I4CE
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Global carbon accounts 2025

Carbon pricing instruments and the unlocked potential of carbon revenues

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CARBON REVENUES CAN FURTHER CONTRIBUTE TO DOMESTIC RESOURCE MOBILIZATION EFFORTS AND HELP FILL THE FINANCE GAP

This 2025 edition of the Global Carbon Accounts presents **a landscape of carbon pricing instruments worldwide through the lens of their current and potential contribution to scale up climate and development finance**, as key discussions at the international level on the matter are taking place this year – notably in the context of the climate negotiations on the 'Baku to Belem Roadmap to 1.3T'[1] and the Fourth Finance for Development Conference (FFD4). Several jurisdictions are already using carbon revenues to support a range of policy objectives, including decarbonisation efforts and support for economic actors most affected by the transition. Yet there is still potential for them to further contribute to fill the gap.

USD 103 billion were generated by carbon pricing instruments in place in 2024 (67% by ETSs and 33% by carbon taxes), showing a slight decrease from the record high of nearly USD 106 billion raised in 2023. The decrease is largely due to the drop in emission allowance prices in the European Union Emissions Trading System (EU ETS). Currently, carbon revenues remain relatively concentrated among a few major mechanisms: the EU ETS alone accounts for 41% of total revenues, followed by the German national ETS (14%), and the Canadian carbon tax (9%). Ten jurisdictions together account for 86% of global carbon revenues.

The figure above represents only a fraction of the estimated needs, but there still significant potential to unlock. According to top-down estimates of the Independent High-Level Expert Group on Climate Finance, **USD 6.3-6.7 trillion are needed each year for global climate investments by 2030**. Emerging and developing economies alone (excluding China) would require USD 2.3-2.5 trillion – comprising USD 1.1 trillion in domestic effort and USD 1.3 trillion in international support.[2] **Carbon pricing instruments could generate approximately USD 2.6 trillion if all 2024 emissions are priced at USD 50/tCO_2e.**

56% of carbon revenues **were earmarked for activities contributing to climate change mitigation and adaptation, environmental protection, or development**. One quarter of total revenues is redistributed either directly – through transfers to households or businesses (19%) – or indirectly – via tax exemptions or reductions (6%) – to economically impacted actors (households or firms). The remaining portion (19%) was transferred to government budgets without specific earmarking.

USD 75 billion in additional revenues **could have been generated on top of the USD 53,5 billion raised in 2024 by *cap-and-trade* ETSs alone** without free allocation of emission allowances, showing the unlocked potential of carbon revenues. This estimate excludes China and Kazakhstan due to insufficient data to assess their foregone revenues. Nevertheless, China's national ETS represents the largest untapped source, which now covers 15% of global emissions following its 2025 expansion to include the steel, cement, and aluminum sectors, but 100% of its allowances are allocated for free. This notion of potential government revenue that is not collected due to specific policy choices is referred to as 'revenue foregone' and can also apply to taxes that have exemptions or reductions in place.

1 Part of the UNFCCC negotiations on the New Collective Quantified Goal (NCQG) – a new climate finance target to succeed the USD 100 billion goal. The NCQG decision ended up with a new USD 300 billion goal and a proposal to work on a roadmap to scale up climate finance for developing countries to reach a level closer to the estimated needs – the 'Baku to Belem Roadmap to 1.3T'. This with a focus on grants, concessional finance, non-debt-creating instruments, and measures to increase fiscal space.

2 A critical assessment of these figures, which were largely used for the NCQG negotiations and criticised by some, is available in a **forthcoming publication by I4CE**.

Carbon pricing key figures

78 carbon pricing instruments (CPIs) put a price on carbon emissions worldwide as of May 1, 2025, with 43 carbon taxes and 35 emissions trading systems (ETS). Out of these 44 operate at the national level, 33 at the subnational level (including regional initiatives such as RGGI and WCI), and only the EU ETS at the supranational level. 74 of these 78 systems were already in place in 2024. This same year, jurisdictions with carbon pricing instruments (CPIs) accounted for 65% of global GDP.

USD 0.1-160 is the range of explicit carbon prices, which widened again in 2024. While the price reached USD 160 per ton of CO_2 equivalent emissions (tCO_2e) in Uruguay, it remained below USD 10 cents/tCO_2e for Poland's carbon tax (although Poland is also part of the EU-ETS). Only 20% of covered emissions are priced in line with the Stern-Stiglitz Commission's recommendations, which in 2017 estimated that full incentive effects require prices between USD 40-80/tCO_2e by 2020, and USD 50-100/tCO_2e by 2030. Around 74% of covered emissions are priced below USD 20/tCO_2e.

28% of global emissions were covered by a carbon pricing instrument in 2024 – 4 percentage points higher than in the previous edition of the Global Carbon Accounts. This evolution is explained by the expansion of the Chinese national ETS to the cement, steel and aluminum sectors in March 2025, covering 2024 emissions retrospectively. The positive trend is expected to continue in the coming years, with **14** new mechanisms under implementation and more under consideration. In contrast, the share of global emissions covered at an effective price (excluding exemptions and reductions of taxes, as well as free allowances) has remained at **6%** since 2023. Jurisdictions where CPIs are already in place account for 52% of global GHG emissions – highlighting the significant potential for expanding emissions coverage within these systems.

RECENT DEVELOPMENTS

Between 2024 and 2025, several carbon pricing mechanisms were introduced worldwide at the national level:

Taiwan's carbon tax came into effect on January 1, 2025, targeting the country's electrical and manufacturing industries emitting more than 25,000 tons of CO_2e per year, at a rate of USD 9/tCO_2e.

A **carbon tax** has also been in place in **Israel** since January 2025, targeting the consumption of coal, natural gas, fuel oil, LPG and petroleum coke (not diesel or petrol). The rate varies from USD 9/t for natural gas to USD 333/t for fuel oil and will increase progressively until 2030.

Thailand's carbon tax was implemented in March 2025, covering petroleum products consumption at a rate of USD 6/tCO_2e.

The same month, **China** officially expanded its national **Emissions Trading System** (ETS) to include the steel, cement, and aluminium sectors. With the electricity sector already covered, this mechanism now encompasses more than half of the CO_2 emissions of the world's largest emitter.

In February, **Australia's ETS** officially entered its operational phase, with the issuance of the first **Safeguard Mechanism Units** by the public authority.

And at the subnational level:

In April 2024, **British Columbia** launched a major overhaul of its **ETS** to ensure compliance with the federal framework and complementarity with the province's existing carbon tax, which was repealed in the following budget bill (April 2025).
Oregon reinstated its **ETS** in November 2024, after its court invalidation the previous year.
Colorado issued a first set of tradable allowances for its *baseline-and-credits* ETS in May 2025. The system currently covers large industrial facilities and will be expanded to midstream oil and gas activities by 2028.

The **Mexican state of Morelos** has also introduced a **carbon tax** in its 2025 finance law; it applies to industrial installations at a rate of USD 13/tCO_2e.

For more information on carbon pricing upcoming and recent developments, see the World Bank's State & Trends of Carbon Pricing 2025, as well as ICAP's ETS map and Status Report 2025.

UPCOMING CARBON PRICING MECHANISMS

Carbon pricing mechanisms continue their expansion, particularly in emerging and developing countries:

India adopted the **legal framework** for its future ETS in July 2024: it will take the form of a *baseline-and-credits* scheme covering nine energy-intensive industrial sectors.

Brazil has approved, in November, the **bill** establishing its national *cap-and-trade* ETS, for any entity emitting more than 10,000 tCO_2e per year.

Turkey's national ETS is expected to be launched as pilot in 2026, as a *cap-and-trade* targeting electricity production and carbon-intensive manufactures.

Vietnam's *cap-and-trade* **ETS** will operate as pilot from June 2025 to 2028, applying to major emitters in the power, iron, steel and cement industries.

Colombia, **Chile** and **Ukraine** have also recently established the legal basis for their own emissions trading schemes to cover industrial emissions.

