MEETING THE CLIMATE CHANGE CHALLENGES: INSTRUMENTS FOR CLIMATE CHANGE MITIGATION

Luiz de Mello
Director, OECD Economics Department

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BETTER POLICIES FOR BETTER LIVES

A roadmap

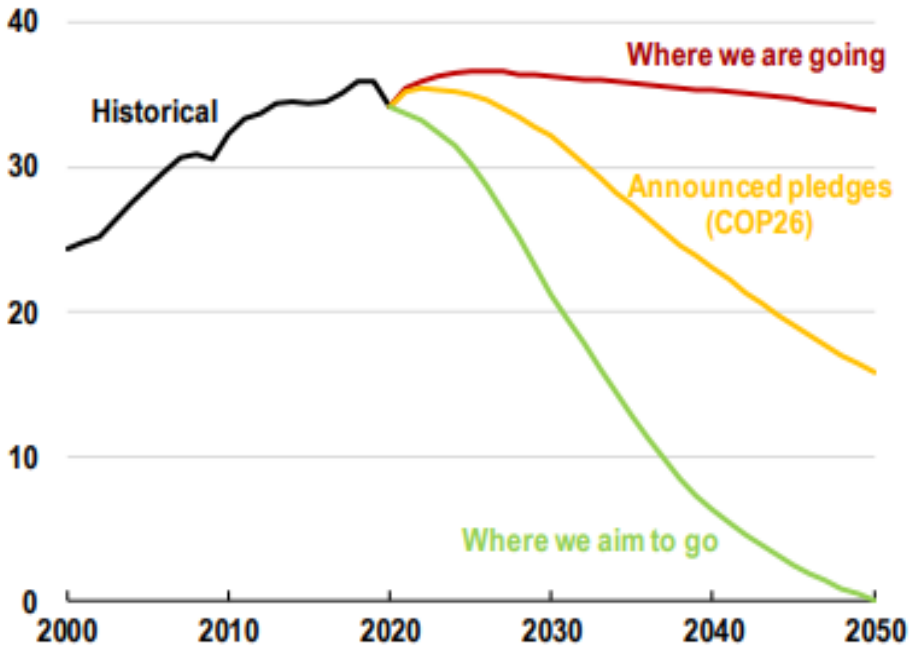
- Where do we stand on climate change policies?
- What instruments can be used to mitigate the effects of climate change?
- The road ahead

Where do we stand on climate change policies?

Ambitious targets have been set, but progress has been slow to meet them

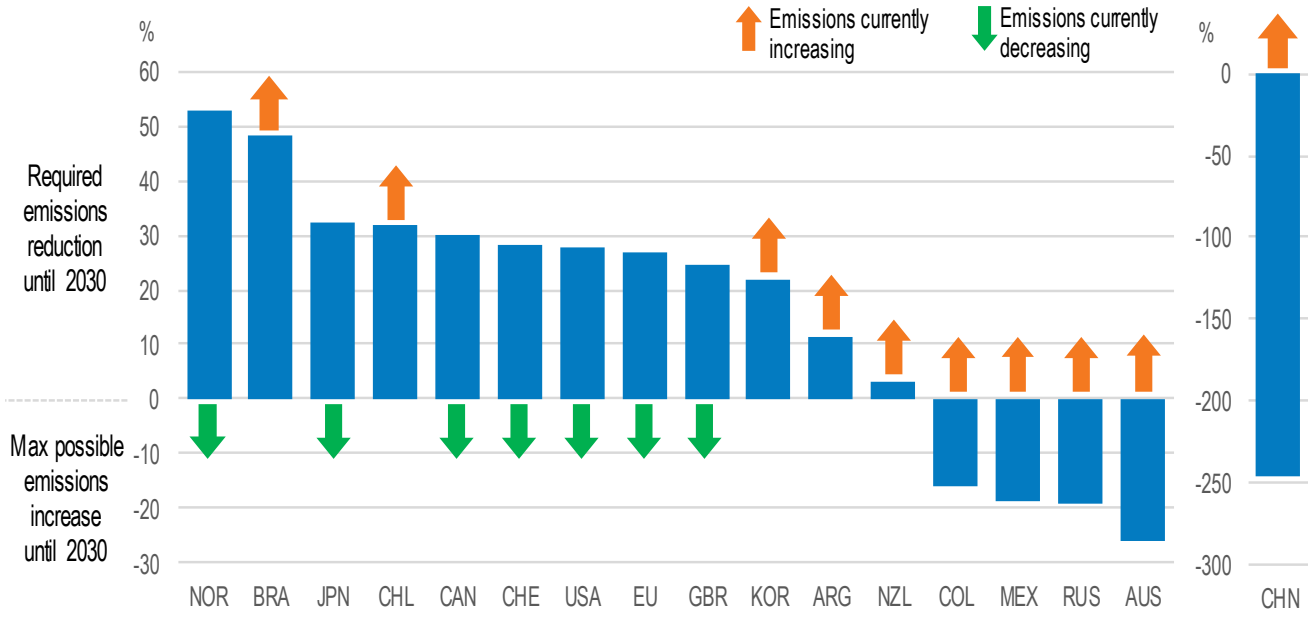
Global emission trajectories

(Gigatons, IEA scenarios)



Distance from 2030 target

(Green arrows = emissions are shrinking)



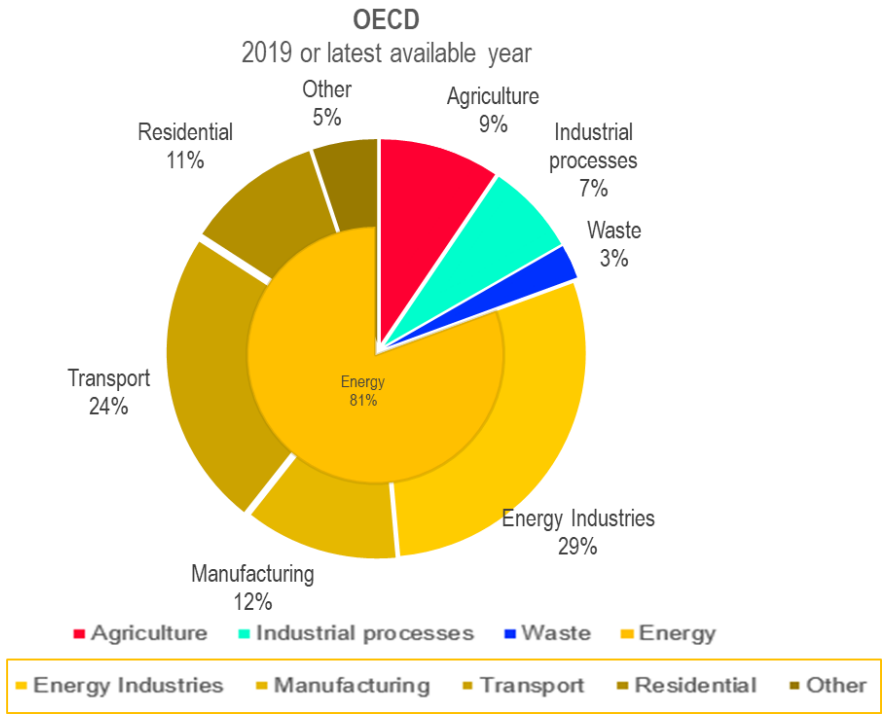
IEA (2021), World Energy Outlook 2021, https://www.iea.org/reports/world-energy-outlook-2021.

D'Arcangelo, F., et al. (2022), « A framework to decarbonise the economy », OECD Economic Policy Papers, n° 31, Éditions OCDE, Paris, https://doi.org/10.1787/4e4d973d-en.

