

The evolution of the European Emissions Trading System (EU ETS)

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Il Green Deal europeo al bivio tra
sicurezza e competitività

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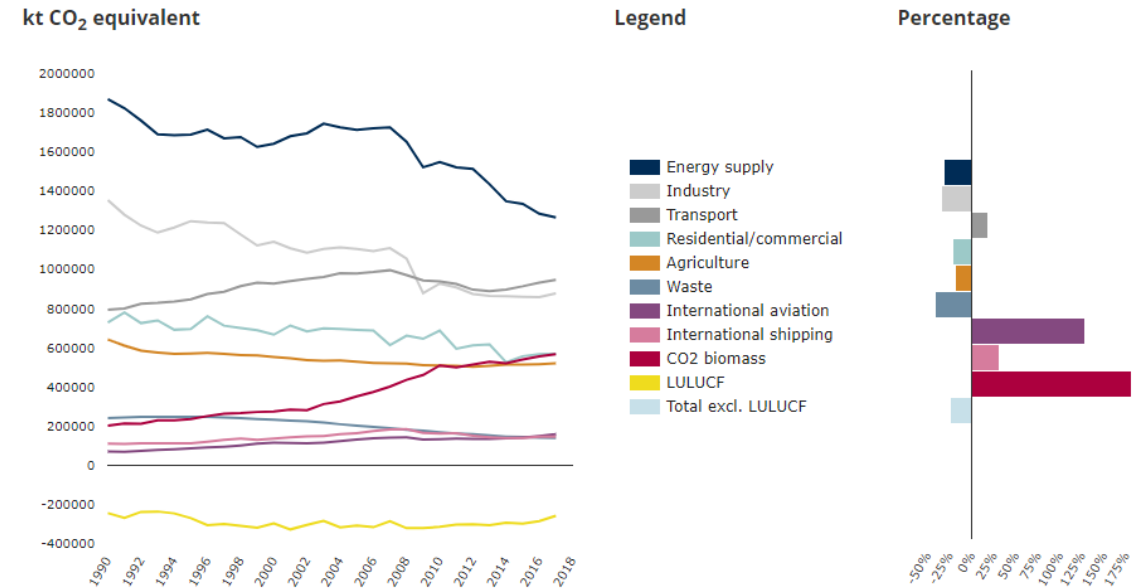
Carbon markets and the EU ETS

- **Cap-and-trade:** regulatory authority sets a **cap** (maximum amount of pollution allowances) and allocates them among polluting companies
- **Trade** of allowances leads to a market price for the polluting emissions
- **EU ETS:** 40% of European emissions, >10,000 installations, 30 countries
- Four phases: 2005-07, 2008-12, 2013-20, **2021-30**
- Increasingly stringent over time: **cap decreasing faster and faster**
- EU emissions from European power and industry plants: **-47.6%** by 2023 compared to 2005 levels (target: -62% by 2030)



The EU ETS 2

- Directive 2023/959: extension of EU ETS to transports and buildings (residential, commercial and institutional).
- Operational since 2027, postponed to 2028 in case of exceptionally high gas and oil prices in 2026
- Stability reserve mechanism to reduce price fluctuations
- If price above €45 (ETS price in 2020) for 3 years, new allowances released



