

# Carbon Pricing Metrics:

Analyzing Existing Tools and Databases of Platform for Collaboration on Tax (PCT) Partners



## PCT ASK-AN-EXPERT WEBINAR # 3

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# Overview

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## Format & Content

Comparative analysis of carbon pricing metrics developed and utilized by each PCT Partner organization: IMF, OECD, UN, and World Bank

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Development of a proposed framework for analyzing carbon pricing metrics consistently and systematically

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Comparison of carbon pricing metrics based on technical considerations

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Country examples that demonstrate how to understand and use the typology

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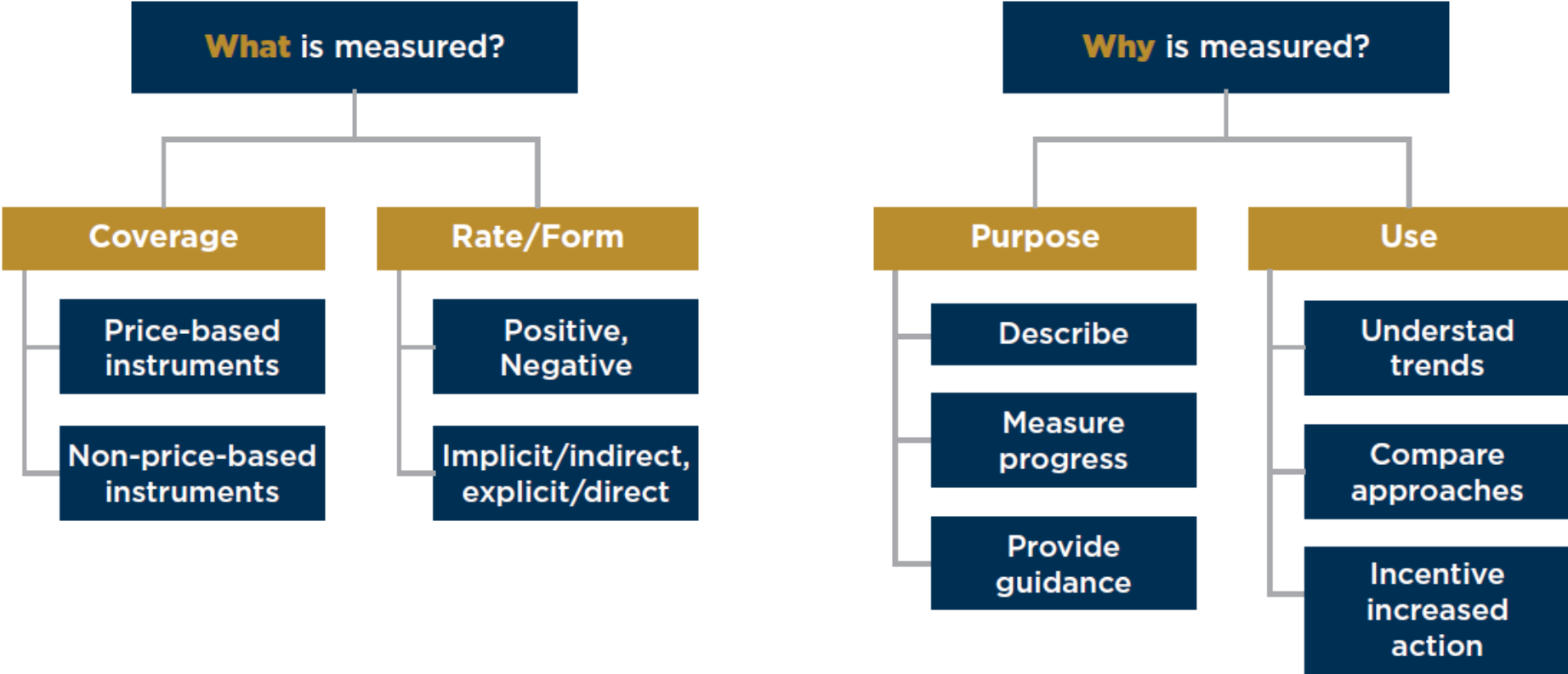
# Inventory of Carbon Pricing Metrics, Reports & Data Sources