Emissions vary considerably across sectors and countries

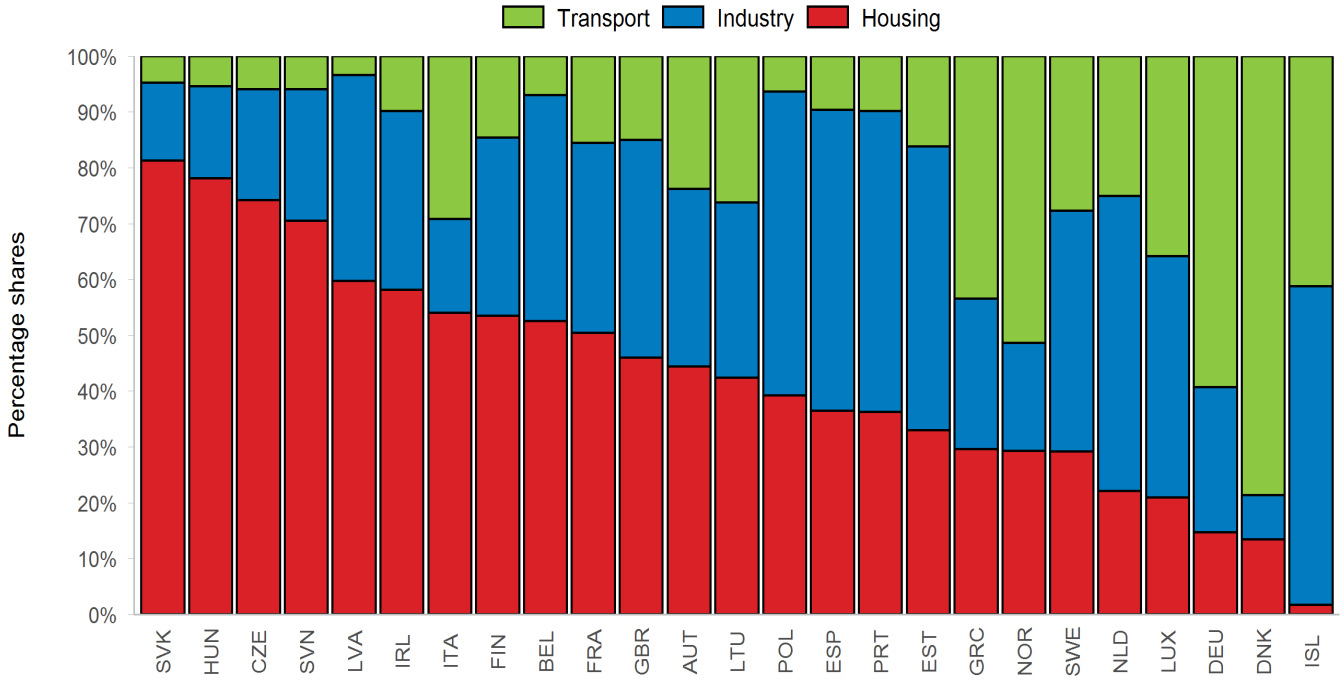
Final consumption emissions

(by sector, in %, 2019)



Particulate-matter emissions by sector

(PM2.5 emissions, in %, 2019)



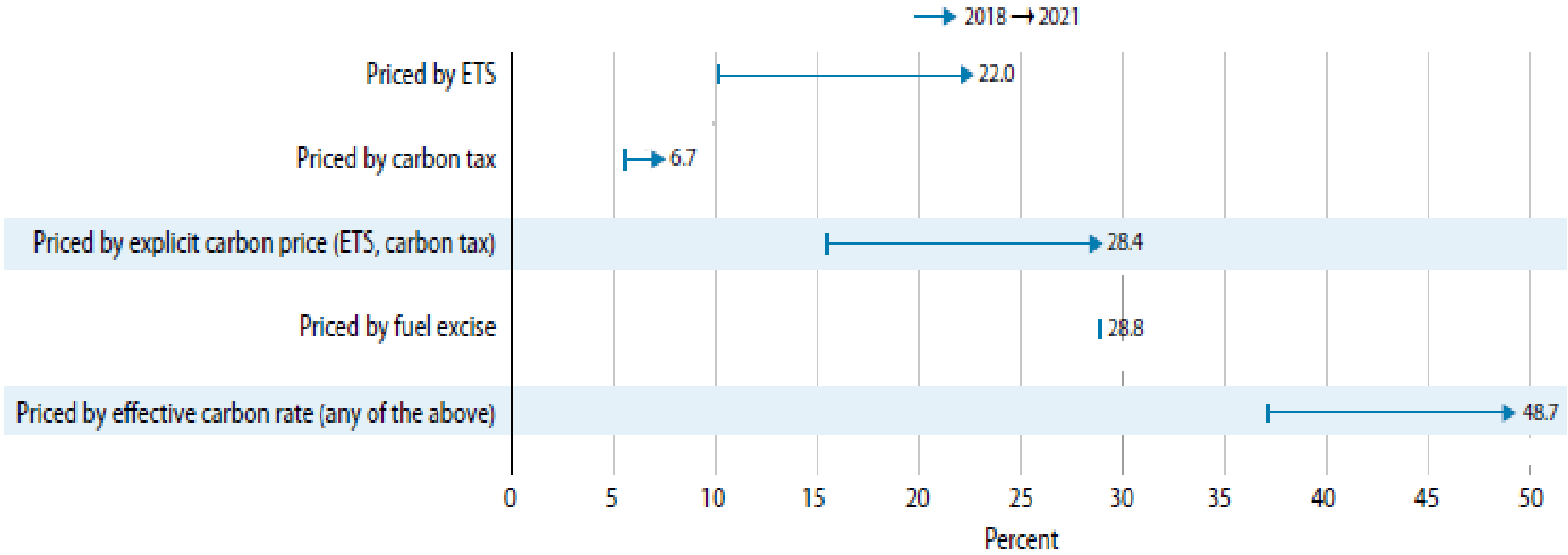
Source: OECD Environment Database

What instruments can be used to mitigate the effects of climate change?

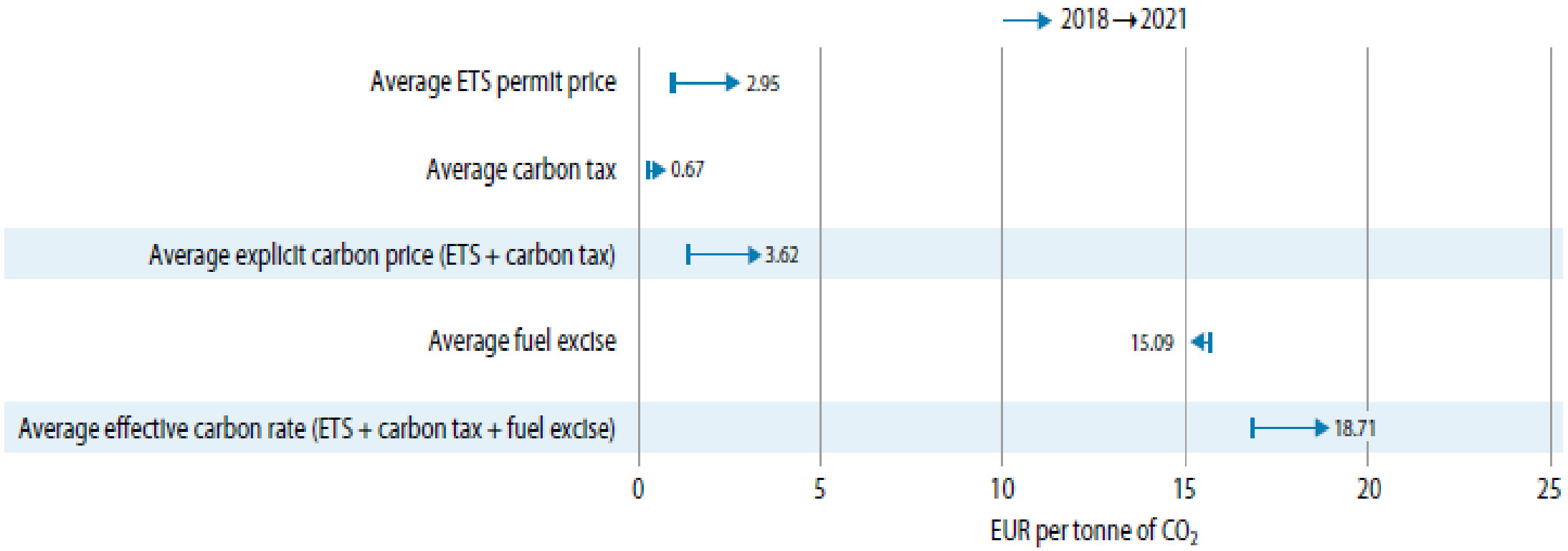
Price and non-price instruments contribute to reducing emissions

