



The Compass for Net Zero: Navigating Ambition, Justice and Development

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5th ELEVATE International Stakeholder Workshop



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Colophon

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About us

ELEVATE aims to develop new scientific insights to support the preparations of Nationally Determined Contributions (NDCs) and national climate policies focused on achieving net-zero emissions in line with the Paris Agreement. The project is developed by a transdisciplinary consortium of national and international climate research teams interacting actively with policymakers and other stakeholders in climate policy and the Sustainable Development Goals (SDGs).

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Introduction

The outcome of the first Global Stock Take (GST) outlined a clear call to action: we must raise ambition in the next round of NDCs to achieve the 1.5°C goal in line with the Paris Agreement. However, climate multilateralism is threatened by rising geopolitical tensions, shifting political priorities and growing mistrust in the credibility of international climate finance and governance. In response to these challenges, it is essential for scientists and policymakers to collaborate on research that integrates diverse perspectives and develops mitigation strategies with broad public support. Could a justice-oriented approach be the key to reinvigorating ambition and fostering cooperation across countries? How can modelling-based insights support policymakers to develop equitable and Paris-aligned NDCs?

The 5th ELEVATE International Stakeholder Workshop, which took place in parallel to the Bonn Climate Negotiations (SB62), drew on the latest ELEVATE project findings to evaluate the interplay of ambition and justice-focused approaches in shaping robust 2035 NDCs. The event further explored how to capture and reflect different fairness considerations in mitigation pathways, turning these insights into practical policy solutions to advance the Net-Zero transition.

With the 2035 NDCs under preparation, the workshop provided a timely opportunity for policymakers, researchers, and civil society representatives to come together, discuss national strategies and consider how justice, development, and ambition can be reconciled. The sessions included research presentations, a panel discussion and structured dialogue with stakeholders, aiming to link technical assessments with broader social and political dynamics. These included issues such as the geopolitics and climate impacts of energy protectionism, the credibility of current NDCs, and the scope for scaling successful policy practices. Participants also discussed the representation of justice in modelling tools, emphasizing that transition pathways must address fairness across generations, regions, and social groups to ensure legitimacy. This report presents a synthesis of the main research presentations, findings, and directions discussed.

Key takeaways

- Sustained climate ambition and international cooperation are critical to achieve the goals of the Paris Agreement in challenging geopolitical times: research shows that pursuing national energy protectionism without meaningful cooperation between countries fails to accelerate emission reductions and leads to financial costs for all actors involved.
- Justice considerations must be better integrated into analytical tools: IAMs and mitigation pathways need to improve the representation of justice dimensions to support effective implementation of climate policies. This includes inter- and intra-country equity, intergenerational justice, and impacts on development and nature.
- Replicating successful climate policies from other countries can help achieve global goals, but strategies must account for technical feasibility, national capacity, and political constraints.
- To strike a balance between international climate goals and domestic priorities and development needs, including rising energy demand, science can support countries to create diverse, context-sensitive policy instruments.
- Inclusive Participation Matters: engaging cities, youth, and local communities enhances legitimacy, innovation, and effectiveness in climate policy design and NDC implementation.



Participants at the workshop

Part 1: Advancing Just and Ambitious National Commitments

In the first part of the workshop, ELEVATE researchers presented key scientific findings and research developments as input for the discussion.

1.1 Energy Autarchy and Climate Cooperation – research presentation by Lara Aleluia Reis, CMCC

Context and Methodology

Current geopolitical tensions around the globe have made energy autarchy a compelling political strategy for many countries. From the Russian invasion of Ukraine to instability in Middle Eastern exporting countries, governments are increasingly wary of dependency on foreign fossil fuels. Research shows that climate policy can reduce energy security concerns, due to lowering dependence on fossil fuel exports and the increasing diversity of energy options. However, national energy independence might not be sufficient to solve climate problems.

