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INTERNATIONAL PROGRAMME FOR ACTION ON CLIMATE (IPAC) – PRELIMINARY DASHBOARD

(Note by the Secretary-General)

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1. This document sets out, in its Annex, the preliminary International Programme for Action on Climate (IPAC) Dashboard that is envisaged as a key deliverable for the MCM (5-6 October 2021), the approach used for climate-related indicators, and a preliminary indicator development agenda. The process for developing the Dashboard and next steps are described in the sections below.

Introduction

2. The recently released Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) states that climate risks will be significantly reduced if we can limit emissions in line with the low-emissions scenarios consistent with the Paris Agreement goal. More and more countries are committing to net-zero emission targets around mid-century, as well as reinforcing their Nationally Determined Contributions (NDCs) by 2030, or have signalled an intention to do so. The OECD is undertaking an extensive range of efforts to support countries to achieve both their national climate objectives and the collective efforts under the Paris Agreement [see C(2021)131].

3. IPAC was established by the Council on 19 April 2021 [C(2021)63/REV1] and launched at the MCM in May 2021[1]. The G7 and G20 groups noted in their communiqués the value of supporting international initiative such as IPAC[2].

4. IPAC will help countries to progress towards net-zero greenhouse gas emissions and a more resilient economy by mid-century. IPAC will provide information and tools to monitor, evaluate and improve the effectiveness of participating countries' climate actions. It will enable the sharing of good practices and provide targeted policy advice and internationally harmonised indicators that are complementary to the United Nations Framework Convention on Climate Change (UNFCCC) and aligned with the objectives of the Paris Agreement (PA)[3]. The IPAC initiative thus aims to enhance countries' ability to disclose and harmonise information, making their climate-related commitments more credible and operational, by taking into account the common but differentiated responsibilities, the respective capabilities and national circumstances, and enabling them to measure and achieve progress in meeting their own climate goals. Ensuring close alignment with wider OECD climate action, IPAC has been incorporated as a fourth pillar in the Horizontal Project (HP) on Building Climate and Economic Resilience [C(2021)63/REV1][4].

5. The Programme is open to all OECD Members and to selected non-OECD Members: the five Key Partners (Brazil, China, India, Indonesia, South Africa), the six prospective members (Argentina, Brazil, Bulgaria, Croatia, Peru, Romania), and two non-OECD G20 countries (Russia, Saudi Arabia).

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[1] 2021-Ministerial-Council-Statement-Part-I.pdf (oecd.org)

[2] See 11-13 June 2021 Carbis Bay G7 Summit Communiqué, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1001128/Carbis_Bay_G7_Summit_Communique__PDF__430KB__25_pages_.pdf and the 23 July 2021 Joint G20 Energy-Climate Ministerial Communiqué, https://www.g20.org/wp-content/uploads/2021/07/2021_G20-Energy-Climate-joint-Ministerial-Communique.pdf.

[3] For countries Party to the Paris Agreement.

[4] The other HP modules are (1) Framing the Climate Challenge after COVID-19 crisis: Tipping Points and Systems Thinking; (2) Accelerating the low-carbon transition to build climate and environmental resilience and to alleviate impacts of the COVID-19 crisis; (3) Building systemic resilience to climate impacts.

6. IPAC is articulated around four components:

   - The **IPAC Dashboard**, composed of key climate-related indicators, will provide an overview of country progress and trajectories toward net-zero. The Dashboard's indicators derive from a broader set of climate-related indicators that covers additional aspects and provides further detail. The Dashboard will take the form of an interactive web page, with data visualisation tools.
   - The **Annual Climate Action Monitor**, based on the indicators Dashboard and supported by a policy framework, will provide a digest of country progress towards their own climate objectives and their alignment with Paris Agreement goals[5]. The monitor will provide examples of good climate mitigation and adaptation practices and results. It will take the form of an interactive web page, with data and text visualisation tools. The first edition of this web tool will be available in time for COP26 in November 2021.
   - **IPAC Country Notes** with targeted policy advice, to assist in the design of coherent and phased mitigation and adaptation actions that are economically viable and sound, as well as socially acceptable. The country notes will use the broader set of climate indicators, and take into account countries' economic structure, as well as social, regional and geographical factors. The country notes will be available in 2022.
   - The IPAC **Interactive Platform** for dialogue and mutual learning across countries. The platform will propose topics for discussion on innovative approaches and good practices. This digital space will also provide online discussion among countries using a dedicated Community site. The interactive platform is due to be available in 2022.

