STI in an Age of Disruptive Change

- Disruptive shocks and crises and a greater emphasis on the **resilience** function of STI
- Climate change and the need for greater **directionality** in STI policy and international cooperation
- Strategic competition and the growing **securitization** of STI policy
- Rapid rise of emerging technologies and demand for improved **governance**

OECD Science, Technology
and Innovation Outlook 2023
ENABLING TRANSITIONS IN TIMES OF DISRUPTION

OECD
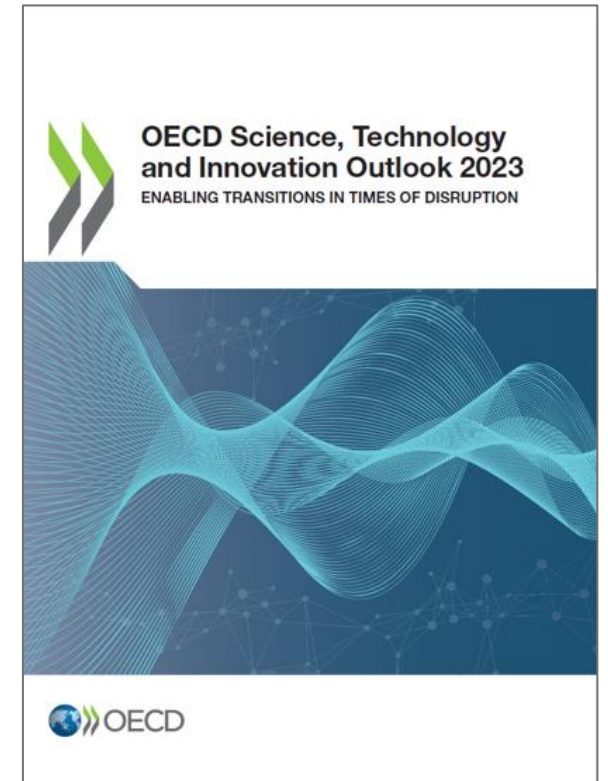
An agenda for transformative STI policies

NEW MODES OF PARTNERSHIP

How to spur and deepen **STI cooperation** between firms, the public research system, governments, and non-profit sectors for transition?

How to **engage society in STI** to further transitions?

How to promote **cross-government coherence** on STI-enabled transitions that depend on several government bodies cooperating?

How to leverage **international STI cooperation** in the interest of transitions?
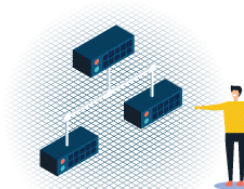
INNOVATION ENABLERS

How to direct **private financing and public funding** to support transitions?

How to **develop and implement emerging technologies** to enable just transitions?

How to **gear research and technical infrastructures** towards transitions?

How to nuture the **skills and capabilities** required for STI-enabled transitions?

How to ensure various **framework conditions** for STI are conductive to supporting transitions?

How to develop and use **knowledge and evidence** that support transitions?

Three key policy imperatives

1. **Ensure directionality** in research and innovation – incl. financing and collaboration
2. **Promote inclusion co-operation and partnerships**, favoring whole-of-government approaches, multistakeholder & citizen engagement, co-creation
3. **Prioritize anticipatory technology governance**, focusing on alignment, anticipation, agility, stakeholder engagement, international co-operation

