participation leads to better policy outcomes by drawing on citizens' knowledge and innovative ideas to improve policy development, implementation, evaluation and cost-effectiveness (OECD, 2022^[82]). For comprehensive guidance on best practices for citizen participation, the OECD has published resources such as *Guidelines for Citizen Participation* and *Good Practice Principles for Deliberative Processes for Public Decision Making* (OECD, 2022^[82]; OECD, 2020^[83]).

Summary of evidence

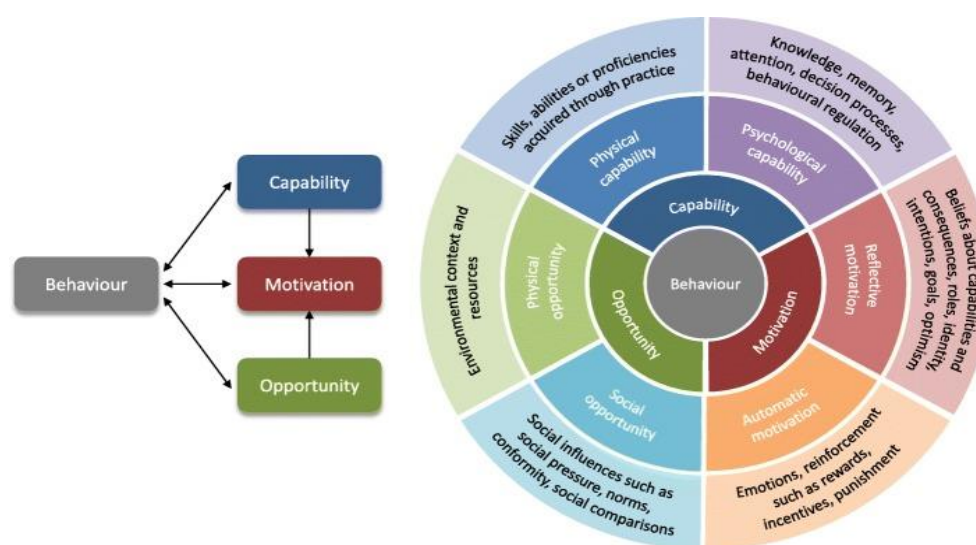
Engaging the public in environmental policymaking can be challenging, particularly for policies involving long-term or complex technologies, such as those aimed at reducing carbon emissions (Paunov and Planes-Satorra, 2023^[86]). One way to understand the key factors driving citizen participation and how behavioural science can be used to boost public engagement is by applying the COM-B model (Figure 2). It describes how capability (C, an individual's ability to engage in an activity), opportunity (O, the factors outside an individual's control that influence their behaviour), and motivation (M, the processes that direct behaviour such as habits, emotional responses, and analytical decisions) interact to generate behavioural change (Michie, Stralen and West, 2011^[87]).

Opportunity

Governments use behavioural science to create and design opportunities for citizen participation in sustainability policymaking. Gaining a clearer understanding of how people perceive and respond to climate challenges that impact their daily lives, as well as the opportunities available for them to actively participate in addressing these issues, can significantly improve the design of citizen engagement processes (OECD, 2024^[88]). For instance, trusted messengers have been shown to effectively foster public trust and encourage involvement (BIT, 2014^[89]). In Costa Rica, "cultural mediators" work with policymakers to better understand and address the needs of Indigenous communities (OECD, Forthcoming^[90]; OECD, 2024^[91]). Similarly, Iceland's co-operation platform brings together citizens, businesses and officials to co-develop national sustainability strategies (Government of Iceland, 2024^[92]).

Citizens' assemblies supported by behaviourally informed design choices are another effective method for increasing public involvement in environmental policymaking. In 2024, the German parliament held a citizens' assembly on nutrition, which included six online and three in-person meetings. Scientific experts were invited to present balanced perspectives, ensuring that all participants had a solid foundation for discussions. Fact-checkers were made available to verify information in real time. These tools help lower the cognitive and informational barriers to participation, giving citizens greater opportunity to engage effectively. The assembly generated nine key recommendations, such as providing free school lunches and introducing mandatory nutrition labels, which were ultimately adopted by parliament (German Parliament, 2024^[93]). Behaviourally-informed design elements and formats – such as breaking up sessions into smaller, manageable parts and offering expert support – can help create opportunities for a broader, more representative group to participate and be actively involved.

Figure 2. COM-B Model



Source: (McDonagh et al., 2018^[94])

Capability

Behavioural science can be applied to understand and address the capability to participate in environmental policymaking. Enhancing people's capability to engage in citizen participation requires a tailored approach to overcoming specific barriers faced by different groups. These barriers can range from physical and digital accessibility issues to socio-economic barriers. For instance, a United Kingdom study identified common individual barriers to climate-change engagement, including lack of knowledge, uncertainty about solutions' effectiveness, distrust in information sources and the belief that climate change is a distant threat. Social barriers included a lack of visible climate action by governments and businesses, as well as social norms that present sustainable living as undesirable (Lorenzoni, Nicholson-Cole and Whitmarsh, 2007^[95]). Psychological capability involves equipping individuals with the necessary knowledge, skills and cognitive resources to participate effectively in environmental policymaking. An illustrative example of enhancing psychological capability is presented in Box 7, where the UK Government Office for Science utilised stakeholder workshops and public dialogue sessions to engage participants in developing and analysing plausible scenarios, thereby enhancing their understanding and ability to contribute effectively to the net-zero initiative.

Simplifying processes, reducing bureaucratic hurdles and providing user-friendly online platforms can further encourage participation (Fung, 2006^[96]). Governments can provide resources in multiple

languages, ensuring accessibility for people with disabilities and reaching out to underrepresented groups to include them in decision-making (Schlosberg and Collins, 2014^[97]; OECD, 2022^[82]). Various tools are available to assess and enhance the inclusivity of participatory processes. One example is the New South Wales Behavioural Insights Unit, which developed a sludge audit – a behavioural assessment tool designed to reduce friction in government services. Among other metrics, the tool uses inclusivity to identify governmental frictions that disproportionately affect marginalised communities. By applying an equity lens throughout the sludge audit, policymakers can better address the unequal impact of these barriers on underserved groups (OECD, 2024^[31]).

Box 7. Citizen engagement and public dialogue on net zero in the United Kingdom

The United Kingdom's Government Office for Science undertook a project to explore how social and behavioural changes could influence the path to net zero. This project included a high-level evidence review of recent societal trends impacting emissions, supplemented by a series of case studies forming diverse narratives about behavioural changes within society. Stakeholders from government, business, and academia participated in workshops to develop plausible scenarios designed to stretch thinking about potential societal changes, which were brought to life through detailed narratives and illustrations. Each scenario was analysed using energy system models to determine the types of energy systems needed to meet net zero while assessing costs, feasibility and wider impacts like health. Public dialogue workshops, including citizens from across the country, were conducted to test the plausibility of these scenarios and gather insights on their implications for achieving net zero.

The design of the workshops was grounded in behavioural science principles. To maximise participation and engagement, the workshops were conducted online and divided into multiple sessions, reducing participant fatigue. This approach also offered early insights into how the public might respond to proposed changes, helping to ensure that the path to net zero better reflects societal behaviours, preferences and perceptions. The insights from this project are being used to inform the UK's long-term strategy for net zero, helping to stress-test policies and integrate public feedback on plausibility, necessary changes by 2050, key themes, conflicts and compromises in decision making and initial public reactions to the scenarios.

Source: (United Kingdom Government Office for Science, 2023^[98])

Motivation

Behavioural science can also be applied to motivate citizens to participate in policymaking. A commitment to the public interest is correlated with increased participation in co-production activities (Neumann and Schott, 2021^[99]). Understanding these motivators is crucial as stakeholder engagement is key to overcoming the barriers that hinder the green transition (Addison et al., 2024^[84]). The National Dialogue on Climate Action (NDCA) in Ireland (see Box 8) demonstrates how early and inclusive engagement can uncover the motivations, abilities, processes and both physical and social barriers individuals face in taking climate action. By identifying and addressing these barriers, the NDCA creates diverse opportunities for public involvement and tracks progress through a behavioural insights dashboard, which helps inform policies that enhance public engagement and strengthen support for climate action. Ensuring that citizen participation is sought early in the policy development process is likely to result in higher levels of motivation to contribute (Addison et al., 2024^[84]). Engaging the public is important not only during the early stages of policy formulation but throughout the entire policy process, especially when developing options for policy implementation (OECD, 2024^[88]). When citizens feel fairly treated, they comply more with government policies, feel more integrated into society and place greater trust in their government (Lind

and Arndt, 2016^[85]). This can be particularly challenging with marginalised communities, where negative perceptions of fairness and respect are more prevalent (van de Wetering, 2023^[100]).

Box 8. National Dialogue on Climate Action (NDCA) in Ireland

To support the green transition, the National Dialogue on Climate Action (NDCA) was launched to actively involve the public and stakeholders in climate initiatives. Since 2021, over 12 000 people have participated in annual 'Climate Conversations' and over 1 000 stakeholders have engaged through various forums and assemblies. The NDCA's social and behavioural research programme includes:

- The inclusion of the MAPPS behavioural science model (a framework that outlines key dimensions for behaviour change) in the 2023 Climate Conversation allowed the Irish government to examine the motivations, abilities, processes and both physical and social barriers individuals face in taking climate action across various areas, such as switching to electric vehicles or adopting a more plant-based diet. The analysis of this data will help policymakers and researchers design targeted solutions to overcome these barriers, tailored to different types of individuals and sectors.
- Support for a series of behavioural studies led by top researchers in Ireland, including: Person-Centred Attitudes to Climate Change; Gap Analysis on Behavioural Research Related to Climate Policy and Interventions and Encouraging Cooperation in Climate Collective Action Problems. The NDCA team developed a Key Performance Indicator (KPI) on a behavioural insights dashboard to allow policymakers to incorporate the evidence base from social and behavioural research into their policy design.
- In 2021 the Irish Environmental Protection Agency (EPA) started a project called 'Climate Change in the Irish Mind' (CCIM) with Yale University's Programme on Climate Change Communications (YCCCC) to research climate change attitudes and behaviours in the Irish public. CCIM is a large scale nationally representative survey of attitudes, risk perceptions, policy preferences and behaviour towards climate change. This study is primarily of interest to policymakers at national and local government level but also provides accessible interactive maps which are of local interest.