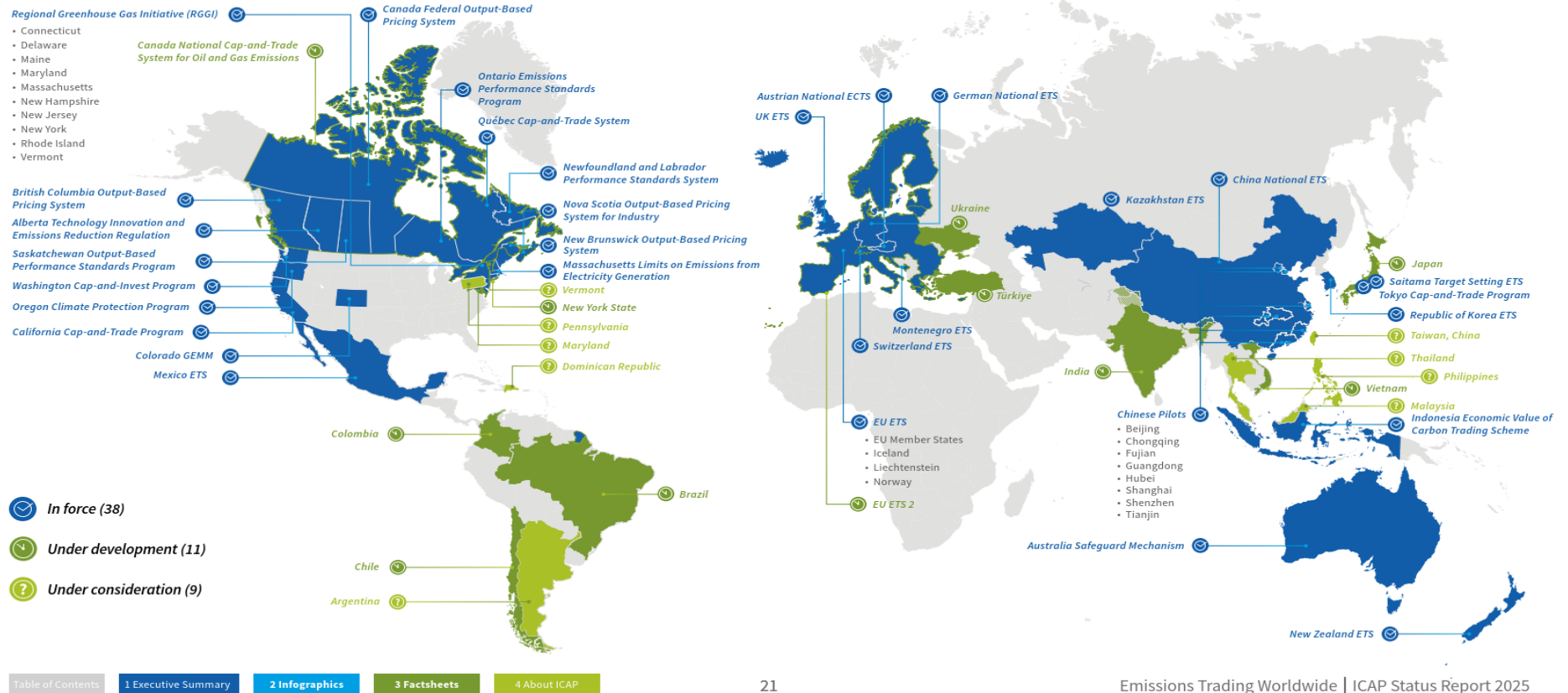
Fonte: European Environment Agency (2019)



EMISSIONS TRADING WORLDWIDE

THE CURRENT STATE OF PLAY IN EMISSIONS TRADING

The ICAP ETS world map depicts emissions trading systems currently in force, under development or under consideration. As of January 2025, there are 38 ETSs in force. Another 11 are under development and expected to be in operation in the next few years. These include ETSs in Colombia, Türkiye, and Vietnam. 9 jurisdictions are also considering the role an ETS can play in their climate change policy mix. If a jurisdiction has multiple systems in force, it is depicted in blue, with the borders of the jurisdiction representing the layered systems (e.g. Germany and Guangdong). If, however, it has a system in force but is also developing an additional system, it is depicted in blue but also features a green border (e.g. the EU).



Carbon markets: a companion of LIFE

- LIFE SIDE (Supporting Implementation and Development of EU ETS)
Sept 2016 – Dec 2018
- LIFE DICET (Deepening International Cooperation on Emissions Trading)
Sept 2019 – Dec 2022
- LIFE COASE (Collaborative Observatory for ASsessment of the EU ETS)
Jan 2023 – Dec 2025

ETSs: EU, California, China, New Zealand, Québec and Switzerland + Brasil, Canada, UK

Observatory on the dynamics of the market: size, composition, price, investments etc....

