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S&T Policy 2025 Dialogue highlights: Enabling transitions through science, technology and innovation

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Foreword

The first 'policy dialogue' of the CSTP crosscutting project, S&T Policy 2025: Enabling transitions through science, technology and innovation, convened on 20 October 2021. The policy dialogue introduced and discussed the S&T 2025 Policy concept, and then explored two substantive policy challenges in more detail – how to mobilise research and innovation system actors and how to manage STI interfaces with other policy areas – in pursuit of sustainability transitions. This note provides a brief summary of the presentations and discussions.

S&T Policy 2025 Dialogue highlights: Enabling transitions through science, technology and innovation

Introduction

The first 'policy dialogue' of the CSTP crosscutting project, *S&T Policy 2025: Enabling transitions through science, technology and innovation*, convened on 20 October 2021. The policy dialogue introduced and discussed the S&T 2025 Policy concept (see Box 1), particularly its framing and proposed activities. It then explored two substantive policy challenges in more detail – how to mobilise research and innovation system actors and how to manage STI interfaces with other policy areas – in pursuit of sustainability transitions. The dialogue highlighted relevant country experiences that respond to these questions and provided further orientation for the priorities and activities of the S&T Policy 2025 project. A summary of the workshop programme is outlined in an annex (see [DSTI/STP/AH(2021)5] for the full agenda), while videos of the panel discussions are available online[1] at the S&T Policy 2025 website.[2] This note provides a brief summary of the presentations and discussions.

Box 1. S&T Policy 2025: Enabling Transitions through Science, Technology and Innovation

- S&T Policy 2025 is a concept that responds to calls for governments to rethink and transform their STI policies in light of multiple challenges, notably sustainability, resilience, competitiveness and well-being.
- Encompassing the whole of STI policy, the concept aims to provide a broader, mobilising "brand" that existing and future CSTP projects can leverage and that will "join-the-dots" between them.
- The CSTP could also use the concept to reach out to other OECD committees interested in supporting STI to tackle multi-sectoral challenges like climate change.
- The project will organise events and produce papers and guidance that support governments in their practical reforms of STI policy practices and governance arrangements.
- The concept should provide the main framing narrative for the next edition of the STI Outlook and will be used to think strategically about the orientation and contents of the 2023-24 PWB. Ultimately, it could inform a proposed Ministerial meeting to be organised in 2024, as well as a new framework for OECD country reviews.

[1] The policy dialogue webpage is at: https://www.oecd.org/sti/inno/policydialogueonscienceandtechnologypolicy2025-enablingtransitionsthroughsciencetechnologyandinnovation.htm

[2] The S&T Policy 2025 website is available at: https://www.oecd.org/sti/inno/stpolicy2025/

Panel 1 – Introducing the S&T Policy 2025 concept

Background

The recent OECD STI Outlook 2021 argues for reforms of STI policy that favour greater directionality in support of sustainability transitions, resilience and inclusion goals. It also suggests the disruptive COVID-19 crisis offers a 'window of opportunity' to enact reforms, particularly in the context of ambitious recovery packages and renewed commitments to address climate change.

While transition timelines are long-term (e.g. net zero targets typically aim for 2050), there is an urgent need to set STI policy on pathways that contribute to long-term socio-technical transitions. Accordingly, the S&T Policy 2025 concept calls for short-term 'stretch targets' for the STI policy community to aim for over the next 3-4 years, to put STI on track to make the sorts of contributions future challenges call for [see [DSTI/STP(2021)23]). The concept also encompasses the whole of STI policy, drawing together multiple strands (e.g. on STI funding, human resources, governance, etc.) that can be assembled into a crosscutting, overarching schema to provide a holistic overview of the STI policy landscape in transition.

As currently envisaged, S&T Policy 2025 should produce evidence and guidance to support countries' practical reforms of STI policy practices and governance arrangements. The project will organise various events in 2021-22, notably in the form of policy dialogues, and will generate policy notes and papers to underpin these. Events and papers will be scheduled over the duration of the project, accumulating into a body of knowledge and practice that deepens and extends the concept, giving it power to mobilise and enable STI policy reform. Since policy goals, transition frameworks and policy practices are all still emerging, the concept should be implemented as a sort of co-creation space for open deliberation and experimentation on the future of STI policy. The project should also provide the bedrock for the 2022 edition of the STI Outlook [DSTI/STP(2021)24], and ultimately signal directions for the CSTP's future work programme.