Source: (NDCA, 2022^[101])

Behaviourally informed techniques can enhance public communication around environmental policies and motivate participation in their design (Boon-Falleur et al., 2022^[102]). By using behaviourally informed digital platforms, public campaigns and educational programmes, governments can ensure that sustainability-focused policies are presented in a way that resonates with citizens, making the information relatable and engaging. This approach helps to foster a sense of understanding and relevance, motivating individuals and organisations to participate in shaping and supporting these policies (Dilling and Moser, 2009^[103]).

Lastly, increasing people's awareness of citizen participation and the fact that other citizens participate can increase their willingness to engage with sustainable practices (Dai, 2024^[104]). As citizen participation is inherently collective, behavioural science strategies, such as leveraging social norms and peer feedback, can be used to design interventions that strongly influence people within groups (Morrow, 2013^[105]). For instance, public social commitments, where individuals openly state how they will engage in policymaking, have been shown to boost participation rates (Foley and Griffiths, 2011^[106]). Additionally, those with stronger social networks are more likely to engage in public governance (Suebvises, 2018^[107]). In Valencia, a programme recruiting citizens to be ambassadors of the Spanish city's climate-neutral initiative improved public awareness and support of the programme (Paunov and Planes-Satorra, 2023^[86]).

Trend 5: Governments use behavioural science to increase the demand for sustainable goods, services and technologies.

About this trend

Governments are using behavioural science to:

- **Increase demand for sustainable goods and help consumers avoid unsustainable consumption patterns.** For example, governments are experimenting with eco-label designs that communicate environmental benefits, such as carbon footprint or resource efficiency, helping consumers make greener choices. They also make unsustainable options less attractive. Examples include setting defaults in public procurement, such as introducing vegetarian defaults in public canteens to minimise meat consumption.
- **Encourage a shift to using more sustainable services** through interventions such as improving convenience, providing incentives, or adjusting pricing to make sustainable service options more appealing. Governments are also reducing administrative burdens to facilitate access to sustainable services, such as energy-efficient home upgrades.
- **Improve the adoption of green technologies** by increasing the uptake of green technologies, such as solar panels. By identifying barriers that hinder adoption (e.g. high upfront costs or lack of information) and designing targeted interventions, such as subsidies or awareness campaigns, they enhance the accessibility and appeal of these technologies.

Why this trend matters

Demand-side strategies can facilitate GHG emissions reductions across all sectors, offering enormous mitigation potential. A key element in demand-side strategies is behavioural change, both in terms of everyday lifestyle shifts by individuals and through their uptake of services and technologies that support the net-zero transition. Therefore, changing behaviours related to consumption of energy and food, use of transport and generation of waste are vital to reducing emissions (OECD, 2017^[15]). Motivation for individuals and households to alter their consumption and behaviour to reduce emissions remains generally low worldwide. One reason is that individual actions, while important, are not enough to effectively mitigate climate change unless they are reinforced by broader structural and cultural changes (Creutzig et al., 2023^[2]). Identifying, understanding and overcoming barriers to large-scale behavioural change is essential to boosting the demand for sustainable goods and services.

In 2022, the OECD conducted its third OECD Survey on Environmental Policies and Individual Behaviour Change (EPIC) with over 17 000 households across nine countries. The survey explored attitudes, behaviours, and support for environmental policies in energy, transport, waste, and food. It revealed that availability, convenience and affordability are key barriers sustainable choices (OECD, 2024^[78]).

- **Availability:** A third of households do not have electric vehicle charging stations within three kilometres of their residence. Additionally, over half of regular car users (54%) stated that improved and cheaper public transport would encourage them to drive less.
- **Convenience:** Most households adopt easy energy conservation measures, such as switching off lights when leaving a room (92%). However, fewer households take steps that require significant effort or impact perceived comfort, such as minimising heating or cooling use (68%).
- **Affordability:** Only 9% of households consider the potential carbon footprint of their food purchases, whereas over 60% prioritise affordability, taste and freshness (OECD, 2023^[72]).

Summary of evidence

Governments are increasingly leveraging behavioural science to drive demand for sustainable goods, services and technologies by understanding and addressing barriers to adoption. For instance, governments are experimenting with green labels (see Box 9) to see if they whether they could encourage consumers to choose more environmentally-friendly products (Buratto and Lotti, 2023^[108]). Similarly, interventions aimed at understanding and overcoming obstacles to the adoption of green technologies are being designed to accelerate their acceptance and usage (Levine, 2012^[109]; Creutzig et al., 2023^[21]).

Box 9. Testing effective climate labels on grocery products in Denmark

Denmark is developing a voluntary climate label for food to guide consumers towards more climate-friendly choices. To understand the influence of green marketing (e.g. labels) on consumer behaviour, the Danish Competition and Consumer Authority conducted an experimental online study. They tested two types of labels in a simulated supermarket setting: a best-in-class (BIC) label, identifying low-emission products within categories and a scale label, ranking products on an A-to-E scale from green (low emissions) to red (high emissions). Both labels were compared to a control group with no climate labels.

The experiment showed that consumers found the scale label easier to interpret and more effective in identifying greener options across different categories. However, neither label significantly impacted the estimated emissions from consumers' purchases in the simulated shopping exercise. Interestingly, for the subgroup of consumers who intended to use the label in the future, the scale label prompted them to buy more climate-friendly products, reducing emissions from their purchases by 10% compared to the same subgroup with the BIC label and the control group.

One reason for the labels' limited overall impact was their inability to convey the magnitude of emissions differences across product categories, such as meat versus vegetables. Another factor was the reactance from climate-sceptical consumers, who used the labels to choose high-emission products, counteracting the reductions achieved by motivated consumers. The study provided Danish policymakers with insights into which label to advance. It also highlighted the need to consider scale cut-off points and prepare for potential negative reactions from climate sceptics.

Source: (Danish Competition and Consumer Authority, 2024^[110]); (Danish Competition and Consumer Authority, 2024^[111])

There are various behavioural factors influencing sustainable consumption including for instance habits, the intention-action gap, sludge, difficult-to-see behavioural consequences, social influence or framing:

- Human behaviour is largely driven by routines and habits, which can pose significant challenges and opportunities for promoting sustainable consumption (Verplanken and Whitmarsh, 2021^[112]). Routines are stable patterns of behaviour that provide individuals with predictability and efficiency in their daily lives. Habits are automatically triggered by situational cues, often bypassing conscious thought (Verplanken, 2006^[113]). This automaticity can make it difficult to change unsustainable behaviours, but it also provides a pathway for embedding new, sustainable habits. For instance, studies have shown that interventions such as setting default options for renewable energy, encouraging reusable shopping bags and reducing meat consumption can create new habits that promote sustainability (Thøgersen and Crompton, 2009^[114]; Meier et al., 2022^[115]). Insights from these studies can inform public procurement to enhance sustainable consumption.
- The intention-action gap is the discrepancy between individuals' stated intentions to engage in sustainable behaviours and their actual actions. Ajzen's Theory of Planned Behaviour suggests that while many people express a desire to act sustainably, various barriers often prevent them from following through (Ajzen, 1991^[116]). This gap is influenced by factors such as convenience, perceived control and immediate costs. Implementation intentions, which involve planning specific

actions in advance, can help bridge this gap and increase the likelihood of sustainable behaviours being enacted (Paschal Sheeran, 2016^[117]).

- How information is framed significantly influences sustainable consumer behaviours. Framing, a form of choice architecture, shapes decision-making by highlighting certain aspects. For example, emphasising the cost savings and environmental benefits of energy-efficient appliances, rather than upfront costs, has been shown to boost adoption (Nicole D. Sintov, 2019^[118]). Framing sustainable behaviours as the societal norm increases their desirability and adoption. Highlighting the social and environmental benefits of actions like recycling or public transport appeals to intrinsic motivations and a sense of responsibility (Kormos, Sussman and Rosenberg, 2021^[119]). An example of framing has been done by the Government of Canada, to test different ways of communicating the advantages of heat pumps to increase their uptake (see Box 10).

Box 10. Motivating uptake of heat pumps in Canada with a communications intervention

To help reduce the emissions associated with home heating and cooling, the Government of Canada is supporting the transition from home heating based on fossil fuels (e.g. natural gas, oil, or coal) to electric heat pumps. To support this policy goal, the Program of Applied Research on Climate Action in Canada conducted initial research on the home heating landscape in Canada to help understand drivers and barriers to heat pump adoption. The results demonstrated that homeowners have low awareness of and knowledge about heat pumps and that there are very narrow windows of opportunity for heat pump adoption (e.g. end of heating system life).

Building on this research, PARCA designed a field trial to test different ways of framing the advantages of heat pumps and to assess the benefits of a step-by-step guide in driving real-world heat pump adoption. Working with Toronto Hydro, one of the largest utilities in Canada, emails were sent to approximately 74 000 households, each randomly assigned to one of 10 experimental conditions. Another 20 000 households were in the control condition and received no email. Each email described the benefits of heat pumps using a behaviourally informed communication strategy, such as focusing on social norms or environmental benefits. The emails contained a link to a page describing heat pumps and, depending on the experimental condition, also contained a link to a step-by-step guide on how to acquire one. In addition, "booster" e-mails were sent out a few months later. These emails shared a calculator for estimating financial savings from switching to a heat pump and asked participants about their heat pump adoption and intentions. The main outcomes for this field trial include early indicators of engagement in the email campaigns (e.g. email open and click-through rates) as well as indicators of real-world heat pump adoption (e.g. electricity usage patterns) one year later.

Engagement was highest with emails that focused on the functions of heat pumps (i.e., that they can both heat and cool) or social norms (i.e., that adoption is increasing). Shorter emails tended to cause higher click-through rates than longer ones. If these emails lead to heat pump adoption, as determined from anonymized electricity usage data, this short intervention could be scaled to other areas.

Source: (Impact Canada, 2024^[22])

- A challenge in promoting sustainable behaviour is that the consequences of consumption, such as carbon emissions, deforestation and pollution, are often not immediately salient, occurring over long timeframes and dispersed globally, making it difficult for individuals to connect their actions with broader environmental outcomes (Weber, 2010^[120]). Cognitive dissonance theory suggests that when people's actions conflict with their beliefs, such as wanting to act sustainably but behaving unsustainably, they experience discomfort (Festinger, 1957^[121]). Raising awareness of

these impacts alone is unlikely to be effective, as it can intensify this discomfort, leading individuals to justify or downplay their behaviour to reduce the dissonance. To be effective, awareness efforts must be accompanied by clear, practical actions that allow individuals to align their behaviour with their values, enabling them to resolve the dissonance constructively.

