Factsheet

Regulatory Carbon Pricing

How does it work and how will it impact businesses?

ecoact
an Eviden business

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Introduction

Carbon pricing ensures that private entities are responsible for the environmental costs of their carbon emissions. As governments around the world increase their use of regulatory carbon prices to fight climate change, these mechanisms will become material financial risks for a growing number of firms.

It is not only directly regulated firms that need to pay attention. Energy-intensive industries often pass on their carbon costs through to consumers, meaning all companies will be vulnerable to more expensive transportation, energy, and raw materials along their global value chains. Consequently, regulators and shareholders are demanding evidence that corporate strategies are robust to the growth of carbon pricing. It is listed as an important risk area by the Taskforce on Climate-related Financial Disclosures (TCFD).

The EcoAct Carbon Pricing Tool helps companies to measure their exposure to regulatory carbon pricing and the financial implications of potential decarbonisation actions. EcoAct also offers an integrated suite of additional services to prepare clients for the prominent role that carbon pricing is set to play in the global energy transition.

These include:

- Internal carbon pricing advisory
- Carbon credit advisory
- Carbon footprinting
- Product life cycle assessment

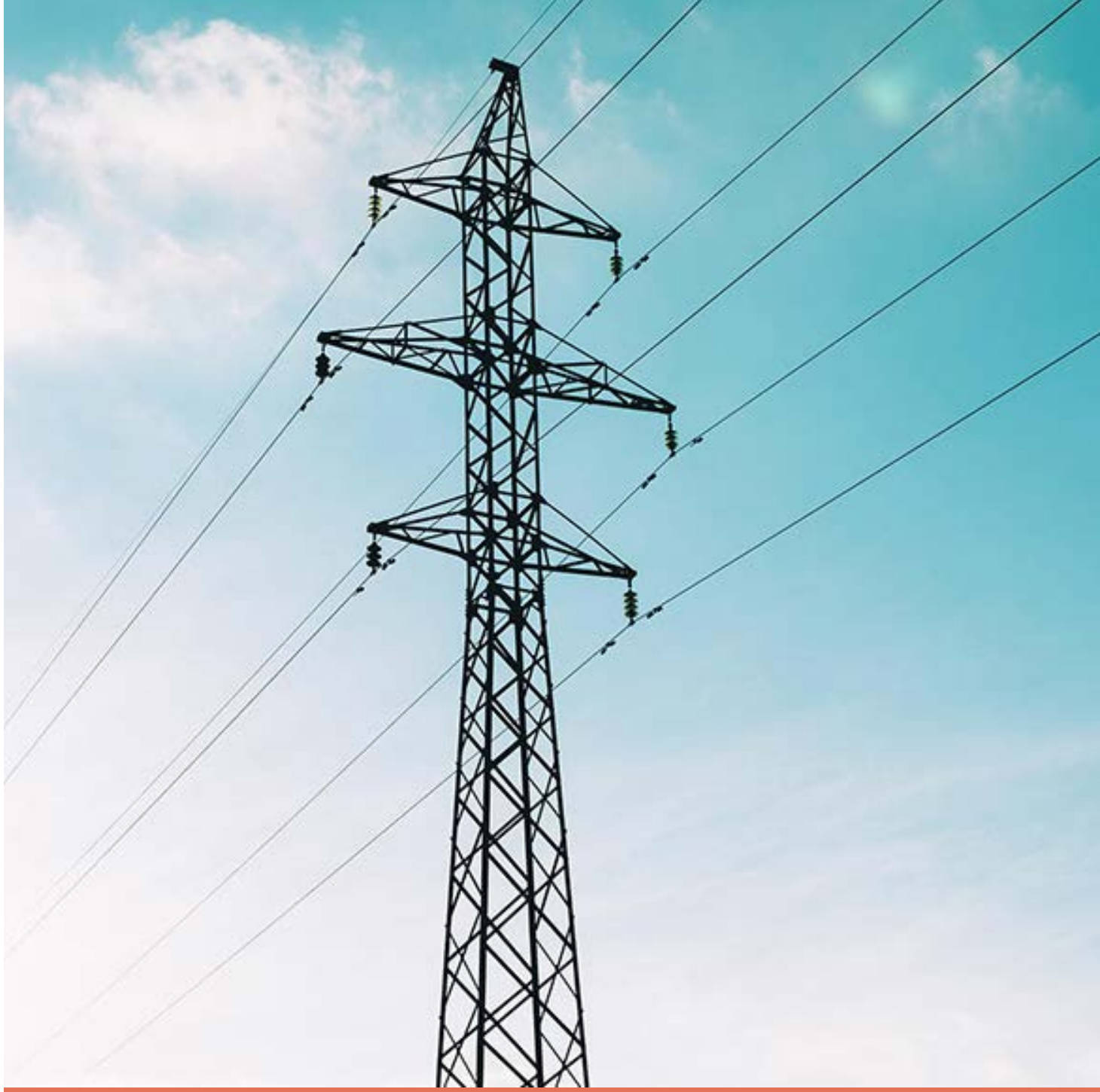
What is regulatory carbon pricing?

What is regulatory carbon pricing?