Institution	Approaches: Publications and metrics	Dataset
OECD	<a href="#">Effective Carbon Rates (ECR) and Taxing Energy Use (TEU)</a>	<a href="#">Effective Carbon Rates</a>
	<a href="#">Inventory of Support Measures for Fossil Fuels</a>	<a href="#">Fossil Fuel Support Data</a>
IMF	<a href="#">Fossil Fuel Subsidies</a>	<a href="#">IMF fossil fuel subsidies dataset</a>
	Climate Change Indicators	<a href="#">Climate Change Indicators Dashboard</a>
World Bank	<a href="#">State and Trends of Carbon Pricing</a>	<a href="#">Carbon Pricing Dashboard</a>
	<a href="#">Energy Subsidy Reform Assessment Framework (ESRAF)</a>	N/A
UN	<a href="#">UN Handbook on Carbon Taxation for Developing Countries</a>	N/A
	<ul style="list-style-type: none"> <li>• <a href="#">Measuring Fossil-Fuel Subsidies in the context of SDGs</a> (UNEP-IISD)</li> <li>• <a href="#">Emissions Gap Report (EGR), 2021</a></li> </ul>	N/A
OECD, IMF, IEA	Fossil Fuel Subsidy Tracker	<a href="#">Fossil Fuel Subsidy Tracker</a>
IEA	IEA Energy Subsidies	<a href="#">IEA Energy Subsidies Database</a>
RFF	<a href="#">Emissions-weighted carbon price or ECP</a> (Dolphin et al. 2020, Dolphin, 2022)	Emissions Weighted Carbon price dashboard
Vivideconomics & ODI	<a href="#">Estimating effective carbon prices</a>	N/A
Other	<ul style="list-style-type: none"> <li>• Comprehensive carbon price or CCP (Carhart et al., 2022)</li> <li>• The environmental bias of trade policy (Shapiro, 2020)</li> </ul>	<ul style="list-style-type: none"> <li>• Kepos Carbon Barometer</li> <li>• N/A</li> </ul>

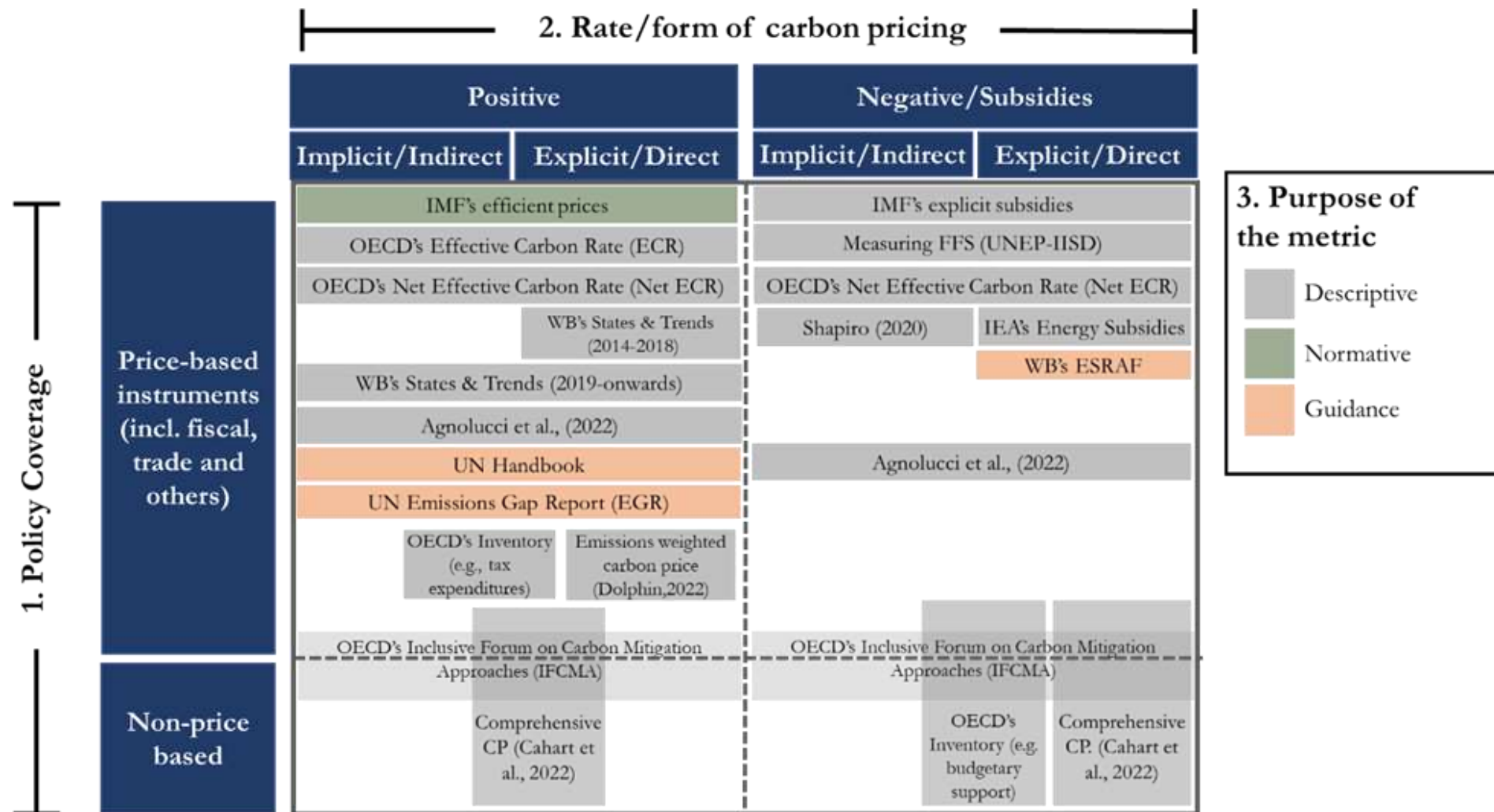
# Carbon Pricing Data & Resources of PCT Partners