	Price-based instruments		Non-price-based instruments
	Explicit carbon prices	**Other price-based instruments**	
Climate policy instruments (main policy motivation is to reduce GHG emissions)	Emissions trading systems (1) Carbon taxes (2)	Emissions-based vehicle taxes Feed-in tariffs Feebates Tradable GHG emissions performance standards Corporate tax incentives	GHG emissions intensity standards Technology deployment subsidies Technology mandates or bans
Non-climate policy instruments (Other principal policy motivation but highly climate-relevant)		Fuel excise taxes (3) Fossil fuel subsidies (4) Electricity excise taxes (5) Electricity subsidies (6) Some industrial and agricultural subsidies	Air pollution standards Fertiliser regulations Fuel efficiency regulations

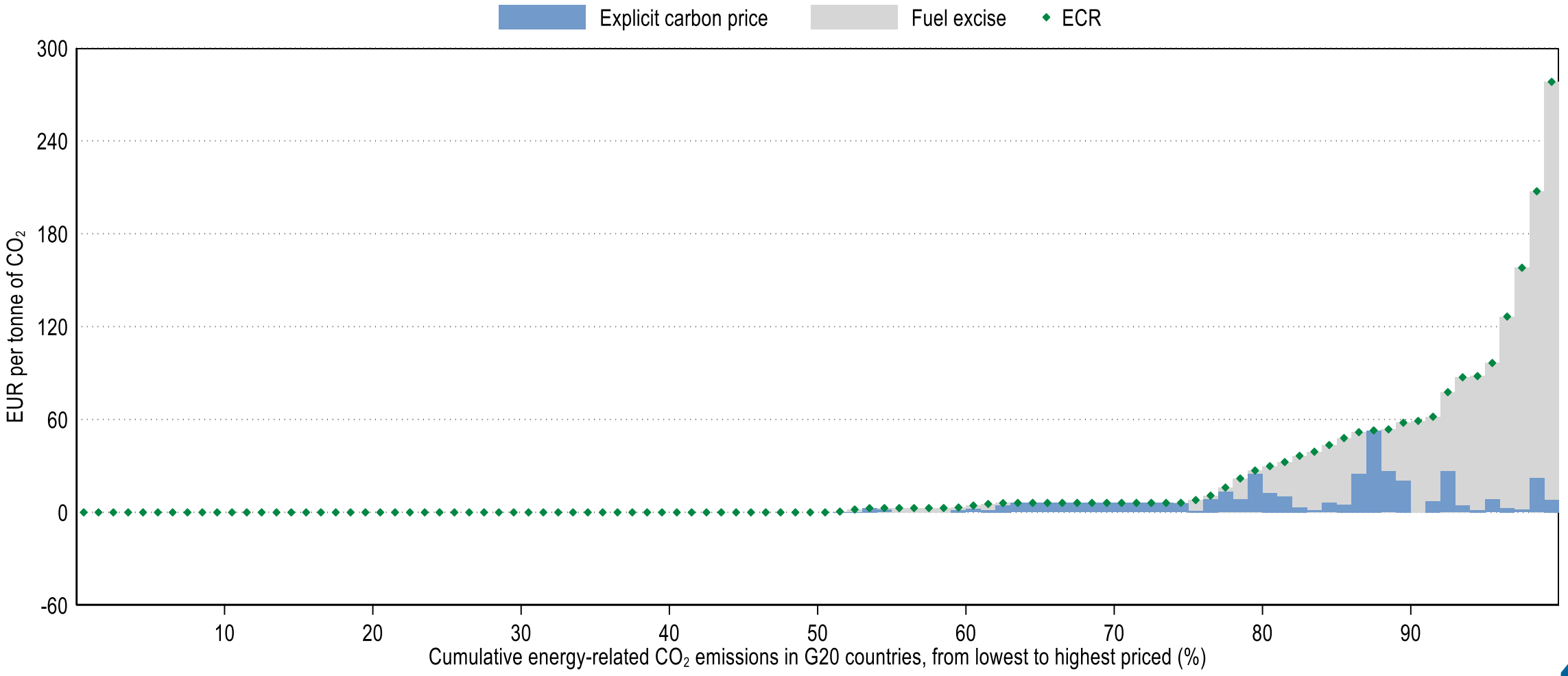
The share of emissions affected by positive pricing has risen in recent years…



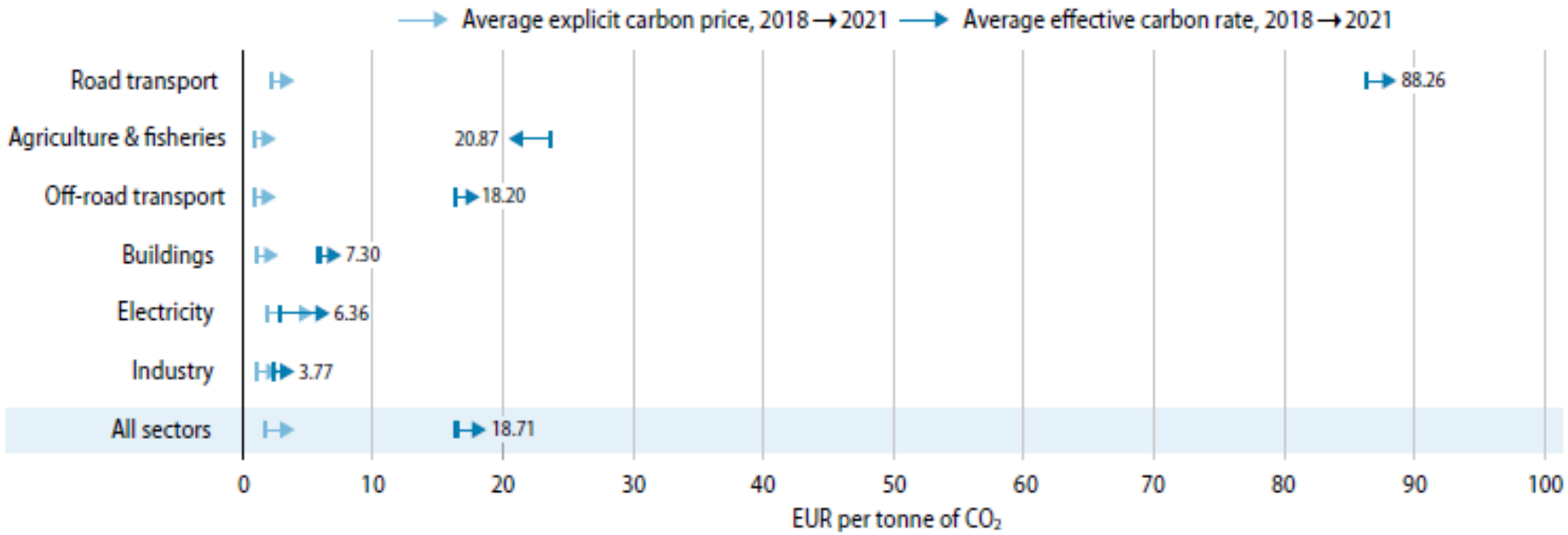
… but effective carbon rates (ECR) have risen modestly and remain relatively low…