The development of the IPAC Dashboard

7. The Dashboard was developed through in-depth discussions of the Technical Expert Group (TEG)[6] of IPAC on 26 May and 6 July 2021 and benefited from their subsequent written comments. The design was then further refined based on comments from the Environmental Policy Committee (EPOC) and reviewed by the oversight body of the Horizontal Project on Building Climate and Economic Resilience, known as the Committee Leadership Group (CLG), which is composed of the Chairs of twelve OECD Committees most implicated in OECD climate work.[7] EPOC's comments broadly reiterated support for the IPAC indicator work and highlighted areas for refinement and future additional indicators.
8. Delegates recognise that the choice of indicators and their definitions may evolve over time, as new or improved data and methodologies become available. Some of the more technical comments will continue to be addressed in the next rounds of developments of the

[5] For countries that are Party to the Paris Agreement.

[6] The TEG is composed of representatives from 32 countries, 8 international organisations/agencies (EU, EBRD, IEA, ITF, NEA, ONS, UNFCCC, UNSD), one NGO (Climate Transparency) and OECD staff from across different Directorates.

[7] Regional Development Policy Committee (RDPC), Committee on Fiscal Affairs (CFA), Insurance and Private Pensions Committee (IPPC), Working Party on Responsible Business Conduct (WPRBC) under the Investment Committee (IC), Development Assistance Committee (DAC), Economic Policy Committee (EPC), Environment Policy Committee (EPOC), Public Governance Committee (PGC), Committee on Statistics and Statistical Policy (CSSP), Committee for Scientific and Technological Policy (CSTP), Committee for Agriculture (COAG), Trade Committee (TC).

Dashboard in the months ahead. As the responsible committee, EPOC will continue to be consulted as this work progresses.

9. Coherence and complementarity with the OECD "Dashboard to Monitor a Strong, Resilient, Green and Inclusive Post-COVID-19 Recovery" [C(2021)95], also envisaged for launch at the MCM (5-6 October 2021), is ensured through its environmental pillar. Main findings from the Post-COVID-19 Recovery Dashboard would inform the IPAC Annual Climate Monitor.

Next steps

10. The preliminary list of dashboard indicators, the broader set of IPAC indicators, as well as the indicator development agenda constitute a first edition of the work on IPAC data and indicators. It is important to note that this work will evolve over time, as new or improved data and methodologies become available.

11. A preliminary indicator development agenda has been prepared by the TEG to fill statistical and methodological gaps, and is presented in the Annex, section 3. It includes ongoing and planned work with short term deliverables (e.g. quarterly GHG emissions, consistency of financial flows, fossil fuel support), medium to long term deliverables (e.g. inequality of exposure to climate-related risks and distributional implications of climate policy, climate-related expenditure and budgets, climate-related jobs and skills and labour market opportunities arising from climate action), as well as measurement issues that will need to be addressed in the short term (e.g. defining a way to associate emission indicators with NDCs or national objectives for countries not Party to the PA, and to measure emission trajectories towards GHG neutrality). The indicator development agenda will be further refined after the MCM (see Annex, section 3). Due consideration should be given to the situation of the developing countries.

12. A first edition of the Dashboard, presenting those indicators that are currently available, is being prepared for launch at the MCM (5-6 October 2021). It will also support the progress report on the IPAC Climate Action Monitor that is being prepared as a deliverable to the COP26 (31 October-12 November 2021).

13. In the coming months, the preliminary Dashboard will be further discussed and refined through the TEG. The broader set of IPAC indicators is being reviewed in parallel. Some of the more detailed comments received from TEG members and EPOC delegates and the best way to relate emission indicators to NDCs and to net-zero trajectories will be addressed during this process.

14. An updated *Dashboard* will be available in the first half of 2022, as will the full list of IPAC indicators and a revised development agenda with timelines.