- Social norms – shared expectations within a group about how to behave – can significantly impact sustainable consumption patterns (Cialdini, Kallgren and Reno, 1991^[122]). Individuals are more likely to engage in pro-environmental behaviours when they perceive that their peers and social groups value and practice these behaviours (Goldstein, 2008^[123]). Highlighting prevalent sustainable behaviours within communities – such as high recycling rates or the adoption of energy-efficient appliances, fosters a collective sense of responsibility and encourages others to follow suit (Goldstein, 2008^[123]). Additionally, providing feedback on individuals' energy consumption compared to their peers can effectively encourage reductions in energy use (Hunt Allcott, 2019^[124]). Social proof, where people look to others for behavioural cues, underscores the importance of leveraging social networks and community initiatives to promote sustainability. By aligning social norms with desirable sustainable actions, policymakers can harness the power of social influence to promote the widespread adoption of eco-friendly practices. Furthermore, role models can shape sustainable behaviours, as individuals often emulate the practices of those they admire. When prominent figures advocate for sustainable practices, they can effectively influence community norms and individual actions towards sustainable behaviours (Solomon, 2013^[125]).

Trend 6: Governments harness behavioural science to build resilience to climate misinformation.

About this trend

In a 2021 survey of eleven European countries, 57% of people reported seeing false or misleading information about climate change in the previous month (Kantar Public, 2022^[126]). The spread of climate change misinformation has the potential to undermine governments' efforts to encourage both individual and collective actions to reduce GHG emissions. Behavioural science is a promising tool for building resilience, measuring susceptibility to climate misinformation and understanding the drivers of its proliferation. Governments are applying behavioural science to design interventions that improve public understanding, influence sharing behaviours and enhance the ability to identify credible information.

Why this trend matters

The COVID-19 pandemic demonstrated that misinformation could have real-world consequences for human behaviour, including undermining public-health efforts, trust in institutions and exacerbating social divisions. A late 2020 study in the United States and the United Kingdom demonstrated that exposure to COVID-19 misinformation reduced vaccination intentions by about 6 percentage points (Loomba et al., 2021^[127]). In the context of climate change, the sorts of cognitive factors that misinformation could affect – such as knowing about, believing in and being concerned about human-induced climate change – are drivers of people's willingness to act in climate-friendly ways (Hornsey et al., 2016^[128]) and to support government climate policies (Dechezleprêtre et al., 2022^[56]). Receiving and spreading misinformation may compound other psychological determinants of climate action and support, such as people's social identities and group affiliation (Hampton and Whitmarsh, 2023^[129]). Exposure to false or misleading statements can cast doubt on official and information, eroding the credibility of democratic institutions and their ability to use information-based measures to promote pro-social behaviours. People's perception of the extent to which governments provide high-quality information is now the biggest determinant of their level of trust in government (as it is for trust in the media and businesses) (Edelman, 2022^[130]). Even more

broadly, misinformation can make it harder for society to forge consensus, or even to have functional debates based on the free and fact-based exchange of information (OECD, 2022^[7]).

Summary of evidence

Misinformation refers to false or inaccurate information that is shared unknowingly and without intending to deceive others (Leshner, Pawelec and Desai, 2022^[131]). Misinformation is a systemic issue involving a network of actors: organisations that fund and produce it, influential or highly networked journalists or community leaders who promote it, social media platforms whose algorithms and choice architecture shape whether it gets seen and spread and individual citizens who both receive and disseminate it (Treen, Williams and O’Neill, 2020^[132]). The strategically orchestrated mis- and disinformation campaigns impact a wide range of policy areas, from national security to climate crisis (OECD, 2024^[133]).

Addressing these challenges requires a broad range of legal, financial and regulatory policy options, which can be targeted at different parts of the system (OECD, 2022^[7]; Farrell, McConnell and Brulle, 2019^[134]). Government-led or commissioned research can play a crucial role in ensuring that the policymaking process is well-informed and effective (OECD, 2024^[133]). Driven by the objective to understand and reduce the spread of misinformation, the OECD has conducted a collaborative project with Canada and France to better understand and learn how the spread of misinformation can be reduced. As the report *Good Practice Principles for Public Communication Responses to Mis- and Disinformation* has highlighted, there is a need for evidence-based approaches to addressing mis- and disinformation. Effective public interventions and communication to counteract mis- and disinformation require interventions grounded in behavioural science. These approaches help to recognise relevant narratives, behaviours and characteristics, providing a better understanding of the context.

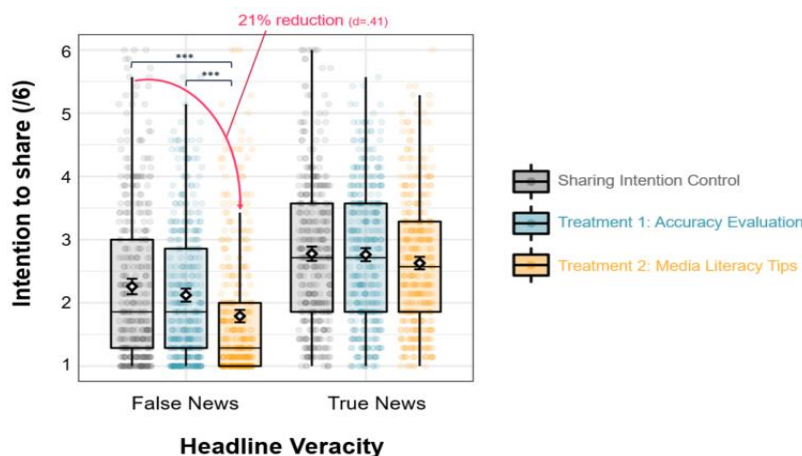
This, in turn, aids in defining the problem, tracking its evolution and developing and testing appropriate responses (OECD, 2023^[135]). The collaboration has demonstrated that behavioural science can empower policymakers to implement measures that help people protect themselves against misinformation and offer both immediate and long-term solutions. It revealed that cross-border experimental approaches are crucial for addressing global policy challenges, which require sustainable responses to the spread of mis- and disinformation (OECD, 2022^[136]). Behavioural science research can help understand how individuals process misinformation and decide to share it and on the environment in which they are finding and reacting to misleading content. Behavioural biases relevant in this context include:

- **Cognitive overload:** People can reject true information because of negative emotions, such as stress, anxiety, confusion, fear, or fatigue when they are subjected to high volumes of information (Pantazi, Hale and Klein, 2021^[137]).
- **Confirmation bias:** People can reject information that does not confirm or support predetermined beliefs or ideas (Zhou and Shen, 2021^[138]).
- **Anchoring bias:** People anchor their beliefs and opinions to outdated or irrelevant information rather than updating their perspectives according to recent or new information (Stubenvoll and Matthes, 2021^[139]).

A successful method of reducing the influence of misinformation has been to “inoculate” people in advance (so called “pre-bunking”). This consists of forewarning people that they may be exposed to misinformation, then showing them examples of misinformation alongside direct refutations. In the context of climate change, inoculation with the message “some politically motivated groups use misleading tactics to try to convince the public that there is a lot of disagreement among scientists” reduces the impact of misinformation on people’s belief in the scientific consensus on human-induced climate change (van der Linden et al., 2017^[140]) even a week later (Maertens, Anseel and van der Linden, 2020^[141]). Other strategies influence end-users’ decisions or actual behaviours by adding prompts alongside potential misinformation or just before someone is exposed to the content. As the OECD’s collaborative project with Canada and France found, the intentions to share false news headlines about COVID-19 on social media

could be reduced by drawing users' attention to the accuracy of the content (Figure 3) (OECD, 2022^[136]), thereby replicating findings from other surveys (Pennycook et al., 2021^[142]).

Figure 3. Impact of media literacy tips and accuracy prompts on intention to share false news from collaborative project between OECD, France and Canada



Source: (OECD, 2022^[136])

Communicating media literacy tips to users, by contrast, had an even greater impact on people's sharing decisions, significantly reducing intentions to share false news specifically (OECD, 2022^[136]). This confirms findings from other cross-country studies (Arechar et al., 2022^[143]). Other ideas include making content sorting transparent and modifiable by the user and allowing users to see how content has cascaded to their feed (Lorenz-Spreen et al., 2020^[144]). Another research focused on the possibility that misinformation content could be debunked or corrected after exposure. However, as recent meta-analysis of correction effects in science-relevant misinformation has shown, debunking misinformation might not be sufficient and there is a potential risk of giving credibility to the false information (Chan and Albarracín, 2023^[145]). A recent project in Canada explored boosting Canadians' resilience to climate-change misinformation, including correcting misconceptions about climate-based social beliefs (see Box 11).

Beyond this, consideration has also been given to the broader social and network effects of intervening in individuals' encounters with misinformation. Research shows that small reductions in individuals' sharing of misinformation (e.g. 5%) can lead to larger effects across social networks, reducing overall engagement by 15% (Bak-Coleman et al., 2022^[146]). However, countering misinformation effectively requires multiple strategies, not just nudging end-user behaviour (Ecker et al., 2022^[147]). Spreading misinformation can undermine democracy and escalate during crises when people share information more readily, increasing the risk of misinformation spread (OECD, 2022^[7]). A study in Greece has investigated how behaviourally informed communication can help during natural disaster events (see Box 12).

Research has further looked at individual differences in susceptibility to misinformation and decisions to spread that misinformation. Cross-country surveys found that public belief in misinformation about COVID-19 was not widespread but restricted to a minority of the population in each country. These surveys found that lower trust in scientists and lower numeracy skills were associated with lower susceptibility to COVID-19 misinformation, which, in turn, was related to less compliance with health and vaccination guidance (Roozenbeek et al., 2020^[148]). The OECD's collaborative project with Canada and France clustered participants according to their trust in institutions, conspiratorial thinking, psychological reactance and openness to evidence. The clusters significantly differed in their belief in and intent to share false news headlines about COVID-19, although they all responded equally to the interventions tested (OECD,

2022^[136]). Psychographic segmentation is likely to produce useful insights for governments designing policy responses to misinformation by enabling a nuanced understanding of drivers and likely reactions in population groups that cut across traditional demographic divisions.

Box 11. Understanding and building resiliency to climate misinformation in Canada

Impact Canada, along with Environment and Climate Change Canada and Natural Resources Canada, have been measuring the susceptibility of Canadians to climate-related misinformation through several waves of PARCA national surveys and in-depth studies. These surveys include measures of Canadians' knowledge about climate change, the prevalence of belief in climate change-related misinformation, trusted information sources and trust in the government regarding climate change. These findings aim to help the Canadian government to understand how Canadians think, feel and act in response to climate change-related misinformation, identify the types of misinformation that are proliferating and assess the associated risks. One of the main findings so far has been that, over time, the problem of climate change-related misinformation is either getting worse or staying the same; it is not getting better.