In this study, six integrated assessment models (IAMs) were used to create a scenario examining how national self-sufficiency scenarios interact with long-term energy and climate goals. Researchers hypothesised that a geopolitically influential country instrumentalises climate policy to enhance its national energy security. This move leads to retaliation from other countries, which impose either (a) moderate tariffs on energy imports or (b) severe tariffs on energy imports. In addition to these, researchers explored two further possible trajectories: one where countries stop cooperating on technology advancements, and one where the revenues from the energy tariffs are reinvested in green technologies. The scenario is summarised in the figure below:

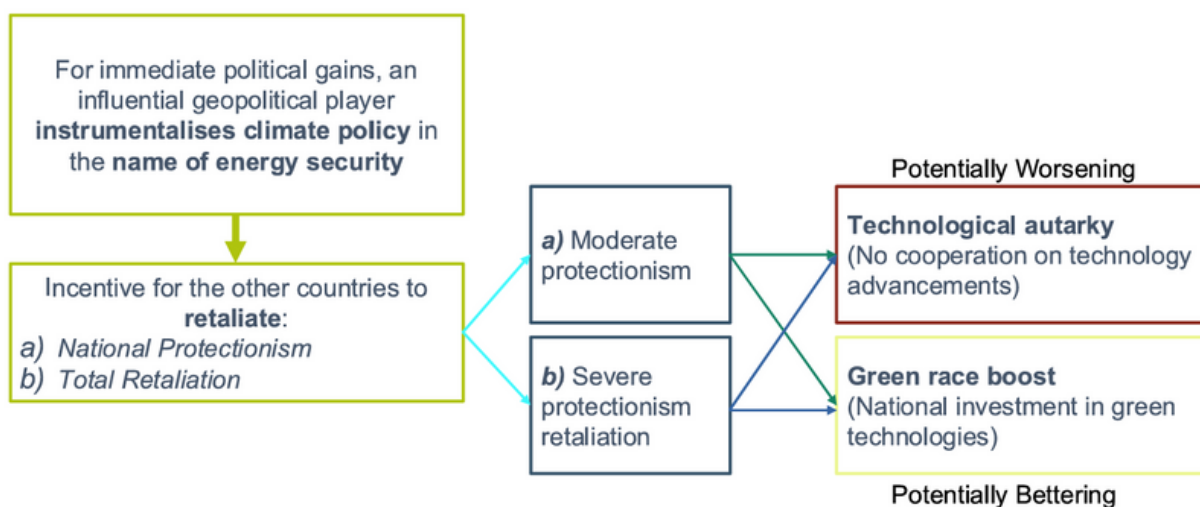


Fig.1 - A diagram outlining the scenario design

Key Takeaways:

- On the one hand, nationalist protectionism (where countries impose tariffs on energy imports) produces limited emission reductions; in the retaliation-heavy scenario, emissions decline more significantly, but they still fall short of meeting the goals of the Paris Agreement. On the other hand, both forms of protectionism see a reduction in fossil fuel use and increased reliance on biomass and renewables.
- Under national protectionism, however, all regions are projected to incur economic losses. Even countries with low climate ambition targets, like India, face high costs when retaliation is widespread. Fossil fuel-exporting countries and North America are hardest hit.
- While transition minerals are abundant globally, no region except Australia can independently sustain a clean energy transition. This insight suggests that complete energy independence might not be a realistic goal.
- Technological isolation is detrimental to all actors. A cooperative “green race” yields better outcomes, reducing emissions by about 3%.

This research shows that energy independence alone is insufficient for climate progress. It requires strong cooperation among countries to improve efficiency, reduce costs and deliver deeper emission reduction.



Participants at the workshop

1.2 Ambition and Impact of the New 2035 NDCs – research presentation by Ioannis Dafnomilis (PBL)

Context and Methodology

In 2025, countries are expected to put forward new or updated Nationally Determined Contributions (NDCs) under the Paris Agreement. As of mid-2025, only 22 NDCs have been submitted, covering about one-fifth of global emissions. This limited participation opens up questions about the trajectory of global climate ambition.