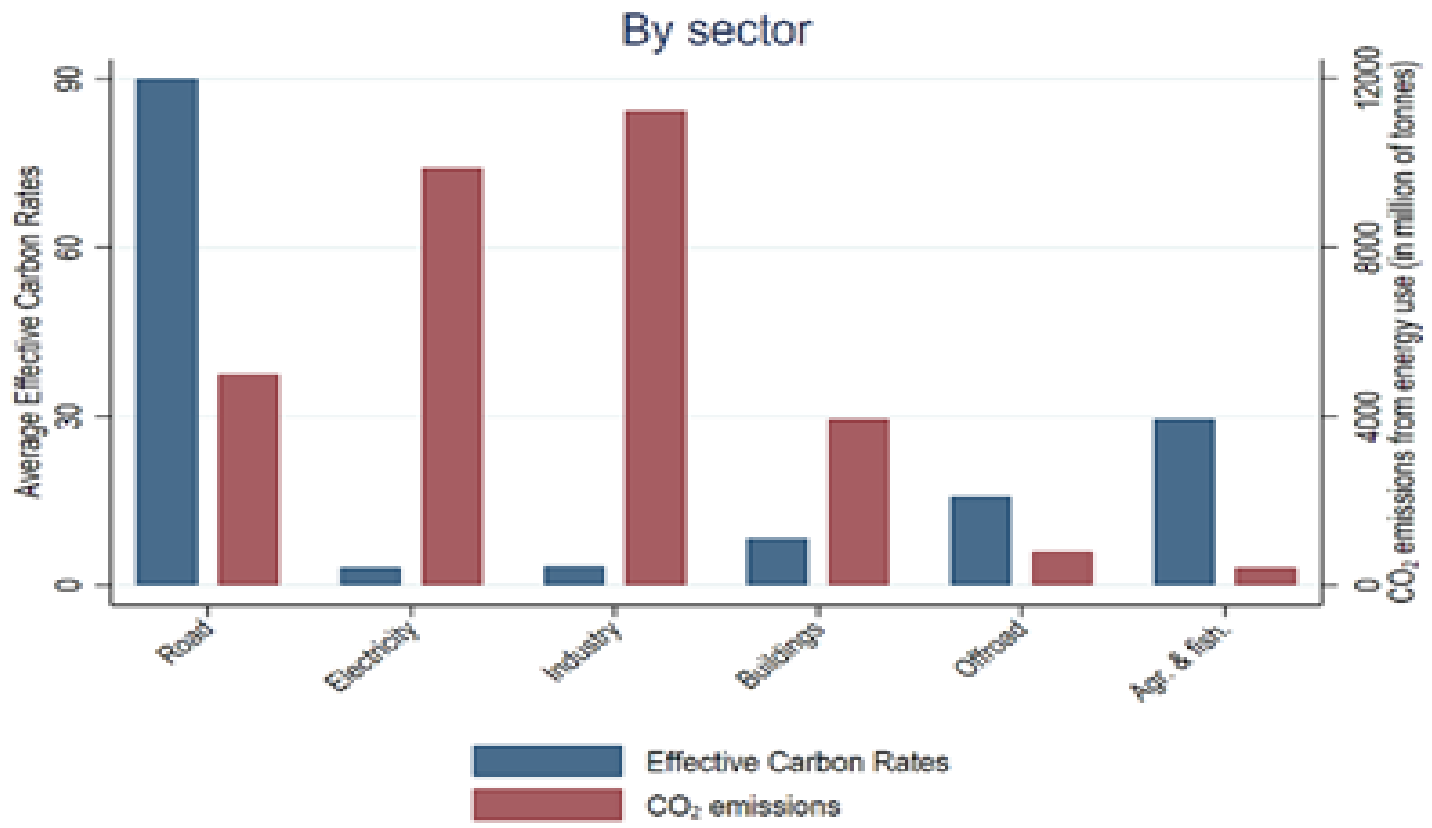
… essentially because there is a large proportion of unpriced emissions



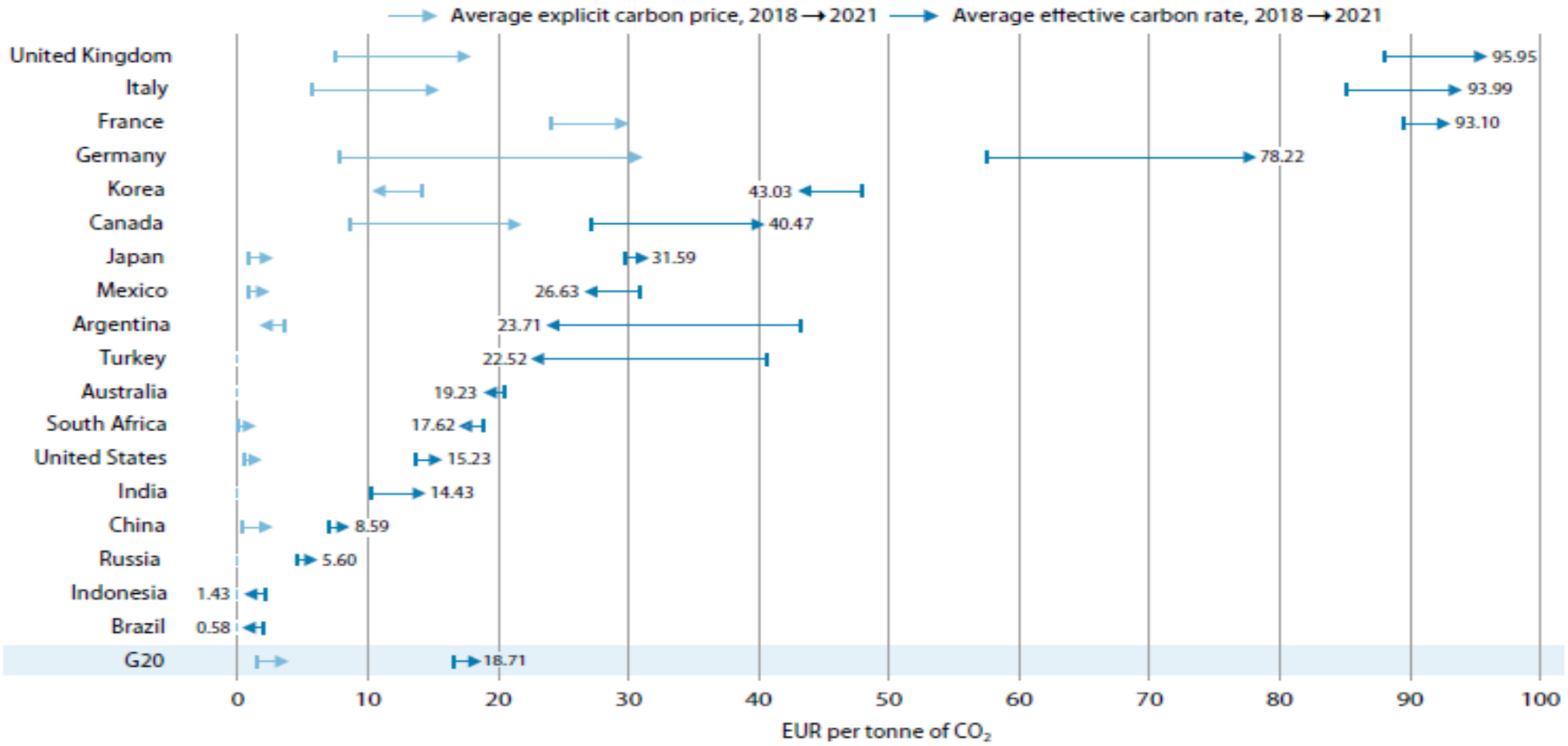
ECRs are dominated by fuel taxes and are highest (by far) in road transport