Based on these results, the team conducted an RCT in March 2024 to test several interventions to boost Canadians' resilience to climate-related misinformation. A representative sample of adult Canadians (n=3,015) was randomly assigned to one of the five intervention conditions. These interventions encouraged critical evaluation of information accuracy, improved digital media literacy, corrected misconceptions about climate-based social beliefs and provided pre-emptive refutations of false claims. The results showed that interventions that enhanced digital media literacy and included active and pre-emptive refutations of false claims were the most effective in reducing susceptibility to misinformation and the sharing of false news. However, the condition that simply provided passive information about how to identify misinformation tactics reduced participants' ability to correctly identify true headlines, perhaps due to heightened scepticism or hyper-vigilance. An effective way for climate communicators to address the misinformation threat may therefore be to focus on equipping individuals with tools and critical thinking skills to discern truth from falsehood, rather than solely focusing on debunking misinformation as it emerges.

Source: (Impact Canada, 2024^[22]).

Box 12. Using behaviourally informed communication during natural disaster events in Greece

The National Transparency Authority in Greece designed a behavioural science intervention to address the spread of misinformation during natural disasters. According to official data, during such incidents, most Greek citizens do not choose to be informed through official governmental channels and are often not able to identify fake news, falling victim to misinformation. The intervention included a series of actions aimed at raising citizens' awareness and encouraging them to trust information from reliable sources. These actions comprised: posts on official governmental websites and social media channels; informative SMS and other types of messages sent directly to Greek citizens during natural disasters; and guidelines for identifying and avoiding unreliable sources of information during a natural disaster. The success of this intervention suggests that similar communication strategies can be a vital part of any integrated emergency management system.

Source: (Greek National Transparency Authority, 2024^[149])

3 Moving forward

This policy paper highlights six key behavioural science trends relevant to environmental policy. It outlines two primary opportunities: first, harnessing behavioural science to catalyse positive social tipping points—critical moments where shifts in behaviours can lead to large-scale, exponential changes; and second, utilising behavioural science to enhance government decision-making and operations in support of the green transition, including areas like financial management and procurement.

1. Leveraging behavioural science to enable positive social tipping points.

About positive social tipping points

Recent scientific evidence indicates that the global ecosystem is nearing thresholds in various biophysical systems, called climate tipping points, which could lead to self-sustaining climate change (OECD, 2022_[150]). Beyond this point, climate change will no longer be driven solely by human emissions but by irreversible processes already set in motion (Meldrum et al., 2023_[151]). Climate tipping points occur when specific components of the climate system cross warming thresholds, creating feedback loops that push the system into a fundamentally altered state. Examples include the irreversible collapse of ice sheets or disruptions to deep ocean circulation (Lenton et al., 2023_[152]).

As opposed to negative climate tipping points, positive social tipping points offer an opportunity to accelerate the deployment of zero-emission technologies and behaviours, significantly reducing global emissions. Both natural and human systems can reach tipping points that lead to transformative changes.

Instead of merely replacing high-emission technologies with low-carbon alternatives, it is essential to address the broader systems that drive emissions. For example, switching from fossil-fuel to electric vehicles alone may not suffice. Achieving lasting emissions reductions requires adjusting the underlying frameworks and incentives that shape production, consumption and investment patterns in order to reach a systemic shift in societal behaviour.

Positive social tipping points do not occur spontaneously; deliberate interventions such as technological advancements, political and social initiatives, behavioural and normative shifts and targeted financial investments are necessary to create the right conditions and modify feedback mechanisms, enabling these tipping points to be reached (Lenton et al., 2023_[152]).

Using behavioural science to trigger positive social tipping points

Building on the trends highlighted in this policy paper, policymakers can harness behavioural science to unlock the potential for positive social tipping points. To enable these tipping points, it is essential to address the barriers and enablers influencing individual decision-making, such as choices about adopting new technologies. Key factors include socio-demographic elements like education, gender and income, as well as psychological factors such as awareness, perceived risk, locus of control (the degree to which individuals feel they can influence outcomes) and psychological reactance (resistance to perceived restrictions on freedom). A deep understanding of individual and collective behaviours is critical to

designing interventions that effectively trigger positive tipping points. Policymakers must consider the conditions, context and effects of triggering positive tipping points, while addressing cultural and social dynamics to ensure interventions are effective and widely supported (Stadelmann-Steffen et al., 2021^[153]).

Demand-side strategies and feedback loops

Demand-side strategies are important for triggering positive tipping points because they shape both technological progress and individual and government actions. When individuals adopt sustainable behaviours, such as using energy-efficient products or reducing waste, these actions create ripple effects that influence markets and encourage companies and governments to reinforce these changes, creating a feedback loop. This self-reinforcing cycle helps accelerate broader societal shifts towards sustainability.

Behaviourally informed regulation, incentives and communication can play a pivotal role in driving sustainable demand and triggering positive tipping points. For instance, well-designed green defaults are among the most effective policies for mainstreaming low-carbon energy choices (Sunstein and Reisch, 2014^[154]). Behaviourally informed incentives reducing the cost of greener options further encourage adoption by making sustainable choices more accessible. Meanwhile, behaviourally informed communication strategies can raise public awareness and foster acceptance of sustainable practices. Approaches like personalised feedback and positive reinforcement enhance the impact of these communications, nudging individuals toward greener decisions (BIT, 2023^[10]).

Social norms to catalyse widespread change

Shaping social norms can accelerate the green transition and catalyse positive tipping points through social contagion (Judge et al., 2024^[155]). The dynamics of network and co-ordination effects play a crucial role here: as more individuals adopt sustainable practices, like using renewable energy, their collective actions increase the value and attractiveness of these practices. This form of reinforcing feedback, where the value of sustainable choices escalates as more people engage with them, drives widespread change. Behavioural strategies that influence public perception and acceptance of sustainable practices are crucial. For instance, encouraging the adoption of plant-based diets by showcasing societal trends can lead to widespread behavioural shifts in food consumption (OECD, Forthcoming^[156]).

The transition to net zero may face resistance due to economic disruptions and short-term costs, even from supporters. As adaptation measures reach their limits, such as when technological or social constraints arise, transformational approaches will be needed (Juhola et al., 2022^[157]). To prevent maladaptation and support long-term sustainability, policymakers must adopt innovative, flexible strategies that consider how behaviour is influenced (Schill, Anderies and Lindahl, 2019^[158]).

Unlocking agency: empowering Individuals and communities

Social tipping points highlight the critical role of agency—the capacity of individuals and groups to drive change. By enhancing citizen participation, policymakers can meaningfully involve people in co-creating solutions, particularly for complex challenges like climate change. This approach not only fosters greater public support for climate policies but can also help trigger social tipping points through more collaborative and impactful environmental strategies (Stadelmann-Steffen et al., 2021^[153]).

By ensuring that individual behavioural changes are supported and amplified by systemic and cultural shifts, this approach drives significant progress towards a sustainable future (Eker et al., 2024^[159]). To enable positive tipping points and achieve rapid, sustainable behaviour change, policymakers must carefully consider public acceptance. Leveraging behavioural science to shape attitudes can make sustainable practices more appealing and widely adopted. However, resistance may arise if initiatives are perceived as unpopular or divisive, underscoring the importance of transparent, inclusive strategies that build trust and shared commitment.

2. Leveraging behavioural science to improve government decision-making and operations in green agendas.

Governments need processes that produce accurate policy recommendations and operational decisions. The use of behavioural science to improve the quality of government functions is referred to as behavioural public administration (Grimmelikhuijsen et al., 2016^[160]; Bertelli and Riccucci, 2022^[161]). Behavioural public administration is especially valuable for decisions made on complex environmental issues like climate change which require the analysis and consideration of evidence from many fields, require coordination between multiple governmental and non-governmental actors and are increasingly likely to impact a government's entire agenda.

In the policy process, behavioural science highlights several biases that affect decision-making. Biases such as loss aversion, confirmation bias and overconfidence shape policy formulation, influencing which options are considered based on framing, prior views and available information (Gofen et al., 2021^[162]; Drummond, Shephard and Trnka, 2021^[163]). Policymakers may focus on short-term issues over long-term challenges like climate change (Gofen et al., 2021^[162]). Policymakers can also inadvertently assume that members of the public think the same way they do about a policy (BIT, 2018^[164]).

Behavioural science can improve planning and forecasting by addressing policymakers' over-optimism, where they base timelines and risks on ideal scenarios, ignoring past delays. This is worsened by incentives that reward announcing new initiatives rather than ensuring effective delivery. Policymakers may also overestimate their control over outcomes and favour familiar methods, especially in complex systems, leading to path dependency and resistance to change (BIT, 2018^[164]).

A behavioural perspective can improve the integration of evaluation evidence into policy revision (Gofen et al., 2021^[162]; Drummond, Shephard and Trnka, 2021^[163]). For example, content analysis reveals that policy evaluations often present outcomes favourably to policymakers (Vaganay, 2016^[165]). To address this, review processes should ensure all evaluation evidence is considered and encourage periodic reassessment of policy options.

Features of the green transition that may pose additional behavioural challenges include (Luo and Zhao, 2021^[166]; Markowitz and Shariff, 2012^[167]; Brick, Bosshard and Whitmarsh, 2021^[168]):

- **Long time-scales:** Policymakers often prefer short-term successes over long-term benefits, problematic for climate action requiring immediate efforts to prevent future suffering.
- **Externalities:** Climate change is a collective-action problem, where global benefits and local costs requiring cross-jurisdictional collaboration complicate decision-making.
- **Social identity:** Personal and ideological identities influence how policymakers perceive and react to green policies, especially in politically polarised contexts.

Efforts to improve government decision-making should go beyond simply training policymakers on behavioural biases. A more effective approach focuses on improving the contexts, systems and institutions in which policymakers operate. Potential solutions for consideration and testing include (Drummond, Shephard and Trnka, 2021^[163]):

- **Reminders**, e.g. for policymakers to use a tool that structures their thinking.
- **Defaults**, e.g. adding default new sections in a standard template.
- **Implementation intentions**, e.g. seeking commitments from policymakers that they will review the positive aspects of non-preferred options before making a final decision.
- **Diversifying teams and encouraging debate**, e.g., to disrupt status quo biases and foster the generation of new ideas.
- **Increasing autonomy**, e.g., encouraging policymakers to incorporate new and relevant evidence to inform their decisions.