Panel presentations and discussion

Dimitrios Pontikakis, Economist at the European Commission's Joint Research Centre (JRC), outlined the JRC's work on understanding and managing industrial transitions, which has included several pilot country and regional reviews. This work has shown that system level innovation is not typically seen as a legitimate domain of STI policymaking, that domestic demand is under-exploited in industrial transitions, and that a whole-of-government approach is needed but extremely challenging. There is a persistent mismatch between established policy framings meant to promote innovation primarily at the level of organisations and the broader systemic framing that seems necessary to coordinate and programme actions across policy portfolios and across levels of governance. It is not fully clear how to move beyond traditional actors like universities and firms, to engage more directly with regulators, workers, consumers, educators and others who would be central to a just transition towards sustainability.

Cecilia Cabello Valdés, Director of Operations, Fundación Española para la Ciencia y Tecnología (Spain), welcomed S&T Policy 2025 proposals to develop a framework to measure STI contributions to transitions. As a member of the NESTI bureau, she pointed out that the knowledge base that helps policymakers to make evidence-based decisions all along the policy cycle requires conceptual and measurement (data and methods) frameworks. There are right now a lot of initiatives to measure STI contributions to transitions, but they are scattered. To pull things together, Spain has set up a National Office for Foresight & Strategy, called Spain 2050, in which S&T is one of the pillars. The S&T Policy 2025 project may serve to provide a coherent framework to measure STI contributions to transitions that could provide useful policy insights. To animate the policy community to engage in these activities, she argued, a practical step would be to prepare toolkits aimed at specific processes or tasks of the policy cycle. For instance, guidance on how to interpret the information provided by indicators of STI contributions of transitions would be very useful.

Tiago Santos Pereira, researcher at the Centre for Social Studies, University of Coimbra (Portugal), underscored the challenge of understanding and identifying the impacts of S&T, namely going beyond direct S&T impacts and highlighting wider indirect impacts and, as a consequence, the impacts of S&T Policy, which has budgetary implications. The S&T Policy 2025 initiative should pay attention to this challenge. Furthermore, he argued that human resources, skills and qualifications should be an essential concern of S&T Policy 2025, given an increasing role for public policy to support, integrate, monitor and anticipate human interactions with machines. He also welcomed the project's reference to 2025 to denote the urgency of the challenges we face, but cautioned this could be at the expense of imagination that a longer time perspective would bring.

Pranpreya Sriwannawit Lundberg, Policy Specialist at the Office of National Higher Education, Science, Research and Innovation Policy Council (Thailand), while highlighting the importance of cross-governmental and multi-stakeholder collaboration for socio-technical transitions, described the difficulties of working beyond policy silos. Thailand has introduced various institutional reforms to improve cross-government collaboration, but barriers remain, including the fragmented annual budgeting system. The most recent OECD Declaration on STI policy was the Daejeon Declaration, but it is not widely known or cited. If S&T Policy 2025 is to result in a new OECD Declaration, she recommended it address not only broad-based STI policy, but also pressing thematic issues in socio-technical systems, such as energy, agrifood, and public health, to help build bridges between 'upstream' STI and 'downstream' application sectors. In this regard, she argued the OECD should leverage its convening power to bring together the CSTP and other OECD committees to work on policy agendas that promote socio-technical system transitions.