Participation in **Japan's national ETS** will be compulsory from 2026; **Mexico's ETS**, meanwhile, is currently suspended for lack of political support, but may soon return to the government's agenda.

Morocco and **Malaysia** are both expected to introduce a carbon tax in their 2026 budget bill.

Malaysia is also studying the possibility of introducing an emissions trading scheme, as are **Thailand** and the **Philippines**.

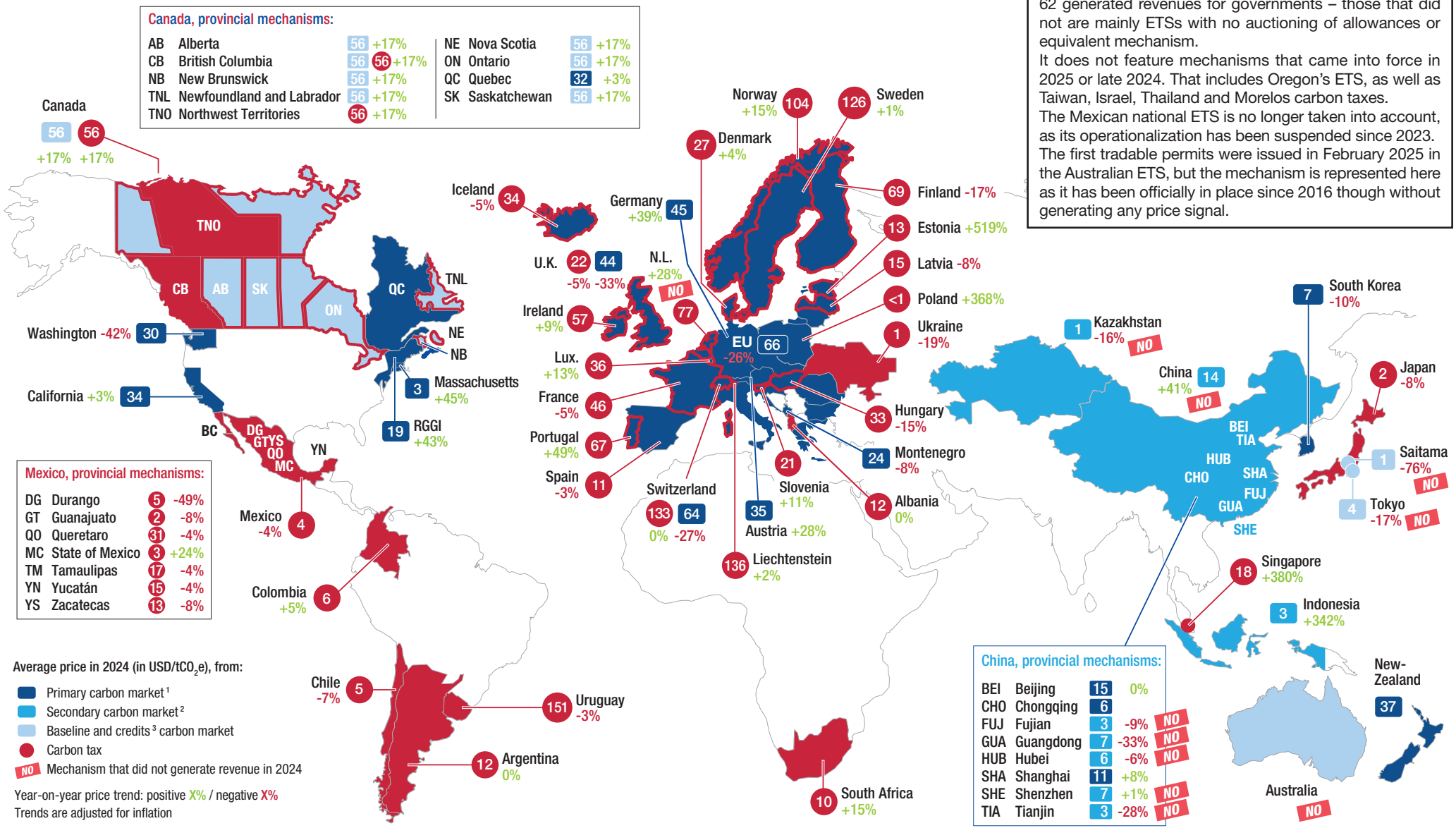
And new forms of carbon pricing are also set to emerge in the coming years:

The **International Maritime Organization (IMO)** will apply, from 2027, a tax of up to USD 380/tCO_2e. emitted to owners of large international ships that do not use sufficient low-carbon fuels. **The IMO Net-Zero** Fund will be established to collect and use pricing contributions from emissions.

Denmark will be the first country in the world to tax greenhouse gas emissions from the agricultural and livestock sectors, starting in 2030. This **tax** would start with a rate of 300 Danish kroner (approximately EUR 40) per ton of CO_2e, increasing to 750 kroner by 2035. Yet a 60% tax deduction will be applied to mitigate the impact on farmers, effectively reducing the set rate to kroner 120/tCO_2e in 2030.

European Union will inaugurate, in 2027, the first international auctioning of emissions allowances in the transport and heating sectors, with the **ETS2** (which will absorb the German and Austrian national ETSs).

CARBON PRICES IN 2024 AND REVENUE-GENERATING MECHANISMS



Reading note

This map captures prices and their variation between 2023 and 2024. Out of the 75 CPIs in place in 2024, 62 generated revenues for governments – those that did not are mainly ETSs with no auctioning of allowances or equivalent mechanism.

It does not feature mechanisms that came into force in 2025 or late 2024. That includes Oregon's ETS, as well as Taiwan, Israel, Thailand and Morelos carbon taxes.

The Mexican national ETS is no longer taken into account, as its operationalization has been suspended since 2023.

The first tradable permits were issued in February 2025 in the Australian ETS, but the mechanism is represented here as it has been officially in place since 2016 though without generating any price signal.

[1] Allowances are auctioned by a public authority

[2] Trading of allowances between players, with no revenue for the public authority

[3] Emissions standard to be met by each player. If the standard is exceeded, the player must buy allowances (possibly from the public authority). Below this, it "wins" quotas, which can be exchanged on the market.