Moving from insights to action

To accelerate progress towards net zero, behavioural science can trigger positive social tipping points alongside improving government decision-making.

Key implications:

1. Positive tipping points emerge when the right conditions are in place. Climate solutions that focus on shifting behaviours complement those addressing technologies, materials and markets (Lenton et al., 2023^[152]). By integrating behavioural science, governments can identify target behaviours and critical moments when behavioural change is most likely and create conditions that support behavioural shifts and sustainable transitions. Applying behavioural science to enhance traditional policy tools will further help trigger tipping points that gain structural, systemic and cultural support. Policymakers must also ensure that information, knowledge and interventions used to trigger these tipping points are equitable and do not marginalise vulnerable communities. Careful policy design and evaluation are required to respect local behaviours, rights and voices (Wunderling et al., 2024^[169]; Pereira et al., 2023^[170]).
2. Demand-side strategies that target consumers, users and citizens are critical to triggering positive social tipping points as they directly influence individual behaviours, markets and government actions. When individuals adopt sustainable practices—such as using energy-efficient products, reducing waste, or opting for public transport—these actions ripple through society and markets, creating a self-reinforcing cycle of change. Behavioural science can design interventions to encourage widespread adoption, shaping habits that drive the green transition (Stadelmann-Steffen et al., 2021^[153]). Tools such as default options can simplify sustainable choices, making them more convenient and attractive. Focusing on strong positive feedback loops—like social contagion and shifting social norms—can further accelerate behavioural shifts. Ensuring sustainable innovations are affordable, accessible and socially acceptable will help scale up systemic change, supporting rapid and large-scale transformations (OECD, Forthcoming^[156]).
3. Governments should integrate behavioural science to effectively engage citizens and stakeholders in the policymaking process. This requires strengthening institutional frameworks, establishing dedicated capacity for citizen participation and clearly communicating the government's vision for public engagement. Behavioural science can help overcome barriers to participation, fostering behaviour change that aligns with sustainability goals. By promoting people's agency, governments can empower citizens to make sustainable choices, shaping policies that reflect public needs and values. Embedding behavioural science in these efforts will deepen citizen involvement, build public trust and accelerate the adoption of sustainable behaviours (OECD, Forthcoming^[156]).
4. Integrating behavioural science into governmental decision-making and operations can reduce biases, optimise the selection of policy tools and increase the effectiveness of environmental policies. Establishing robust monitoring and evaluation mechanisms is essential for assessing policy impacts, tracking progress and adjusting interventions to address emerging challenges. This adaptive, data-driven approach will ensure long-term sustainability and the success of green initiatives (Gofen et al., 2021). Those involved in policy development, service delivery and evaluation should have a foundational understanding of human behaviour as the green transition is, inherently, a behavioural shift.

By focusing on these priorities, policymakers can harness the potential of positive social tipping points to drive the transformative change required for a sustainable, low-carbon future. The OECD will continue supporting these efforts by conducting targeted research, offering evidence-based policy recommendations, facilitating knowledge exchange and fostering international co-operation. Governments that adopt behaviourally informed strategies will enhance the likelihood of triggering positive social tipping points, accelerating systemic changes essential for enabling a low-carbon future.

References

- Addison, R. et al. (2024), "Towards the green transition: Stimulating investment and accelerating permits for low emissions infrastructure", *OECD Working Papers on Public Governance*, No. 68, OECD Publishing, Paris, <https://doi.org/10.1787/fc97f64e-en>. [84]
- Ajzen, I. (1991), "The Theory of Planned Behavior", *Organizational Behavior and Human Decision Processes*, [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T). [116]
- Anderson, B., T. Böhmelt and H. Ward (2017), "Public opinion and environmental policy output: a cross-national analysis of energy policies in Europe", *Environmental Research Letters*, Vol. 12/11, p. 114011, <https://doi.org/10.1088/1748-9326/aa8f80>. [54]
- Arechar, A. et al. (2022), *Understanding and Combating Misinformation Across 16 Countries on Six Continents*, Center for Open Science, <https://doi.org/10.31234/osf.io/a9frz>. [143]
- Bak-Coleman, J. et al. (2022), "Combining interventions to reduce the spread of viral misinformation", *Nature Human Behaviour*, Vol. 6/10, pp. 1372-1380, <https://doi.org/10.1038/s41562-022-01388-6>. [146]
- Baranzini, A. and S. Carattini (2017), "Effectiveness, earmarking and labeling: Testing the acceptability of carbon taxes with survey data", *Environmental Economics and Policy Studies*, Vol. 19/1, pp. 197–227, <https://doi.org/10.1007/s10018-016-0144-7>. [63]
- Beaumais, O. et al. (2024), *Behavioural insights for waste-sorting labels in the European Union*, Publications Office of the European Union, <https://doi.org/10.2760/641099>. [18]
- Bechtoldt, M. et al. (2021), "Addressing the climate change adaptation puzzle: a psychological science perspective", *Climate Policy*, Vol. 21/2, <https://doi.org/10.1080/14693062.2020.1807897>. [40]
- Bergquist, M. et al. (2022), "Meta-analyses of fifteen determinants of public opinion about climate change taxes and laws", *Nature Climate Change*, Vol. 12/3, pp. 235-240, <https://doi.org/10.1038/s41558-022-01297-6>. [58]
- Bernedo, M. and P. Ferraro (2016), *Behavioral Economics and Climate Change Adaptation: Insights from Experimental Economics on the Role of Risk and Time Preferences*, https://doi.org/10.1142/9789813208186_0007. [38]
- Bertelli, A. and N. Riccucci (2022), "What is Behavioral Public Administration Good For?", *Public Administration Review*, Vol. 82/1, pp. 179-183, <https://doi.org/10.1111/puar.13283>. [161]
- BETA (2019), *Better support for farmers during drought*, <https://behaviouraleconomics.pmc.gov.au/sites/default/files/projects/better-support-farmers-> [41]

- [drought.pdf](#) (accessed on 10.9.2024).
- BIT (2023), *How to Build a Net Zero Society*, The Behavioural Insights Team, [10]
<https://www.bi.team/publications/how-to-build-a-net-zero-society/> (accessed on 10 September 2024).
- BIT (2020), *A Menu for Change*, The Behavioural Insights Team, [19]
<https://www.bi.team/publications/a-menu-for-change/> (accessed on 10.09.2024).
- BIT (2018), *Behavioural Government*, Behavioural Insights Team, [164]
<https://www.bi.team/publications/behavioural-government/>.
- BIT (2014), *EAST: Four Simple Ways to Apply Behavioural Insights*, [89]
<https://www.bi.team/publications/east-four-simple-ways-to-apply-behavioural-insights/>
 (accessed on 10 September 2024).
- Boon-Falleur, M. et al. (2022), “Leveraging social cognition to promote effective climate change mitigation”, *Nature Climate Change*, [102]
<https://doi.org/10.1038/s41558-022-01312-w>.
- Börjesson, M., J. Eliasson and C. Hamilton (2016), “Why experience changes attitudes to congestion pricing: The case of Gothenburg”, *Transportation Research Part A: Policy and Practice*, Vol. 85, pp. 1-16, [70]
<https://doi.org/10.1016/j.tra.2015.12.002>.
- Botzen, W., O. Deschens and M. Sanders (2019), “The Economic Impacts of Natural Disasters: A Review of Models and Empirical Studies”, *Review of Environmental Economics and Policy*, [37]
 Vol. 13/2, pp. 167-88.
- Brezzi, M. et al. (2021), “An updated OECD framework on drivers of trust in public institutions to meet current and future challenges”, *OECD Working Papers on Public Governance*, No. 48, [76]
 OECD Publishing, Paris, <https://doi.org/10.1787/b6c5478c-en>.
- Brick, C., A. Bosshard and L. Whitmarsh (2021), “Motivation and climate change: A review”, [168]
Current Opinion in Psychology, Vol. 42, pp. 82-88,
<https://doi.org/10.1016/j.copsy.2021.04.001>.
- Brough, A. (2016), “Is eco-friendly unmanly? The green-feminine stereotype and its effect on sustainable consumption”, *Journal of Consumer Research*, [66]
<https://doi.org/10.1093/jcr/ucw044>.
- Brown, Z. and N. Johnstone (2014), “Better the devil you throw: Experience and support for pay-as-you-throw waste charges”, *Environmental Science & Policy*, Vol. 38, pp. 132-142, [71]
<https://doi.org/10.1016/j.envsci.2013.11.007>.
- Buratto, A. and L. Lotti (2023), “The impact of salient labels and choice overload on sustainability judgments: An online experiment investigating consumers’ knowledge and overconfidence”, [108]
Food Quality and Preference, <https://doi.org/10.1016/j.foodqual.2023.104846>.
- Carattini, S. (2018), “Overcoming public resistance to carbon taxes”, *WIREs Climate Change*, [52]
 Vol. 5/9, <https://doi.org/10.1002/wcc.531>.
- Chan, M. and D. Albarracín (2023), “A meta-analysis of correction effects in science-relevant misinformation”, *Nature Human Behaviour*, [145]
<https://doi.org/10.1038/s41562-023-01623-8>.
- Chater N., L. (2022), “The i-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray”, *Behavioral and Brain Sciences*, [21]

<https://doi.org/10.2139/ssrn.4046264>.