Annex. International Programme for Action on Climate (IPAC) – Preliminary Dashboard

1. The International Programme for Action on Climate (IPAC) was established by the Council on 19 April 2021 [C(2021)63/REV1] and launched at the MCM in May 2021.[8] IPAC will provide information and tools to monitor, evaluate and improve the effectiveness of participating countries' climate actions, and enable countries to measure and achieve progress in meeting their own climate goals. It will enable the sharing of good practices and provide targeted policy advice that is complementary to the United Nations Framework Convention on Climate Change (UNFCCC) and Paris Agreement (PA)[9].
2. IPAC is articulated around four components:
    - The **IPAC Dashboard**, composed of key climate-related indicators, will provide an overview of country progress and trajectories toward net-zero. The Dashboard derives from a broader set of climate-related indicators that provides additional detail. It takes the form of an interactive web page, with data visualisation tools.
    - The **Annual Climate Action Monitor**, based on the Dashboard and supported by a policy framework, will provide a digest of country progress towards their own climate objectives and their alignment with PA goals[9], and give provide examples of good practices and results. The first edition of a web-based monitor will be available for COP26 in November 2021.
    - **IPAC Country Notes** with targeted policy advice, to assist in the design of coherent and phased mitigation and adaptation actions that are economically viable and sound, as well as socially acceptable (due to be available in 2022).
    - The IPAC **Interactive Platform** for dialogue and mutual learning across countries (due to be available in 2022).

1. The approach to IPAC indicators

3. The availability of harmonised and analytically sound indicators is a cornerstone of IPAC. The selection of IPAC indicators builds on the conceptual frameworks and guidance elaborated for the development, measurement and use of environmental and green growth indicators, adapted to climate change issues. It builds on existing OECD and other international indicator sets, and on a large climate-related information base available from the OECD, the International Energy Agency (IEA), the International Transport Forum (ITF), the Nuclear Energy Agency (NEA) and other international sources, including the UNFCCC (Figure 1). The IPAC indicator framework uses an adapted "pressure-state-response" model to structure the indicators (Figure 2). This adapted model integrates the topics covered in the assessments of the IPCC and used in the United Nations Statistical

[8] 2021-Ministerial-Council-Statement-Part-I.pdf (oecd.org).
[9] For countries that are Party to the Paris Agreement.

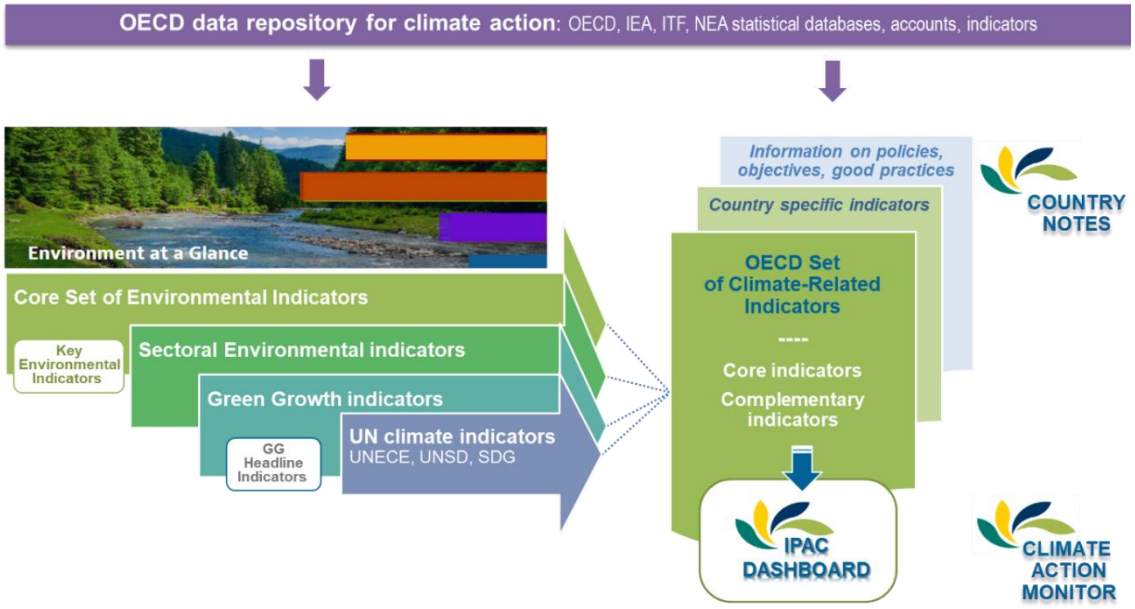
Division (UNSD)[10] and United Nations Economic Commission for Europe (UNECE)[11] indicator frameworks. Synergies with the IMF Climate Change Indicators Dashboard on which the OECD co-operates are also being used.[12]

4. A number of criteria are used for selecting the indicators and validating their choice. It is important that the indicators be policy relevant and of value for users as well as be analytically sound and measurable.[13]

5. The IPAC dashboard will provide a common denominator. With the Climate Action Monitor, it will provide key insights and a clear narrative of climate action and progress backed by a broader set of commonly agreed indicators. The related web pages will be simple to use and interpret, showing both cross-country comparisons and trends over time, making it a powerful communication tool.