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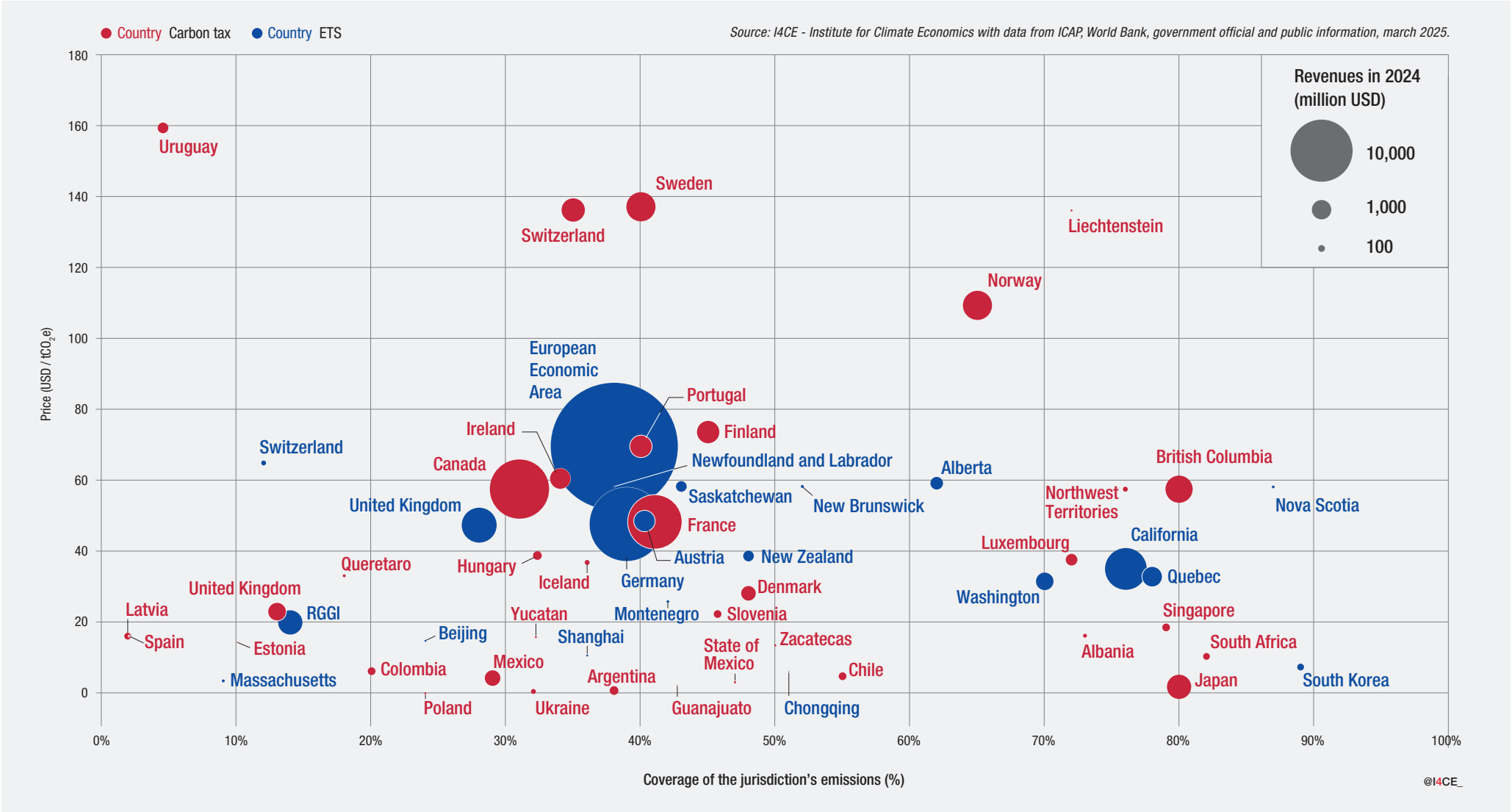
CARBON PRICING MECHANISMS AT A GLANCE: PRICE, COVERAGE AND REVENUES IN 2024

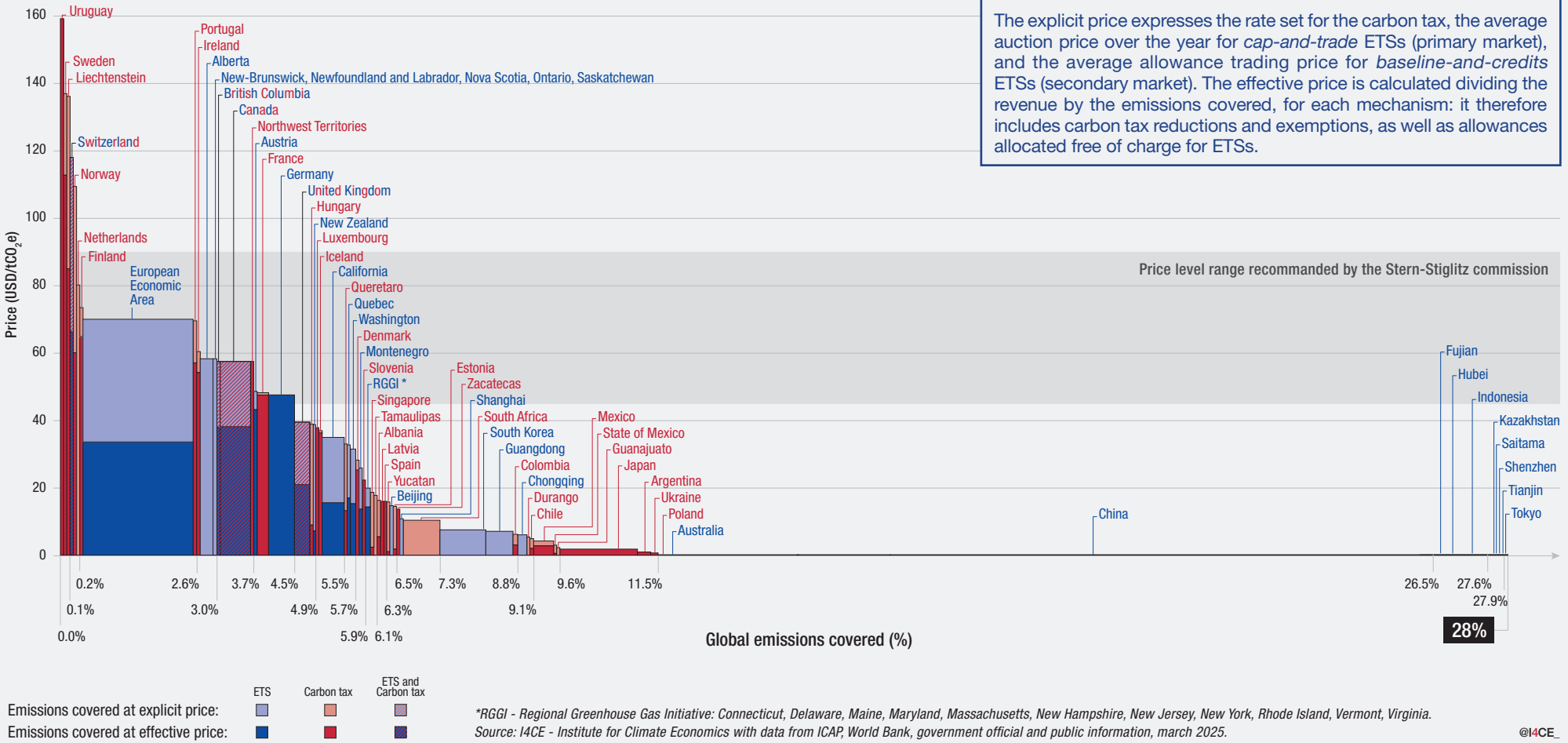
Price, coverage rate and revenue generated in 2024



Reading note

This graph illustrates the level of ambition of the various carbon pricing instruments, crossing the variables of price, coverage and revenue generated. Ambition increases as the bubbles' disposition tends towards the upper right corner. Liechtenstein's carbon tax is the most ambitious carbon pricing instrument globally, with a price reaching USD 136 in 2024 covering 72% of the country's emissions – its small amount of revenue generated is explained by the size of the country's economy. Spain's tax, on the other hand, only covers 2% of the country's GHG emissions (targeting fluorinated gases), at a price of USD 16. Regarding revenues, larger economies dominate the landscape. G7 countries raised 45% of overall carbon revenues. This figure climbs to 87% when including all G20 countries. Low- and middle-income countries (according to the IMF nomenclature) only collected 1% of total carbon revenues.