- Cialdini, R. (2007), "Descriptive social norms as underappreciated sources of social control", [42]
Psychometrika, Vol. 72(2), pp. 263-268, <https://doi.org/10.1007/s11336-006-1560-6>.
- Cialdini, R., C. Kallgren and R. Reno (1991), "A focus theory of normative conduct: A theoretical [122]
refinement and reevaluation of the role of norms in human behavior", *Advances in
Experimental Social Psychology*, Vol. 24, pp. 201-234., [https://doi.org/10.1016/S0065-2601\(08\)60330-5](https://doi.org/10.1016/S0065-2601(08)60330-5).
- Creutzig, F. et al. (2023), "Demand, Services and Social Aspects of Mitigation", in *Climate [2]
Change 2022 - Mitigation of Climate Change*, Cambridge University Press,
<https://doi.org/10.1017/9781009157926.007>.
- Dai, M. (2024), "How to Enhance Public Participation in Environmental Governance? Evidence [104]
from China", *Sustainability*, <https://doi.org/10.3390/su16083154>.
- Danish Competition and Consumer Authority (2024), *Competitive Markets and Consumer [110]
Welfare*, <https://en.kfst.dk/media/4tldd0co/20240116-consumers-and-companies-benefit-from-transparent-green-marketing.pdf> (accessed on 10 December 2024).
- Danish Competition and Consumer Authority (2024), *Testing Effective Labels: A Climate Scale [111]
Label Helps Consumers Identify Greener Grocery Alternatives – But Fails To Change
Aggregate Behaviour*, <https://en.kfst.dk/publikationer/kfst-english/2024/20241216-testing-effective-labels-a-climate-scale-label-helps-consumers-identify-greener-grocery-alternatives-but-fails-to-change-aggregate-behaviour>.
- Dasandi, N. et al. (2022), "Positive, global, and health or environment framing bolsters public [62]
support for climate policies", *Communications Earth & Environment*,
<https://doi.org/10.1038/s43247-022-00571-x>.
- de Groot, J. and G. Schuitema (2012), "How to make the unpopular popular? Policy [64]
characteristics, social norms and the acceptability of environmental policies", *Environmental
Science & Policy*, Vol. 19-20, pp. 100-107, <https://doi.org/10.1016/j.envsci.2012.03.004>.
- Dechezleprêtre, A. et al. (2022), "Fighting climate change: International attitudes toward climate [56]
policies", *OECD Economics Department Working Papers*, No. 1714, OECD Publishing, Paris,
<https://doi.org/10.1787/3406f29a-en>.
- Decrinis, L. et al. (2023), "Sustainable behaviour at work: How message framing encourages [4]
employees to choose electric vehicles", *Business Strategy and the Environment*,
<https://doi.org/10.1002/bse.3441>.
- Diaz Del Valle, E., C. Jang and S. Wendel (2024), *Behavioral Systems: Combining behavioral [20]
science and systems analysis*, Busara Center For Behavioral Economics,
https://www.busara.global/wp-content/uploads/2024/02/Diaz-Del-Valle_Jang_Wendel_BehavioralSystems_Groundwork_2024.pdf (accessed on
10 September 2024).
- Dilling, L. and S. Moser (2009), *Creating a climate for change: Communicating climate change [103]
and facilitating social change*, Cambridge University Press,
<https://doi.org/10.1017/CBO9780511535871>.
- Douenne, T. and A. Fabre (2022), "Yellow Vests, Pessimistic Beliefs, and Carbon Tax Aversion.", [60]

- American Economic Journal: Economic Policy*, Vol. 14/1, pp. 81–110, <https://doi.org/10.1257/pol.20200092>.
- Douenne, T. and A. Fabre (2020), “French attitudes on climate change, carbon taxation and other climate policies”, *Ecological Economics*, Vol. 169, p. 106496, <https://doi.org/10.1016/j.ecolecon.2019.106496>. [59]
- Draws, S. and J. van den Bergh (2015), “What explains public support for climate policies? A review of empirical and experimental studies”, *Climate Policy*, Vol. 16/7, pp. 855-876, <https://doi.org/10.1080/14693062.2015.1058240>. [69]
- Drummond, J., D. Shephard and D. Trnka (2021), “Behavioural insight and regulatory governance: Opportunities and challenges”, *OECD Regulatory Policy Working Papers*, No. 16, OECD Publishing, Paris, <https://doi.org/10.1787/ee46b4af-en>. [163]
- Dutch Ministry of Economic Affairs and Climate (2023), *Behavioural Analysis of Sustainability in SMEs*, <https://www.rijksoverheid.nl/documenten/rapporten/2023/04/05/eindrapportage-gedraganalyse-verduurzaming-mkb> (accessed on 10 September 2024). [80]
- Ecker, U. et al. (2022), “The psychological drivers of misinformation belief and its resistance to correction”, *Nature Reviews Psychology*, Vol. 1/1, pp. 13-29, <https://doi.org/10.1038/s44159-021-00006-y>. [147]
- Edelman (2022), *2022 Edelman Trust Barometer*, <https://www.edelman.com/trust/2022-trust-barometer> (accessed on 28 March 2023). [130]
- Eker, S. et al. (2024), *Cross-system interactions for positive tipping cascades*, <https://doi.org/10.5194/esd-15-789-2024>. [159]
- Fairbrother, M., I. Johansson Sevä and J. Kulin (2019), “Political trust and the relationship between climate change beliefs and support for fossil fuel taxes: Evidence from a survey of 23 European countries”, *Global Environmental Change*, Vol. 59, p. 102003, <https://doi.org/10.1016/j.gloenvcha.2019.102003>. [77]
- Farrell, J., K. McConnell and R. Brulle (2019), “Evidence-based strategies to combat scientific misinformation”, *Nature Climate Change*, Vol. 9/3, pp. 191-195, <https://doi.org/10.1038/s41558-018-0368-6>. [134]
- Festinger, L. (1957), *A Theory of Cognitive Dissonance*, Stanford University Press, <https://doi.org/10.1515/9781503620766>. [121]
- Foley, B. and S. Griffiths (2011), *Engaging Behaviour: Behavioural economics and citizen engagement*, London Department for Communities and Local Government, <http://webarchive.nationalarchives.gov.uk/20120919132719/www.communities.gov.uk/documents/corporate/pdf/2112968.pdf> (accessed on 10 September 2024). [106]
- Frame, B., T. Milfont and H. More (2023), “Applying behavioural science to wicked problems: systems thinking for environmental policy in Aotearoa New Zealand”, *Frontiers in Environmental Science*, Vol. 11, <https://doi.org/10.3389/fenvs.2023.1239966>. [17]
- French Ministry of Ecological Transition and Territorial Cohesion (2021), *Repairability index*, <https://www.ecologie.gouv.fr/politiques-publiques/indice-reparabilite>. [32]
- Fung, A. (2006), “Varieties of Participation in Complex Governance”, *Public Administration* [96]

- Review, <https://doi.org/10.1111/j.1540-6210.2006.00667.x>.
- German Parliament (2024), *Final Recommendations of the Citizens' Assembly on Nutrition*, [93]
<https://www.bundestag.de/en/parliament/recommendations-nutrition-995916> (accessed on
 10 September 2024).
- Gofen, A. et al. (2021), "Behavioural governance in the policy process: introduction to the special [162]
 issue", *Journal of European Public Policy*, Vol. 28/5, pp. 633-657,
<https://doi.org/10.1080/13501763.2021.1912153>.
- Goldstein, N. (2008), "A Room With a Viewpoint: Using Social Norms to Motivate Environmental [123]
 Conservation in Hotels", *Journal of Consumer Research*, <https://doi.org/10.1086/586910>.
- Government of Iceland (2024), *Sustainable Iceland*, [92]
<https://www.government.is/topics/sustainable-iceland/>.
- Greek National Transparency Authority (2024), *National Transparency Authority*, [149]
<https://aead.gr/en/>.
- Grimmelikhuijsen, S. et al. (2016), "Behavioral Public Administration: Combining Insights from [160]
 Public Administration and Psychology", *Public Administration Review*, Vol. 77/1, pp. 45-56,
<https://doi.org/10.1111/puar.12609>.
- Grothmann, T. and A. Patt (2005), "Adaptive capacity and human cognition: The process of [39]
 individual adaptation to climate change", *Global Environmental Change*, Vol. 15/3, pp. 199-
 213, <https://doi.org/10.1016/j.gloenvcha.2005.01.002>.
- Haenssger, M. et al. (2022), "Implementation of the COP26 declaration to halt forest loss must [50]
 safeguard and include Indigenous people", *Nature Ecology & Evolution*,
<https://doi.org/10.1038/s41559-021-01650-6>.
- Haenssger, M. et al. (2023), "The impact of conservation and land use transitions on the [49]
 livelihoods of Indigenous peoples: a narrative review of the northern Thai highlands. Forest
 Policy and Economic", *Forest Policy and Economics*,
<https://doi.org/10.1016/j.forpol.2023.103092>.
- Haenssger, M. et al. (2023), *Towards an Inclusive Approach to Forest Conservation and Land [48]
 Use Policy in Thailand*.
- Hallam, A., A. Bowden and K. Kasprzyk (2012), *Agriculture and Climate Change: Evidence on [47]
 Influencing Farmer Behaviours*,
<https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2012/10/agriculture-climate-change-evidence-influencing-farmer-behaviours/documents/social-research-report-agriculture-climate-change-evidence-influencing-farmer-be>.
- Hallsworth, M. (2023), "A manifesto for applying behavioural science", *nature human behaviour*, [16]
 Vol. 7, pp. 310-322, <https://doi.org/10.1038/s41562-023-01555-3>.
- Hampton, S. and L. Whitmarsh (2023), "Choices for climate action: A review of the multiple roles [129]
 individuals play", *One Earth*, <https://doi.org/10.1016/j.oneear.2023.08.006>.
- Hine, D. et al. (2016), "Preaching to different choirs: How to motivate dismissive, uncommitted, [46]
 and alarmed audiences to adapt to climate change?", *Global Environmental Change*, Vol. 36,

