OECD Submission to the First Global Stocktake  
(March 2023)

Together with governments, policy makers and citizens, the OECD works on establishing evidence-based international standards and finding solutions to a range of social, economic and environmental challenges. From improving economic performance and creating jobs to fostering strong education and fighting international tax evasion, we provide a unique forum and knowledge hub for data and analysis, exchange of experiences, best-practice sharing, and advice on public policies and international standard-setting.

The OECD provides this submission in response to the call for inputs for the first global stocktake (GST) of the Paris Agreement. The GST provides an important opportunity for Parties and the international community to course correct so that collective efforts are in line with the goals of the Paris Agreement as highlighted in a previous OECD-IEA Climate Change Expert Group (CCXG) submission to the GST in August 2022.

More information related to OECD work on climate change mitigation, adaptation and resilience, and finance can be found at: https://www.oecd.org/climate-change/

Mitigation

*What efforts are being undertaken to plan, implement and accelerate mitigation action towards achieving the goals defined in Articles 2.1(a) and 4.1 of the Paris Agreement?*

The OECD Climate Actions and Policies Measurement Framework (CAPMF) is a climate policy database that tracks selected information on countries’ mitigation efforts. It includes information from 50 countries\(^1\) and the EU, covering around 85% of global GHG emissions. The database includes information on the adoption and the stringency of 56 climate policies by tracking 128 policy variables over the 2000-2020 period. Figure 1 presents the policies covered in different sectors in the CAPMF database. The CAPMF database defines policy adoption in terms of how many policies were implemented in a specific time-period and policy stringency as the degree to which climate actions and policies incentivise or enable GHG emissions mitigation at home or abroad (Nachtigall, D., et al. 2022).

\(^1\) Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Malta, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Portugal, Romania, Saudi Arabia, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States.
Some of the key results from descriptive analysis of the CAPMF database are summarised below:

- **Countries strengthened their climate action in the last decade, though at different paces**: The results from the CAPMF indicate that 50 countries, on average, strengthened their climate action between 2010-2020. Countries increased both the number of policies adopted and the stringency of existing policies. This was driven by support instruments for renewable electricity, carbon pricing as well as bans and phase outs of fossil fuel infrastructure such as coal power plants. There are however significant differences in policy developments between countries, and individual countries progressed at different paces.

- **Countries have focused on meeting climate objectives through policy packages**: Countries covered in the CAPMF have enabled climate action by establishing emission targets, adopting integrated and multi-level governance approaches, and policy packages which include a diverse set of instruments.

- **Policy mixes vary significantly across time and across countries**: Policy mixes in many countries changed from cross-sectoral to a more sectoral focus and from non-market to market-based approaches. Market-based instruments, such as carbon pricing or financial support for renewable energy, have been increasingly adopted in 50 countries included in the CAPMF. Most of the 50 countries have adopted minimum energy performance standards (MEPS) for electric motors and electric appliances, building codes or fuel efficiency standards for vehicles. The stringency and adoption of MEPS for electric motors increased substantially in the last decade (Figure 2, Panel A). Bans and phase-outs of fossil-fuel equipment or assets...
are prevalent in the electricity sector and have been rising in recent years (Figure 2, Panel B). Countries have also started to ban fossil-fuel equipment on heating (oil and gas boilers) and in transport (passenger cars with internal combustion engines), both at a national and sub-national level.

Figure 2. Countries increased the stringency of non-market-based instruments

Note: MEPS = Minimum energy performance standards.
Source: (Nachtigall, D., et al. 2022)

- Despite progress, further efforts are needed to reach the goals of the Paris Agreement. While the results indicate that the 50 countries covered in CAPMF strengthened their climate action in the last decade, emissions are not on track to meet countries’ NDCs and countries still have room to strengthen their climate action to accelerate further emission reductions. Descriptive results of the CAPMF suggest that countries with stronger climate action are associated with steeper emission reductions. Analysis in Nachtigall et al. 2022 indicates countries with an above-average number of adopted policies and above-average policy stringency were most successful in reducing their emissions. However, these results should be taken with caution, since causation and correlation are difficult to disentangle, and more work is needed to explore which policy mixes work best under which circumstances to reach countries’ NDCs and the goals of the Paris Agreement.
Adaptation