ECRs are lowest in sectors that account for the largest share of emissions

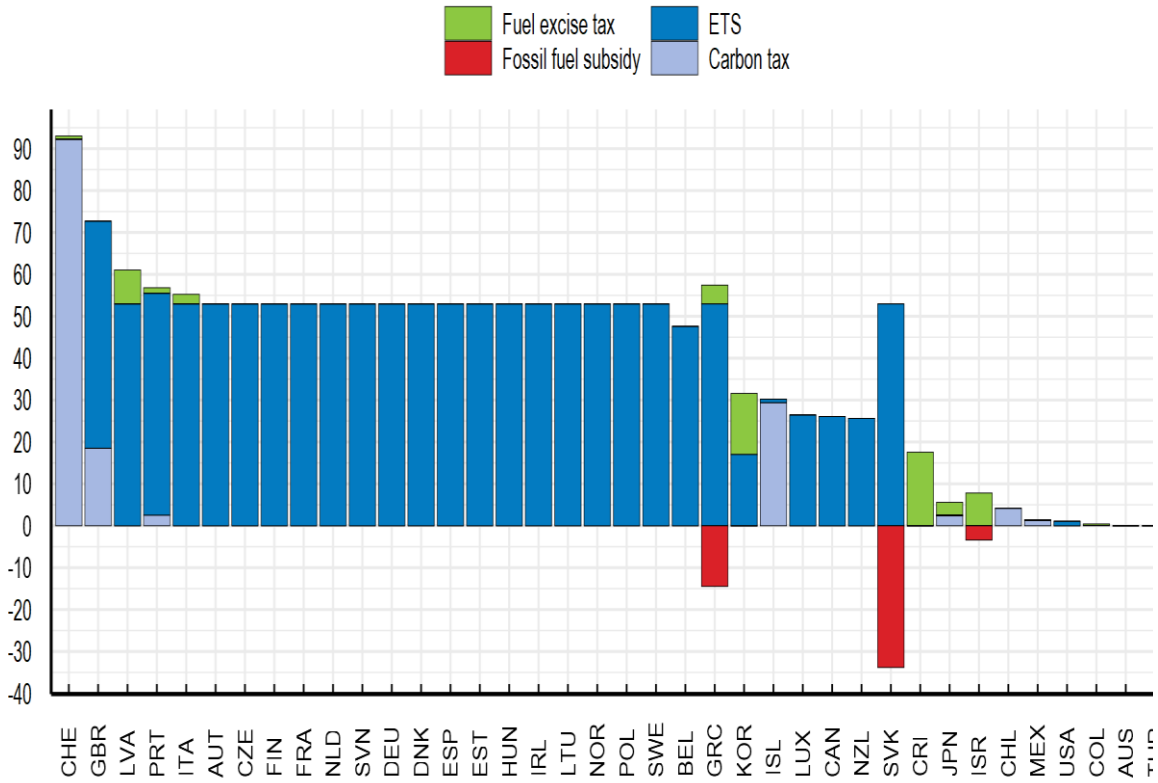


Average ECRs also vary greatly across countries, largely due to fuel taxes

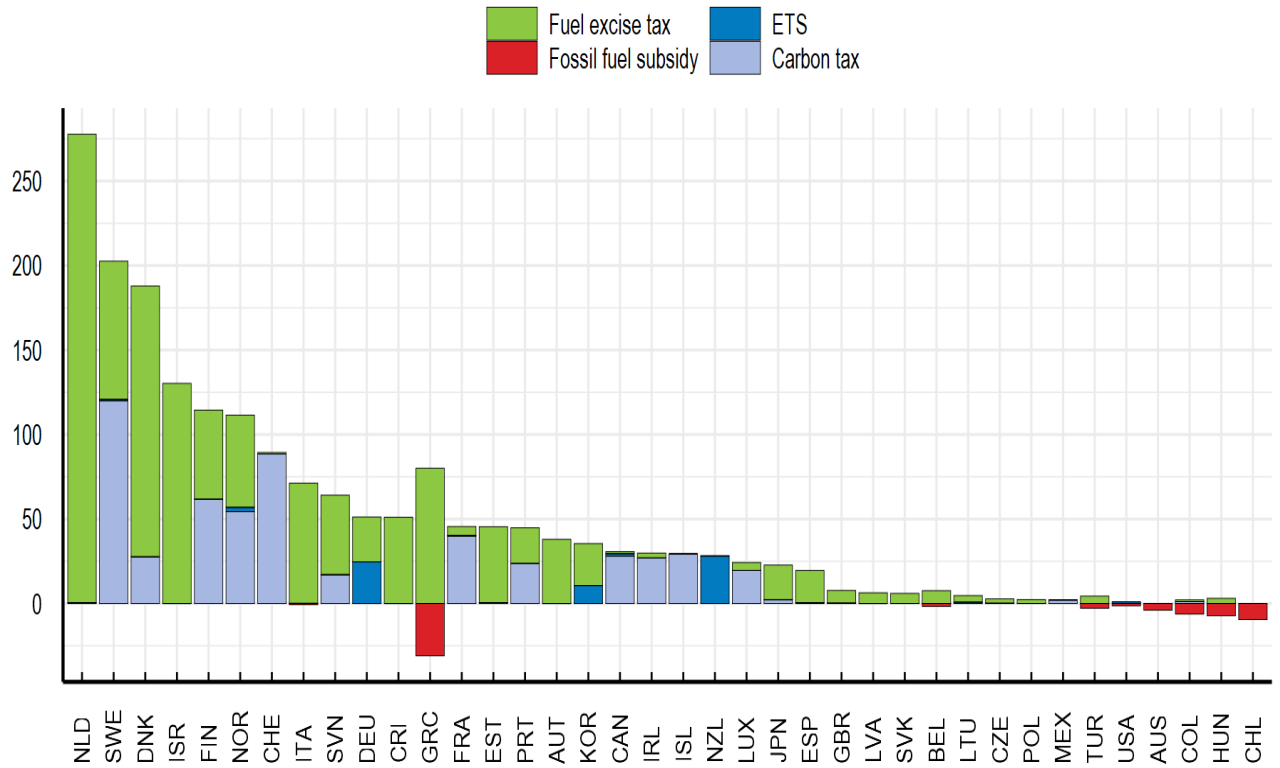


An example: different ECRs across energy sources in buildings

Electricity sector
(estimated ECR, EUR per ton of CO2)