Direct funding of Business R&D in the policy mix

Direct government funding and government tax support for business R&D

As a percentage of GDP, 2006 and 2020

Source: OECD R&D Tax Incentives Database, http://oe.cd/rdtax, January 2023

Legend: ■ Direct Funding of BERD ■ Tax Support for BERD ■ Subnational tax Support for BERD ◆ Total 2006 (excl. subnational tax support)
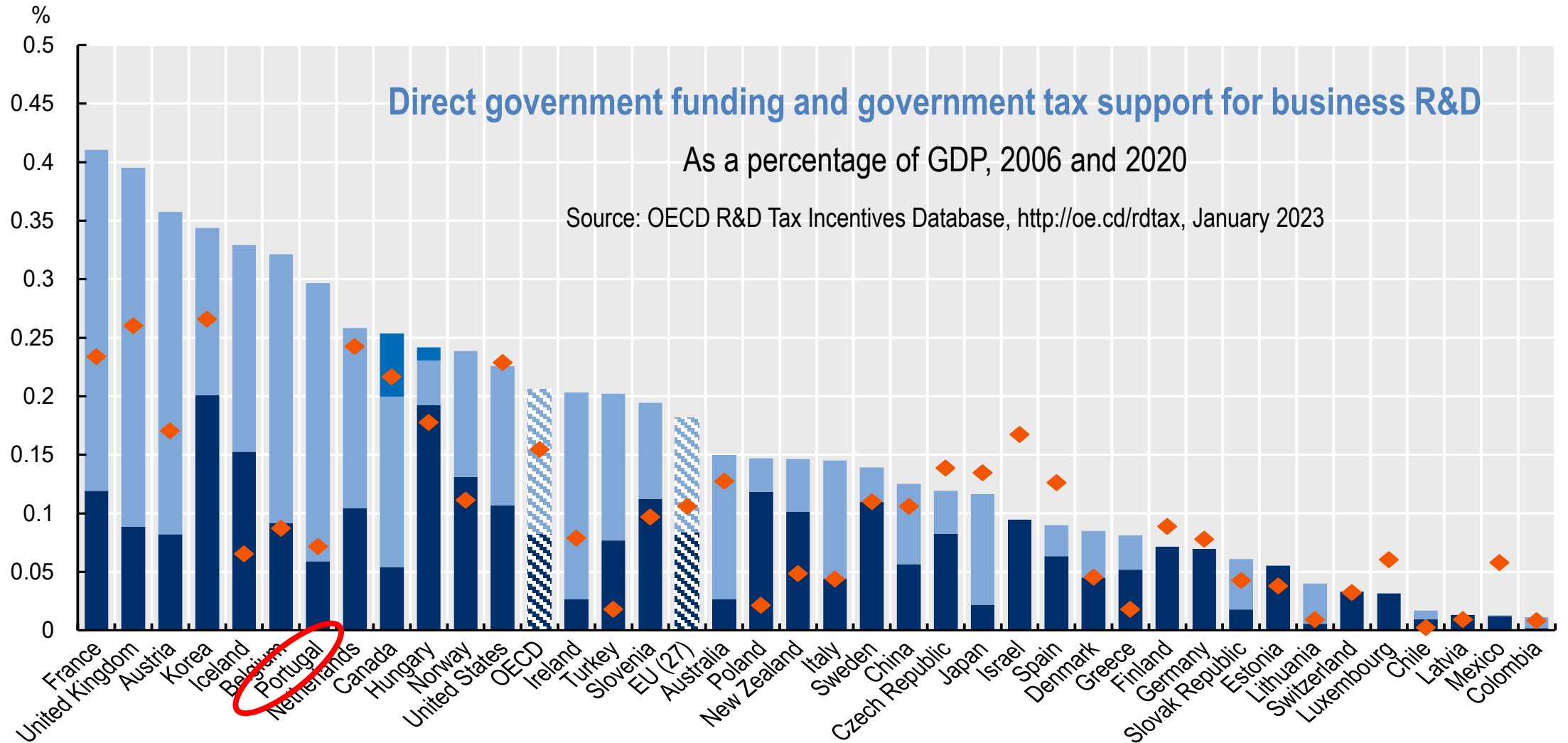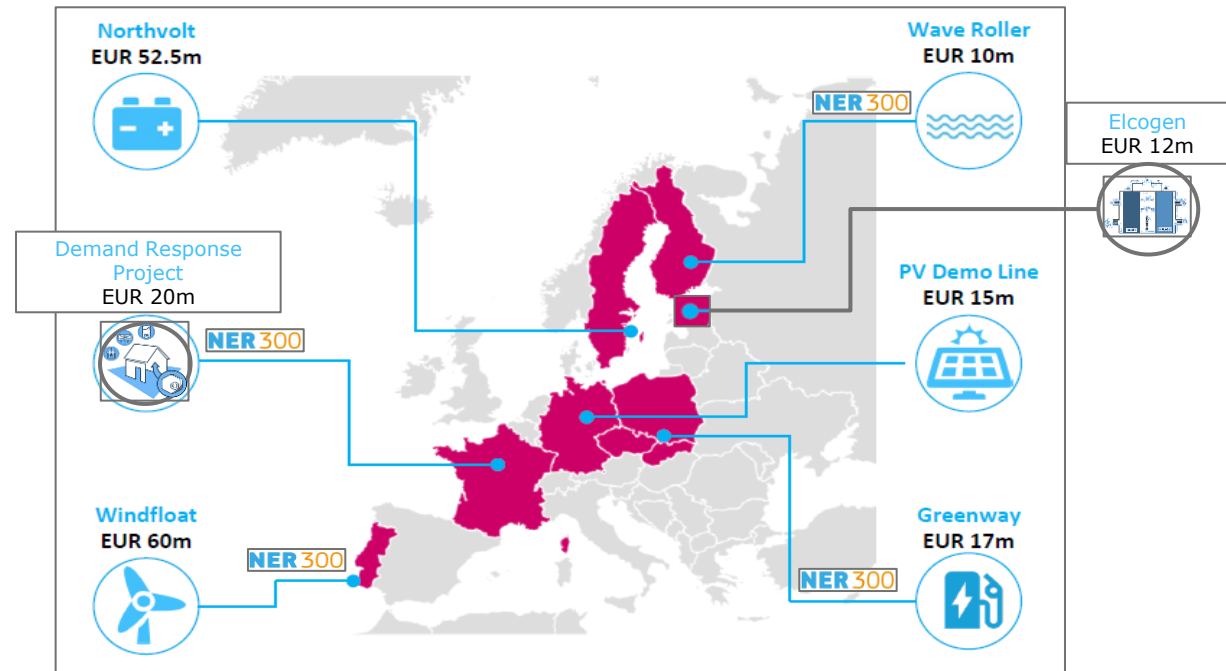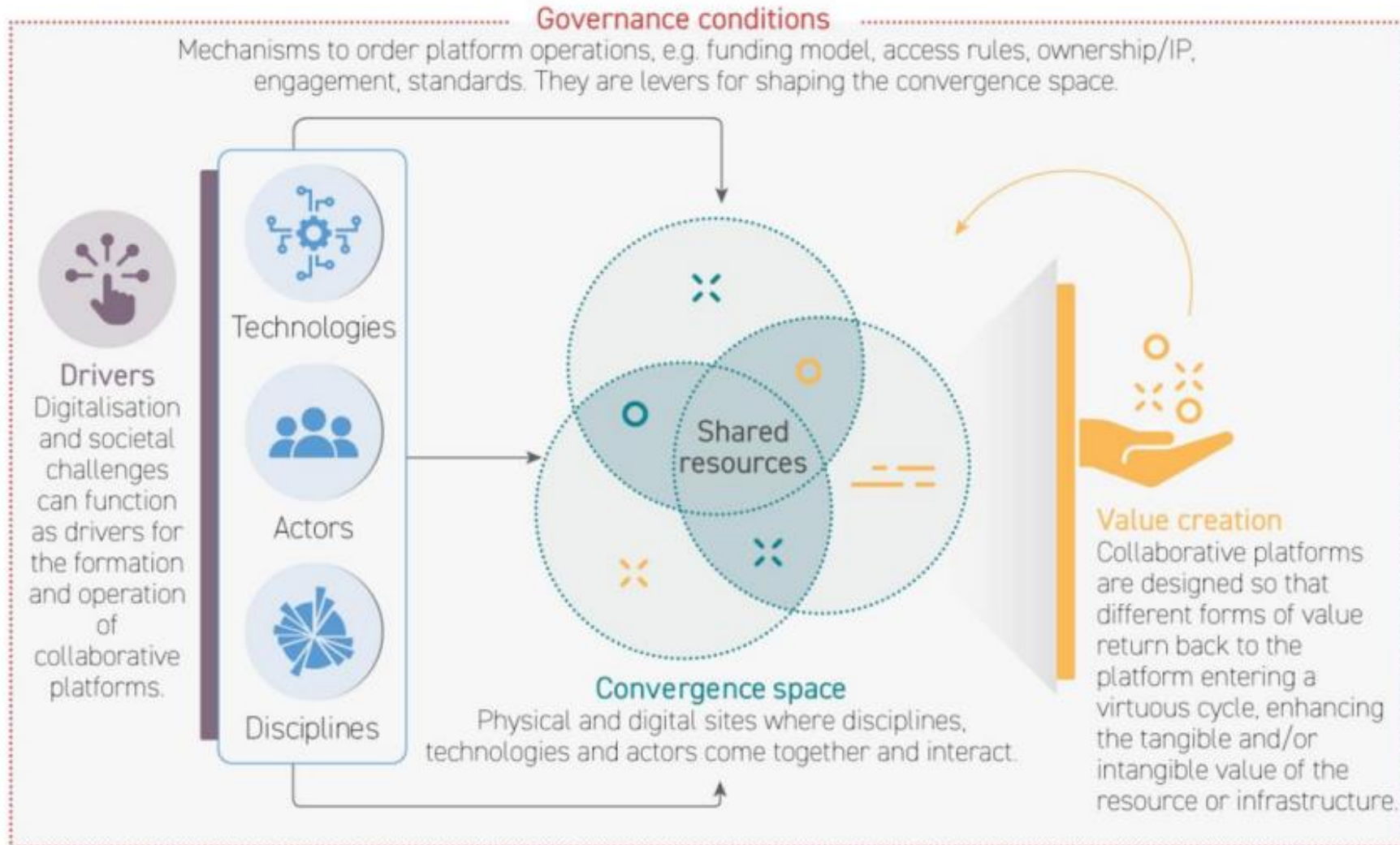
The role of blended finance