Addressing the mandate of the GST on adaptation is not straightforward and there are several open questions and remaining gaps. Analysis by the OECD-IEA Climate Change Expert Group (CCXG) that explores what the first global stocktake (GST1) could usefully do to review the adequacy and effectiveness of adaptation and to facilitate enhanced implementation of adaptation action. It also highlights potential outputs from GST1, and how they could facilitate intended outcomes of the process on adaptation, taking into account the learning-by-doing approach of the GST. The paper concludes that the provision for learn-by-doing in the GST provides an important opportunity for the GST to develop, apply and refine approaches and methodologies over time as data availability improves. Thus, the GST1 could play a key role in helping to set a foundation for improved approaches and data on adaptation over time that can feed into subsequent GST cycles.

How adequate and effective are the current adaptation efforts and the support provided for adaptation towards achieving the goals defined in Articles 2.1(b) and 7.1 of the Paris Agreement?

How to collect information on and assess the adequacy and effectiveness of adaptation at a collective level is one of the open questions on how to approach the different elements of the GST mandate on adaptation. Analysis by the OECD-IEA CCXG highlights that to inform an assessment of adequacy and effectiveness of adaptation action such as under the GST, it may be more appropriate to focus on outcomes (i.e. effects) rather than processes (i.e. planning and policies). A combination of different approaches in triangulated assessments or mixed methods, which bring together different types of information and methodological approaches, could provide a more comprehensive picture of the adequacy and effectiveness of adaptation action. For example, quantitative indicators could usefully be complemented with qualitative information and approaches, such as a theory of change, to help establish a cause-and-effect relationship between an adaptation action and its results and provide a more complete assessment. Further work is currently being carried out by the OECD to understand how to measure progress in implementation adaptation policies at the national level.2

A collective assessment of adaptation under the GST will need to draw on various sources of information at different scales, apply different methodologies and complementary approaches. One approach could be to rely on country self-assessments of their own adaptation efforts which could in turn feed into a collective assessment under the GST. As set out in analysis by the OECD-IEA CCXG, for example:

- Countries could undertake self-assessments of the adequacy and effectiveness of their own adaptation actions via different methods, e.g. triangulated assessments, mixed methods, scorecards, assessing outcomes on a continuum, etc. Country self-assessments could be focused on outcomes, in terms of capacity and risk for example, integrated in Parties’ M&E processes, and build on lessons from current experiences and good practices.
- The GST could compile findings from country self-assessments to provide an approximate assessment of global trends. This would necessarily be an approximate assessment, as it would involve an aggregation of non-comparable information. Nonetheless, it could enable the GST to make a simple “traffic light” assessment of progress and gaps in relation to specific types of adaptation action (e.g. coastal protection), areas of the Global Goal on Adaptation

2 https://www.oecd.org/climate-change/adaptation-measurement/
How can the implementation of adaptation action towards achieving the goals defined in Articles 2.1(b) and 7.1 of the Paris Agreement be enhanced, taking into account the adaptation communication referred to in paragraph 10 of the Paris Agreement?

How a global level process like the GST could help to enhance implementation of action on the ground is one of the open questions on how to approach the different elements of the GST mandate on adaptation. The GST mandate to “enhance the implementation of adaptation action” is closely related to other elements of the GST adaptation mandate. For example, assessing the adequacy and effectiveness of adaptation action can provide an opportunity to learn from successful and unsuccessful practices to inform future adaptation efforts, adaptation support and implementation priorities. Similarly, reviewing the adequacy of adaptation support could potentially lead to enhanced implementation of adaptation action if it leads to increased and more effective delivery of adaptation support.

One important enabling factor that could support enhanced implementation is a functional adaptation monitoring and evaluation (M&E) system / a monitoring, evaluation and learning (MEL) system to incorporate learning. There is an opportunity to scale up efforts and learn lessons from experiences with establishing M&E systems (and emerging experiences with MEL). An M&E system focused on learning is important both for providing relevant inputs to inform the GST and for translating GST recommendations into national processes. As set out in analysis by the OECD-IEA CCXG, there is potential for positive feedback loops whereby GST outputs can feed into national efforts and help strengthen the domestic enabling environment, including M&E / MEL systems, which can lead to improved information, including on adaptation outcomes, which can in turn inform subsequent GST cycles and support improved implementation of adaptation action over time.