Partner	Database/publication	Metrics	Instruments covered	Data available	Level of disaggregation
OECD	ECR	ECR	ETS, carbon taxes, fuel taxes, ex-post fossil	2012, 2015, 2018, 2021	Fuel and sector, by country
	Pricing Greenhouse Gas Emissions (OECD)	Net ECR	ETS, carbon taxes, fuel taxes, pre-tax fossil fuel subsidies	2018, 2021	Fuel and sector, by country
	TEU		Energy taxes, carbon taxes and ETS (since 2018)	2012 2015, 2018, 2021	Fuel and sector, by country
IMF	Fossil fuel subsidies	Explicit and implicit subsidies	Explicit and implicit subsidies, carbon taxes, energy taxes, and ETS	1990-2021	Fuel and sector, by country
WB	Carbon pricing dashboard	Carbon rate levels and coverage	ETS, carbon taxes	1990-2021	Jurisdiction level
UN	UN Handbook on Carbon Taxation for Developing Countries	The Handbook does not include metrics but does include practical guidance on how to implement carbon taxes.	Carbon taxes	—	Jurisdiction level

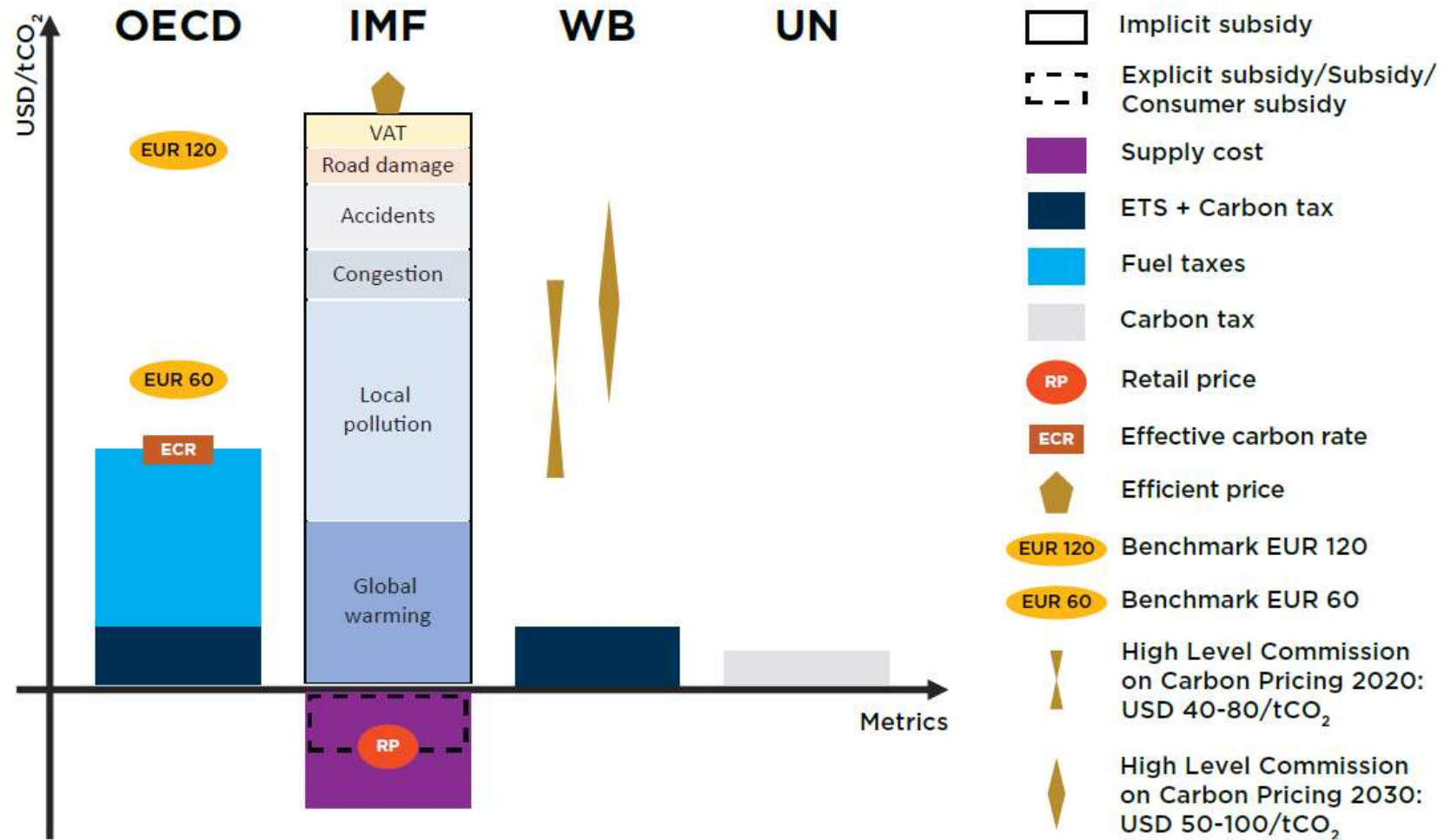
# Typology & Framework for Measuring Carbon Pricing



# Comparing Carbon Pricing Metrics Along Three Dimensions



# Using Benchmarks to Evaluate PCT Carbon Price Metrics



# Dealing with Rate Reductions, Refunds, Exemptions and Free Allocation

- Carbon prices with uniform rates for all emissions provide stronger incentives for investment in clean technologies (OECD, 2021).
- Yet, in practice, design elements of carbon pricing instruments can drive a wedge between marginal and average carbon prices, affecting the dynamic (long-term) effectiveness of the instrument.
- Rate reductions, refunds and exemptions are part of tax expenditures and often target specific groups of consumers, fuels, or fuel uses.
- Design choices can also alter the price signal of carbon taxes. Initially, political economy constraints on carbon taxation may require rate reductions, zero rates and exemptions, leading to differentiated tax rates by fuel type (or sector). These can phase out over time.



# Key Message from the PCT Report

- Existing carbon pricing metrics differ in their policy coverage, the forms of carbon pricing accounted for (direct vs. indirect, positive vs. negative), and their purpose.
- Metrics can diverge due to technical approaches, geographic coverage, sectoral or temporal scope, and the benchmarks they are compared to.
- No single metric can summarize all dimensions of carbon pricing. Understanding the key differences between the metrics is thus crucial.
- Carbon pricing signals to date are insufficient. All PCT Partners highlight this message. Energy prices are poorly aligned with climate, environmental, and health costs.
- Strategies to improve alignment include the removal of fossil fuel subsidies, higher direct carbon prices (via carbon taxes or ETS), broadening the tax base of fuel taxes and aligning the rates with the social cost of carbon.



To access the full report:

[www.tax-platform.org/](http://www.tax-platform.org/)

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