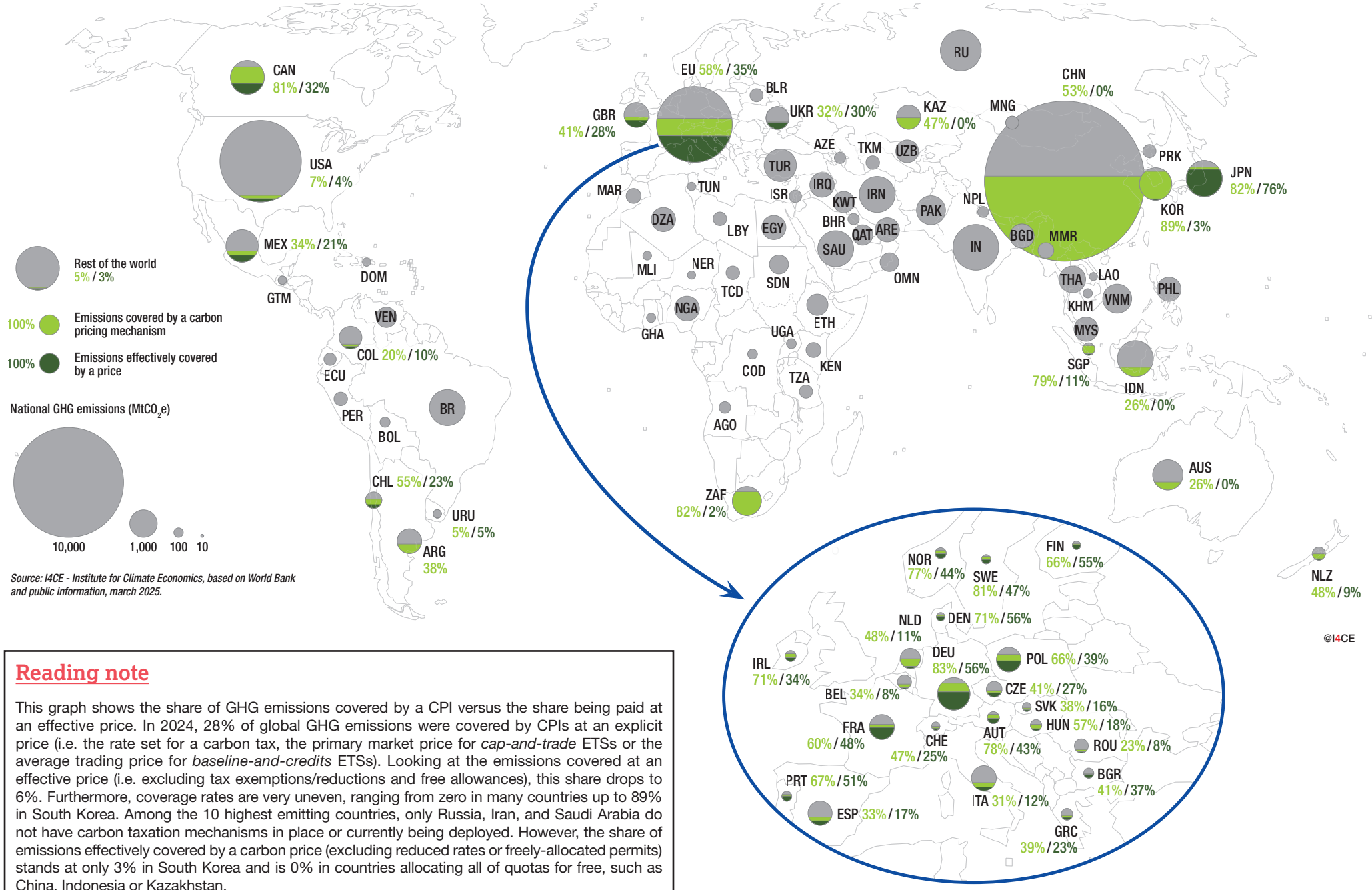
GLOBAL EMISSIONS COVERED BY CARBON PRICING MECHANISMS IN 2024



Reading note

This graph shows the percentage of global emissions covered by carbon pricing mechanisms, with the associated explicit and effective prices. For example, the California ETS alone covers 0.5% of global emissions at a primary market price of USD 35. However, considering the share of allowances allocated for free, the effective price is around USD 16. The notion of effective prices does not apply to *baseline-and-credits* ETSs (Canadian ETSs except Quebec, Australia, Tokyo and Saitama), since the revenue generated by this type of mechanism is not correlated with the number of allowances sold by the public authority. The Chinese national ETS alone covers nearly 15% of global emissions, yet the carbon price remains zero due to the continued absence of allowance auctions. For ease of reading, some histograms have been enlarged and are not perfectly at scale.

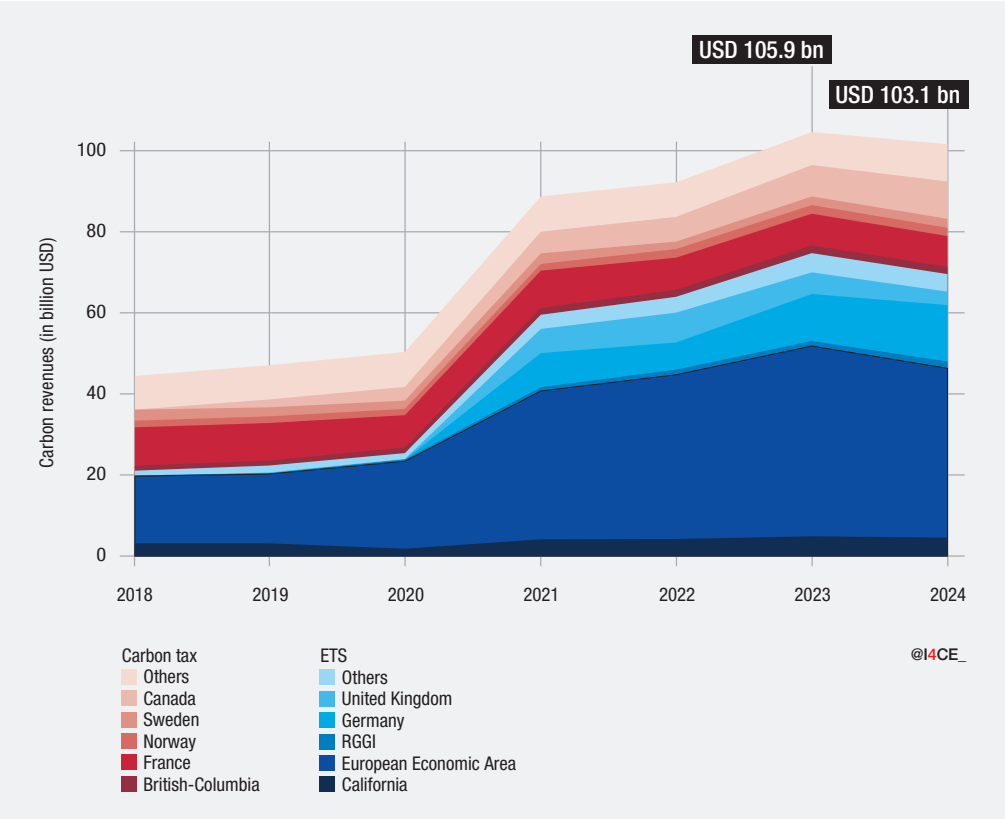
CARBON PRICE COVERAGE OF GHG EMISSIONS FOR THE 90 MOST EMITTING COUNTRIES



Reading note

This graph shows the share of GHG emissions covered by a CPI versus the share being paid at an effective price. In 2024, 28% of global GHG emissions were covered by CPIs at an explicit price (i.e. the rate set for a carbon tax, the primary market price for *cap-and-trade* ETSs or the average trading price for *baseline-and-credits* ETSs). Looking at the emissions covered at an effective price (i.e. excluding tax exemptions/reductions and free allowances), this share drops to 6%. Furthermore, coverage rates are very uneven, ranging from zero in many countries up to 89% in South Korea. Among the 10 highest emitting countries, only Russia, Iran, and Saudi Arabia do not have carbon taxation mechanisms in place or currently being deployed. However, the share of emissions effectively covered by a carbon price (excluding reduced rates or freely-allocated permits) stands at only 3% in South Korea and is 0% in countries allocating all of quotas for free, such as China, Indonesia or Kazakhstan.

GLOBAL EVOLUTION OF CARBON REVENUES AND LARGEST REVENUE-GENERATING JURISDICTIONS



IN 2024, CARBON PRICING REVENUES SLIGHTLY DECLINED COMPARED TO 2023 LEVELS, YET REMAIN ABOVE $100 BILLION

By 2024, governments will have collected 2.3 times the amount of carbon revenues in 2018, with ETS generating around 67% of the total. The year 2021 represents the inflection point, with a sharp increase in revenue generation by ETSs. The main driver of the shift from 2020 to 2021 revenue generation was the strengthening of the EU ETS following the entry into force of regulations linked to the European Green Deal, as well as the establishment of the German, British and Austrian markets.