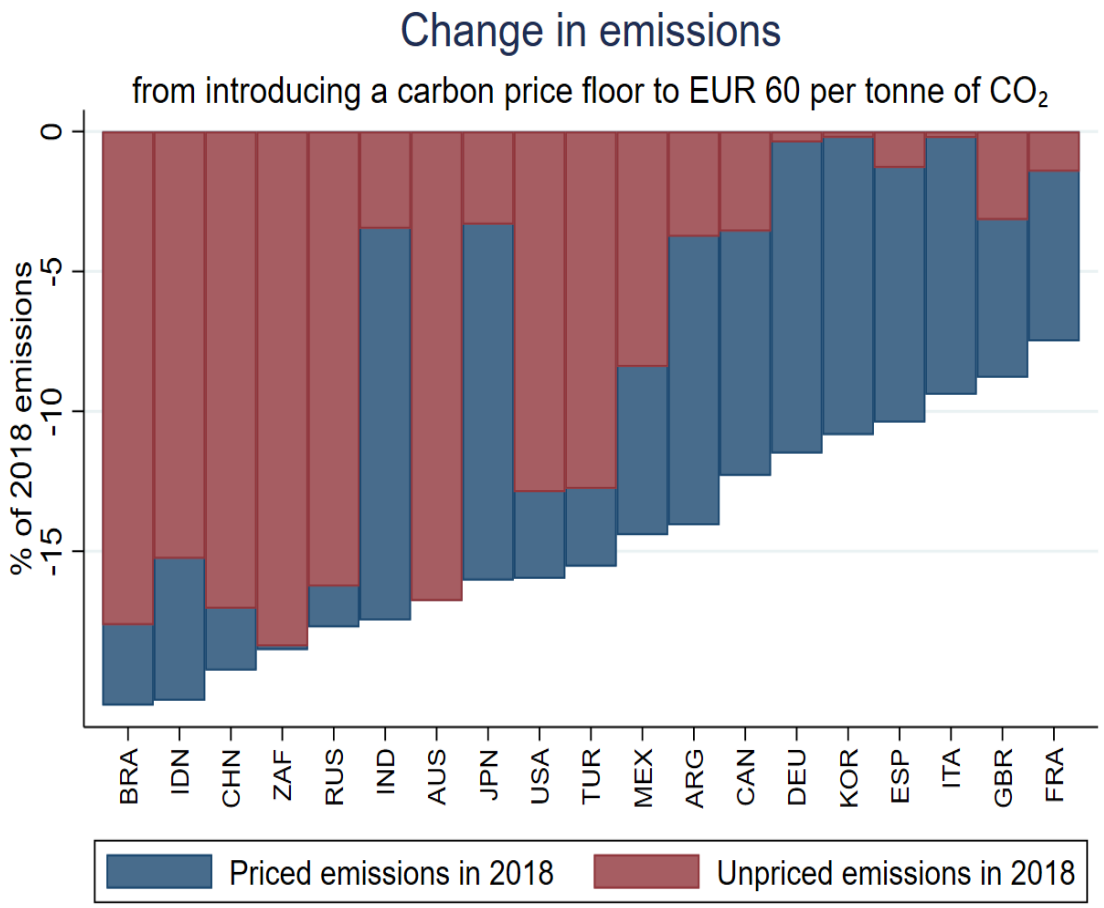


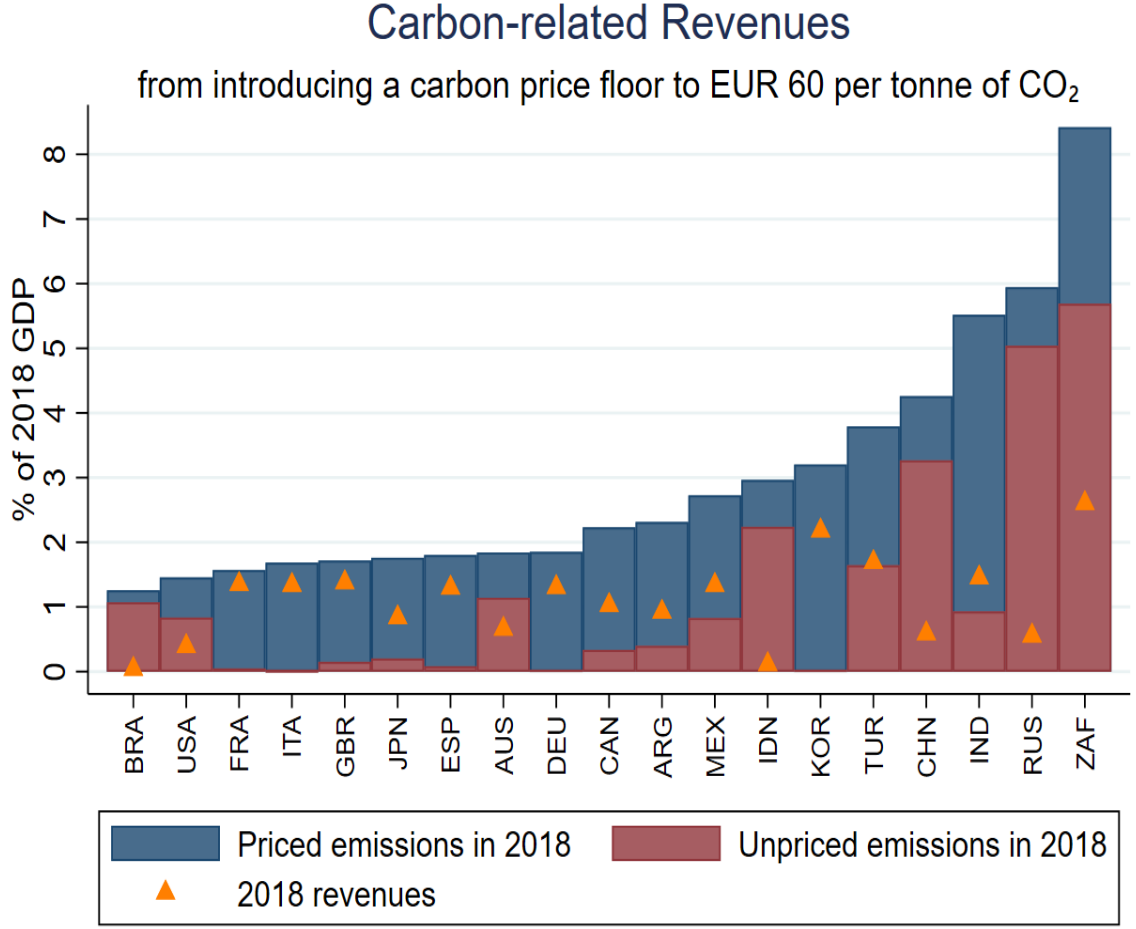
Building use
(estimated ECR, EUR per ton of CO2)



Source: Taxing energy use (OECD,2022).