The final package of GST1 outputs could outline recommendations targeting specific actors to enhance implementation of adaptation action over time as set out in analysis by the OECD-IEA CCXG, e.g.:

- Parties could be invited to conduct self-assessments of their own adaptation efforts as part of their reporting on adaptation-related information in national submissions to the UNFCCC.
- The Adaptation Committee, the Least Developed Countries Expert Group and the Standing Committee on Finance could be invited to take forward further technical work to assess different tools and methodologies for reviewing adequacy and effectiveness, and potential options to combine different approaches in triangulated assessments or mixed methods. Increasing understanding of available tools and methodologies for assessing adequacy and effectiveness of adaptation action can help to inform the development of Parties’ M&E systems and provide improved information to feed into subsequent GSTs, potentially supported by improved data collection and reporting in future years.
- The Paris Committee on Capacity-building could be directed to prioritise capacity building support for GST follow-up including support for the development and enhancement of Parties’ adaptation M&E/MEL systems.
- The UNFCCC Secretariat could be invited to consider how activities under the Glasgow-Sharm el-Sheikh work programme on the GGA could complement the GST process, including efforts to identify methodologies, indicators, data, and metrics for assessing
progress towards the GGA which could inform the review of adequacy and effectiveness in subsequent GST processes.

- The research community, including the IPCC, could be invited to address priority gaps in information, guidance, and methodologies identified by the GST technical dialogue process, including updating relevant adaptation-related methodologies and technical guidelines.
- Non-Party stakeholders could be encouraged to incorporate GST adaptation recommendations in their work such as supporting NAP planning processes as well as the development and enhancement of adaptation M&E / MEL systems in countries.

In order to achieve the goals defined in Articles 2.1(b) and 7.1 of the Paris Agreement: a) What further action is required? b) What are the barriers and challenges, and how can they be overcome at national, regional and international levels? c) What are the opportunities, good practices, lessons learned and success stories?

Further action is required to achieve the adaptation-related goals of the Paris Agreement. This includes further efforts on monitoring exposure to climate-related hazards which can support policymakers to develop and implement appropriate policies that can help to reduce climate exposure and vulnerability.

The OECD developed a set of climate-related hazard indicators that showcase which areas, regions or communities are most impacted by climate-related hazards. The indicators assess seven hazard types (extreme temperature, extreme precipitation, drought, wildfire, wind threats, river flooding and coastal flooding) and the exposure of people and assets to these hazards (across four exposure variables - built-up areas, croplands, forests, and population density). All indicators are publicly available on the OECD.Stat database. Details on methodologies used to develop the set of climate-related hazard indicators can be found in the OECD Working Paper.

The data set has:
- **Global geographic coverage**: covering all countries in the world with a special focus on selected countries.
- **Time series**: covers the period from 1979 and includes data up to 2021, depending on data availability.
- **Timeliness**: based on regularly updated data sources permitting consistent time series and anomaly calculations.
- **Subnational focus**: High-resolution hazard data is overlaid with other socio demographic or economic data to produce indicators at different national and subnational scales.

Results show that impacts on populations and assets vary depending on the geographic location, with significant differences across countries in terms of exposure to climate-related hazards. Bringing together the different climate-related hazards also helps identify regions prone to multiple hazards such as the southwest of the United States, Madagascar or southeast Asia (see Figure 3).
Figure 3: Spatial distribution of number of climate-related hazards a geographical area is exposed to over a given period (2017-21 average)

Note: The hazard hotspot map identifies the number of climate-related hazards (extreme temperature, wildfire, wind threats, river and coastal flooding) that regions are prone to experience based on annual averages from 2017 to 2021. For each hazard, a specific threshold was applied to determine whether or not a region is exposed (see table below). Note that potential exposure to a hazard does not imply disaster risk because the local population, built environment or natural ecosystems may be adapted to the occurrence of the hazard.