On the ETS side, in addition to the aforementioned mechanisms, California's ETS and the American states of the Regional Greenhouse Gas Initiative (RGGI) are the carbon markets generating the most revenue, albeit with more modest growth.

Revenues from carbon taxes are also growing, yet at a moderate pace. One reason is that ETSs have expanded more widely than carbon taxes – over 60% of carbon pricing developments between 2020 and 2024. As ETS caps tighten, allowance prices tend to rise faster than emissions fall in the short term, leading to higher revenues. This effect is amplified when systems reduce the share of free allowances. For example, revenues from the EU ETS more than doubled between 2018 and 2024. In contrast, carbon taxes often face stronger political resistance, limiting both rate increases and expansion. In France, for instance, the carbon tax has been frozen at €44.60 since the "yellow vest" protests in 2018, causing revenues to stagnate.

On the carbon tax side, the main revenue generating jurisdictions include Canada (national), France, Sweden, Norway and British Columbia (Canada subnational). Yet this landscape will change in coming years, as both Canadian taxes were cancelled effective from April 1, 2025.

Canadian carbon tax repeal: a revealing case of lessons learned surrounding the use of carbon revenues

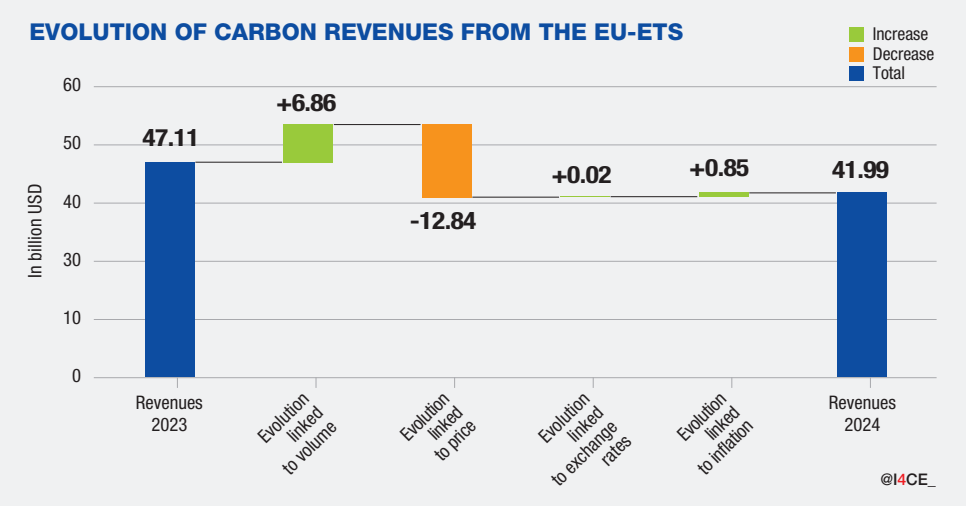
One of the first decisions made by Canada's new Prime Minister, Mark Carney – despite being a strong advocate for climate action – was to eliminate the carbon tax introduced by his predecessor. This decision serves as a particularly instructive case on the relevance of generating public support for a carbon pricing policy and of an effective communications strategy. Even though the entirety of the tax revenues were redistributed to Canadian households – with most of them being net beneficiaries – the tax became a focal point of political tensions in an inflationary context. **More than half of eligible Canadians were unaware that they were receiving payments related to the carbon tax**, and efforts of the Canadian government to better communicate the use of the Federal Fuel Charge revenues – including by changing the name of the redistribution mechanism – came in too late to be effective.

This policy reversal highlights a key lesson: revenue redistribution alone is not a guarantee of social acceptance for carbon pricing. It must be accompanied by solid communication strategy from the outset. It also raises a more fundamental question: are citizens expecting carbon revenues to be used this way ? A new **study** conducted by OECD researchers surveyed 40,000 individuals across 20 countries to gather their views on various climate policies. In both developed and developing nations, respondents showed significantly greater support for carbon taxes when the revenues were allocated to environmental infrastructure projects, rather than distributed as direct cash transfers. However, this idea should be nuanced, as the provincial carbon tax in British Columbia was also abolished in 2025, despite a shift in how the revenue was used. While it was primarily used for transfers in 2022, by 2024, most of it was directed towards a fund dedicated to decarbonising industry.

CONTRASTING PRICE DYNAMICS IN ETSs AND CARBON TAXES LED TO A SLIGHT REVENUE DECLINE FOR THE FORMER AND AN INCREASE FOR THE LATTER BETWEEN 2023 AND 2024

On the ETS side:

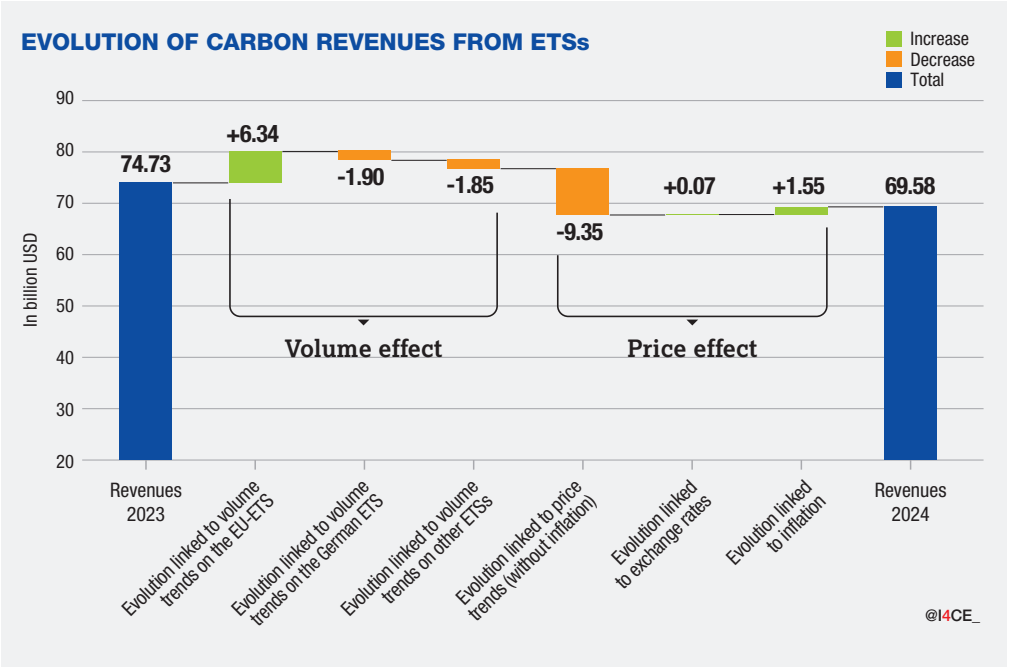
- Despite a substantial price growth in Austrian, German, Canadian and Regional Greenhouse Gas Initiative (RGGI) markets, ETSs revenues were driven down by a strong price decrease on the EU ETS, from an average of USD 90 in 2023 to USD 70 in 2024 (in nominal terms). This can be firstly explained by the injection, from the European Commission, of €20 billion worth of additional emission allowances into the EU ETS between late 2023 and early 2024 to help finance the REPowerEU plan, increasing the volume of allowances available on the market.