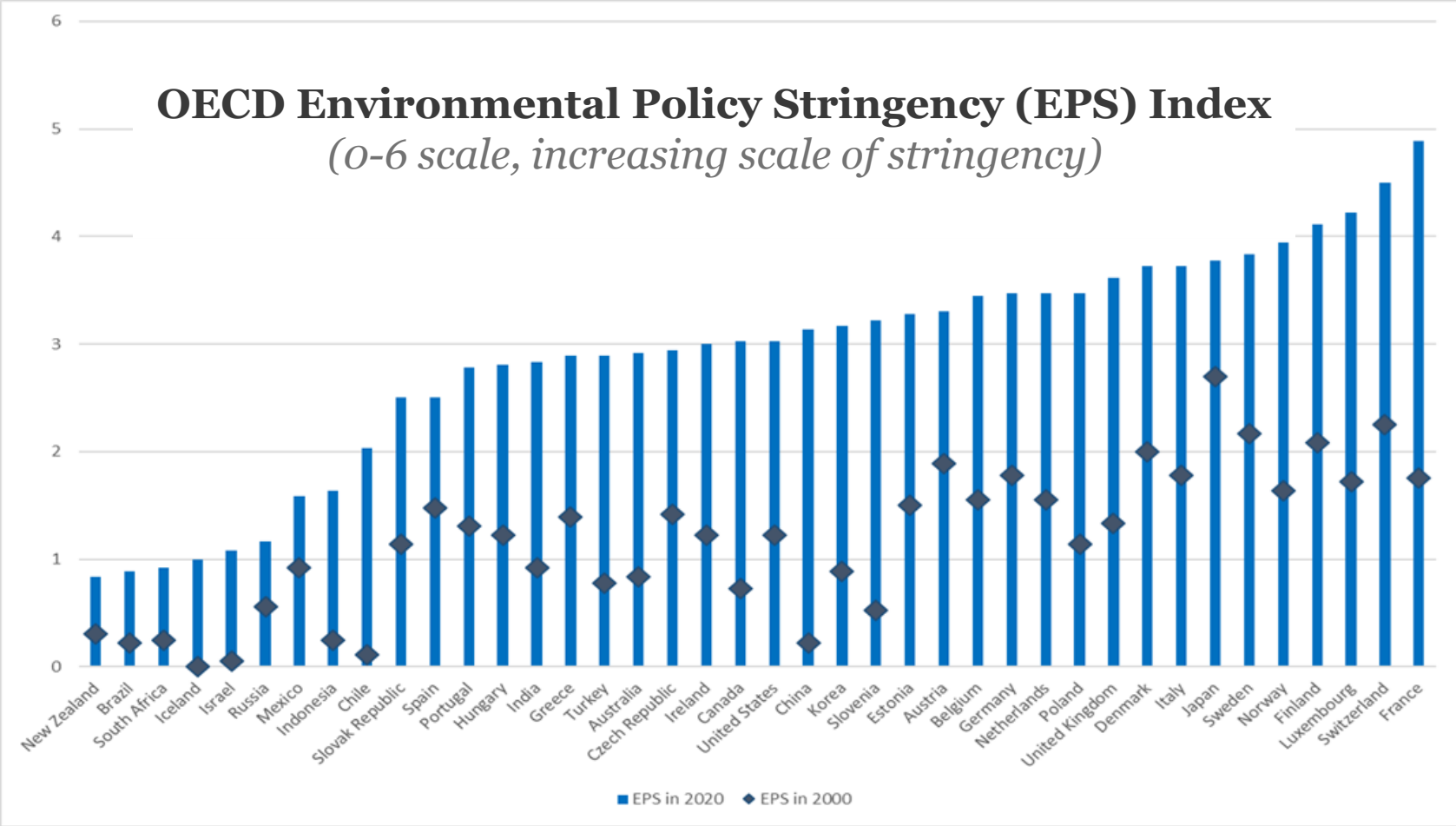
A price floor at 60 EUR would significantly reduce emissions, while raising revenue





Source: D'Arcangelo, F., et al. (2022), "Estimating the CO2 emission and revenue effects of carbon pricing: New evidence from a large cross-country dataset", *OECD Economics Department Working Papers*, No. 1732, OECD, Paris.

Carbon pricing has made environmental policy more stringent, despite variations



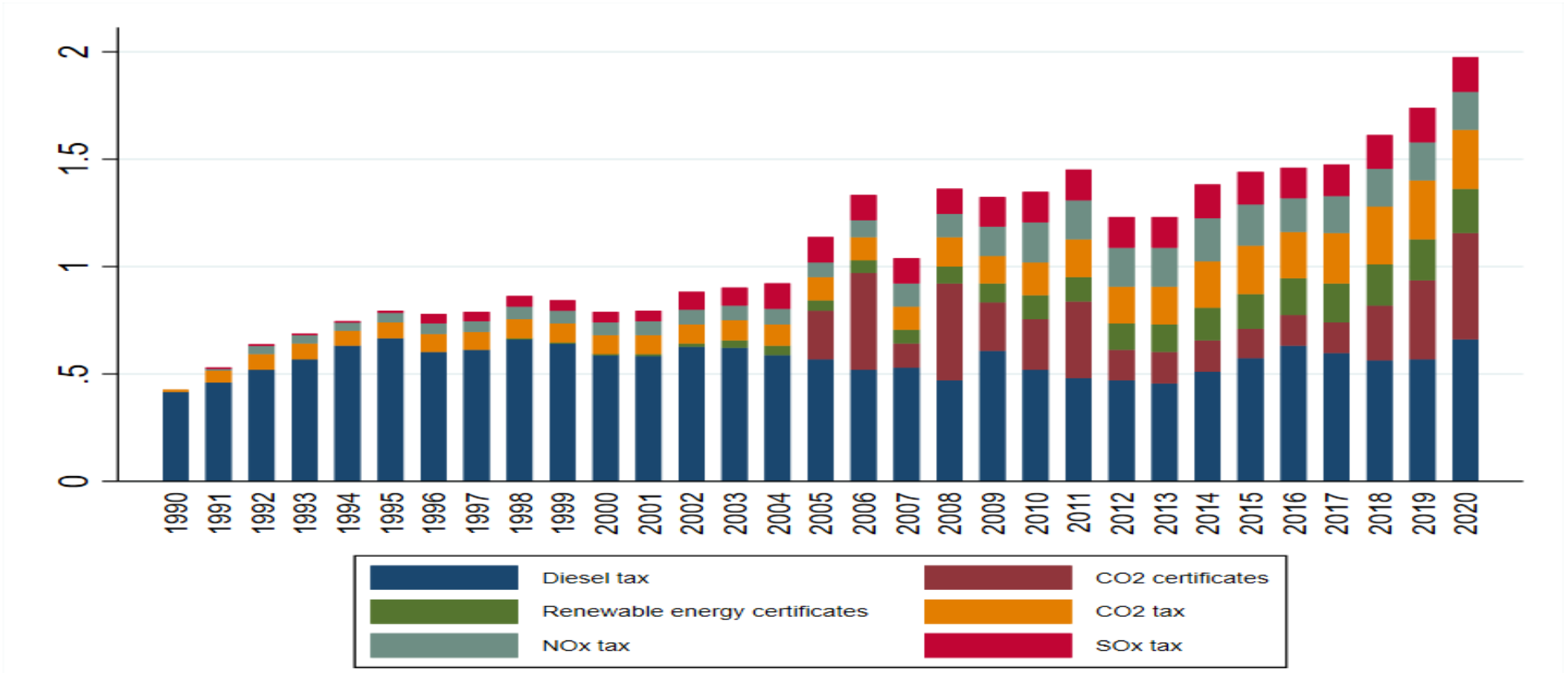
- Market, non-market instruments and technology support
- 34 countries (most G20) over 1990-2020
- EPS covers essentially GHG and air pollution
- To come: actions and policies index (IPAC)

Source: Kruse, T., et al. (2022), "Measuring environmental policy stringency in OECD countries: An update of the OECD composite EPS indicator", OECD Economics Department Working Papers, No. 1703, OECD Publishing, Paris, https://doi.org/10.1787/90ab82e8-en.