The following main points were raised in the discussions that followed:

- There is still a large legitimacy gap for STI policy action on sustainability transitions, which could be bridged with suitable policy intelligence and statistics. There should also be support for policy learning on how countries can develop and use strategic intelligence to inform their activities. More broadly, there is need to provide guidance that helps 'transition managers' in governments.
- There is also need to build legitimacy through dialogue beyond the STI community, to enable broader participation that allow different voices to be heard, including policymakers from other domains.
- Reference roadmaps and stretch targets can be useful in charting transition pathways, and overcoming attachment to inadequate STI framings. Stretch targets allow for gradual reforms and improvements, giving everyone time to adapt.
- But gradualism also harbours the risk of stalemate. There is a lot to be learned from the most ambitious governments who make bold transformations of their policy making systems. S&T Policy 2025 should therefore draw from promising international practice.
- However, not all the solutions we need will be 'out there in the wild'. Policy will have to innovate itself and to develop new instruments, including mechanisms that lower the costs of coordination across government, allow experimentation and reflexivity, yet incentivise transformational outcomes. Creating these spaces for policy experimentation, and piloting some instruments, could be an integral part of the S&T 2025 project.

Panel 2 – Mobilising research and innovation system actors for transformations

Background

Socio-technical transitions are systemic by nature, requiring firms, governments, public research actors, and societies more broadly to adapt to meet the sustainability challenge. These actors have their own plans, strategies and agendas that shape the course of transitions. This means system transitions display

various degrees of complexity, novelty, uncertainty, and ambiguity, and their course is impossible to predict. But shared visions and cooperation between different parts of the system can help reduce uncertainty and ambiguity, as multiple actors work towards common goals and solutions.

Governments can play important roles in mobilising system actors around shared visions and common goals. For example, they can use tools like strategic foresight to convene system actors to articulate normative visions and strategies; subsidies, taxes, carbon pricing, regulations and technical standards to destabilise existing, unsustainable regimes and to encourage the emergence of new sustainability niche areas; and funding to incentivise firms and public research actors to follow particular research and innovation trajectories. These functions require resources, of course, including strategic intelligence and government capabilities to understand and act, which may be in short supply.

Governments are experimenting with more directive STI policies to mobilise a wide range of actors to address explicit societal challenges like climate change. For example, the recent turn to mission-oriented innovation policies (MOIPs) attempts to bundle together a range of complementary public and private interventions to achieve ambitious goals for which more traditional fragmented STI policies have produced, at best, only mixed results. These specific 'co-ordinated packages' of research and innovation policy and regulatory measures can span different stages of the innovation cycle, from research to demonstration and market deployment; mix supply-push and demand-pull instruments; and cut across various policy fields (see Panel 3). Several countries are currently experimenting with different types of MOIPs to tackle all kinds of societal challenges, including climate change.

New institutional arrangements are also emerging, such as collaborative platforms, to coordinate a diverse set of actors across the public and private sector and to create value by harnessing platform effects. They entail a technological architecture that allow their members to innovate rapidly, but also to collaborate with many external players who can use the platform for their own innovations. Many governments, along with partners in industry, start-ups, and civil society are developing experimental forms of these collaborative platforms to provide better linkage between research and innovation, and to promote commercialisation. By bringing together experts from academia, industry and the philanthropic sector, collaborative platforms are often more flexible than national regulatory frameworks when it comes to setting technical standards for the application of technology and managing associated risks. Furthermore, government involvement in collaborative platforms can help de-risk investment in emerging technologies.

Finally, research funders in many countries are striving to promote transdisciplinary research (TDR), which can address complex problems beyond the reach of traditional science. TDR offers a practical way to address issues such as sustainability transitions that are highly contested and where stakes are high. It is a mode of research that integrates both academic researchers from unrelated disciplines – including natural sciences and social sciences and humanities – and non-academic participants to achieve a common goal, involving the creation of new knowledge and theory. Given the scale and urgency of the human-environmental system challenges that society is facing, there is a strong argument that TDR needs to be scaled up very considerably and become a mainstream modus operandi for research. This would affect both prioritisation of research areas and changes to funding processes, including funding criteria, peer review and evaluation.

Panel presentations and discussion

Muriel Attané, Secretary General of the European Association of Research and Technology Organisations (EARTO), highlighted the important role that knowledge intermediaries, such as research and technology organisations (RTOs), have to play in helping support socio-technical transitions, but also the challenges they face. There is an evolution in the role of RTOs: they have to address problems that are much more complex and integrate all disciplines including social sciences and humanities, while in turn being asked to justify their impact and raise higher levels of industry support. She argued that higher investments in research and technology infrastructures are critical if complex challenges are to be addressed.