Table 1: Exposure thresholds

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Exposure threshold</th>
<th>Links to OECD database</th>
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<tbody>
<tr>
<td>Extreme temperature</td>
<td>More than 14 hot days (daily maximum temperature &gt; 35 °C) or tropical nights (daily minimum temperature &gt; 20 °C) per year</td>
<td>IEA/OECD (2022), “Climate-related hazards: Extreme temperature”, Environment Statistics (database), <a href="https://oe.cd/dx/4TF">https://oe.cd/dx/4TF</a></td>
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<tr>
<td>Wind threats</td>
<td>Occurrence of violent storms (Beaufort class 11) or an exposure to tropical cyclones with a 100-year return period (Hurricane category 1 or higher on the Saffir Simpson scale)</td>
<td>IEA/OECD (2022), “Climate-related hazards: Wind threats”, Environment Statistics (database), <a href="https://oe.cd/dx/4TJ">https://oe.cd/dx/4TJ</a></td>
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Source: (Maes, M., et al., 2022)
Finance

Article 2.1c

What is the collective progress in terms of the current implementation of, and ambition in, making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development towards to achieving the goal defined in Article 2.1 (c) of the Paris Agreement?

Assessing progress towards the goal of “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” requires producing evidence about investments and financing (flows and stocks) across both the financial sector and the real economy. Three OECD country-sector pilot studies conducted to assess the consistency with climate mitigation policy objectives of real economy investments in Norway’s manufacturing industries (Dobrinevski and Jachnik, 2020a), Latvia’s transport sector (Dobrinevski and Jachnik, 2020b), and the United Kingdom’s buildings sector (Jachnik and Dobrinevski, 2021) yielded the following overarching conclusions:

- Real economy investments are currently only partially consistent with Article 2.1c of the Paris Agreement;
- Different reference points for assessing consistency (such as international- and national-level scenarios or performance thresholds) lead to varying results;
- Conducting robust assessments is dependent on accessing granular data on climate mitigation-related targets and pathways, greenhouse gas and energy performance of assets, corporate and household investments, as well as on financing sources;
- It is very challenging to link financing sources to real economy investments.

From the perspective of the financial sector, further OECD work has found that:

- Under current investment regulations in OECD and G20 countries, pension funds and insurance companies can only allocate a small portion of their assets under management (i.e. finance stocks) towards infrastructure in the real economy, and that, within this, less than a third can be considered “green” (OECD, 2020).
- The lack of transparency, comparability, and interoperability in current climate transition and ESG investing practices results in fragmentation which undermines market integrity (OECD, 2021). In this context, the OECD developed guidance for policy makers and market participants seeking to strengthen ESG investing and finance a climate transition through the use of quality metrics, ratings, targets and frameworks (OECD, 2022). The OECD also developed guidance on transition finance which must be grounded in credible corporate climate transition plans (2020a). Elements of credible plans include setting interim targets, internal coherence with a company’s business plan, transparency and verification, and mechanisms for preventing carbon-intensive lock-in.
- There is growing landscape of coalitions, frameworks and methodologies promoting the alignment of finance with the temperature goal of the Paris Agreement. Classifying initiatives according to these three categories helps clarify their purpose and role. However, initiatives may perform multiple and evolving roles over time. In this context, coalitions and frameworks promoting climate-transition and -alignment in the financial sector can build on and be informed by existing international frameworks, such as the OECD’s Responsible Business Conduct Due Diligence Guidance (OECD, n.d.).
• Climate-alignment assessments of finance agree on a high level of misalignment of financial assets, but different methodological perspectives lead to different alignment metrics and climate ratings for a given asset (Noels and Jachnik, 2022). Moreover, high E scores under ESG ratings are not correlated with factors such as reduced greenhouse gas emissions and emission intensity over time or increased use of and investment in renewable energy (OECD, 2022c). In turn, this makes the E pillar not a useful tool to assess or indicate a company’s current level of short-term reduction in greenhouse gas emissions and emission intensity or investment in environmental R&D and renewable energy, which could limit market participants’ use of it.

