



STATISTICS

National GHG Estimates

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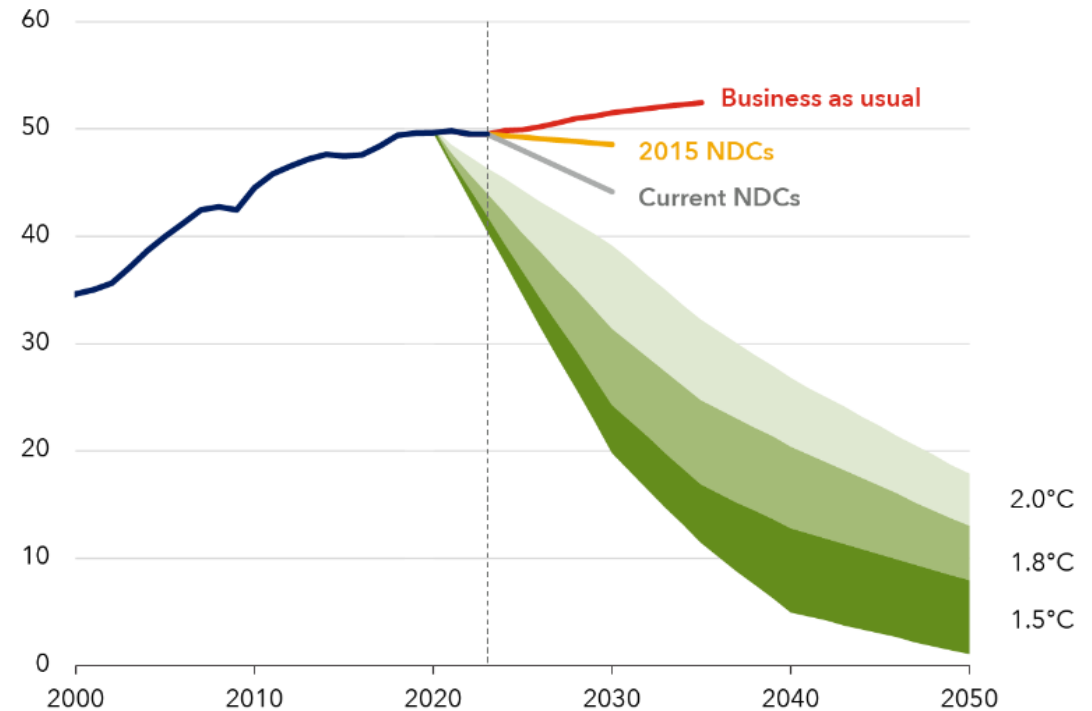
The World Needs More Policy Ambition, Private Funds, and Innovation to Meet Climate Goals

- ✓ Carbon dioxide and other GHGs need to be cut by 25 percent to 50 percent by 2030 if we hope to limiting global warming to 1.5 degrees to 2 degrees Celsius and reaching net zero by 2050.
- ✓ Current global commitments reflected in nationally determined contributions would reduce emissions by just 11 percent by the end of this decade.

Falling short

Current climate commitments will still only reduce global greenhouse gas emissions by 11% by 2030.

(global GHG emissions, GtCO₂e per year)



Sources: Intergovernmental Panel on Climate Change 2022; and IMF staff using CPAT.
Note: Excludes land use and land use change emissions. NDCs = Nationally determined contributions; GHG = greenhouse gas; GtCO₂e = Gigatonnes of carbon dioxide equivalent.

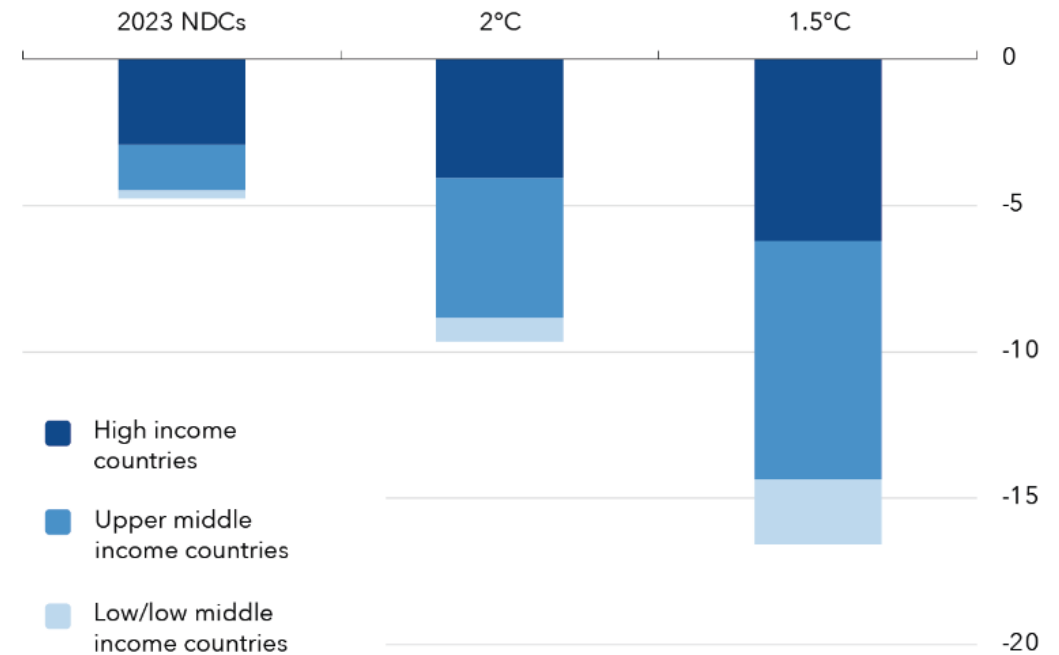
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- ✓ To get back on track with the global climate goals, we need more ambition now.
- ✓ To keep within 2 degrees of warming, high, upper-middle, lower-middle, and low-income countries will need emissions reductions of 39 percent, 30 percent, 8 percent, respectively, by 2030.