Mark Ferguson, Director General at the Science Foundation Ireland (SFI) and Chief Scientific Adviser to the Government of Ireland, presented three new policy approaches implemented by SFI to enhance the engagement of the public in research and innovation processes:

- Mechanisms to support problem curation, whereby a wide diversity of actors are gathered together to define the specific problems to solve and explore how science can help address them.
- Challenge-based funding, open to all actors including those that are traditionally not engaged in science and innovation calls.
- Democratisation of science, through programmes such as "Creating Our Future" that invites people across Ireland to submit ideas about what researchers could focus on to create a better future. Such action often raises political attention to science.

These innovative instruments, he argued, are not substitutes but should complement traditional policy approaches and tools which can bring in people that are traditionally excluded from the R&D system.

Julia Reinaud, Senior Director at Breakthrough Energy, presented the range of programmes implemented by Breakthrough Energy – a network of stakeholders that supports the goal to reach net zero CO2 emissions by 2050. A key element is to strengthen innovation efforts, since 50% of the technology solutions in this area are still emerging. This requires new innovation to be deployed at much larger scale, and to overcome the many obstacles created by a lack of adequate regulatory environment. She explained that new forms of public-private partnerships are needed, which can de-risk technologies, leverage funding from private partners including philanthropic organisations and scale-up innovative projects.

Jeanne M. VanBriesen, Division Director for Chemical, Bioengineering, Environmental and Transport Systems at the National Science Foundation (United States), argued that the main challenge ahead is the mobilisation of diverse research and innovation system actors (i.e. actors with different backgrounds, areas of expertise, using different tools and approaches) to work collaboratively to address key societal challenges. Sustained interactions among those diverse actors is critical, and can lead to the creation of novel frameworks, new paradigms and even new disciplines, as well as help develop convergence research. In a context where challenge-driven research is getting more attention, she explained, curiosity-driven research remains critical and should continue to be supported by policy.

Ben Smith, Senior Adviser at Research Council Norway, highlighted the importance of transformative research. It is critical to leverage competences from traditional sectors to new emerging domains (for example, in the field of energy research). Transdisciplinary research/co-creation of projects is also increasingly required to address societal challenges and transitions. Programmes in place in Norway to promote it include virtual research centers for environmentally friendly technologies, as well as cooperative research projects. Such cooperative research projects, which include a requirement for the participation of non-academic actors, now represent over 10% of the total budget of Research Council Norway. A key challenge, he explained, is the saturation of the capacity among stakeholders which may limit the development of radical thinking in applied research.

During the discussion that followed, panellists agreed on the following:

- Relationships between STI system actors are changing. Researchers are increasingly interested in engaging with society and addressing societal challenges. There is a need for good brokers that can bring together the diversity of stakeholders needed to address complex problems.
- Policy experimentation (test and learn approaches / risk taking) should be further encouraged if countries aim to be leaders in addressing societal challenges. Experimentation cannot wait for complete evidence and metrics to be available.
- The success of new schemes requires public buy-in as well as the right regulatory and policy incentives. Innovation requires investments, which in turn require market prospects. The whole value chain needs to be considered.

- Public sector capabilities need to be strengthened to be able to manage such new programmes and approaches.
- OECD work in this area is critical to facilitate the international sharing of good practices and incentivise decision-makers to increase the uptake of new tools and policy approaches.

Panel 3 – STI interfaces with other policy areas in pursuit of socio-technical transitions

Background

Policy co-ordination and coherence are among the oldest and most prevalent challenges for governments, and are today subject to greater scrutiny as policymakers confront multi-dimensional systemic problems like climate change. In a Zoom call poll conducted during CSTP's April 2021 meeting, country delegates identified "co-ordination with other policy areas" as the biggest challenge that could hinder STI policy contributing to sustainability transitions.