Market-based instruments have become more stringent since the mid-2000s

Market based policies

(OECD EPS index, 6 = most stringent)



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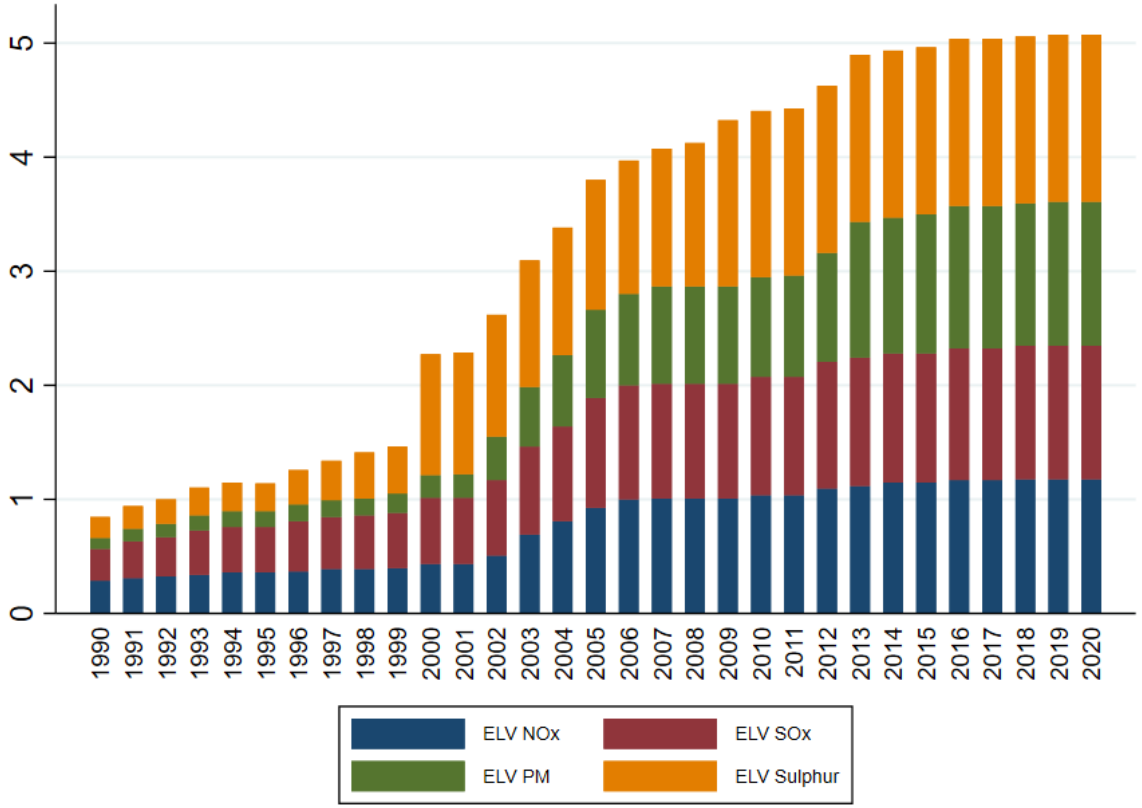
Non-market measures have also been tightened, but technology support has stalled

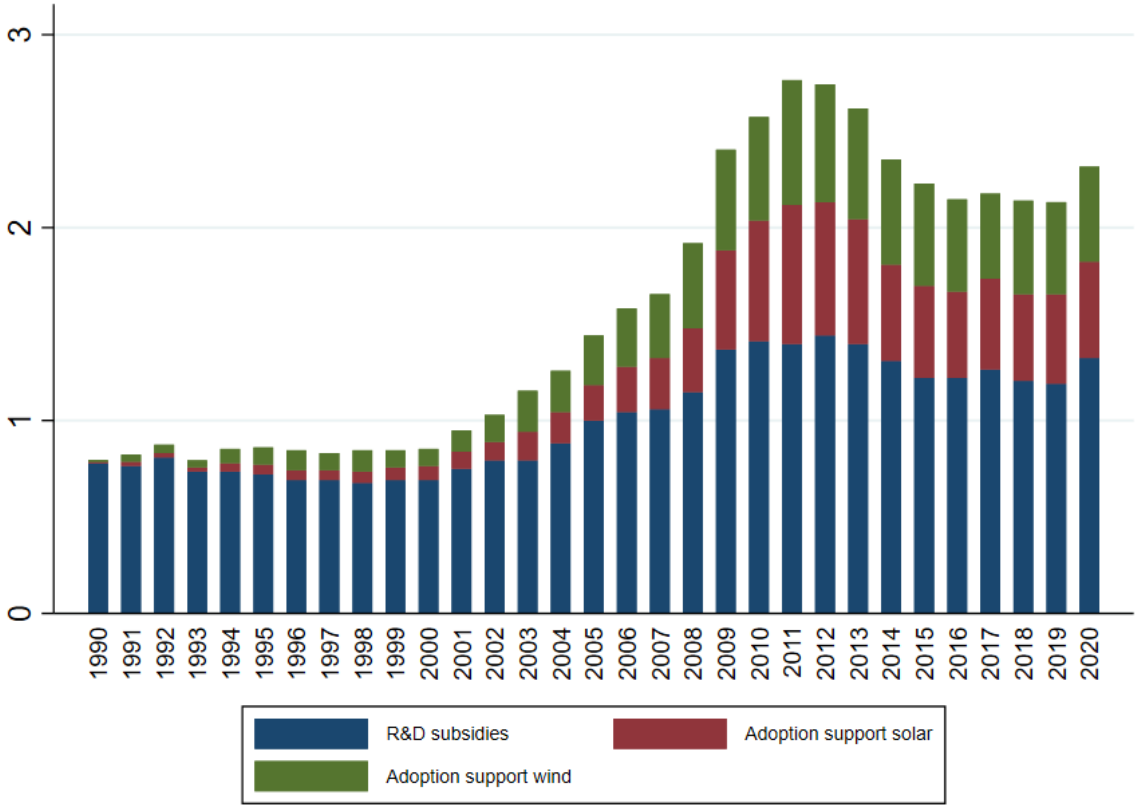
Market based policies

(OECD EPS index, 6 = most stringent)



Technology support

(OECD EPS index, 6 = most stringent)



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Trade-offs and synergies across policy instruments call for a comprehensive policy mix

	Assessment criteria						
Policy instrument	Short-term minimisation of abatement costs	Long-term minimisation of abatement costs	Administrative costs	Ability to deal with uncertainty	Reallocation and distributional concerns	Political economy and acceptability	Fiscal revenues and expenditures
GHG tax	High	High	Moderate to High	High	Moderate	Low	Rev. raising
Non-tradable performance standards	Moderate	Moderate	Low	Low	Low	High	Neutral
Subsidies to abatement	High	Moderate	High	High	Moderate to High	High	Expenditure
Technology standards	Low	Low	Low	Low	High	High	Neutral

D'Arcangelo, F., et al. (2022), « A framework to decarbonise the economy », OECD Economic Policy Papers, n° 31, Éditions OCDE, Paris, https://doi.org/10.1787/4e4d973d-en.

Back to buildings: examples of comprehensive policy packages

	Copenhagen	New York	Vienna	Paris	Tokyo
Taxes		ETS for buildings planned			ETS for buildings
Subsidies and tax incentives	Energy-saving packages	Low- or no-interest loans to finance energy retrofit, Property tax exemptions for green buildings	Subsidies for energy retrofits, heat pumps, gas condensing boilers and district heating	Subsidies, tax credits and no-interest loans for retrofits, reduced VAT	Subsidies for retrofits
Standards and regulations	Mandatory energy efficiency requirements	Proposed mandatory energy use limits, Performance-based energy codes for new construction	Low energy and passive-house standards (voluntary)	Mandatory energy efficiency standards for all buildings	No strict standards, zero-emissions targets
Provision of information (labels)	Energy performance certificates	Building Energy Efficiency Rating Labels	Energy performance certificates	Energy performance certificates; low-energy labels for new construction	Mandatory tenant Rating/ Disclosure, carbon Certification Program (voluntary)

Source: OECD (2023), Brisck by Brick (Volume 2), OECD, Paris.

The road ahead

Towards a dialogue on climate policies

- There is a need to:
  - Improve global understanding and comparability of policy effectiveness
  - Allow climate policy performance and commitments to be better assessed
  - Inform global dialogue and decision-making on best practices
  - Help driving greater climate ambition globally avoiding negative cross border spillovers

- The OECD proposes an **Inclusive Forum on Carbon Mitigation Approaches Forum** will support more ambitious climate policy by :
  - Creating inventories of climate policies (price and non-price)
  - Measuring how climate policies compare and meet emission reductions commitments

Thank you

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