Closing the gap

Much stronger ambition and policies are needed to get back on track with global climate goals.

Illustrative scenarios of emission reductions needed to reach 2030 goals
(billion tons of CO₂)



Source: IMF staff using CPAT.

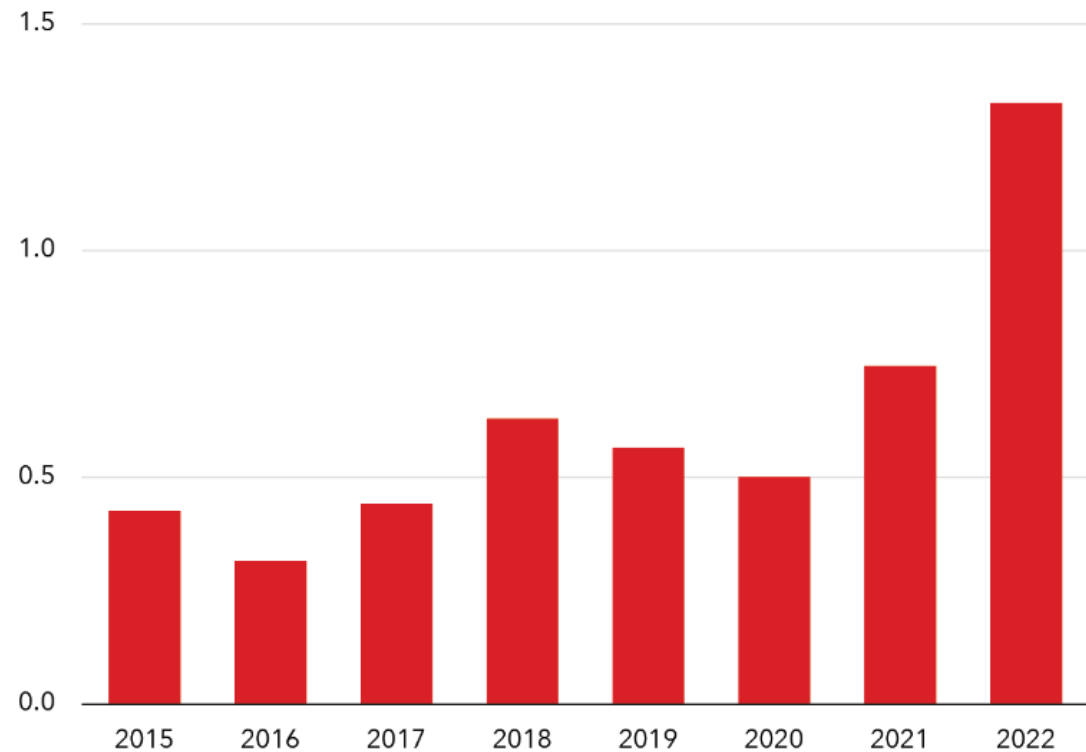
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- ✓ We require major policy changes to achieve these more ambitious targets.
- ✓ These would ideally be centered on a robust carbon price and a substantial change in fossil fuel subsidies.
- ✓ We also need to ramp up 'low-carbon' investment.

Wrong direction

Global fossil fuel subsidies have surged, with explicit subsidies alone topping \$1.3 trillion annually last year.

(explicit fossil fuel subsidies, trillions of USD)



Source: IMF staff calculations.

Note: Figures from 2019 onwards use projections for fuel use.

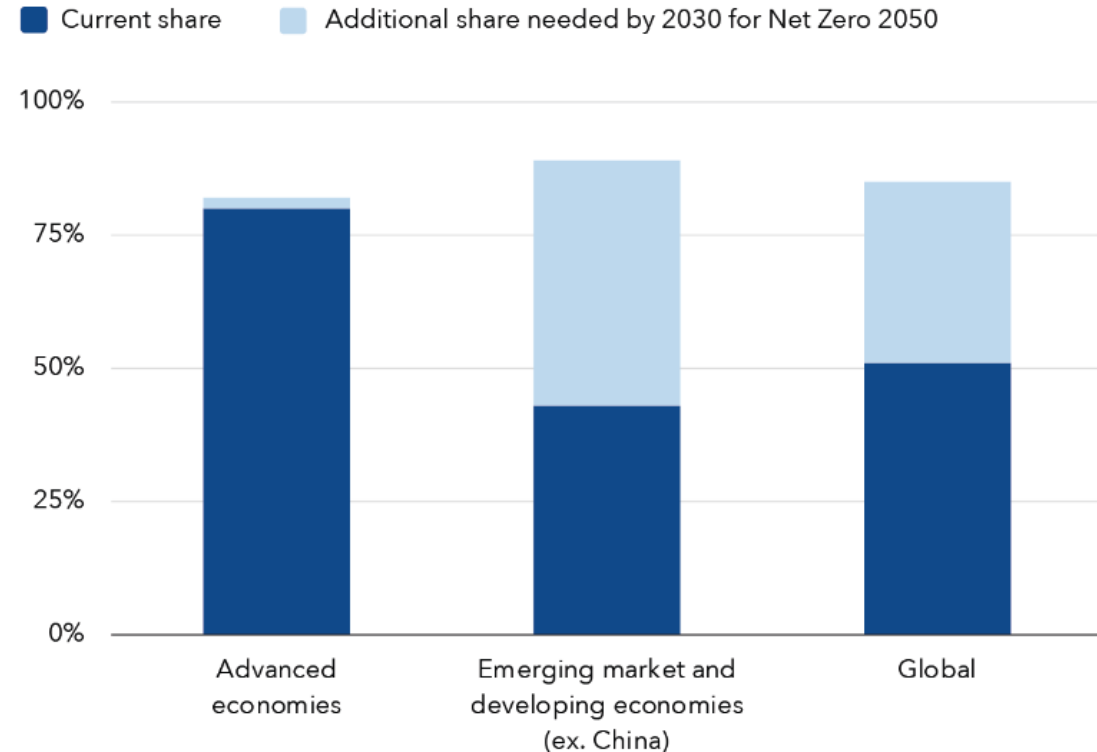
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- The path to net zero by 2050 requires low-carbon investments to rise from \$900 billion in 2020 to \$5 trillion annually by 2030.
- Even if advanced economies meet or somewhat exceed their promise to provide \$100 billion a year, the bulk of the financing for these low-carbon investments will need to come from the private sector.