This result is hardly surprising: sustainability transitions cannot be achieved or even chiefly driven by STI and STI policy alone, though potentially they have much to contribute. Sectoral policies, including subsidies, taxes, regulations and technical standards in areas such as energy, mobility and agriculture, are expected to do much of the 'heavy lifting' in enacting sustainability transitions. These sectors in many OECD countries have their own considerable STI activities and capabilities, which, when taken together, can dwarf those under the direct responsibility of ministries of research and their funding agencies. Sectoral STI activities operate with their own logics, institutions and policy practices that often differ from those of 'mainstream' STI policy, and interactions between them can be weak. Links with non-STI performing policy areas, such as ministries of finance, can be even more fraught.

STI policies should therefore not stand on their own in the transition to net-zero systems, but should be integrated in a broader, systemic approach. Non-technical innovation, such as process innovation, innovative climate action, innovative governance arrangements, new business models, and improved financial frameworks are key to the transition to net-zero systems across sectors and at different levels of governance. In the context of net-zero pathways, systems innovation is about designing policies that help to deliver overall socio-technical systems that are low energy and low material by design while also inclusively improving well-being.

Efforts to promote cross-government STI linkages are not new, of course, and various arrangements have emerged over the years to improve the overall coherence of STI policies, programmes and instruments across a range of government departments and agencies, as well as at different governance levels (e.g. regional, national, EU). These include developing shared visions and missions, joint programming between agencies, joint customer-facing services, such as one-stop shops to serve innovative SMEs, and strategic oversight by high-level cross-departmental committees. The issue is whether these practices need to be adapted and extended for sustainability transitions and the practical steps governments will need to take to do so. S&T Policy 2025 could explore and compare country experiences at these cross-government interfaces to identify useful practices from which policy lessons can be drawn.

Panel presentations and discussion

Daniel Dufour, Director General of the Innovation Branch in Natural Resources Canada, described how Canada has implemented several new measures to better integrate policies in the wake of its new encompassing Strengthened Climate Plan, which aims to reduce emissions 30% by 2030. He highlighted the imperative to work better together, to engage all stakeholders, and that this starts with the national government being well coordinated, sequenced and integrated. It involves a well-articulated plan with

investment targets, a clear governance model with roles and responsibilities allocated across the system, and dedicated programmes and resources. On the latter, for example, the Canadian government is implementing a net zero accelerator that works across departments to enable clean technology transitions. It is also creating common pools of funding that departments can jointly apply for, which compels them to cooperate, as well as 'softer' measures, such as joint policy forums.

Maria Benedetta Francesconi, Head of Division for SMEs and Start-ups at the Ministry of Economic Development (Italy), outlined how Italy has set up ad hoc coordination groups within government focusing on specific initiatives, such as the digital transition. These have successfully convened people from across the system and encouraged them to work in a cross-ministerial way. There has also been growing recourse to experts and, because of this, an increase in the use of expert taskforces to supply the technical competencies the public service requires to make policy quickly and with a strong evidence base.

András Hlács, Counsellor for Education, Digitalisation and STI in the Delegation of Hungary to the OECD and UNESCO, described how Hungary's Smart Specialisation Strategy was revised in 2019 with the active involvement of different ministries, ensuring the strategy had a broad scope. The selection of strategic priorities was undertaken through an 'entrepreneurial discovery' methodology involving a wide range of stakeholders and non-government actors to bring in new perspectives.

Alexandr Hobza, Chief Economist in the European Commission's Directorate General for Research and Innovation (DG R&I), described how a co-design process was used to develop the strategic orientation of Horizon Europe, soliciting over 8,000 contributions from stakeholders to feed into the process. The EU Missions (focusing on cancer, climate change, oceans, healthy soil and food, and greener cities) were developed in a cooperative way, he explained, and are governed by Mission Boards that have experts, policymakers, and stakeholders working together. He pointed out that the Boards have mission managers who come from other Directorate Generals, beyond the DG Research and Innovation, in order to move policymaking beyond STI confines and into better collaboration with sectoral policies. He also described how the EU Next Generation Plan, which was developed holistically across Commission services, has triggered new opportunities (and needs) for cross-ministerial initiatives within EU Member States.

Federico Torres, Vice-Minister in the Ministry for Science, Technology and Telecommunication (Costa Rica), described how Costa Rica has launched a new National Bio-economy Strategy to address inclusive development, encompassing a wide range of issues related to inclusive development. He explianed how the government has developed new public governance mechanisms that build synergies nationally and internationally and use committees and funding platforms to mobilise different forms of actors and funding, including regional actors and innovation users.