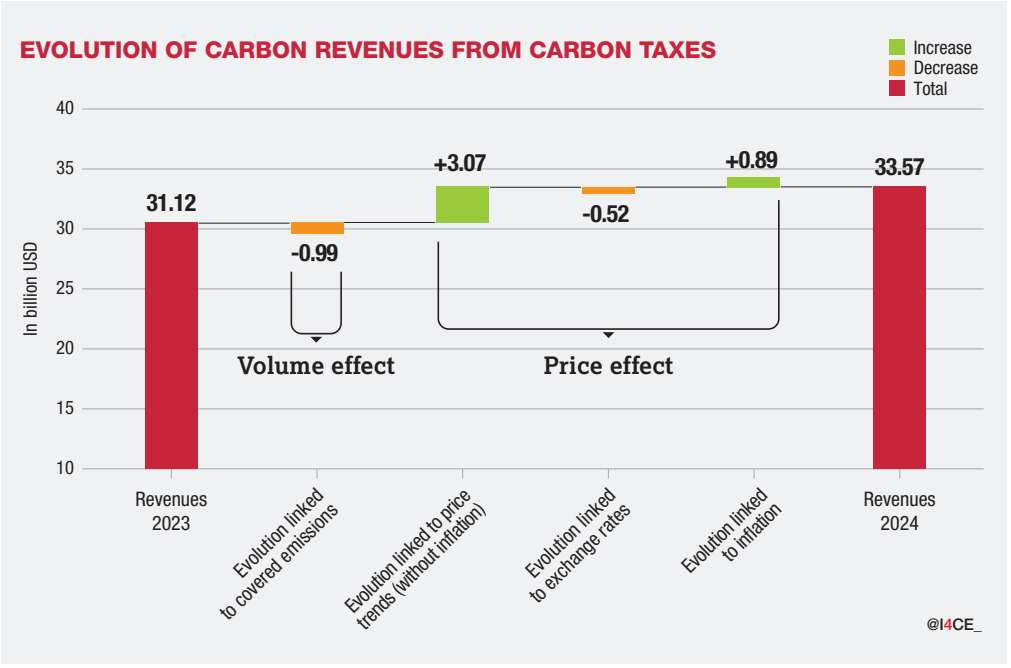


- Dynamics on the energy markets also played a role, with a downward trend in gas prices in both Europe and the UK since the record levels reached in the summer of 2022, accentuating demand for this energy compared with coal, whose carbon footprint per MWh is higher. On the other hand, the sharp rise in renewable and nuclear generation between 2023 and 2024 has reduced the use of carbon intensive energies in electricity production, helping reduce pressure on the price of allowances. In addition, the United Kingdom definitively ended its coal-fired power generation in September 2024.
- Other contributing factors could include the **decline of 2,3% of industrial activity across the EU** between 2023 and 2024 (according to Eurostat).

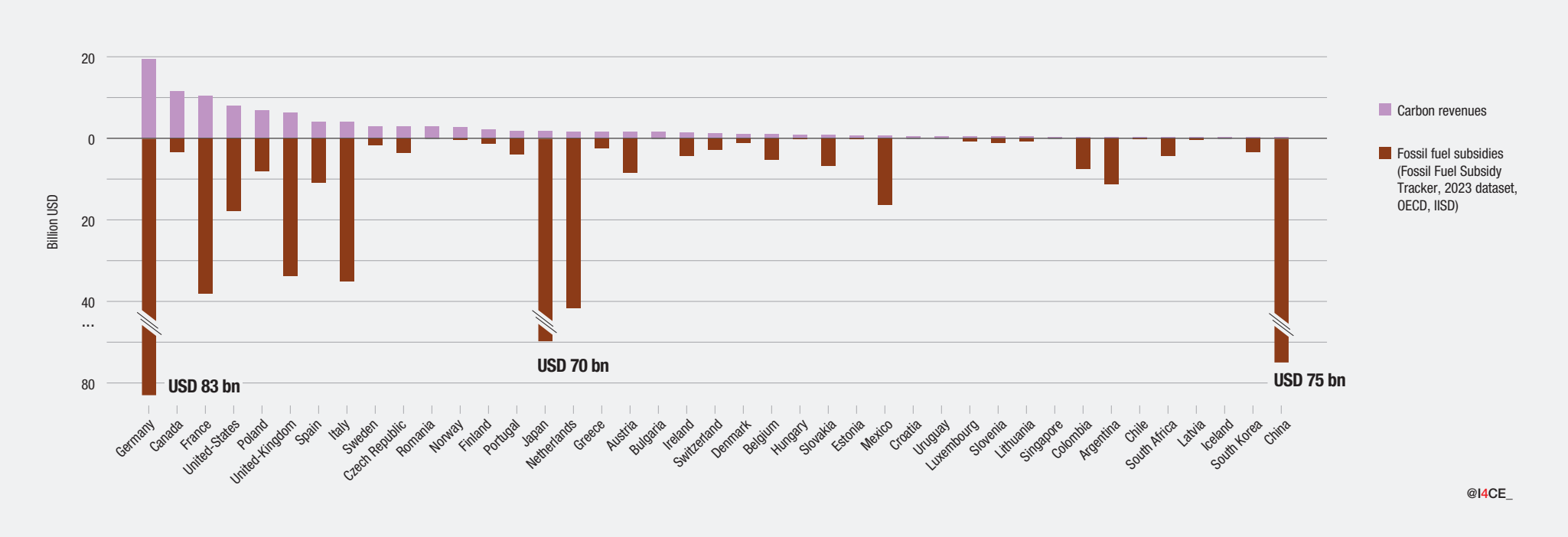
On the carbon tax side:

- Revenues slightly increased for carbon taxes, due to planned price increases in Portugal (+49%, progressively returning to the level of the trajectory scheduled before the 2022 freeze), Canada (+17%), Norway (+15%) and South Africa (15%). Jurisdictions that have not modified their tax rate between 2023 and 2024, such as France, Japan and the UK, levered fewer revenues in 2024 because of inflation.





CARBON REVENUES AND PUBLIC SUPPORT FOR FOSSIL FUELS IN 2023



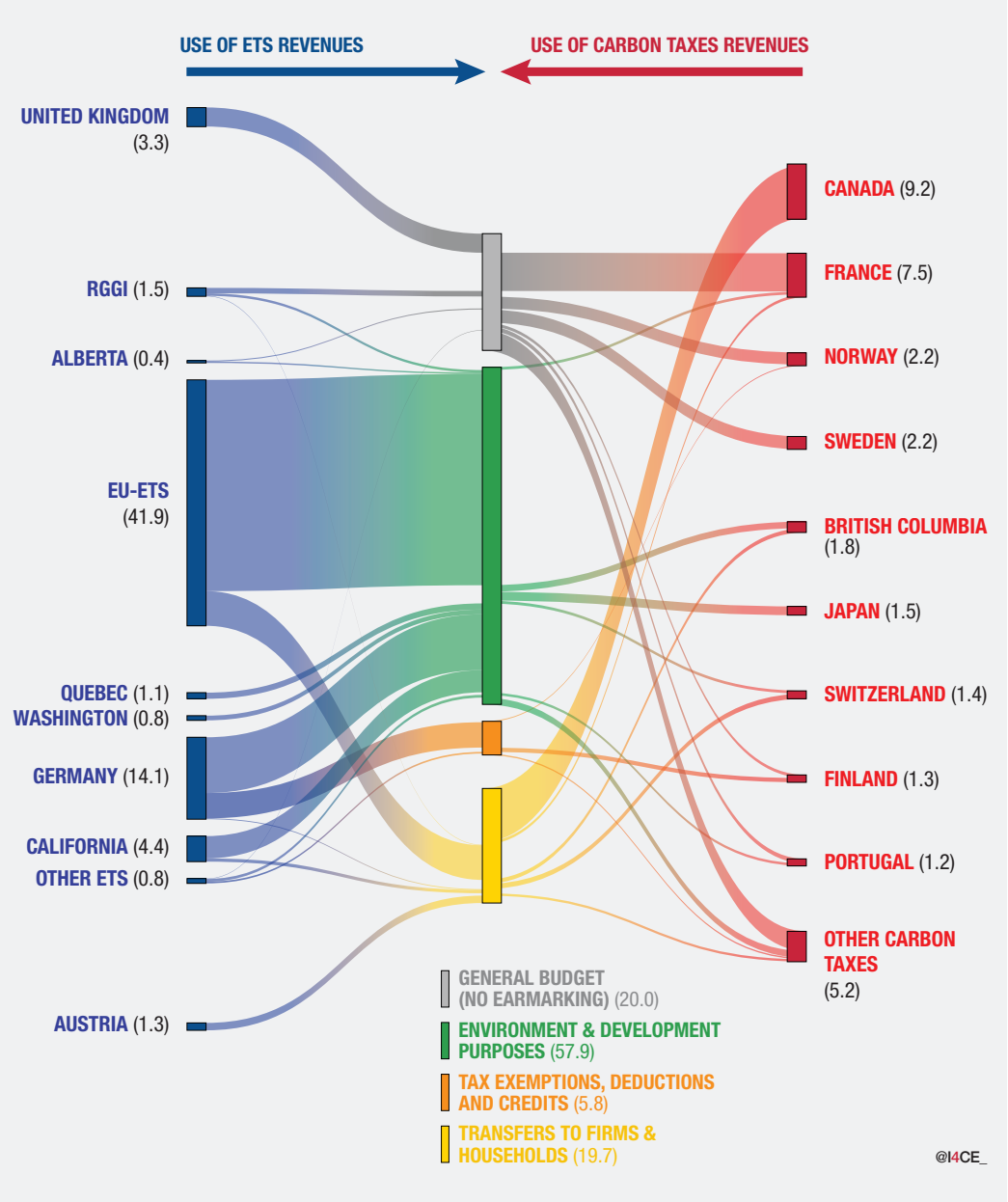
THE VOLUME OF GLOBAL CARBON REVENUES REMAINS WAY BELOW THE VOLUME OF PUBLIC RESOURCES USED BY JURISDICTIONS IN THE FORM OF FOSSIL FUEL SUBSIDIES