6. The broader set of climate-related indicators, from which the Dashboard indicators are derived, will help inform the IPAC Country Notes and other climate-related work undertaken in the OECD. It will provide a basis for better understanding the performance of specific policies or policy packages and assist in evaluating their outcomes. The broader set will be accompanied with country-specific indicators and information on national climate policies and targets (e.g. NDCs) to enable tailored assessments and policy recommendations at the country level[14].

Figure 1. Climate-related indicators for IPAC – Foundations and architecture



[10] https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml .

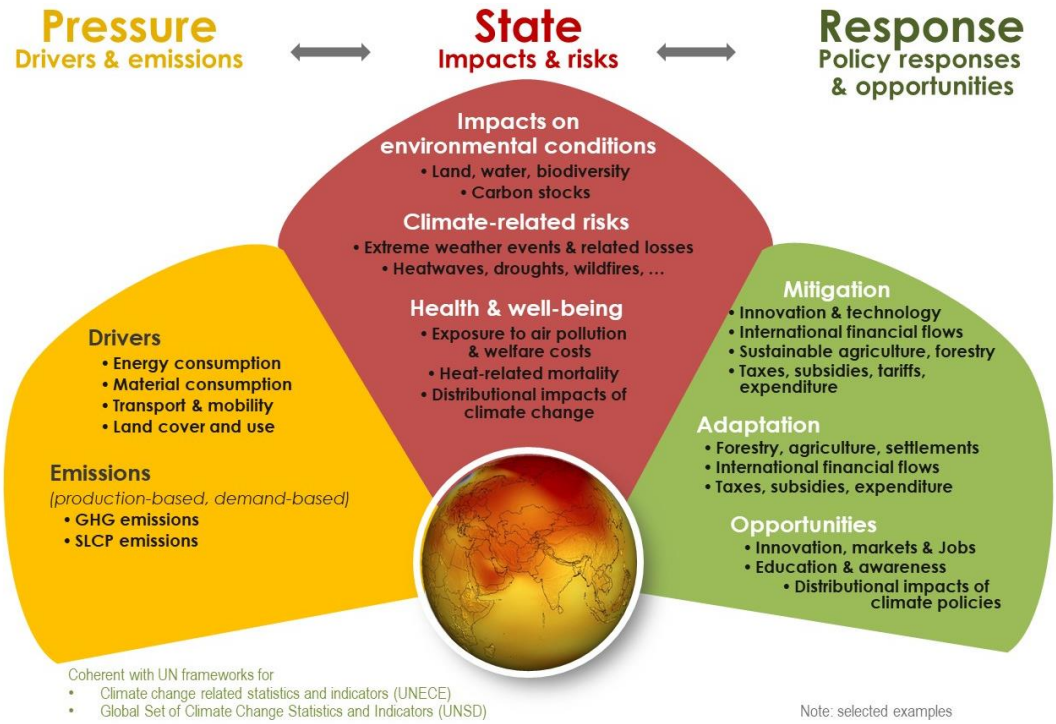
11 https://unece.org/statistics/climate-change.

[12] https://climatedata.imf.org/

[13] Data will be sourced from official sources or otherwise validated by countries. No additional regular reporting on data underlying the indicators is expected from governments.

[14] The broader set of indicators is being refined and is expected to be available in mid 2022.

Figure 2. The OECD conceptual framework for climate-related indicators



2. The preliminary IPAC Dashboard

7. The objective of the first TEG meetings was to select a preliminary set of key indicators (8-10) for the first edition of the Dashboard. TEG reactions to the OECD Secretariat proposals were generally positive, albeit with some reservations because of the absence of indicators on adaptation, vulnerability and international finance, for which data are not currently available (see Section 3 on the preliminary indicator development agenda).

8. The preliminary Dashboard endeavours to provide key messages and a balanced picture of climate action and progress towards climate goals. The selected key indicators derive from the broader IPAC indicator set that covers additional aspects and provides further detail. Most of the selected indicators are available and regularly used in OECD work. A few indicators need more methodological or measurement work.