The following main points were raised in the discussions that followed:

- The COVID crisis has made it clear to politicians, policy makers and stakeholders that it is the right moment to rethink how policy can be developed and implemented holistically. Policymakers are under pressure to achieve targets and results in shorter timeframes, requiring a whole-of-government approach that sees STI increasingly interact with sectoral, industrial, and environmental policies.
- However, a whole-of-government approach confronts policy makers with an array of growing demands for new governance models for cross ministerial coordination, engagement of new actors, dedicated programmes and resources, the technical competencies in STI ministries to reach out to sectoral ministries, mechanisms for staff mobility between government departments, and a change of mindsets and culture in administration.
- There is the need to embrace experimentation, identify policy gaps and possible models, and take an attitude of 'learn as we go' to undertake 'informed risk-taking'. Concerted efforts to better include evidence in decision-making are needed, making it intelligible to diverse audiences, and supporting its use in policy formulation.

- There is a role for non-government actors in sectoral or STI policies but there is the question of how to involve them in reform processes, in the development of plans and roadmaps, as well as in governance structures.

Takeaway messages and next steps

In this final wrap-up session, the chairs of the CSTP and its working parties were asked to reflect on the workshop's key takeaway messages and their implications for upcoming discussions on the 2023-24 programme of work and budget (PWB). In brief:

- **Yongsuk Jang**, Senior Research Fellow at the Science and Technology Policy Institute (Korea) and chair of the CSTP, stated that the S&T Policy 2025 concept should provide a guiding light on what challenges countries should aim to tackle together in the CSTP over the next few years. There are many unknowns, for example, on appropriate 'stretch targets' for STI policy to set itself, which the project should help the Committee to figure out. STI policy implementation capacities are an important concern for the project, as is the need to ensure sufficient funds are available for STI to contribute to transitions. While international collaboration was not discussed much during the meeting, he reminded everyone of its critical importance. For example, how can the global innovation system be improved? And what position for developing countries?
- **Gabriele Fioni**, Regional Commissioner for Higher Education, Research and Innovation for the Auvergne Rhône-Alpes region (France) and chair of the Global Science Forum (GSF), informed the meeting that the GSF was already looking at several issues relevant to STI-enabled socio-technical transitions. The COVID-19 pandemic has been an accelerator of change, and it is going to be vitally important to scale up those things that worked well. This means disruptive changes, and a concept like S&T Policy 2025 can help harbour these. But he also offered a word of caution for future STI policy agendas, pointing out the need to protect fundamental research and the need to garner public trust in science.
- **John Jankowski**, (Programme Director at the National Centre for Science and Engineering Statistics, National Science Foundation (United States) and chair of NESTI, remarked that he had heard a lot of national demands for innovative and experimental data during the meeting, but that these do not always coincide with multilateral efforts on statistics and indicators development. Policies for data are needed, and the CSTP should bring in NESTI at the start of projects to see what the policy data needs are.
- **Göran Marklund**, Deputy Director General of Vinnova (Sweden) and chair of TIP, welcomed the S&T Policy 2025 concept's multilevel transitions framework, which could offer an excellent arena for working out interdependent needs for new strategic intelligence, new governance arrangements, etc. He also endorsed plans to bring in other committees given STI cannot enable transitions on its own. But he also questioned whether STI policy reforms are happening at sufficient pace given the scale, scope and urgency of the societal challenges faced.
- **Francoise Roure**, Chair of the committee "Safety, Security and Risks" at the Ministry of Economy and Finance (France) and chair of BNCT, called for wide-ranging reforms that would see the public sector take greater risks to tackle societal challenges like climate chance. STI should be a 'multiplier force' for realising the SDGs. The necessary reforms would involve re-imagining policy visions, missions and actions, including policy instruments, and the ways in which these are evaluated.