In this study, the IMAGE model was used to project global and national emissions under current policies, 2030/2035 NDCs, and net-zero targets. Researchers considered the coverage of greenhouse gases and sectors, treatment of land use, and data harmonization across different inventories. For countries with no new NDC submission, emissions were held constant at 2030 NDC levels. The study explored the following research questions:

- What effect will the new NDCs have on projected global and national emissions through 2030 and 2035?
- How ambitious are the new and existing NDCs when measured against criteria such as consistency with net-zero pledges, sectoral scope, and pace of decarbonization?

Findings: Impact on global emissions and country profiles

New NDCs are projected to cut emissions by ~1.4 GtCO₂e by 2035. However, the overall reduction is highly contingent on U.S. participation; without it, the aggregate effect is significantly diminished.



Participants at the workshop

Country	Key Insights on Ambition
USA	NDC becomes inoperative in 2026 with its Paris withdrawal.
Brazil	Broad emission reduction range; seven sectoral mitigation plans initiated.
UK	Adopted a Clean Power Action Plan aiming for zero-carbon electricity by 2030.
China	Net-zero target remains ambiguous in GHG coverage; efforts have slowed emissions growth but not increased decarbonisation rate.
EU	Ambition strengthened and supported by comprehensive policy adoption.
Japan	Raised ambition but requires further policy follow-through.
India	Net-zero target scope unclear and insufficient decarbonisation rate. However, low per capita emissions and historical responsibility considerations allow for further emission growth.

Further research is currently underway to explore how equity considerations can influence the assessment of NDCs scope and impact. The research process was shared with stakeholders and key findings will be presented at the next engagement opportunity.

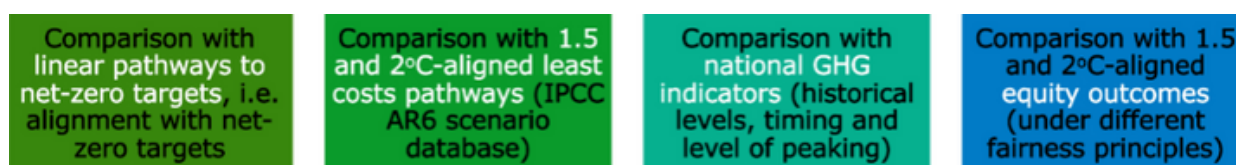


Fig.2 - Research process to evaluate equity and fairness in NDCs

1.3 Good Practice Policies Scenario - research presentation by Elena Hooijschuur, PBL

Context and Methodology

The outcome of the GST shows that stronger climate policies are essential to meet the Paris Agreement and national long-term goals. One strategy for countries to achieve fast, effective decarbonisation is by adopting policies that have worked well elsewhere. The **good practice scenario examines how replicating top-performing policies could help achieve global climate goals, while also accounting for differences in countries' capacity and related performance**. The research follows these three steps:

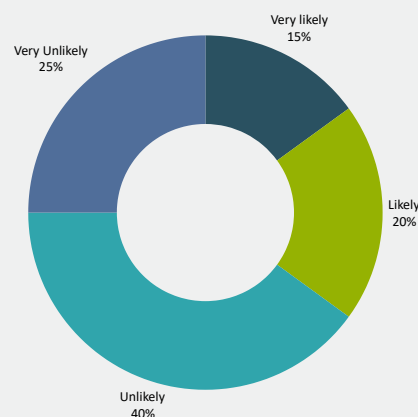
1. **Historical Analysis:** Researchers identify examples of rapid mitigation (i.e., EV adoption, renewable electricity expansion, methane reductions, and improved livestock management). Following this, they determine historical indicators of good performance: how “deep” and how “fast” could improvements go? In this analysis, they account for local constraints (e.g., performance variation by income group).
2. **Policy Mapping:** Researchers link observed successes found in the historical analysis to national policy choices. The analysis and mapping are reviewed with stakeholders via surveys and expert input.
3. **Scenario Design:** Based on steps 1 and 2, a scenario will be developed. Between 2025 and 2028, this scenario will follow a current policy trajectory to represent the necessary time to implement good practices. Between 2028 and 2050, good practices are rolled out at maximum historical pace. Then, between 2050 and 2100, two trajectories will be explored: one in which the scenario moves towards net-zero targets and one in which global warming is limited to 1.5°C by the end of the century.