• A range of different and complex methodological choices, as well as current scope and data limitations, across four dimensions of climate-alignment assessment methodologies impact the environmental integrity and policy relevance of alignment or misalignment results (Noels and Jachnik, 2022).
  o Coverage of financial asset classes: Gaps in asset class coverage could undermine the environmental integrity of climate-alignment assessments as it may result in not capturing a range of underlying economic actors, activities and physical assets responsible for significant portions of GHG emissions.
  o Choice of greenhouse gas (GHG) performance metrics: In particular, absolute versus intensity-based metrics may find different alignment results for a given asset. The temporal coverage of the methodology is also a strong driver of alignment results and variation. Notably, alignment tends to be assessed more frequently as being achieved using methodologies that only look at a unique point-in-time in 2050. However, such results may allow for delayed action and fail to capture the cumulative emissions that drive temperature outcomes. The results of climate-alignment assessments are influenced by the coverage of GHG emissions (type and scope) as well as by the treatment of offsets. While the former is mainly constrained by data availability and quality (notably for scope 3 GHG emissions), there remains much opacity about the use of offsets by economic and financial sector actors, which in turn results in a lack of clarity in alignment assessment methodologies.
  o Selection of climate change mitigation scenarios: The absence of agreed approaches to disaggregate the global PA temperature goal and downscale GHG emissions scenarios is a core source of uncertainty and variation when assessing the alignment of financial assets. Moreover, the underlying uncertainties and assumptions of (the currently limited number of) climate change mitigation scenarios relied on by climate-alignment assessment methodologies are not well communicated.
  o Approach for aggregating alignment assessment for a given asset class and at portfolio level: Aggregate-level assessments of financial portfolios add another layer of complexity and can hide individual activities that may be misaligned. There is no agreed approach to aggregate and allocate alignment results for a given financial asset class, and even less so across different asset classes as these need to follow different alignment assessment methodologies.

Looking ahead, the OECD will continue its efforts to contribute to the development of robust and policy-relevant approaches, methodologies, assessments and indicators to assess progress towards Article 2.1c, from the perspectives of both “low greenhouse gas emissions” and “climate-resilient development” goals. To the extent made possible by data availability, ongoing and foreseen work seeks to address both the mitigation- and resilience-related provision of Article 2.1c of the Paris Agreement, real-economy investments and the financial system, as well as the interlinkages between
the two, and financial flows and stocks. In addition to analysing finance as such, these efforts also intend to provide evidence about public policies, instruments and broader conditions that facilitate or hinder the mobilisation and redirection of financial flows and stocks to climate-consistent activities, building on OECD analytical expertise on this area (see for instance Ang, Röttgers and Burli, 2017).

Climate finance and the USD 100 billion goal

The annual goal for developed countries to provide and mobilise USD 100 billion of climate finance per year for climate action in developing countries was due to have been met in 2020 and to be sustained to 2025. Since 2015, the OECD has produced several analyses to assess progress towards this goal. These OECD analyses provide both historical figures of actual progress towards the goal and forward looking scenarios of climate finance provided and mobilised for developing countries.

Historical figures of actual progress towards the goal

The latest two of these reports, both released in 2022, provide trends up to 2020. In particular:

- “Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries in 2013-2020” (OECD, 2022b) found that USD 83.3 billion was provided and mobilised jointly by developed countries for climate action in developing countries in 2020 and that therefore the collective level of developed country climate finance remained USD 16.7 billion short of the goal. The report also found that:
  - Mitigation finance remained the majority, but adaptation finance continued to grow, in both relative and absolute terms.
  - Loans continued to be the main instrument used to provide public climate finance.
  - Climate finance mainly targeted Asia and middle-income countries.

- “Climate Finance Provided and Mobilised by Developed Countries in 2016-2020: Insights from Disaggregated Analysis” (OECD, 2022a) provided disaggregated data analysis of climate finance provided and mobilised in 2016-2020 across climate finance components, themes, sectors, and financial instruments. The analysis found that:
  - Climate finance provided and mobilised largely focused on mitigation in relatively high-emitting countries. The likely drivers of this trend include more readily available pipelines of sizeable and financially sustainable projects for mitigation than for adaptation.
  - While loans overall represented most of the public climate finance provided, grants represented a larger share of climate finance for SIDS, LDCs and fragile states, compared to developing countries overall, likely due to their economic and socio-political conditions that do not favour loan-based finance due to limited absorptive and repayment capacity.
  - Increasing private climate finance mobilisation has proved challenging, and most private climate finance was mobilised for projects in middle-income countries with relatively conducive enabling environments and relatively low-risk profiles.

Forward looking scenarios

As indicated in a previous OECD submission to the GST in February 2022, analysis based on forward-looking public climate finance commitments from developed countries and projections of climate finance from multilateral development banks, and communicated in the context of the donors’ Delivery Plan shows that the USD100 billion goal is likely to be met in 2023 (OECD, 2021b). This 2021 OECD analysis also highlights the inherent uncertainty of any attempt to quantify future levels of aggregate climate finance.