Investment gap

A major share of climate mitigation investment in emerging market economies must come from the private sector.

Private sector share of mitigation investment

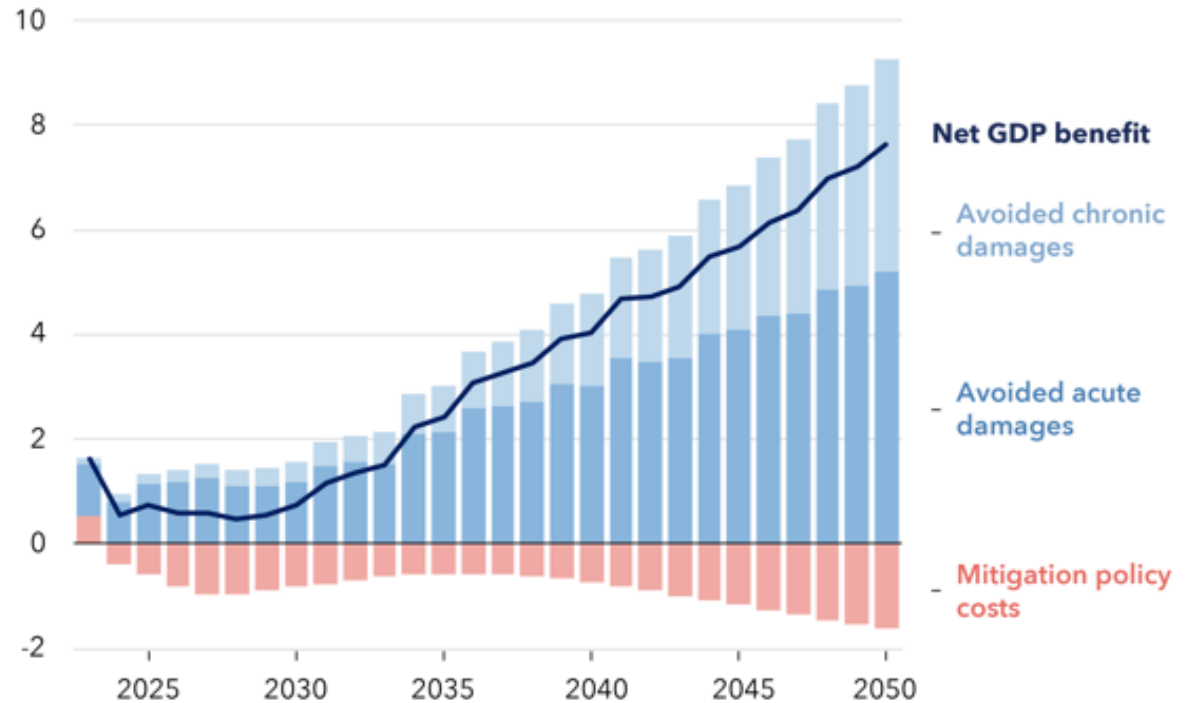


Sources: Climate Policy Initiative, International Energy Agency, and IMF staff calculations.

The World Needs More Policy Ambition, Private Funds, and Innovation to Meet Climate Goals

- The benefit of action is measurable.
- Recent estimates from the NGFS (2023) put the net benefit of an orderly transition at 8% of global GDP.

World potential GDP benefit under net zero carbon emissions by 2050
(percent deviation from reference scenario)



Sources: NGFS (2023), Scenarios Portal; IIASA (2023), NGFS Phase 4 Scenario Explorer; and IMF staff calculations. Note: NiGEM model with REMIND-MAGPIE inputs. The reference scenario is the Current Policies scenario with no transition but physical risk.



The World Needs More Policy Ambition, Private Funds, and Innovation to Meet Climate Goals

- Countries have started to take action and establish policies related to subsidy reform, carbon pricing, climate adaptation and mitigation programs are being put into place.
- Policymakers (such as the G20 Finance Ministers and Central Bank governors) are looking for data to develop these policies and monitor their effect.
- Specifically, they are looking for environmental and climate change statistics that can be readily integrated with economic statistics to better assess economic and financial market risk, present the interplay between the economy and environment.
- The community of official statistics has responded to these demands through initiatives such as the G20 Data Gaps Initiative and the development and updating of economic and environmental accounting frameworks (e.g System of National Accounts and Balance of Payments Manual).