9. The structure of the dashboard uses the OECD Pressure-State-Response model (Figure 2) adapted to climate change. Building on OECD's expertise and value added, it focuses on "pressures" (i.e. emissions) and on "responses" (i.e. policy measures and instruments) that are at the heart of IPAC. A few "state" indicators complete the picture by reflecting some key impacts and risks arising from climate change.

10. The "pressure" indicators focus on emissions (i.e. GHG emission trends and intensities and net-zero trajectories) that indicate whether countries are on track to reach their targets. The objective is to measure distance to national targets and to GHG neutrality by mid-century. Emission intensities (per GDP and per capita) are added to facilitate the comparison of emission levels across countries, inform about countries' contributions to global emissions and monitor the economy's efficiency in decoupling emissions from output.

11. "State" indicators (i.e. climate-related impacts on environmental conditions, climate-related risks and climate-related vulnerabilities and impacts on well-being) are very specific to

national circumstances, including differences within countries and across different social groups. It is thus challenging to find a single indicator suited to cross-country comparisons. Therefore, the focus has been placed on weather-related impacts, such as temperature anomalies and extreme weather events. Direct weather-related impacts determine, to a large extent, country-specific environmental, socio-economic and adaptation outcomes. Climate-related risks and vulnerabilities have been left as a Dashboard placeholder for priority development (see Section 3).

12. The "response" indicators (changes in the energy mix towards low-carbon sources, carbon pricing and taxation, climate-related innovation and climate policy stringency) focus on mitigation measures for which indicators are readily available and well developed. More specifically, it is suggested to focus on general government measures directly aimed at (or having a direct bearing on) emissions, such as GHG pricing and taxes, which cover many of the mitigation tools at countries disposal. They are important instruments for governments to shape relative prices of goods and services, and to decarbonise the more carbon-intensive sectors. Other policy instruments are covered in the full list of IPAC indicators, or will be addressed in the IPAC country notes.

13. The IPAC focus on "responses" adds to the UNFCCC's current focus on pressures. It will also complement and have synergies with the reporting envisaged under the MRV (monitoring, reporting and verification) requirements of the UNFCCC and the Enhanced Transparency Framework (ETF) of the PA, which are in a transition phase towards a new consolidated reporting system. IPAC focuses on internationally comparable and sound policy indicators that go beyond the information to be provided in countries' transparency reports. IPAC's work is annual, starting in 2021, as opposed to the biennial nature of the Reporting under the ETF that will start in 2024.

14. It is also important to note that the preliminary IPAC Dashboard is complementary to the OECD "Dashboard to Monitor a Strong, Resilient, Green and Inclusive Post-COVID-19 Recovery" [C(2021)95] also envisaged for launch at the October 2021 MCM. The Recovery Dashboard considers environmental factors alongside economic and social factors, consistently with the broader OECD statistical agenda "on GDP and beyond". Its environmental pillar focuses on monitoring progress towards achieving a people-centred green transition with IPAC-consistent indicators on climate change, renewable energy, circular economy, biodiversity and the environmental quality of life.

15. Table 1 presents the 8 indicators and 2 placeholders for indicators yet-to-be developed, their sub-indicators, the rationale behind the indicator choices, the data sources and the tentative deliverables for COP26. Again, coherence and complementarity with the OECD "Dashboard to Monitor a Strong, Resilient, Green and Inclusive Post-Covid-19 Recovery" is ensured.