- pp. 1-11, <https://doi.org/10.1016/j.gloenvcha.2015.11.002>.
- Hornsey, M. et al. (2016), “Meta-analyses of the determinants and outcomes of belief in climate change”, *Nature Climate Change*, Vol. 6/6, pp. 622-626, <https://doi.org/10.1038/nclimate2943>. [128]
- Hunt Allcott, J. (2019), “The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons”, *American Economic Journal*, <https://doi.org/10.1257/app.20170328>. [124]
- IEA (2021), *Do we need to change our behaviour to reach net zero by 2050?*, <https://www.iea.org/articles/do-we-need-to-change-our-behaviour-to-reach-net-zero-by-2050> (accessed on 10 September 2024). [53]
- IFAD (2022), “Behavioural Evidence Gap Map”, <https://www.ifad.org/documents/38714170/47212493/behavioural-science-evidence-gap-map.pdf>. [33]
- Impact Canada (2024), *The Program of Applied Research on Climate Action in Canada*, <https://impact.canada.ca/en/behavioural-science/parca> (accessed on 10 September 2024). [22]
- IPBES (2024), *Policy Instruments*, <https://www.ipbes.net/policy-instruments#:~:text=Legal%20and%20Regulatory%20Instruments%3B,Social%20and%20Cultural%20Instruments>. [29]
- IPCC (2023), *Climate Change 2023: Synthesis Report of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Intergovernmental Panel on Climate Change, <https://www.ipcc.ch/report/ar6/syr/>. [1]
- Ipsos (2023), *Global Trends 2023: A new world disorder*, <https://www.ipsos.com/en-us/global-trends>. [55]
- Irvin, R. and J. Stansbury (2004), “Citizen Participation in Decision Making: Is It Worth the Effort?”, *Public Administration Review*, <https://doi.org/10.1111/j.1540-6210.2004.00346.x>. [81]
- Judge, M. et al. (2024), “Accelerating social tipping points in sustainable behaviours: Insights from a dynamic model of moralized social change”, *Science Direct*, pp. 759 - 770, <https://doi.org/10.1016/j.oneear.2024.04.004>. [155]
- Juhola, S. et al. (2022), “Social tipping points and adaptation limits in the context of systematic risk: Concepts, models and governance”, *Frontiers in Climate*, <https://doi.org/10.3389/fclim.2022.1009234>. [157]
- Kantar Public (2022), *Infographic: Is disinformation polluting climate action?*, Kantar Public, <https://sfgdesign.com/is-disinformation-polluting-climate-action>. [126]
- Kaufman, S. et al. (2021), “Behaviour in sustainability transitions: A mixed methods literature review”, *Environmental Innovation and Societal Transitions*, Vol. 40, pp. 586-608, <https://doi.org/10.1016/j.eist.2021.10.010>. [12]
- Knobloch, F., M. Huijbregts and J. Mercure (2019), “Modelling the effectiveness of climate policies: How important is loss aversion by consumers?”, *Renewable and Sustainable Energy Reviews*, Vol. 116, <https://doi.org/10.1016/j.rser.2019.109419>. [25]
- Kormos, C., R. Sussman and B. Rosenberg (2021), “How Cities Can Apply Behavioral Science to Promote Public Transportation use”, *Behavioral Science & Policy*, [119]

- <https://doi.org/10.1177/237946152100700108>.
- Lenton, T. et al. (2023), *The Global Tipping Points Report 2023*, <https://report-2023.global-tipping-points.org/>. [152]
- Leshner, M., H. Pawelec and A. Desai (2022), “Disentangling untruths online: Creators, spreaders and how to stop them”, *OECD Going Digital Toolkit Notes*, No. 23, OECD Publishing, Paris, <https://doi.org/10.1787/84b62df1-en>. [131]
- Levine, D. (2012), *What Impedes Efficient Adoption of Products? Evidence from Randomized Variation in Sales Offers for Improved Cookstoves in Uganda*, UC Berkeley Institute for Research on Labor and Employment, <https://doi.org/10.1093/jeea/jvx051>. [109]
- Lind, E. and C. Arndt (2016), “Perceived Fairness and Regulatory Policy: A Behavioural Science Perspective on Government-Citizen Interactions”, *OECD Regulatory Policy Working Papers*, No. 6, OECD Publishing, Paris, <https://doi.org/10.1787/1629d397-en>. [85]
- Loomba, S. et al. (2021), “Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA”, *Nature Human Behaviour*, Vol. 5/3, pp. 337-348, <https://doi.org/10.1038/s41562-021-01056-1>. [127]
- Lorenzoni, I., S. Nicholson-Cole and L. Whitmarsh (2007), “Barriers perceived to engaging with climate change among the UK public and their policy implications”, *Global Environmental Change*, <https://doi.org/10.1016/j.gloenvcha.2007.01.004>. [95]
- Lorenz-Spreen, P. et al. (2020), “How behavioural sciences can promote truth, autonomy and democratic discourse online”, *Nature Human Behaviour*, Vol. 4/11, pp. 1102-1109, <https://doi.org/10.1038/s41562-020-0889-7>. [144]
- Lourenço, J. et al. (2016), *Behavioural insights applied to policy: European Report 2016*, <https://doi.org/doi:10.2760/903938>. [13]
- Lunn, P. (2014), *Regulatory Policy and Behavioural Economics*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264207851-en>. [28]
- Luo, Y. and J. Zhao (2021), “Attentional and perceptual biases of climate change”, *Current Opinion in Behavioral Sciences*, Vol. 42, pp. 22-26, <https://doi.org/10.1016/j.cobeha.2021.02.010>. [166]
- Maertens, R., F. Anseel and S. van der Linden (2020), “Combatting climate change misinformation: Evidence for longevity of inoculation and consensus messaging effects”, *Journal of Environmental Psychology*, Vol. 70, p. 101455, <https://doi.org/10.1016/j.jenvp.2020.101455>. [141]
- Maibach, E. et al. (2022), “Harnessing the Power of Communication and Behavior Science to Enhance Society’s Response to Climate Change”, *Annual Review of Earth and Planetary Sciences*, Vol. 51/1, <https://doi.org/10.1146/annurev-earth-031621-114417>. [61]
- Markowitz, E. and A. Shariff (2012), “Climate change and moral judgement”, *Nature Climate Change*, Vol. 2/4, pp. 243-247, <https://doi.org/10.1038/nclimate1378>. [167]
- McDonagh, L. et al. (2018), “Application of the COM-B model to barriers and facilitators to chlamydia testing in general practice for young people and primary care practitioners: a systematic review”, *Implementation Science*, <https://doi.org/10.1186/s13012-018-0821-y>. [94]

- Meier, J. et al. (2022), "Review: Do green defaults reduce meat consumption?", *Food Policy*, [115]
<https://doi.org/10.1016/j.foodpol.2022.102298>.
- Meldrum, M. et al. (2023), *The Breakthrough Effect: How to trigger a cascade of tipping points to accelerate the net zero transition*, Systemiq, [151]
<https://coilink.org/20.500.12592/1dcp1x>.
- Michie, S., M. Stralen and R. West (2011), "The behaviour change wheel: A new method for characterising and designing behaviour change interventions", *Implementation Science*, [87]
<https://doi.org/10.1186/1748-5908-6-42>.
- Moore, B. et al. (2021), "Transformations for climate change mitigation: A systemic review of terminology, concepts, and characteristics", *Wiley Interdisciplinary Reviews: Climate Change*, [9]
 Vol. 12/6, <https://wires.onlinelibrary.wiley.com/doi/10.1002/wcc.738>.
- Morrow, A. (2013), *The impact of Citizen Science activities on participant behaviour*, [105]
<https://www.tcv.org.uk/wp-content/uploads/2014/11/TheImpactofCitizenScienceactivitiesonparticipantbehaviourandattitude.pdf> (accessed on 10 September 2024).
- NDCA (2022), *National Dialogue on Climate Action (NDCA) Monitoring and Evaluation Report 2022*, [101]
<https://www.gov.ie/en/publication/4bf2c-national-dialogue-on-climate-action-ndca/>.
- Neumann, O. and C. Schott (2021), "Behavioral Effects of Public Service Motivation among Citizens: Testing the Case of Digital Co-Production", *International Public Management Journal*, [99]
<https://doi.org/10.1080/10967494.2021.1937413>.
- Nicole D. Sintov, L. (2019), "Thermostat wars? The roles of gender and thermal comfort negotiations in household energy use behavior", *PLoS ONE*, [118]
<https://doi.org/10.1371/journal.pone.0224198>.
- Nova, F. and L. Lades (2022), *Nudges and Other Behavioural Public Policy Instruments to Encourage Environmentally Friendly Behaviour*, UCD Geary Institute for Public Policy, University College Dublin, [30]
https://publicpolicy.ie/downloads/papers/2022/Nudges_and_Other_Behavioural.pdf.
- OECD (2024), *Environment at a Glance Indicators*, OECD Publishing, Paris, [5]
<https://doi.org/10.1787/ac4b8b89-en>.
- OECD (2024), *Environmental Justice: Context, Challenges and National Approaches*, OECD Publishing, Paris, [91]
<https://doi.org/10.1787/57616eb4-en>.
- OECD (2024), *Exploring New Frontiers of Citizen Participation in the Policy Cycle Discussion Paper*, [88]
<https://www.oecd.org/content/dam/oecd/en/about/programmes/reinforcing-democracy-initiative/Exploring-New-Frontiers-of-Citizen-Participation-Discussion-Paper.pdf>.
- OECD (2024), *Facts not Fakes: Tackling Disinformation, Strengthening Information Integrity*, [133]
 OECD Publishing, Paris, <https://doi.org/10.1787/d909ff7a-en>.
- OECD (2024), "Fixing frictions: 'sludge audits' around the world: How governments are using behavioural science to reduce psychological burdens in public services", *OECD Public Governance Policy Papers*, No. 48, OECD Publishing, Paris, [31]
<https://doi.org/10.1787/5e9bb35c-en>.
- OECD (2024), *LOGIC: Good Practice Principles for Mainstreaming Behavioural Public Policy*, [14]

- OECD Publishing, Paris, <https://doi.org/10.1787/6cb52de2-en>.
- OECD (2024), *Steering from the Centre of Government in Times of Complexity: Compendium of Practices*, OECD Publishing, Paris, <https://doi.org/10.1787/69b1f129-en>. [11]
- OECD (2024), *Survey on Drivers of Trust in Public Institutions – 2024 Results: Building Trust in a Complex Policy Environment*, Building Trust in a Complex Policy Environment, OECD Publishing, Paris, <https://doi.org/10.1787/b407f99c-en>. [78]
- OECD (2023), “Better regulation for the green transition”, *OECD Public Governance Policy Papers*, No. 40, OECD Publishing, Paris, <https://doi.org/10.1787/c91a04bc-en>. [6]
- OECD (2023), “Good practice principles for public communication responses to mis- and disinformation”, *OECD Public Governance Policy Papers*, No. 30, OECD Publishing, Paris, <https://doi.org/10.1787/6d141b44-en>. [135]
- OECD (2023), *How Green is Household Behaviour?: Sustainable Choices in a Time of Interlocking Crises*, OECD Studies on Environmental Policy and Household Behaviour, OECD Publishing, Paris, <https://doi.org/10.1787/2b5bb663-en>. [72]
- OECD (2022), *Building Trust and Reinforcing Democracy: Preparing the Ground for Government Action*, OECD Public Governance Reviews, OECD Publishing, <https://doi.org/10.1787/76972a4a-en>. [7]
- OECD (2022), *Climate Tipping Points: Insights for Effective Policy Action*, <https://doi.org/10.1787/abc5a69e-en>. [150]
- OECD (2022), *Declaration on a Resilient and Healthy Environment for All*, OECD Legal, <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0468>. [8]
- OECD (2022), “Misinformation and disinformation: An international effort using behavioural science to tackle the spread of misinformation”, *OECD Public Governance Policy Papers*, No. 21, OECD Publishing, Paris, <https://doi.org/10.1787/b7709d4f-en>. [136]
- OECD (2022), *OECD Guidelines for Citizen Participation Processes*, OECD Public Governance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/f765caf6-en>. [82]
- OECD (2021), *OECD Regulatory Policy Outlook 2021*, OECD Publishing, Paris, <https://doi.org/10.1787/38b0fdb1-en>. [79]
- OECD (2020), *Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave*, OECD Publishing, Paris, <https://doi.org/10.1787/339306da-en>. [83]
- OECD (2019), *Tools and Ethics for Applied Behavioural Insights: The BASIC Toolkit*, OECD Publishing, Paris, <https://doi.org/10.1787/9ea76a8f-en>. [23]
- OECD (2017), *Behavioural Insights and Public Policy: Lessons from Around the World*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264270480-en>. [15]
- OECD (2017), *Tackling Environmental Problems with the Help of Behavioural Insights*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264273887-en>. [27]
- OECD (Forthcoming), *Draft Regulatory Policy Outlook – Chapter 2: Regulating for the planet*. [90]
- OECD (Forthcoming), *Positive Tipping Points: Insights for Effective Policy Action*, OECD [156]

Publishing.