G20

DATA GAPS INITIATIVE 3

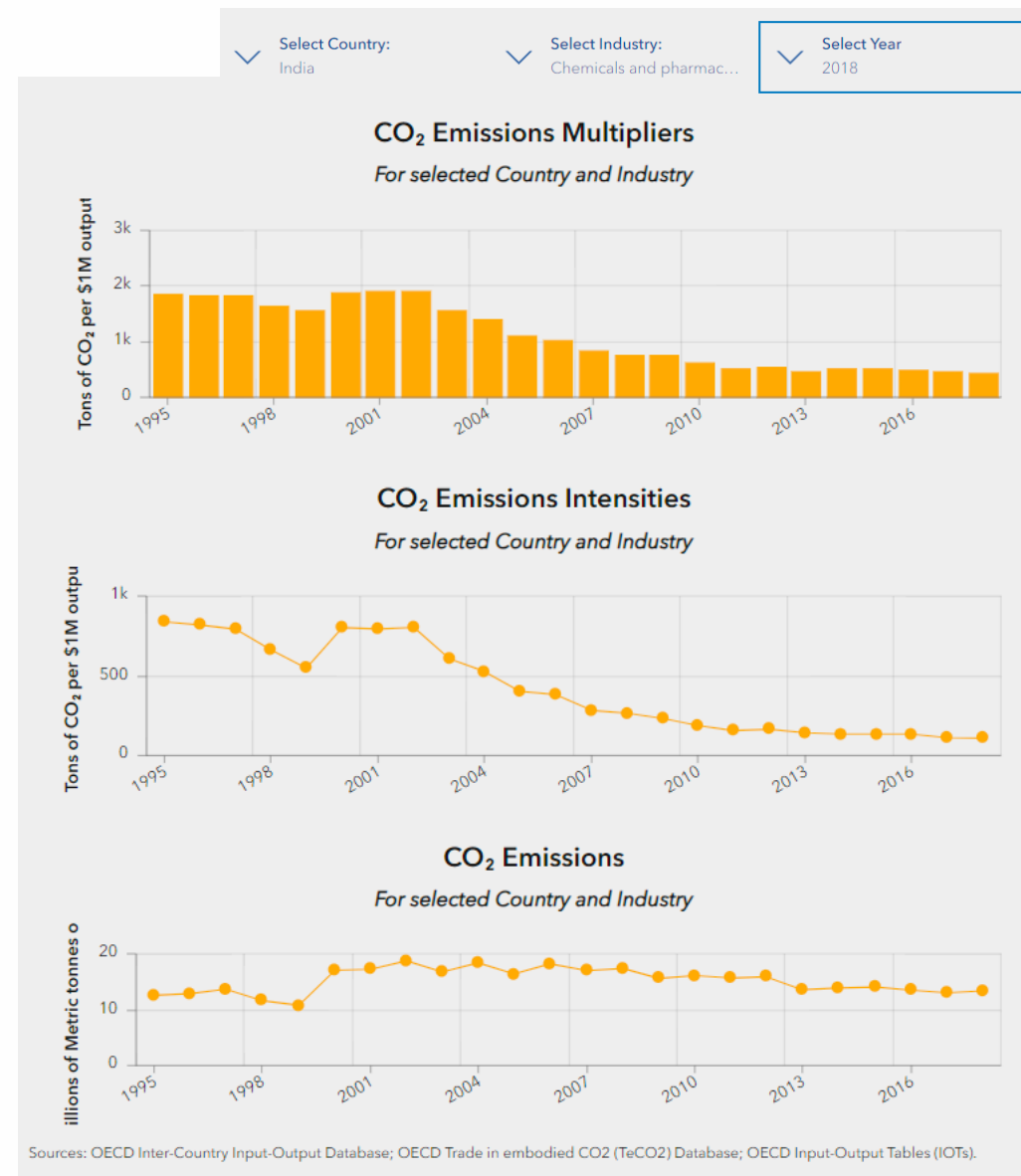


“We welcome the workplan on the new Data Gaps Initiative (DGI) prepared by the IMF, FSB, and the Inter-Agency Group on Economic and Financial Statistics (IAG) in collaboration with participating members. [We ask] the International Monetary Fund (IMF), the FSB and the IAG to begin work on filling these data gaps and report back on progress in the second half of 2023...” - G20 Leaders, at their meeting in Bali, Indonesia in November 2022

DELIVERING INSIGHTS FOR ACTION

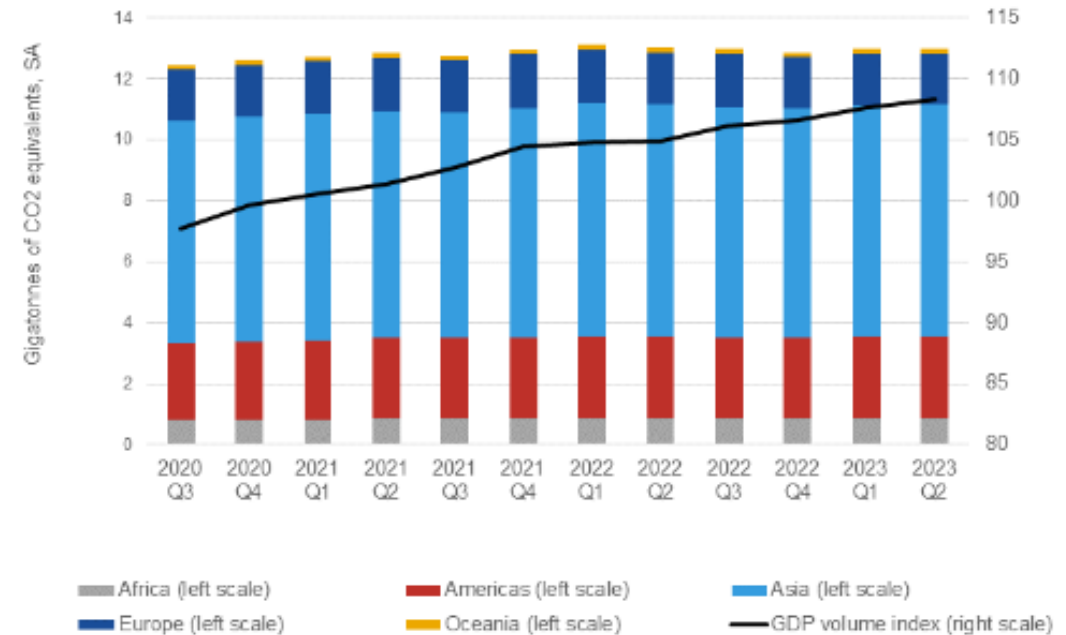
Delivering Insights for action – Air Emissions Accounts