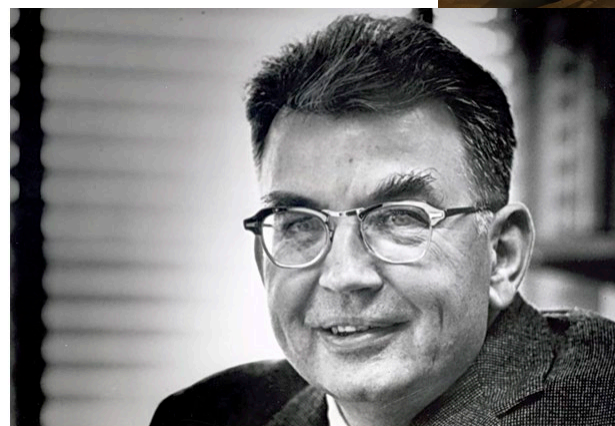
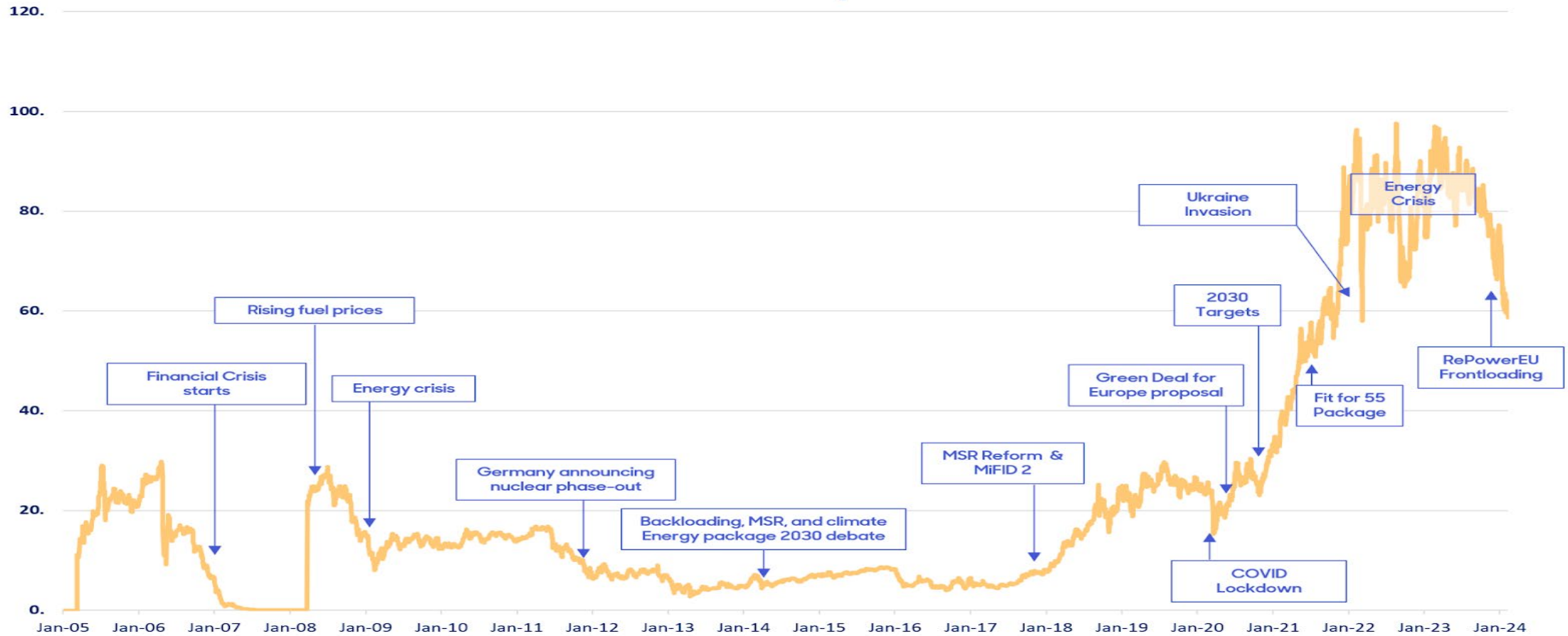