Contrasting revenue generation from pricing of GHG emissions with subsidies provided by these same countries to fossil fuels – largely responsible for these emissions – reveals a fundamental policy dissonance. Using the **Fossil Fuel Subsidy Tracker**'s latest dataset for 2023 to compare with our findings on carbon revenues for the same year highlights the persistent imbalance in many countries between the limited proceeds generated from carbon pricing and the significantly higher public spending on fossil fuel subsidies – a disparity that continues to hinder the shift toward low-carbon energy sources. These subsidies amounted to USD 572 billion in those countries in 2023, while USD 106 billion were generated by carbon pricing instruments the same year.

Germany, for example, received in 2023 almost USD 20 billion from its national and European ETS, and spent over USD 80 billion in the same year on fossil fuel subsidies – partly to temporarily offset the effects of the energy crisis arising from the Russian-Ukrainian conflict.

Yet limitations to comparing fossil fuel subsidies and carbon revenues must be acknowledged. As not all carbon revenues effectively contribute to climate action, a more accurate assessment should extract this share for comparison purposes. This considering that in some cases these revenues can also be supporting fossil fuels, as with the Finnish carbon tax (discussed in the next page). In addition, a more detailed analysis should help differentiate fiscal flows by fossil fuel type (coal, gas, oil…), making it easier to compare revenues collected with the subsidies granted.

CARBON REVENUE USE IN 2024*
(amounts given in billion USD)



**As the EU ETS revenue use data for 2024 is not yet available, this jurisdiction's allocation is based on last year's figures.*

Source: I4CE - Institute for Climate Economics, based on public information and governments officials, march 2025.

AROUND 56% OF CARBON REVENUES GENERATED IN 2024 WERE EARMARKED FOR CLIMATE, ENVIRONMENTAL, AND DEVELOPMENT OBJECTIVES

In 2024, **76% of ETSs revenues were directed towards investments in the ecological transition and development projects, versus 15% for carbon taxes**. The distinct nature of these two types of instruments can partly explain this divergence in revenue use choices. With less predictability on revenue volumes on the ETS side, it is more often decided to link them to a fund, as in the case of Germany's national ETS, which redirects revenues to a "Climate and Transformation Fund" also fed by revenues from the European ETS and other federal financial resources. Funds can also be created on an ad hoc basis, as in the case of the US state of Washington. The EU ETS, which constitutes the main source of carbon pricing revenues earmarked for environmental and development projects, uses a hybrid approach. About three quarters are redistributed to Member States, who are now required to allocate 100% of these funds for climate and energy purposes – a share increased from a 50% non-binding following a 2023 **revision** of the EU ETS Directive. The remaining revenues are channelled either through the Innovation Fund (7% between 2021 and 2023), which supports pioneering low-carbon technologies, or into the Modernisation Fund (13%), which helps upgrade energy systems in the EU's least developed Member States.

19% of carbon revenues were used to offset the impact of carbon pricing on economic actors through transfers (35% for carbon taxes, 12% for ETSs). This approach is often seen as a way to improve public support for carbon pricing. However, it may come with trade-offs, particularly in terms of decarbonisation effectiveness, and highlights the importance of well-designed communication strategies. In the EU, for instance, Member States can use EU ETS revenues to support lower income households as part of a just transition, and up to 25% to compensate industries affected by indirect carbon costs in electricity prices. Another example is Canada, where all revenues generated by the carbon tax were redistributed to citizens, yet the mechanism did not survive political pressure and was abolished in March 2025, despite communication efforts that failed to reach the majority of the population (see **Box in page 8**).

Tax reductions and exemptions are another way of "investing" in public support, yet the same issues as with transfers should be watched out for. **This use represents 6% of overall carbon revenue use**, 3% for carbon taxes and 7% for ETSs'. The Finnish case, where 58% of carbon tax revenues were used in 2024 to reduce tax rates on all types of energy (including fossil fuels), reveals the ambiguity that can affect this kind of allocation. The case of Germany also unveils the blurred lines between revenue use categories. As a matter of fact, around 30% of the resources of the "Climate and Transformation Fund" are used to exempt households from an electricity price surcharge. But while officially framed as a tax relief measure, this expenditure also constitutes an investment in renewable energies considering that the Fund is, since 2023, entirely taking over the subsidy program for renewables that was previously financed through the now-abolished electricity surcharge.

The remaining share of 19% was transferred to government budgets without any specific earmarking and is more common for carbon taxes (46% of total allocation) than for ETSs (6%). France, Sweden and Norway are examples of jurisdictions using almost all their carbon tax revenues to balance their budget. While dedicated funds or programs help provide streamlined management, using these revenues without earmarking raises long-term fiscal planning challenges as this source of income is, by design, expected to decline over time.

AT LEAST USD 75 BILLION IN FOREGONE CARBON REVENUE FOR CAP-AND-TRADE ETSs IN 2024 AND MORE ON CARBON TAXES TO BE EXPLORED

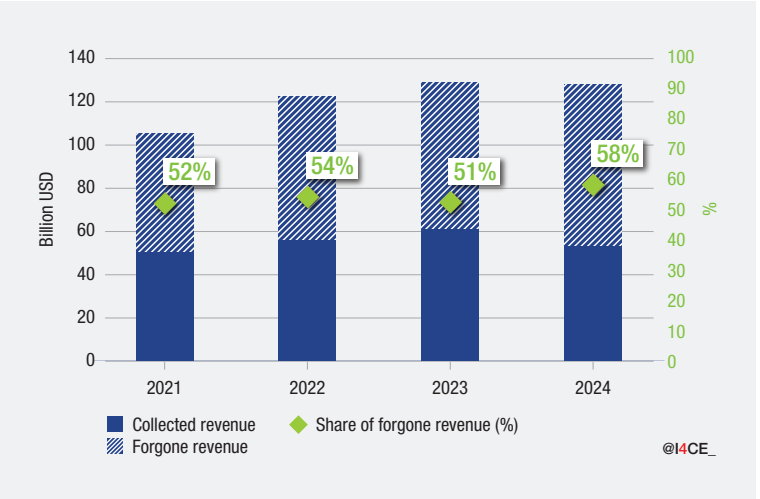
Foregone revenue refers to the proceeds that a jurisdiction has not received due to free allocation of emission allowances in the case of a *cap-and-trade* ETS, or tax exemptions and reductions for certain economic actors in the case of carbon taxes.