- ✓ An important feature of air emissions accounts is the link to economic activity.
- ✓ Classifying and conceptually aligning air emissions accounts with economic data provides policymakers with a key tool to monitor emission intensities by industry as well as labour market dynamics around the transition.



Delivering Insights for action – Air Emissions Accounts

- ✓ To provide a timelier estimates of Air Emissions Accounts, several international organizations have collaborated to develop quarterly GHG emissions.
- ✓ The quarterly estimates provide two important functions: a “near real-time tracking of global GHG emissions, and improved awareness of GHG data and consideration in policy discussions.



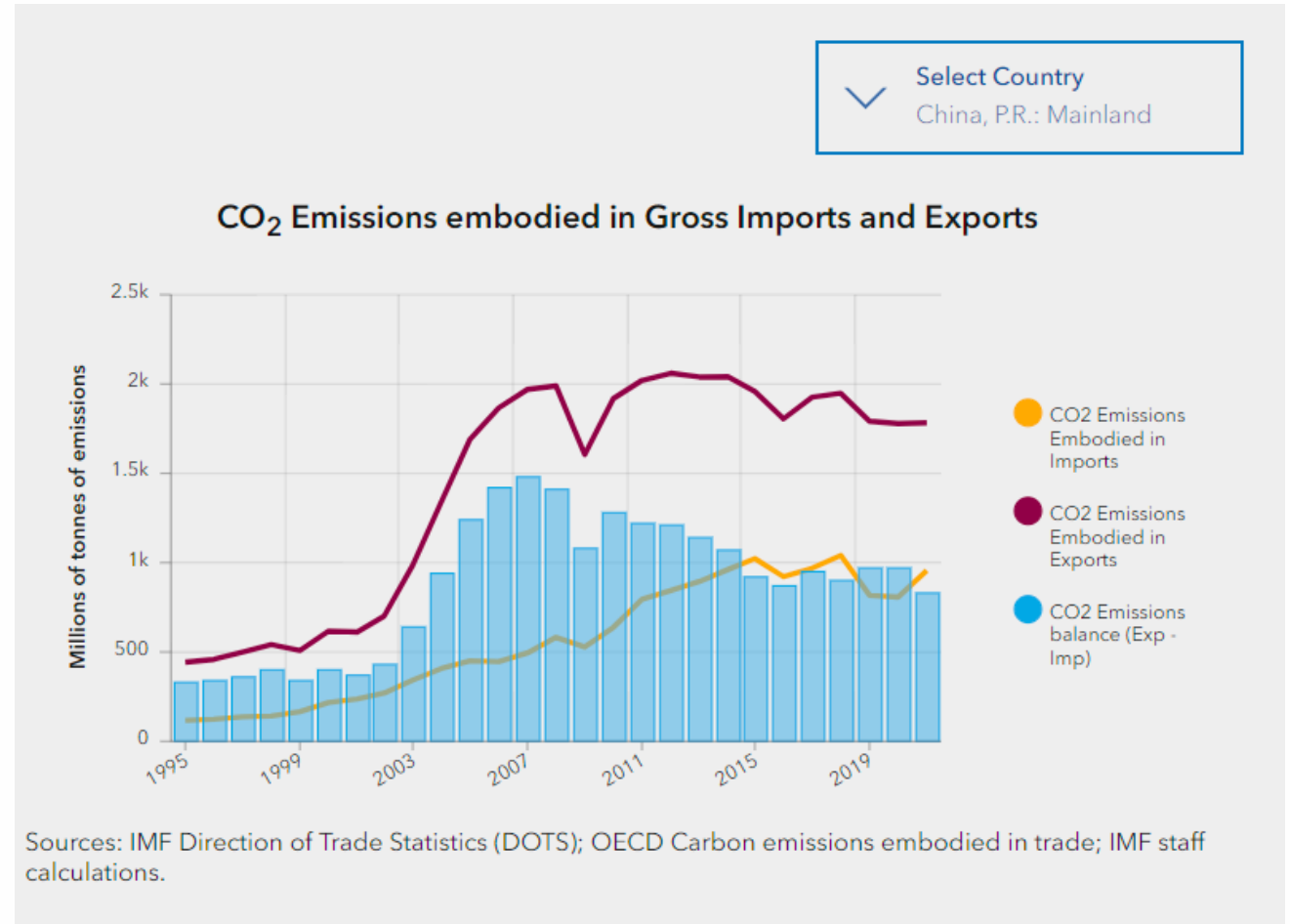
DATA UPDATE: GREENHOUSE GAS (GHG) EMISSIONS