To validate the underlying assumptions in the study, stakeholders were invited to share their views on which countries constituted an example of progress in climate mitigation. The **EU** and **UK** were recognized for their high ambition and policy alignment (in particular, the UK and Denmark also demonstrated high cross-sectoral ambition); **China** was mentioned as an example for large-scale renewables deployment and **Brazil** for the use of biofuel. Participants who indicated that high-performance trajectories would be difficult to replicate in their own national context mentioned high capital costs, limited technology, and fast-growing energy demand as significant challenges.

Zooming in: Increase in share of Electric Vehicles

- Technology adoption typically follows an S-curve pattern: it starts slowly, accelerates rapidly once a tipping point is reached, and then levels off as markets saturate. To analyse this, the share of EV sales in a given year (x-axis) is compared with the growth rate of EV adoption (y-axis). At very low initial shares, growth is modest; at medium shares, growth accelerates sharply; and at high shares, growth slows again.
- Good practice benchmarks are identified by observing the highest recorded growth rates at specific adoption levels. This provides a guide to how fast EV adoption can plausibly expand. Context also matters: in high-income countries, strong performance was recorded in Norway, Iceland, and Finland. In upper-middle-income countries, China stood out. For lower-income countries, limited data made it difficult to establish benchmarks.

Based on these insights, stakeholders were invited to share their views on the topic through a survey:



Some stakeholders noted the role of public transport alongside EVs as a critical good practice to take into consideration. Participants further stressed the importance of distinguishing technical from political feasibility. While widespread adoption of good practices can accelerate progress, stakeholders highlighted the need to increase financial and technical support to overcome systemic barriers.

As a next step, researchers will integrate stakeholders' insights into the analysis of good practices. For instance, they will include a wider range of progress areas in the different sectors to increase granularity and will clarify the focus on technical feasibility in communications about the results.

1.4 Panel Discussion: Evaluation of 2035 NDCs and expectations for future submissions

A panel of expert stakeholders was invited to offer their perspective on the advancement of NDCs in different national contexts, as well as the opportunities to integrate justice considerations in both ambition and implementation of climate targets.

Chile's NDC addresses emission reductions across all sectors, prioritizing renewable energy expansion and ensuring the benefits of the transition are broadly shared. Progress is supported by the 2020 National Energy Transition Strategy, developed in collaboration with coal companies to set a clear timeline for plant closures and reconversions by 2040. Chile is also championing electric public transport, now operating the world's largest fleet of electric buses. These efforts underscore the country's dual commitment to ambitious and equitable climate action, with particular attention to vulnerable communities in coal-dependent regions. The country's NDC includes a dedicated social pillar on just transition and sustainable development, designed to strengthen the legitimacy of climate policies through meaningful citizen participation.

Brazil's emissions are driven largely by land use and deforestation. To address this, the government has adopted national strategies such as the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, complemented by international initiatives such as the Tropical Forest Forever Facility, which provides financial incentives to protect forests. Brazil frames its pathway as a **just transformation**, highlighting the need to develop a new economic model that protects both the environment and the country's social fabric. Achieving this vision requires international cooperation to overcome structural barriers. Last year, Brazil launched the G20 Principles for Just and Inclusive Energy Transitions, with an emphasis on indigenous peoples' rights, and shaped the BRICS climate leadership agenda in support of the 1.5°C goal. Looking ahead at COP30, the Brazilian presidency is expected to centre Just Transition implementation as a central theme in negotiations.