Annex: Policy dialogue agenda

Panel 1 – Introducing the S&T Policy 2025 concept

Key questions for the panel:

- What are the main gaps or challenges that hinder a transformative STI policy agenda in your country?
- In what ways could the S&T Policy 2025 concept help address these gaps and challenges in your country? Specifically, what sorts of activities and outputs would you like the project to focus on?

Panellists:

- Cecilia Cabello Valdés, Director of Operations, Fundación Española para la Ciencia y Tecnología, Spain
- Dimitrios Pontikakis, Economist, Joint Research Centre, European Commission
- Tiago Santos Pereira, Centre for Social Studies, University of Coimbra, Portugal
- Pranpreya Sriwannawit Lundberg, Policy Specialist, Office of National Higher Education, Science, Research and Innovation Policy Council, Thailand

Moderator:

- Sylvia Schwaag Serger, Lund University and member of the Swedish Prime Minister's National Innovation Council, Sweden

Panel 2 – Mobilising research and innovation system actors for transformations

Key questions for the panel:

- How are relationships between STI system actors changing, if at all, to address grand societal challenges like climate change and COVID-19?
- What are the biggest challenges facing governments when trying to mobilise research and innovation system actors for sustainability transitions?
- To what extent are novel policy tools, such as MOIPs, collaborative platforms and support to TDR – all of which remain modest in scale – part of the solution for achieving sustainability transitions?
- What further steps could governments take to mobilise and improve coordination between STI system actors to help enact socio-technical transitions?
- What practical support could a project like S&T Policy 2025 provide to aid these efforts?

Panellists:

- Muriel Attané, Secretary General of EARTO, the European Association of Research and Technology Organisations
- Mark Ferguson, Director General, Science Foundation Ireland and Chief Scientific Adviser to the Government of Ireland
- Ben Smith, Senior Advisor, Research Council Norway
- Julia Reinaud, Senior Director, Breakthrough Energy
- Jeanne M. VanBriesen, Division Director for Chemical, Bioengineering, Environmental and Transport Systems, National Science Foundation, United States

Moderator:

- Sarah Brown, Counsellor for Industry, Science, Energy and Resources at OECD, EU and NATO, Australia Embassy

Panel 3 – STI interfaces with other policy areas in pursuit of socio-technical transitions

Key questions for the panel:

- How are STI and STI policy currently "positioned" in government-wide strategies and initiatives to address sustainability transitions and resilience?
- How should STI policy and other parts of government change to address grand societal challenges like climate change and COVID-19?
- What roles, if any, could non-governmental actors – including firms, public research performers, philanthropists, and international organisations – perform to improve coordination and coherence between STI and other domain areas?
- What practical support could a project like S&T Policy 2025 provide to improve communication and coordination between STI policy and other public policy areas?

Panellists:

- Daniel Dufour, Director General, Innovation Branch, Natural Resources Canada
- Maria Benedetta Francesconi, Head of Division for SMEs and Start-ups, Ministry of Economic Development, Italy
- András Hlács, Education, Digitalisation and STI Counsellor, Delegation of Hungary to OECD and UNESCO
- Alexandr Hobza, Chief Economist, DG Research and Innovation, European Commission
- Federico Torres, Vice-Minister, Ministry for Science, Technology and Telecommunication, Costa Rica

Moderator:

- Christian Naczinsky, Head of Department for EU and OECD Research Policy, Ministry of Education, Science and Research, Austria

Takeaway messages and next steps

In this final wrap-up session, the chairs of the CSTP and its working parties were asked to reflect on the workshop's key takeaway messages and their implications for upcoming discussions on the 2023-24 programme of work and budget (PWB).

- Yongsuk Jang, Senior Research Fellow, Science and Technology Policy Institute (STEPI), Korea (CSTP Chair)
- Gabriele Fioni, Regional Commissioner for Higher Education, Research and Innovation for the Auvergne Rhône-Alpes region, France (GSF Chair)
- John Jankowski, Programme Director, National Centre for Science and Engineering Statistics, US National Science Foundation, United States (NESTI Chair)
- Göran Marklund, Deputy Director General, Vinnova, Sweden (TIP Chair)
- Francoise Roure, Chairperson of the committee "Safety, Security and Risks", Ministry of Economy and Finances, France (BNCT Chair)