Table 1. PRELIMINARY IPAC DASHBOARD

Indicator	Components/sub-indicators	Rationale	Data sources/ availability	Deliverable for COP26*
PRESSURE				
1 **GHG emission trends and intensities**, and distance to targets (annual emissions, in CO_2-equivalent, including or excluding LULUCF, depending on NDCs)	► Total GHG emissions; % change and distance to NDC targets ► GHG emissions by (inventory) sector; distance to targets (if in NDC) ► CO_2 emissions from fuel combustion: production-based; demand-based (carbon footprint) ► GHG emission intensities per unit of GDP and per capita; level and % change	GHG emissions are the most important indicator to reflect both pressure and progress, and measure distance to national targets. The disaggregation by sector and the distinction between production- and demand-based CO_2 emissions allow for identifying the main emitters.	UNFCCC; OECD; IEA; ITF	Yes
2 **Net-zero emission trajectories** (distance to GHG neutrality by 2050)	To be further specified	The objective is to visualise the trajectory towards GHG-neutrality by mid-century, and measure the gap with the required annual emission reduction needed to reach net-zero, regardless of whether a given country has committed to net-zero or not.	UNFCCC; IEA	Further specification needed
STATE				
3 **Climate-related impacts on environmental conditions**	► Mean temperature anomaly (compared to climate normal 1961 - 1990)	Temperature is an obvious indicator for global warming that can be related to GHG emissions. Other physical measures, such as on precipitation and drought, would complete the picture by showing how climate change is affecting weather patterns.	Data on temperature anomalies, mean surface and sea temperature are available.	Yes for selected countries (further statistical work required)
	► Percentage of land area suffering from unusually wet or dry conditions (e.g. Standardised Precipitation index)		Precipitation indices are available from some international sources and from national sources	
	► Change in country's mean sea level (change since 1961-90)		Sea level data are available from NASA and NOAA.	
4 **Climate-related risks: occurrence of extreme weather events** (hurricanes, storms, wildfires, flooding, drought etc.)	► Number of annual events or number of days per year when extreme weather events occurred.	This is another obvious choice given the increase of extreme events. The actual number and the variability over time indicate how climate change is affecting different countries and at what speed.	To be further explored.	Yes
	► Number of deaths and missing persons per 100,000 population		Not yet widely available. Some data are available from reinsurance companies and the EEA(1)	Yes for selected countries (further statistical work required)
	► Direct economic loss attributed to disasters in relation to GDP			
5 **Climate-related vulnerabilities and impacts on well-being**	Placeholder. Risk indicator(s) on exposure to climate-related risks and on the socio-economic inequality in exposure.	In order to adapt we need to know what the risks are, where and for whom. As risks and vulnerability tend to be context-specific, the challenge is to find an indicator that is relevant for most countries and territories.	OECD	Under development
RESPONSE				
6 **Changes in the energy mix** towards low-carbon sources	► Energy mix in total energy supply ► Energy mix in electricity production ► Distance to target (if in NDC)	Widely used indicator that reflects both drivers behind GHG emissions and the effects of policies that encourage a shift towards low-carbon energy sources.	IEA, NEA	Yes

Indicator	Components/sub-indicators	Rationale	Data sources/ availability	Deliverable for COP26*
7 Carbon pricing	► (Net) Effective carbon rates (ECR): Share of CO_2 emissions priced, by benchmark price (3,4)	Carbon pricing encourages the shift of production and consumption choices towards low and zero carbon options. ECRs measure carbon pricing of CO_2-emissions from energy use. They include fuel excise taxes, carbon taxes and tradable emission permit prices.	OECD	Yes for ECR No for net ECR (under development) (4)
8 Climate-related taxation	► Climate related tax revenue as % of total tax revenue and of GDP	Climate-related taxes are an important instrument for governments to shape relative prices of goods and services. They include taxes on GHGs, fuel taxes, taxes on road use, forestry taxes and revenue from auctioned permits of emission trading systems for GHGs.	OECD	Yes
9 Climate-related innovation	► RD&D expenditure in renewable energy as % of total public energy RD&D ► Patent applications in climate mitigation technologies as % of total technologies by (a) inventor's residence; (b) patent office	Ensuring continuous improvements in low-carbon technologies and their broad diffusion internationally will be essential in a transition to net-zero globally.	OECD	Yes
10 Climate policy stringency	► Climate policy index (Placeholder) Composite indicator incorporating quantitative and qualitative information on policy instruments related to climate.(2)	Stringent climate policies are necessary to provide effective incentives to businesses and households to modify their consumption and production patterns or otherwise change their behaviour in ways that are less emission-intensive.	OECD	Under development

Notes: * indicates whether the listed indicator or sub-indicators can be tentatively compiled in time for the COP 26, i.e. by end September.

(1) EEA data cover EEA member countries and the UK (fatalities, economic losses). Data on natural disasters are available from the UN SDG database (as of 2005).

(2) It will build on an adapted environmental policy stringency (EPS) methodology to capture a wide range of market- and non-market-based policies for climate change mitigation, including policies directed at the abatement of methane and nitrous oxide emissions. It will draw on and further expand the policy microdata in the OECD PINE database and other sources (e.g. the "Climate Change Laws of the World inventory").

