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News

Issues and Foresight

Hydrogen



"Putting a price on carbon emissions not only assigns value to climate action, but also stimulates the development of low-carbon technologies by directing investments towards

innovation in this area.

Carbon pricing systems play a pivotal role in this process, shaping industrial strategies and accelerating the transformation of energy and industrial sectors. Understanding their evolution is crucial to anticipating the challenges and opportunities they entail.

At IFPEN, we analyze these mechanisms to support stakeholders in the energy transition and to inform strategic decision-making. This brief decodes recent trends and outlooks for carbon pricing instruments."

*Paula Coussy*

*Carbon Externalities project manager – IFPEN*

[Read the full brief \(PDF in French, 450 KB\)](#)

## A GROWING CARBON PRICING LANDSCAPE

By 2025, 81 carbon pricing systems (ETS and carbon taxes) cover nearly 28% of global GHG emissions. In 2024, ETS accounted for 12 GtCO<sub>2</sub> (23% of emissions), while carbon taxes covered 5%.

## RISING PRICES EXPECTED IN ETS

More than 75% of emissions covered by an ETS trade between 10 and 70 USD/tCO<sub>2</sub>. The EU allowance price could reach €120–200/tCO<sub>2</sub>e by 2030. In 2024, these systems generated USD 70 billion, 84.5% of which in Europe—funding, among other initiatives, the EU Social Climate Fund.

## WIDE DISPARITIES IN CARBON TAXES

Carbon tax levels range from USD 0.1/tCO<sub>2</sub> in Poland to USD 160/tCO<sub>2</sub> in Uruguay. Global revenues from carbon taxes rose by 10% in 2024, reaching USD 35 billion.

## CARBON CREDITS: BETWEEN REGULATION AND VOLUNTARY ACTION

Roughly 40% of ETS and carbon tax systems allow the use of carbon credits. In 2024, the average price of all over-the-counter traded carbon credits was USD 6.78/tCO<sub>2</sub>e, compared with USD

15.50/tCO<sub>2</sub>e on average for nature-based solution credits (NBS).

## CLIMATE URGENCY: EFFORTS STILL FALL SHORT

Unconditional NDCs would lead to warming of over 2.9°C by 2100, versus 2.5°C under conditional NDCs. To stay below +2°C of global warming, unconditional 2030 NDCs would need to be strengthened by an additional 14 GtCO<sub>2</sub>e (UNEP, 2024).

## EUROPE LEADING THE REFORM

The European Union remains a pioneer with its Carbon Border Adjustment Mechanism (CBAM), already inspiring similar initiatives in the United Kingdom, Australia, Japan, Turkey, Thailand, Taiwan, and Chile.

## TOWARD HYBRID SYSTEMS

An increasing number of countries, including China and Brazil, are adopting hybrid systems that combine allowances and carbon credits. ETSs are also expanding to new sectors such as steel, cement, chemicals, transport, buildings, grey hydrogen, and synthetic fuels.

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