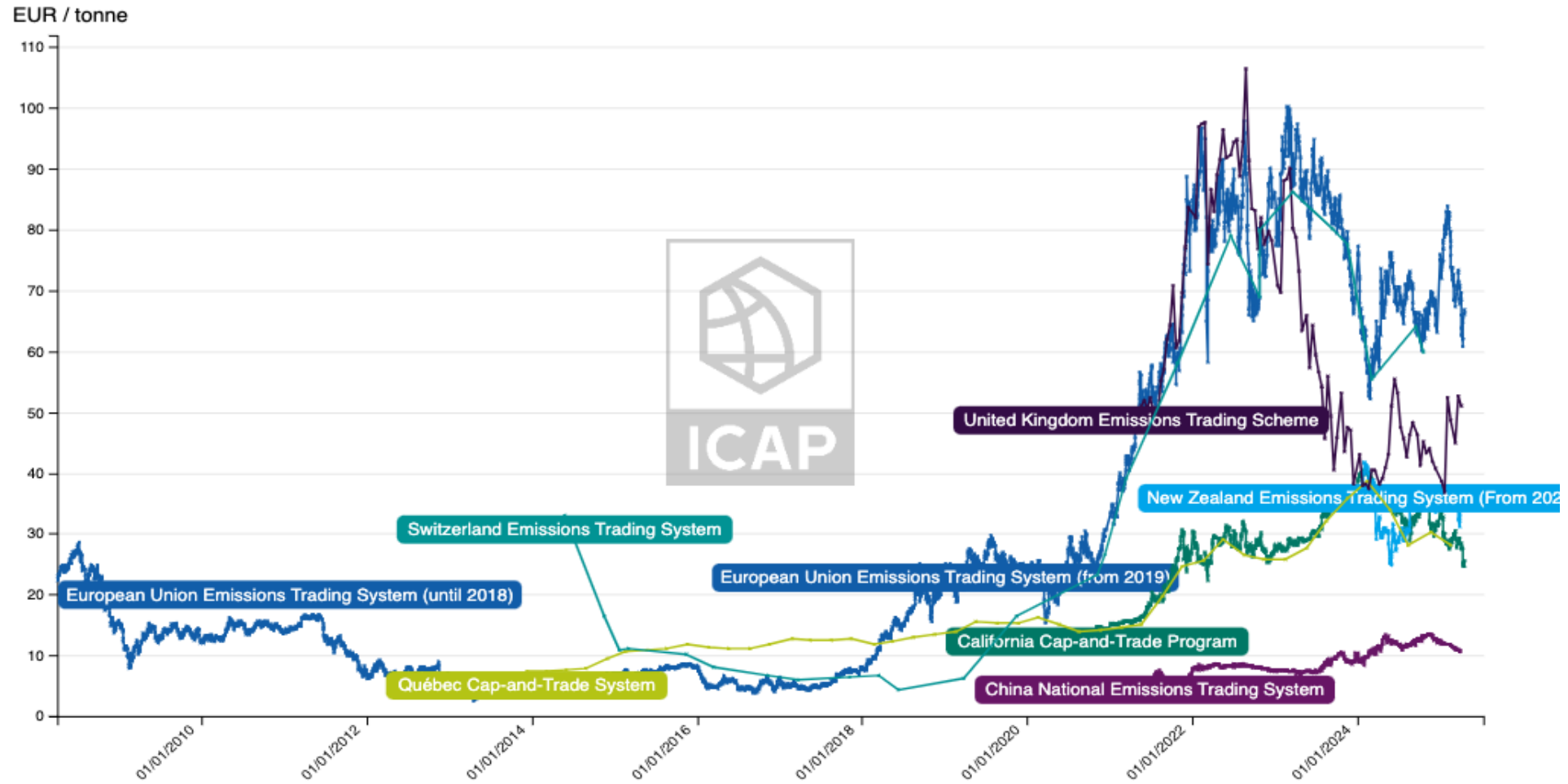
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The relationship between EUA prices and socio-political events and decisions



«The EU ETS and its followers»



The EU ETS: research questions

- Decarbonisation effects → perceived barriers (EIBIS)
- Distributional effects → policy acceptability
- Competitiveness effects → carbon leakage and CBAM
- The future of the (EU) ETS: Negative Emissions & CDR (Agritech)



Sustainability
performances,
evidence & scenarios





2. Distribution effects of carbon pricing

- Likely regressive effects since poor households:
 - spend larger income share on carbon-intensive goods
 - face higher financial constraints to adopt low-carbon technologies
 - more likely to suffer job losses in carbon-intensive sectors
- Social acceptability of higher prices
 - How can we increase acceptability?
 - Acceptability depends on how carbon pricing revenues used (e.g. Carattini et al., 2017) and how use is communicated (Borghesi and Ferrari, 2023).
 - Are carbon pricing revenues enough?