An initial exploration of foregone revenue – focused on *cap-and-trade* ETSs – suggests that at least USD 75 billion could have been raised in 2024, in addition to the revenue generated by these systems the same year (USD 53.5 billion)[1]. It also shows a 7% increase in revenue foregone between 2023 and 2024. Yet this increase can be explained by a 4% growth in average prices in 2024, rather than by an increase in the use of free allocations – which is on a downward trend in these schemes.

Some jurisdictions have yet to use auctions to allocate their allowances. This is the case for the Chinese, Indonesian and Kazakh national ETSs, as well as for the provincial ETS of Fujian in China. These jurisdictions, which apply a zero price on carbon emissions and generate no revenues, account for 49% of global emissions covered by a pricing mechanism.

Baseline-and-credits ETSs – used in all Canadian provinces except Québec, Tokyo and Saitama in Japan, as well as in Australia – do not allocate emissions allowances through auctions. Instead, they set emissions baselines for each covered entity and issue tradable credits when emissions fall below those baselines. Because there is no government allocation or auctioning of allowances, the concept of "revenue foregone" from free allocation is not applicable in most cases[2].

COLLECTED AND FOREGONE REVENUE FOR CAP-AND-TRADE ETS USING FREE ALLOWANCES

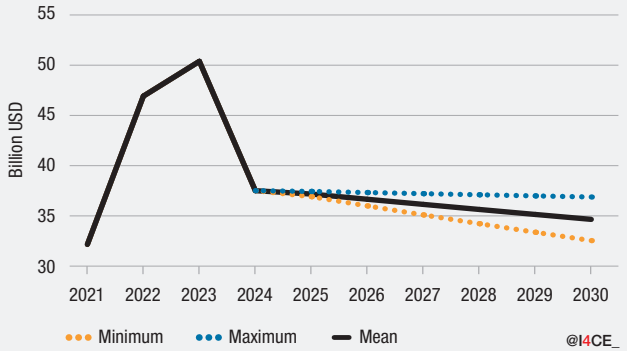


**Cap-and-trade* ETSs allocating 100% of allowances for free (as the Chinese and Indonesian national ETSs) are not taken into account.

EXIT FROM FREE ALLOCATIONS IN THE EU ETS

The European Commission plans to increase the annual reduction rates for free allocation benchmarks in the EU ETS during the second allocation period (2026-2030). The minimum reduction rate will rise from 0.2% to 0.3%, while the maximum rate will increase from 1.6% to 2.5%. The rise in estimated foregone revenue between 2021 and 2023 reflects a 5-percentage-point (p.p.) increase in the share of free allocations, alongside rising allowance prices. In contrast, the estimated decline in 2024 is attributed to a 5 p.p. reduction in free allocations, coupled with a drop in average prices.

EVOLUTION AND PROJECTION OF FOREGONE REVENUE IN THE EU-ETS (2021-2030)*



*Projection calculated with the European Commission's plan to phase out of free allocation in the EU-ETS.

TAX EXEMPTIONS: THE CASE OF SOUTH AFRICA

In South Africa, entities covered by the carbon tax are subject to payment only above a certain threshold of installed capacity. The level of tax rebates could attain 90% and 100%, depending on the activity.

As a result, while 82% of South African carbon emissions are theoretically covered by the tax, only the equivalent of 2% is actually taxed at the set rate. On the one hand, this practice undermines the effectiveness of the carbon tax from a climate point of view, while on the other, it results in a considerable loss of revenue for the government that could be used strategically for climate and development objectives. Nevertheless, exemptions represent a compromise between environmental effectiveness and economic and social realities. Their use is sometimes necessary to protect the competitiveness of sectors exposed to international competition or to ease the burden on vulnerable economic actors.

1 Foregone revenue is estimated by multiplying the number of free allowances allocated in a specific year by the average auction price of allowances in the same period. This estimate is indicative and intended to illustrate the order of magnitude; actual revenue impacts may differ due to market dynamics and behavioural responses. China and Kazakhstan are not included in the estimation due to limited data availability to support a consistent approach.

2 Canadian *baseline-and-credits* are an exception as they do generate revenues by giving companies the option of meeting compliance obligations by purchasing credits at a fixed price from the government. Yet this option competes with that of purchasing them from another company or complying with the emissions reduction pathway. This added to the fact that the volume of credits issued and purchased at the fixed price is not centrally capped or allocated in advance by the authority, makes the notion of "foregone revenue" less directly applicable.

FUTURE PERSPECTIVES: AN UPWARD TREND FOR CARBON REVENUES DESPITE SHORT-TERM SETBACKS?

Despite a decline in 2024, mainly due to the fall in the price of emission allowances on the EU ETS, carbon revenues appear to be on a long-term growth trajectory. The abolition of the Canadian carbon tax, which alone accounted for 12% of total carbon revenues in 2024, could be offset as early as 2025 by an expected rise in the average price of the EU ETS. The European Union's plan to phase out free allowances, which runs until 2033, should also accentuate price pressure in the medium term, and thus generate increased revenues for Member States.

The introduction of new mechanisms should also drive growth in carbon revenues. Indonesia plans to introduce the auctioning of emissions allowances into its ETS in 2026, while Japan is aiming for 2033. From 2027 onwards, the ETS2 of the European Union will also generate revenues, which will partly serve to alleviate the impact of carbon pricing on the most affected vulnerable groups, such as households in energy or transport poverty or micro-enterprises.

Promoting acceptability of the EU ETS2 through strategic revenue use

The use of revenues generated by EU ETS2 is of strategic importance for the acceptability of the policy. The extension of the European carbon market to the road transport and building sectors is likely to have significant distributive effects, notably an increase in costs for the most vulnerable households. The way in which revenues are redistributed or reinvested is therefore a central lever for legitimizing the scheme. The regulation stipulates that between 2026 and 2032, up to EUR 65 billion of ETS2 revenues (representing about 25% of the total proceeds generated), are to be allocated to a Social Climate Fund intended to offset the impact of pricing on vulnerable households via direct transfers and supports to investments in energy renovation and clean mobility. This earmarking of revenues, oriented at national level by Social Climate Plans, is intended to reinforce the effectiveness of the price signal while mitigating its regressive effects. For this approach to be successful, lessons learned from the Canadian experience can be of value. At this stage of the political debate around the EU ETS2, the first step of having all Member States on board is still to be overcome, and clarity on the strategy to ensure social support could be key to unlock these discussions.

CBAM: a boost to the globalization of carbon pricing and a growing concern for developing countries

The introduction of Carbon Border Adjustment Mechanisms (CBAM) by the EU and the United Kingdom is having a massive normative dissemination effect on carbon pricing at international level. Trading partners are encouraged to put a price on their own carbon emissions to capture tax flows coming from their exporters that would otherwise feed the European budget, and to send a decarbonisation signal to their own economy to preserve its long-term competitiveness on export markets.

The mechanism had been fiercely contested by some developing countries, who criticize the measure for contravening the logic of "Common but Differentiated Responsibilities and Respective Capabilities" on global GHG emissions. As a result, **some** advocate for dedicating a substantial portion of CBAM revenues to supporting decarbonisation efforts in developing countries most affected by the mechanism. Today, the regulation does not provide a specific allocation of CBAM revenues, but the European Commission included in its **proposal for a 'next generation of own resources'** that 75% of what EU Member States collect through the CBAM should go to the EU budget. Furthermore, the **CBAM regulation** states, in its preamble, that "The Union is committed to working with low- and middle-income third countries and supporting them in the decarbonisation of their manufacturing industries" and that it "should continue to support these countries through the Union budget, in particular the least developed countries, in order to help ensure their adaptation to the obligations arising from this Regulation".

Nevertheless, the European Union's priorities may shift, especially amid rising tensions in the global economic and geopolitical landscape. Competitiveness and security have moved to the top of the EU agenda. As a result, these objectives could take precedence in the allocation of CBAM revenues within the Union's budget, potentially at the expense of international climate and development finance.

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