From a local perspective, the implementation of Brazil's NDCs remains uneven, reflecting the country's vast regional differences. **Cities, however, are emerging as key hubs of innovation**, capable of engaging communities in planning and decision-making while driving investment in clean energy and sustainable public transport. Brazilian stakeholders emphasized that the **moment to act is now**, as climate impacts risk undoing decades of development gains. Linking initiatives, such as nature-based solutions and adaptation measures, was highlighted as a fundamental strategy to achieve progress, supported by strong indicators for accountability and transparency.

India's NDC reflects both its **development needs and decarbonisation ambitions**, aiming to reduce emissions intensity and expand the share of renewables. Progress is underway, with the country expanding renewable capacity and producing more than **5 million electric vehicles**, with rapid growth expected in the coming years. At the same time, significant challenges remain. The electricity grid is still heavily coal-based, renewable capacity is constrained by intermittency and high storage costs, and the roll-out of EV charging infrastructure faces logistical barriers. Industrial reliance on coal persists due to high energy demand, underscoring the urgency of developing **cost-effective storage solutions** to accelerate the clean energy transition.

The Netherlands is developing its 2035 NDC in coordination with the EU's new 2040 target. Progress has been slowed by the 2024 European elections and the pending European Commission proposal, while discussions remain complicated by debates over what constitutes a fair contribution among member states. In domestic climate policy, justice is considered an important dimension, though its meaning varies across constituencies. For example, the principle of "leaving no one behind" may become politically contentious when applied to sectoral transitions such as agriculture. Participants emphasized that **failing to take timely decisions is itself an injustice**, and that **the benefits of the transition must be communicated more clearly, even as the process remains a work in progress**.

A representative from YOUNGO (Children and Youth Constituency to the UNFCCC) highlighted the importance of **meaningful youth participation in climate policy processes**. She noted that the risk of stalled negotiations, the current crisis of climate multilateralism, and the ongoing challenge of implementing the outcome of the Global Stocktake are concrete obstacles for progress. Overcoming this requires establishing clear ambition benchmarks first, then designing policies to achieve it, rather than lowering targets to allow business as usual. A **human-rights-centred approach** is needed to bring diverse groups together to tackle this complex crisis. Building on these recommendations, YOUNGO published the **Universal NDCs Youth Clause**, outlining concrete pathways for meaningful participation of youth in the NDC development process.

Part 2: Co-Creating Paris-Aligned Pathways: A Stakeholder Dialogue on Justice and Development – research presentation and facilitation by Elina Brutschin, IIASA

Drawing from ELEVATE's efforts to integrate justice considerations into climate modelling, this interactive session explored how new mitigation scenarios can reflect diverse perspectives and inform effective climate policy strategies.

2.1 Definition of Justice for Climate Scenarios

Integrated Assessment Models (IAMs) are used to explore different possible scenarios and pathways resulting from the interaction of the global economy, energy and land systems with the earth's climate. Current IAMs, however, have an underexplored representation of justice considerations.



Fig.3 - Justice metrics in the context of IAMs

To improve the representation of justice in IAMs, experts agree on the need for more points of co-creation with stakeholders, improving communication and transparency, avoiding outcomes that bring negative effects on nature, and better integrating development concerns. In response to these calls, JustMIP is a model intercomparison effort that focuses on linking different justice considerations in IAM scenarios. Researchers identified three focus areas based on key justice priorities in climate policy research:

- Account for regional differentiation (Effort sharing for emission reduction)
- Integrate development needs (Moving beyond GDP to include access to basic needs through the identification of Decent Living Standards - or DSL)
- Avoid adverse effects on nature (Stricter biomass and geological constraints to consider environmental impacts)

JustMIP will produce scenarios exploring the intersection of these three dimensions, with the aim of explore different interpretations of justice and their implications for climate policy. The session aimed at engaging stakeholders to identify critical assumptions and focus areas for JustMIP, ensure clarity and transparency and gather feedback to improve scenario development. The first set of discussions focused on defining **which types of justice should be considered in IAMs scenarios**.