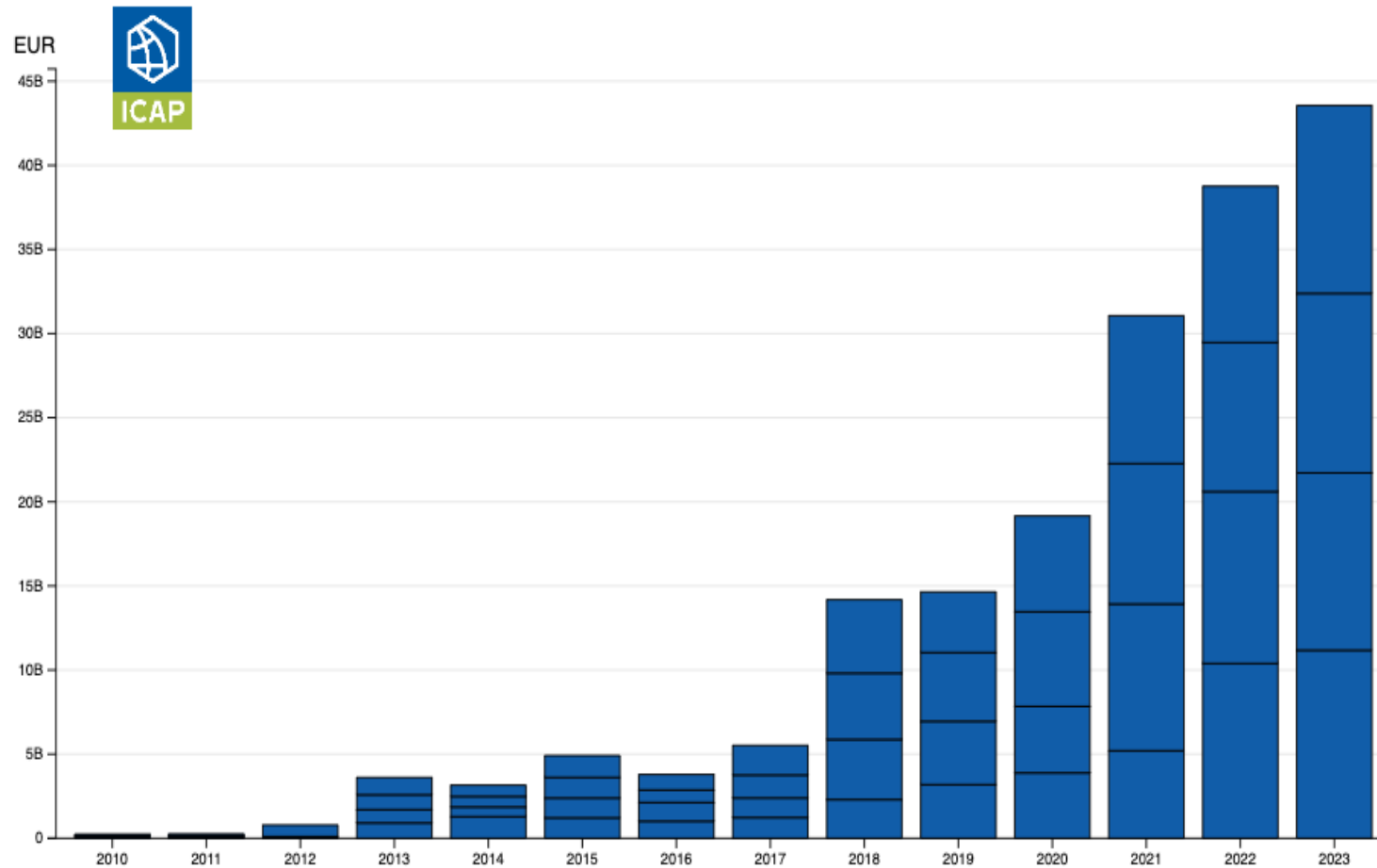


EU ETS and EU ETS 2: public support

Policy Name	Austria	Czech Rep.	Denmark	France	Germany	Greece	Hungary	Italy	Poland	Slovenia	Spain	Sweden	The Netherl..
Ban fossil private planes (EU)	52	43	46	67	52	61	52	65	50	62	67	55	58
Ban intensive livestock farm (EU)	43	11	29	54	39	35	22	58	29	27	42	37	37
CBAM (EU)	47	40	52	59	47	52	48	55	38	45	56	55	46
ETS Agriculture (EU)	41	23	42	47	41	50	54	51	35	33	52	45	45
ETS General Support (EU)	31	16	45	33	33	45	44	44	28	34	43	40	41
ETS Heating (EU)	39	23	41	49	41	51	52	50	37	32	50	46	46
ETS Transport (EU)	40	24	42	48	42	52	49	50	40	33	51	47	46
Fossil car sales ban (all)	22	7	37	25	26	34	27	36	20	17	39	36	31
Fossil car sales ban (exclusions)	43	28	48	50	42	56	43	56	33	38	51	46	44
Fossil fuel ad ban (EU)	43	34	42	58	41	59	45	58	44	46	56	43	50
Household insulation (Country)	56	42	47	65	48	65	68	52	54	62	60	47	54
Rail fund (EU)	64	68	66	73	59	76	76	76	66	74	76	71	71

Fonte: Climate Policy Acceptability project (2025)

EU ETS auction revenues 2010-2023 (yearly data)





Expected EU ETS revenues

- Fuest and Pisani-Ferry (2020): 800-1,500 bln € by 2050

NB: EU's coronavirus aid package: 750 bln €

- Social Climate Fund (to start before ETS2 kicks in): expected 86.7 bln € (65 bln€ from auctions+25% from MS) over the period 2026-32
- Auction revenues likely to increase with higher prices



3. Competitiveness effects of carbon pricing

Unilateral policies may provoke carbon leakage, that is, delocalization of polluting activities


Little evidence so far but carbon prices were low.

More carbon leakage can be expected if carbon prices are to rise to achieve climate neutrality by 2050 (136 countries → 78% global emissions), 2060 (CHN) or 2070 (IND)

How to safeguard international competitiveness?

- 1) Free allowance allocation**
- 2) Linking**
- 3) Border carbon adjustments**