Global GHG Emissions Increased Marginally in the Second Quarter of 2023

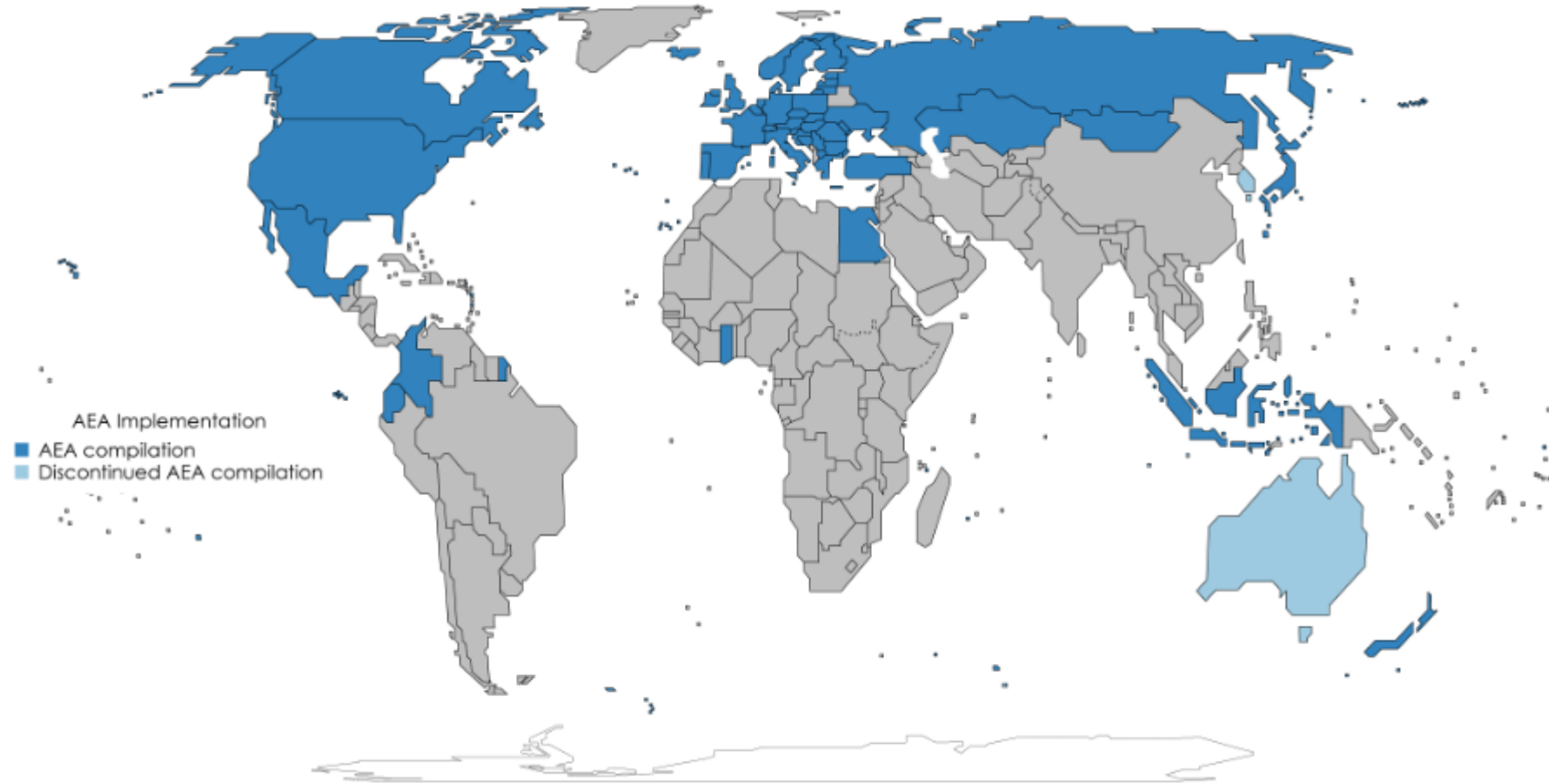
International Monetary Fund. 2022. Climate Change Indicators Dashboard. Quarterly GHG Emissions, <https://climatedata.imf.org/pages/access-data>. Accessed on [2024-02-14].

Delivering Insights for action – National Carbon Footprints

- ✓ Measuring national carbon footprints enriches the discussion around appropriate policy instruments to reduce GHG emissions.
- ✓ The consumption patterns of advanced economies are more GHG intensive than emerging markets and developing economies.