- Participants emphasized the need to distinguish forms of (in)justice within and between countries.
- While recognising that justice is a matter of perspective, participants underscored the value of models to represent possible equitable pathways based on solid scientific insights. Reflecting on the assumptions that shape different future scenarios, participants discussed the challenges of identifying a common ground in the current moment of global political polarisation.
- Pursuing intergenerational justice was highlighted as a possible way to build consensus and overcome entrenched positions by orienting policy design towards the prosperity of future generations.
- The role of interspecies justice and biodiversity was debated: while some felt it belonged more in the context of monitoring the progress of Sustainable Development Goals, others stressed that impacts on nature ultimately affect human justice outcomes and should therefore be adequately represented in IAMs.

2.2 Financing Mitigation and Development

Countries face a key challenge in balancing finance for international and domestic mitigation. Stakeholders discussed whether funding should prioritize direct CO₂ reductions, investment in carbon management technologies, or compensation for adverse economic effects.

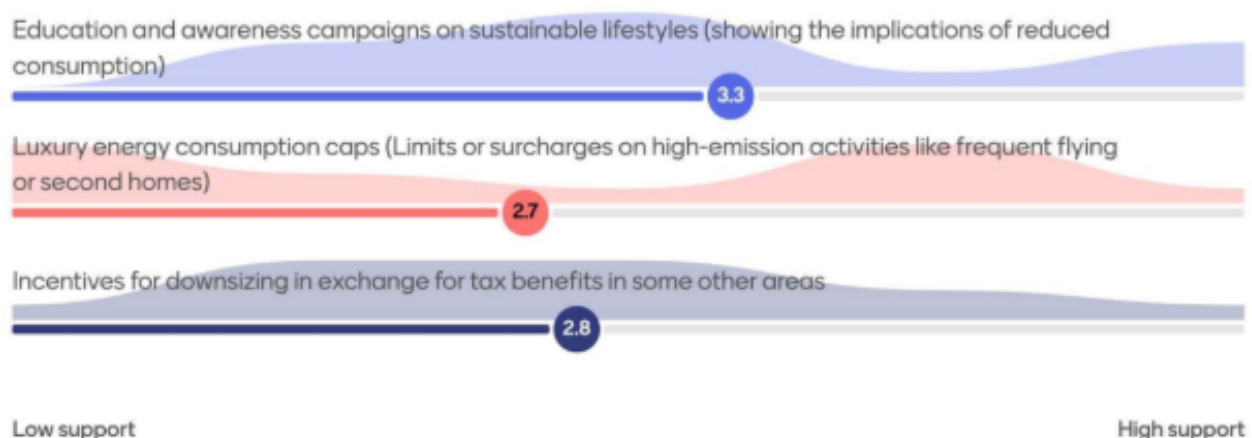
- Some participants noted a **perceived tension between climate mitigation and economic development**, stressing the importance of **challenging this assumption by highlighting the wider societal benefits of climate action**. One example cited Global South farmers facing climate impacts without access to resources to improve productivity, while national environmental regulations linked to trade deals with Western countries further constrain their economic opportunities. This raises the critical question of how to design climate solutions that can directly benefit local communities.

- Participants emphasized that communication and framing are critical in shaping public perception of climate policies. In Greece, for example, the fossil fuel sector portrayed renewables as a threat to jobs, even though most of the national coal capacity was replaced by gas. By contrast, Eritrea’s community-based greening programs for youth have successfully restored degraded land, illustrating how climate initiatives can be included in education programmes to highlight tangible community benefits.
- When discussing the feasibility of devoting different percentages of GDP to climate policies, participants noted that such benchmarks can be misleading. They emphasized that climate action should be embedded across broader political strategies rather than framed as a single taxpayer expense. Stakeholders also highlighted that political feasibility and public will do not always align, even in democratic contexts.