Blended finance can help **scale up private investments in R&D and innovation** to better meet sustainability challenges in both **developed and developing countries,** while **increasing directionality**.

E.g. InnovFin Energy Demo Projects

Northvolt
EUR 52.5m

Wave Roller
EUR 10m

NER 300

Elcogen
EUR 12m

Demand Response Project
EUR 20m

NER 300

PV Demo Line
EUR 15m

Windfloat
EUR 60m

NER 300

Greenway
EUR 17m

NER 300

Deepen STI relationships and modes of partnership

Source: OECD, Collaborative platforms for emerging technology, STI Policy paper April 2021 No. 109

Co-creation case Study: GreenCoLab

Key Takeaways

☐ diversified long-term financial sustainability

☐ industry-supported capacity-building

☐ independent monitoring through international and independent advisors and evaluators

☐ strong citizen engagement

GreenCoLab
Joining the pieces
in algal biotechnology.

Leveraging enabling technologies responsibly

Key messages

Actors at country and international levels seek guidance and agreement on how to **embed foundational values in technology** to make innovation more **responsible and responsive to societal needs.**

Innovators and societal stakeholders (funders, researchers, tech developers, associations etc) need to be brought in the **technology governance process.** This should occur at both the **national and international levels.**

General and anticipatory framework for the governance of emerging technologies is needed, to **use common tools and learning** to help address many recurrent policy issues and dilemmas.

An anticipatory tech governance framework could act as a **force for technological cooperation** at the international level by reinforcing the commonality and commitment of these values and tools.