- O'Neill, B. et al. (2022), *Climate Change 2022 – Impacts, Adaptation and Vulnerability Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, <https://doi.org/10.1017/9781009325844.025>. [44]
- Osorio, P., M. Tobarra and M. Tomás (2024), *Are there gender differences in household carbon footprints? Evidence from Spain*, <https://doi.org/10.1016/j.ecolecon.2024.108130>. [75]
- PACE (2023), *Acceptance of climate protection measures*, <https://projekte.uni-erfurt.de/pace/topic/output/30-akzeptanz/> (accessed on 10 September 2024). [68]
- Pantazi, M., S. Hale and O. Klein (2021), "Social and Cognitive Aspects of the Vulnerability to Political Misinformation", *Political Psychology*, Vol. 42/S1, pp. 267-304, <https://doi.org/10.1111/pops.12797>. [137]
- Panzone, L. et al. (2021), "Sustainable by Design: Choice Architecture and the Carbon Footprint of Grocery Shopping", *Journal of Public Policy & Marketing*, Vol. 40/4, <https://doi.org/10.1002/9781119804345.ch1>. [26]
- Paschal Sheeran, T. (2016), "The Intention-Action Gap", *Social and Personality Psychology Compass*, <https://doi.org/10.1111/spc3.12265>. [117]
- Paunov, C. and S. Planes-Satorra (2023), "Engaging citizens in innovation policy: Why, when and how?", *OECD Science, Technology and Industry Policy Papers*, No. 149, OECD Publishing, Paris, <https://doi.org/10.1787/ba068fa6-en>. [86]
- Pennycook, G. et al. (2021), "Shifting attention to accuracy can reduce misinformation online", *Nature*, Vol. 592/7855, pp. 590-595, <https://doi.org/10.1038/s41586-021-03344-2>. [142]
- Pereira, L. et al. (2023), "Equity and justice should underpin the discourse on tipping points", *Earth Dynamic Systems*, <https://doi.org/10.5194/esd-15-341-2024>. [170]
- Poruschi, L. et al. (2023), *Australian attitudes toward the renewable energy transition – Part 1: General attitudes*. [57]
- Power, K. et al. (2020), *Understanding how behaviour can influence climate change risks*, https://www.ukclimaterisk.org/wp-content/uploads/2020/07/Understanding-how-behaviours-can-influence-climate-change-risks-Main-Report_AECOM.pdf (accessed on 10 September 2024). [43]
- Raymond, L., D. Kelly and E. Hennes (2021), "Norm-Based Governance for Severe Collective Action Problems: Lessons from Climate Change and COVID-19", *Perspectives on Politics*, pp. 1-14, <https://doi.org/10.1017/s1537592721003054>. [67]
- Roozenbeek, J. et al. (2020), "Susceptibility to misinformation about COVID-19 around the world", *Royal Society Open Science*, Vol. 7/10, p. 201199, <https://doi.org/10.1098/rsos.201199>. [148]
- Schill, C., J. Anderies and T. Lindahl (2019), "A more dynamic understanding of human behaviour for the Anthropocene", *Nature Sustainability*, <https://doi.org/10.1038/s41893-019-0419-7>. [158]
- Schlosberg, D. and L. Collins (2014), "From environmental to climate justice: climate change and the discourse of environmental justice", *WIREs Climate Change*, [97]

- <https://doi.org/10.1002/wcc.275>.
- Schuitema, G. and C. Bergstad (2019), *Acceptability of Environmental Policies*, [51]
<https://doi.org/10.1002/9781119241072.ch29>.
- Shrum, T. (2021), “The salience of future impacts and the willingness to pay for climate change mitigation: an experiment in intergenerational framing”, *Climatic Change*, Vol. 165/18, [24]
<https://doi.org/10.1007/s10584-021-03002-6>.
- Solomon, M. (2013), *Consumer Behaviour: A European Perspective. (5 ed.)*, Pearson Longman. [125]
- Stadelmann-Steffen, I. et al. (2021), “A framework for social tipping in climate change mitigation: What we can learn about social tipping dynamics from the chlorofluorocarbons phase-out”, *Energy Research & Social Science*, <https://doi.org/10.1016/j.erss.2021.102307>. [153]
- Strumskyte, S., S. Ramos Magaña and H. Bendig (2022), “Women’s leadership in environmental action”, *OECD Environment Working Papers*, No. 193, OECD Publishing, Paris, [3]
<https://doi.org/10.1787/f0038d22-en>.
- Stubenvoll, M. and J. Matthes (2021), “Why Retractions of Numerical Misinformation Fail: The Anchoring Effect of Inaccurate Numbers in the News”, *Journalism & Mass Communication Quarterly*, Vol. 99/2, pp. 368-389, [139]
<https://doi.org/10.1177/10776990211021800>.
- Suebvises, P. (2018), “Social capital, citizen participation in public administration, and public sector performance in Thailand”, *World Development*, [107]
<https://doi.org/10.1016/j.worlddev.2018.05.007>.
- Sunstein, C. and L. Reisch (2019), *Trusting Nudges. Toward a Bill of Rights for Nudging.*, [73]
 Routledge, <https://doi.org/10.4324/9780429451645>.
- Sunstein, C. and L. Reisch (2014), “Automatically Green: Behavioral Economics and Environmental Protection”, *The Harvard Environmental Law Review*, [154]
<https://doi.org/10.2139/ssrn.2245657>.
- Taberna, A. et al. (2023), “Uncertainty in boundedly rational household adaptation to environment shocks”, *Sustainability Science*, <https://doi.org/10.1073/pnas.2215675120>. [35]
- The Decision Lab (2024), *Loss Aversion*, <https://thedecisionlab.com/biases/loss-aversion>. [171]
- Thøgersen, J. and T. Crompton (2009), “Simple and Painless? The Limitations of Spillover in Environmental Campaigning”, *Journal of Consumer Policy*, <https://doi.org/10.1007/s10603-009-9101-1>. [114]
- Timmons, S., Y. Andersson and P. Lunn (2022), “Framing climate change as a generational issue: Experimental effects on youth worry, motivation and belief in collective action”, *ESRI Working Paper 731*, <https://www.esri.ie/publications/framing-climate-change-as-a-generational-issue-experimental-effects-on-youth-worry>. [65]
- Timmons, S. and P. Lunn (2022), “Public understanding of climate change and support for mitigation”, *ESRI Research Series 135*, <https://www.esri.ie/publications/public-understanding-of-climate-change-and-support-for-mitigation>. [74]
- Treen, K., H. Williams and S. O’Neill (2020), “Online misinformation about climate change”, [132]

- WIREs Climate Change*, Vol. 11/5, <https://doi.org/10.1002/wcc.665>.
- United Kingdom Government Office for Science (2023), *Net Zero Society: Scenarios and Pathways*, <https://www.gov.uk/government/publications/net-zero-society-scenarios-and-pathways--2>. [98]
- Valkengoed, A. and L. Steg (2019), "Meta-analyses of factors motivating climate change adaptation behaviour", *Nature Climate Change*, <https://www.nature.com/articles/s41558-018-0371-y>. [36]
- van de Wetering, S. (2023), "Facilitating citizen participation in marginalised neighbourhoods: selective empowerment in between vulnerability and active citizenship", *Local Government Studies*, <https://doi.org/10.1080/03003930.2023.2218801>. [100]
- van der Linden, S. et al. (2017), "Inoculating the Public against Misinformation about Climate Change", *Global Challenges*, Vol. 1/2, p. 1600008, <https://doi.org/10.1002/gch2.201600008>. [140]
- Verplanken, B. (2006), "Interventions to break and create consumer habits", *Journal of Public Policy and Marketing*, <https://doi.org/10.1509/jppm.25.1.90>. [113]
- Verplanken, B. and L. Whitmarsh (2021), "Habit and Climate Change", *Current Opinion in Behavioral Sciences*, <https://psycnet.apa.org/doi/10.1016/j.cobeha.2021.02.020>. [112]
- Walawalkar, T. and L. Hermans (2022), "Evaluating behavioural changes for climate adaptation planning", *Journal of Environmental Planning and Management*, <https://doi.org/10.1080/09640568.2022.2028610>. [34]
- Weber, E. (2010), "What Shapes Perceptions of Climate Change?", *Wiley Interdisciplinary Reviews: Climate Change*, <https://doi.org/10.1002/wcc.41>. [120]
- Wicherts, J. (ed.) (2016), "Outcome Reporting Bias in Government-Sponsored Policy Evaluations: A Qualitative Content Analysis of 13 Studies", *PLOS ONE*, Vol. 11/9, p. e0163702, <https://doi.org/10.1371/journal.pone.0163702>. [165]
- Wirth, V., A. Prutsch and T. Grothmann (2014), "Communicating climate change adaptation. State of the art and lessons learned from the OECD countries", *GAIA-Ecological Perspectives for Science and Society*, <https://doi.org/10.14512/gaia.23.1.9>. [45]
- Wunderling, N. et al. (2024), "Climate tipping point interactions and cascades: a review", *Earth System Dynamics*, <https://doi.org/10.5194/esd-15-41-2024>. [169]
- Zhou, Y. and L. Shen (2021), "Confirmation Bias and the Persistence of Misinformation on Climate Change", *Communication Research*, Vol. 49/4, pp. 500-523, <https://doi.org/10.1177/00936502211028049>. [138]