(3) EUR 30/tonne of CO_2 represents a historic low-end price benchmark of carbon costs in the early and mid-2010s, consistent with a slow decarbonisation scenario by 2060; EUR 60/t represents a low-end 2030 and mid-range 2020 benchmark according to the High-Level Commission on Carbon Pricing. EUR 120/t represents a central estimate of the carbon price needed in 2030 to decarbonise by mid-century under the assumption that carbon pricing plays a major role in the overall decarbonisation effort.

(4) The environmental effectiveness of taxes and tradable permits on carbon may be hampered by direct and indirect government support to fossil fuels. The calculation of net effective carbon rates will reflect all subsidies on fossil fuels relevant to energy use beyond tax expenditure data already covered in ECR.

3. Preliminary indicator development agenda

16. The TEG has identified measurement gaps in the preliminary edition of the Dashboard as well as in the broader set of IPAC indicators, particularly in the thematic areas of adaptation, vulnerability, finance and expenditure. These important aspects of climate action are not present in the preliminary version due to the lack of methodologically sound, policy-relevant and measurable indicators.

17. To inform discussions of the TEG, and develop a measurement agenda to fill gaps, the TEG was presented with an overview of ongoing, planned and proposed indicator development work across the OECD, IEA, ITF and NEA.

- Ongoing and planned work on indicators to be available in the short- to medium-term, include demand-based GHG emissions, quarterly and subnational GHG emissions, fossil fuel support with international benchmarks and indicators on the consistency of financial flows with climate policy.
- Another important issue that has to be addressed in the short term concerns the way to define the indicator on emission trajectories towards GHG neutrality. This indicator has sparked some contrasted reactions among TEG experts and EPOC Delegates and poses specific measurement difficulties. Concrete proposals on how to define net-zero concept and on how to measure trajectories to net-zero need to be developed.[15]
- Proposals for medium- to long-term development include indicators on exposure to climate-related risks, climate-related expenditure and budgets, valuation of climate change damages, policy uncertainty, labour market opportunities arising from climate action, climate action perception and climate analytics.

18. Initial discussions by the TEG identified proposals for indicator development that could be prioritised and further expanded. These include social aspects of climate action such as inequality of exposure to climate risks and distributional implications of climate policy; indicators on climate-related jobs and skills and on the impact of climate policy on the labour market; climate-related public budget and expenditure; indicators on the agriculture sector; and indicators on climate finance flows.

[15] The 50 IPAC countries are disproportionately likely to have a net-zero plan enshrined in law, proposed legislation, or policy document. As of July 2021, twelve IPAC countries (24%) have a net-zero plan enshrined in law. Three (6%) have legislative proposals, and 18 (36%) have policy documents. Of the remaining 17 (34%) countries without any net-zero national plans, 9 are EU member states covered by the EU-wide pledge. Thus, 42 (84%) IPAC members are covered by either a net-zero plan in law, a proposed legislation, a policy document or by the EU-wide pledge.

Acronyms

CLG: (IPAC) Committee Leadership Group

COP: Conference of the Parties (UNFCCC)

ECR: Effective Carbon Rate

EEA: European Environment Agency

EPOC: (OECD) Environmental Policy Committee

EPS: Environmental Policy Stringency

ETF: Enhanced Transparency Framework (Paris Agreement)

EU: European Union

GDP: Gross Domestic Product

GHG: Greenhouse Gas Emissions

HP: Horizontal Project on Building Climate and Economic Resilience in the Transition to a Low-carbon Economy

IEA: International Energy Agency

IPCC: Intergovernmental Panel on Climate Change

IPPU: Industrial Processes and Product Use

ITF: International Transport Forum

IPAC: International Programme for Action on Climate

LULUCF: Land Use and Land Use Change and Forestry

MCM: (OECD) The Meeting of the Council at Ministerial Level

MRV: Monitoring, Reporting and Verification (Paris Agreement)

NASA: National Aeronautics and Space Administration (USA)

NDC: Nationally Determined Contribution

NEA: Nuclear Energy Agency

NOAA: National Oceanic and Atmospheric Administration (USA) RD&D: Research and Development and Demonstration

SDG: Sustainable Development Goal

TEG: (IPAC) Technical Expert Group

UNECE: United Nations Economic Commission for Europe

UNFCCC: United Nations Framework Convention on Climate Change

UNSD: United Nations Statistics Division