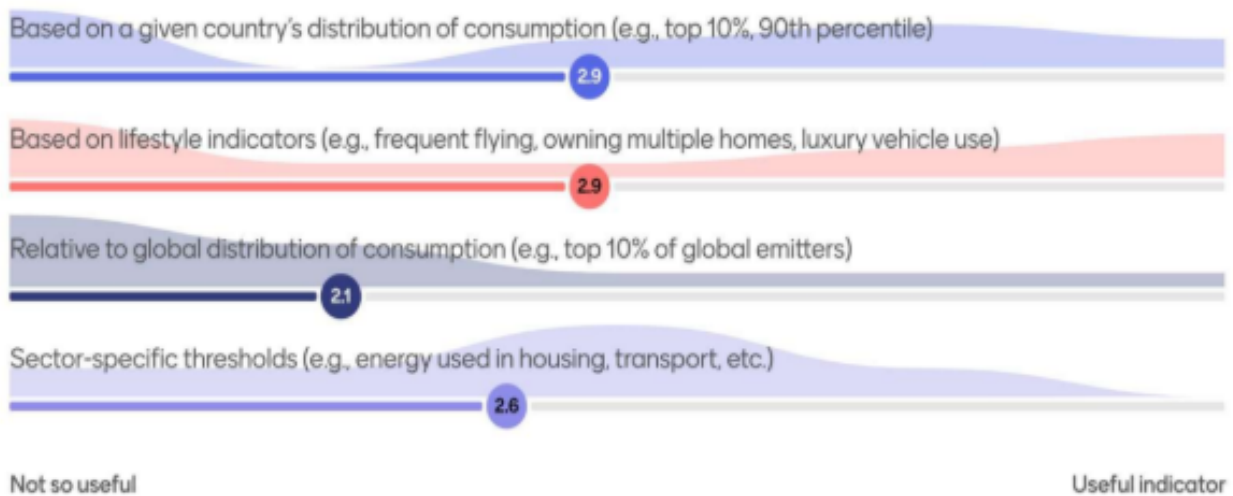
2.3 Energy Demand for Decent Living Standards

A great proportion of the world’s population lives in conditions of poverty. To achieve an equitable future, we should aim to lift every individual out of poverty, a shift that will inevitably increase global energy demand. While reductions in energy-related emissions can be achieved through efficiency gains and the adoption of clean technologies, high-consumption lifestyles—such as frequent air travel or large homes—continue to cause significant emissions. Since a full transition to clean technologies across all sectors is not feasible in the near term, this raises a critical equity question: how can overall individual emissions be reduced while also addressing inequalities in energy access, both within and between countries? Stakeholders were invited to answer a survey reflecting on this question, ranking the following statements from 1 to 5:

How much support would there be in your country for policies aimed at reducing energy consumption among the highest-consuming households?



What criteria could be used to define luxurious consumption?



- Participants stressed the political challenge of balancing rising energy demand with emission reduction requirements throughout the transition phase. In the Global South, countries like Ghana are expanding electricity access and infrastructure, including through new fossil fuel development, and capping consumption would create tension among the population.
- It was noted that in lower-middle-income countries, as well as Eastern Europe, luxury consumption is often seen as a marker of development and success. Limits on “luxurious consumption” may therefore undermine public support for climate policies. To counter this, some participants emphasized the importance of highlighting the co-benefits of the transition to a low-carbon system. For instance, while many in Germany fear losing access to private cars, the broader benefits of car-free cities—such as improved health and quality of life—should be made more visible.
- Discussing possible measures to reduce consumption, it was noted that carbon pricing is often used as a starting point for climate policy based on the ‘polluter pays’ principle. While this might work well for industry, it falls short for households, since individuals have limited influence over their emissions and might end up shouldering costs regardless of their actions. This highlights the need for a more **diverse policy toolbox**, adapted to sector-specific challenges and mindful of household impacts, while also considering differences in governance structures across countries.