Globally, data gaps are significant



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

There are significant regional differences in data availability

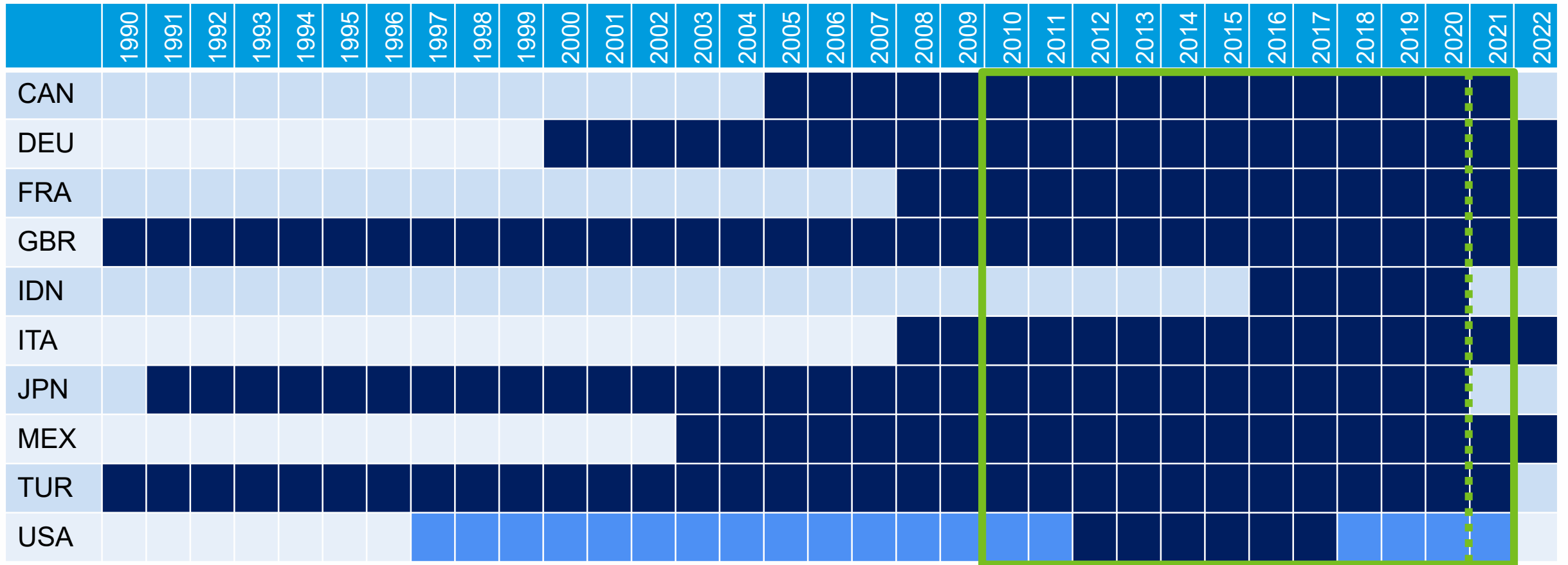
Region	Number of countries compiling AEA		
	Total	G20 + <i>participating economies</i>	Non-G20
All countries	50	14	36
Africa	2	0	2
Central, Eastern, Southern and South-Eastern Asia	4	2: IDN, JPN	2
Europe and Northern America	38	8: CAN, FRA, DEU, GBR, ITA, RUS, TUR, USA 3: <i>NLD, ESP, CHE</i>	27
Latin America and Caribbean	3	1: MEX	2
Oceania	2	0	2
Western Asia	1	0	1

Note: Based on submission of AEA questionnaires, supplemented with information from the SEEA Global Assessment

Coverage by pollutant is more limited

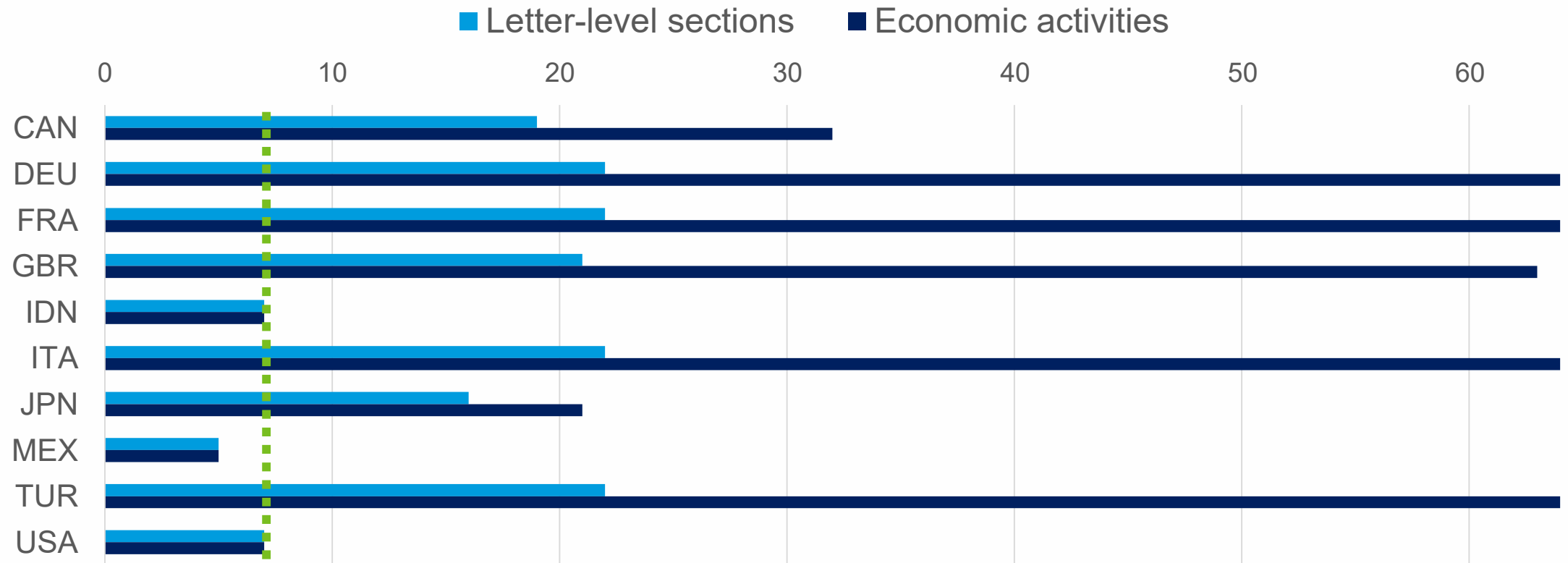
	GHG	CO ₂	Biomass_CO ₂	CH ₄	N ₂ O	HFC	PFC	SF ₆ _NF ₃	CO	NH ₃	NMVO _C	NOX	SOX	PM ₁₀	PM _{2.5}
CAN	X														
DEU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FRA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GBR	X	X		X	X	X	X	X	X	X	X	X	X	X	X
IDN	X	X		X	X										
ITA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
JPN		X		X	X						X				
MEX									X	X	X	X	X	X	X
TUR		X	X	X	X	X (partial)	X (partial)	X (partial)	X	X	X	X	X	X	x
USA	X	X		X	X										