3) Carbon Border Adjustment Mechanism (CBAM)

- Create a level playing field
- First step towards carbon coalition of like-minded countries
- How to implement it? How to avoid “green protectionism”? How to avoid “green colonialism”? How to avoid trade wars and retaliation policies? How to prevent a pollutants club?
- Make it WTO-compatible, transparent (non-protectionist), gradual, multilateral
- Possible regressive effects: Different exposure to CBAM effects across countries (e.g. UKR, RUS, China, Turkey; Mozambique, Zimbabwe, Cameroon, Morocco, Tajikistan).
- Stick and carrot: CBAM accompanied by debt service restructuring, financial aid, technology transfers. Redistribute CBAM revenues outside EU to get more countries on board, conditional on clean investments.





Navigating the transition: concluding remarks

- 20 years of EU ETS: many obstacles but also remarkable achievements
- Requires continuous monitoring and fine tuning
- EU ETS generates revenues
- Can be used to increase social acceptability domestically and to enhance the climate coalition internationally
- Reconciling security, competitiveness and the environment
- Navigating towards climate neutrality requires adjusting the route
- Adjusting not cancelling, extending not removing (i.e. creating a climate coalition and progressively enlarge it)

Thank you!

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Selected recent works

- Borghesi S., Ferrari A., (2023), “Can the EU ETS and Its Revenues Tackle the Impact of High Carbon Prices?”, *EconPol Forum* 24 (6), 28-31, CESifo, Munich.
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- Mazzarano M., Borghesi S. (2024) “Searching for a Carbon Laffer Curve: Estimates from the European Union Emissions Trading System”, *Metroeconomica* <http://doi.org/10.1111/meca.12458>
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