Anticipatory tech governance: embedding values
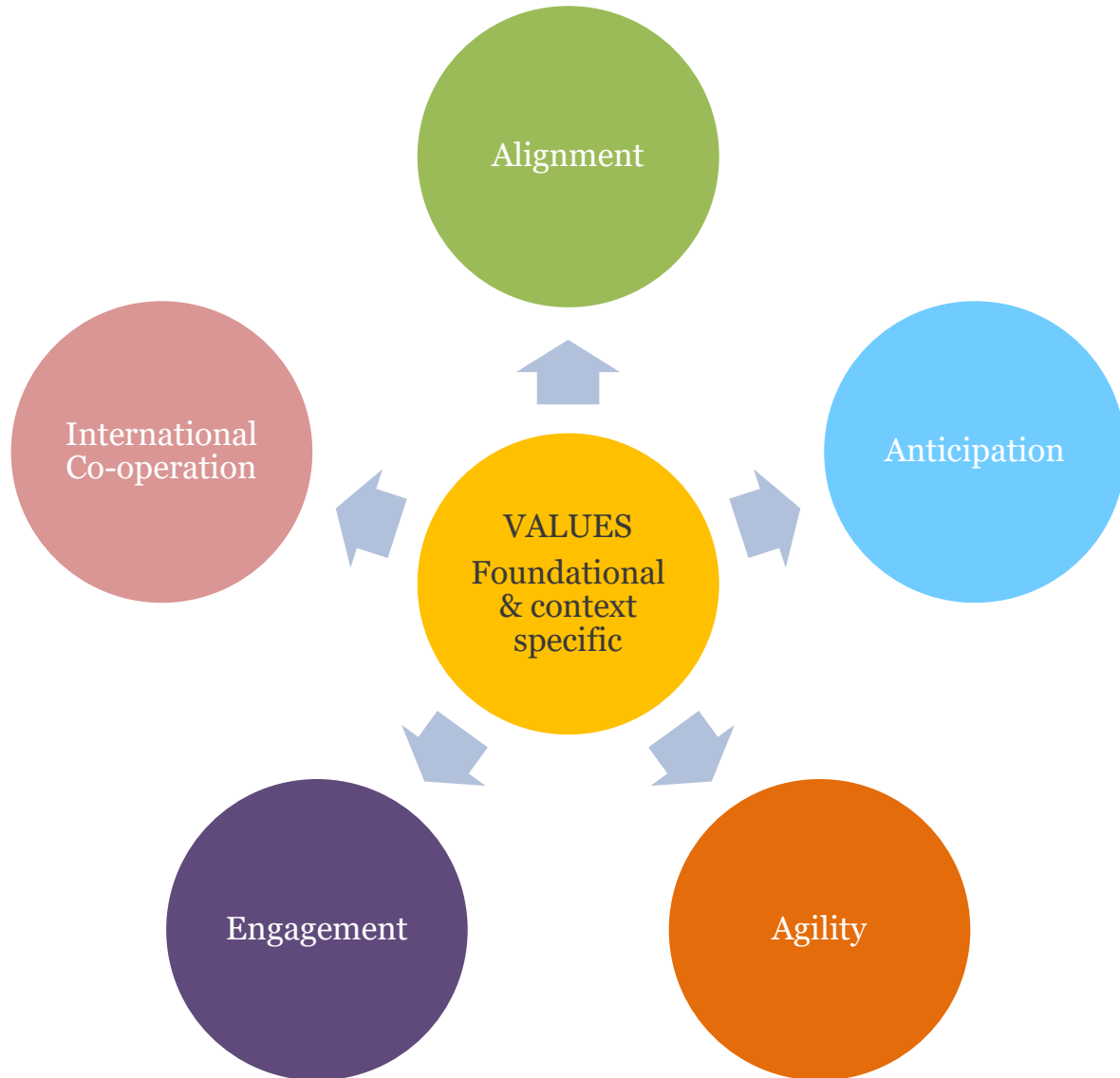
- ❑ **Alignment** of tech development with institutional and social values

- ❑ **Anticipation** enables the identification, upstream, of desirable futures outcomes, potential risks, risk benefit trade-offs and dilemmas

- ❑ **Agility** underpins a governance system that accommodates new evidence and new situations

- ❑ **Stakeholder & societal engagement** can surface societal goals at different points in the innovation system & promote public acceptance of S&T

- ❑ **International co-operation** through coordinated, collaborative research, common evidence bases and dialogue in international for (e.g. GFTech)

Science and technology policy: Shared challenges, transformative actions

OECD Science and Technology Policy Ministerial

23-24 April 2024

ENDORSING A TRASFORMATIVE AND ACTION ORIENTED POLICY AGENDA IN SCIENCE, TECHNOLOGY AND INNOVATION to accelerate sustainability transitions, while embedding shared values in the governance of science and emerging technologies and reaffirming the need for international co-operation in science, technology, and innovation to address global challenges.

1. Ministerial opening: science, technology and innovation policies for transitions in times of disruption
2. Responsible science and technology: aligning values for good governance
3. Transformative science, technology and innovation approaches for climate challenges (plenary followed by 3 breakouts)
4. International STI actions in science, technology and innovation to address global challenges
5. Ministerial closing – Endorsing the Ministerial Declaration

THANK YOU

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