Chronological coverage is improving



- Official data available
- Estimated by OECD

Industrial detail is limited outside the EU



More details can be available in country's national publication (in regional/national industrial classification)

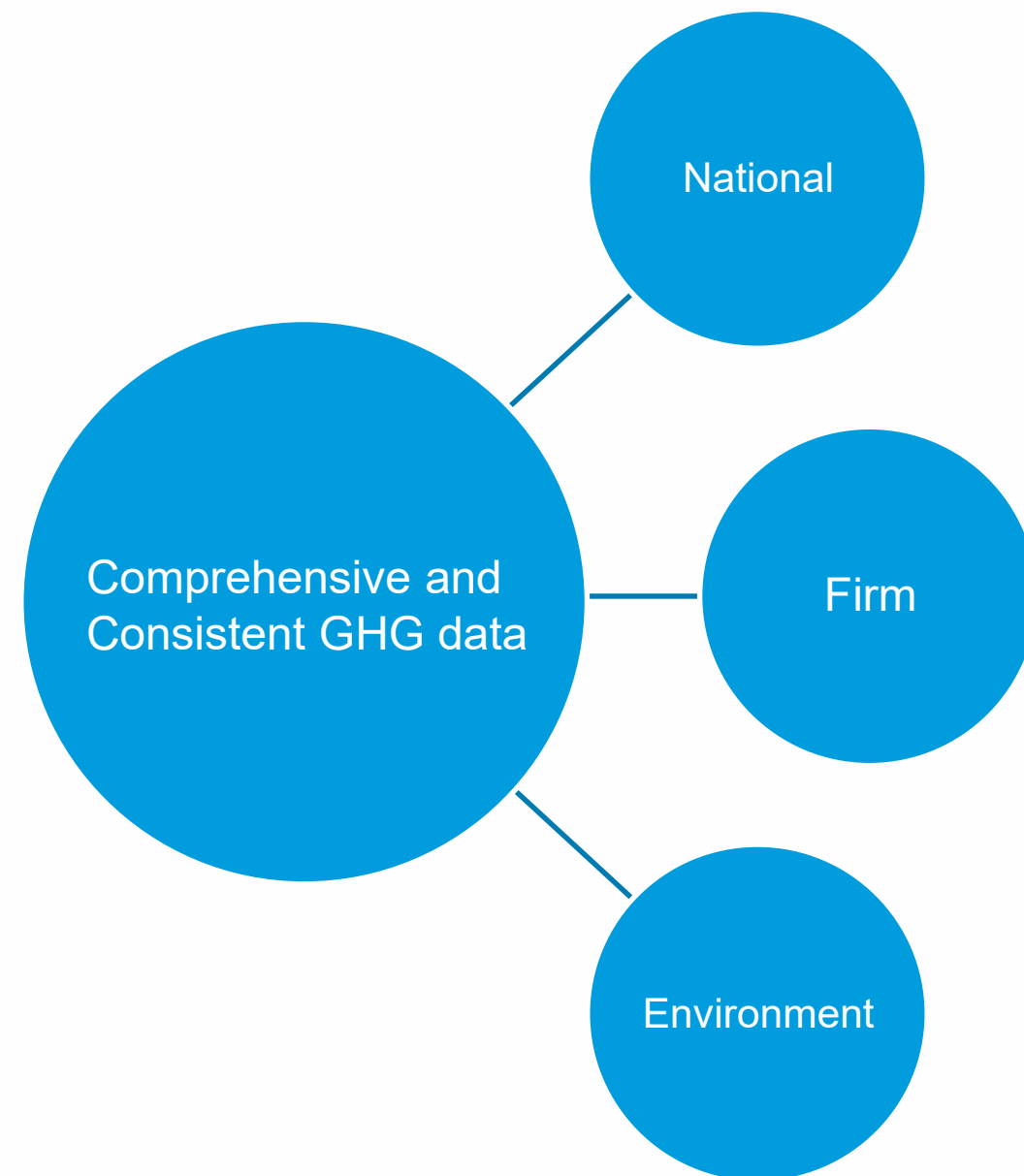
Note: Sectoral disaggregation for CO₂ (For Canada, GHG-total. For Mexico, CO).

GHG Data Ecosystem...

The macro-level estimates are just one piece of the puzzle.

The voluntarily and regulatory reported firm level data are another important part of the puzzle...

And let's not forget the important contribution that can be made using earth observation data...





Climate Change Indicators Dashboard

Bridging the data gap on climate change for evidence-based economic decision-making



Greenhouse Gas (GHG) Emissions

GHG Emissions Accounts
National Inventories and Targets
CO₂ Emissions Intensities and Multipliers
Carbon Footprints from Economic Activity



Mitigation

Environmental Taxes
Environmental Protection Expenditures
Fossil Fuel Subsidies
Renewable Energy
Trade in Low Carbon Technology
Forest and Carbon



Adaptation

Climate-related Disasters Frequency
Climate-driven INFORM Risk



Transition to a Low-Carbon Economy

NEW NGFS Transition Pathways
NEW NGFS GDP Losses and Benefits
Forward-Looking Risks
Trade in Low Carbon Technology
Renewable Energy



Climate Finance

Green Debt
Carbon Footprint of Bank Loans



Climate and Weather

Surface Temperature Change
Atmospheric CO₂ Concentrations
Change in Mean Sea Levels
Land Cover Accounts