Under a regulatory carbon pricing mechanism, regulated entities are generally required to pay for each tonne of CO_2 equivalent (tCO_2e) that they emit. Putting a price on carbon incentivises firms to reduce their emissions by reducing output, increasing efficiency, or switching to low carbon technologies.

As lawmakers seek policies that incentivise the private sector to reduce emissions as efficiently as possible, they are increasingly turning to "market-based" solutions. The Intergovernmental Panel on Climate Change (IPCC) considers high carbon prices as necessary to stimulate innovation and help keep global warming below 1.5°C in a cost-effective manner[1].

An additional benefit is that the revenue generated can be used to invest in clean technology (e.g. the EU Innovation Fund), support households and businesses vulnerable to climate change (e.g. the California Greenhouse Gas Reduction Fund), and achieve other social goals.



[1] IPCC Special Report - Global Warming of 1.5C: https://www.ipcc.ch/sr15/chapter/chapter-2/

Related Voluntary Mechanisms

Internal Carbon Pricing

Internal carbon pricing involves a company voluntarily applying a price on carbon emissions within its own operations and/or supply chain. A company may do this to incentivise investment and procurement decisions that reduce exposure to future regulatory/external carbon price increases.

See EcoAct's Internal Carbon Pricing Factsheet for more information.

Voluntary Carbon Market

The voluntary carbon market enables organisations and individuals to purchase carbon credits on a voluntary basis to take responsibility for all their emissions now, facilitating measured and verified reduction/avoidance or sequestration of GHG emissions elsewhere while supporting sustainable development, often in countries that need it most. This market exists largely separately from regulatory carbon prices, although some regulatory systems allow companies to use voluntary carbon credits to comply with their obligations.

For more information on the voluntary carbon market and the nature- and technology-based solutions EcoAct provides, please click here.

Regulated sectors

Regulated entities that fail to meet their regulatory obligations face fines, plus other legal and reputational consequences.

Large installations in the following energy-intensive sectors are usually the subjects of regulatory carbon price mechanisms:

- Electricity and heat
- Oil and gas
- Cement
- Iron and steel
- Aluminium
- Chemicals
- Paper and pulp

Other sectors that have been (or soon will be) regulated include:

- Aviation
- Maritime shipping
- Road transportation
  (fuel producers and distributors)
- Waste
- Buildings
  (residential and commercial)

How does regulatory carbon pricing work?

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Regulatory carbon pricing mechanisms

The two main types of regulatory carbon price mechanism tend to work as follows:

Carbon Tax:

- The regulator sets a carbon price (e.g. £50 per tCO_2e).
- Firms must pay a fee corresponding to their emission levels.

Emissions Trading System (commonly known as Cap-and-Trade):

- The regulator sets a system-wide annual emissions limit (or cap).
- The regulator issues allowances corresponding to the cap amount to firms. This issuance usually occurs via auction; participants therefore set the allowance price by deciding how much they are willing to pay.
- After auction, firms are free to further trade allowances on the secondary market.

Firms must surrender enough allowances to cover their annual emissions.

The percentage of global emissions covered by regulatory carbon pricing is often cited (currently 23% according to the International Energy Agency (IEA)), but this hides critical differences in the design and impact of different mechanisms, such as:

Coverage:

Regulatory carbon pricing systems differ on the range of covered sectors. They also have unique requirements (regarding size, output etc.) to determine whether a facility is within scope.

Compliance options:

Determining the compliance needs can be complex. For example, carbon taxes can have distinct prices for different fuels, and some mechanisms allow the use of carbon credits (purchased on the voluntary market) in place of tax payment or auction allowances.

Free allocation:

To limit carbon leakage (see inset), most Emissions Trading Systems currently allocate firms some of their allowances for free.

Determination of these free allocations is constantly evolving, and differs within systems depending on the granular characteristics of a given installation.

Carbon Leakage

Regulatory carbon prices increase operational costs for regulated firms, which can force them to raise product prices. Consequently, in international markets, firms in countries with high carbon prices could lose market share to companies based in countries without them. This could lead to negative economic outcomes in countries with ambitious climate policies, and an increase in global emissions.

How is regulatory carbon pricing changing?

How is regulatory carbon pricing changing?

The regulatory carbon pricing ecosystem is undergoing three major changes:

1. Increasing the scope and impact of existing mechanisms:

- In 2022, the EU agreed to reduce its Emissions Trading System (EU ETS) cap, phase out free allocations, and extend compliance obligations to the shipping, buildings, and road transport sectors. These changes are expected to drive up allowance prices and sharpen the decarbonisation incentive for regulated companies. The UK government is contemplating a similar set of amendments.
- China's government has announced its intention to expand its Emissions Trading System, which currently covers only power generation plants, to a wide range of industrial sectors. Given the prominent role of Chinese manufacturing in global supply chains, this will have extensive economic implications.

2. Arrival of border carbon adjustments:

- Border carbon adjustments mean that all emissions in regulated sectors – domestic and imported – are priced, so free allocation is no longer needed to prevent carbon leakage.
- The EU will begin to implement the first such system, its Carbon Border Adjustment Mechanism (CBAM) in late 2023. Other countries with carbon prices may follow suit, including the United States.
- Products imported from countries with higher carbon prices will face lower border carbon adjustment costs. This may encourage other countries to establish carbon prices to preserve the competitiveness of their exports.

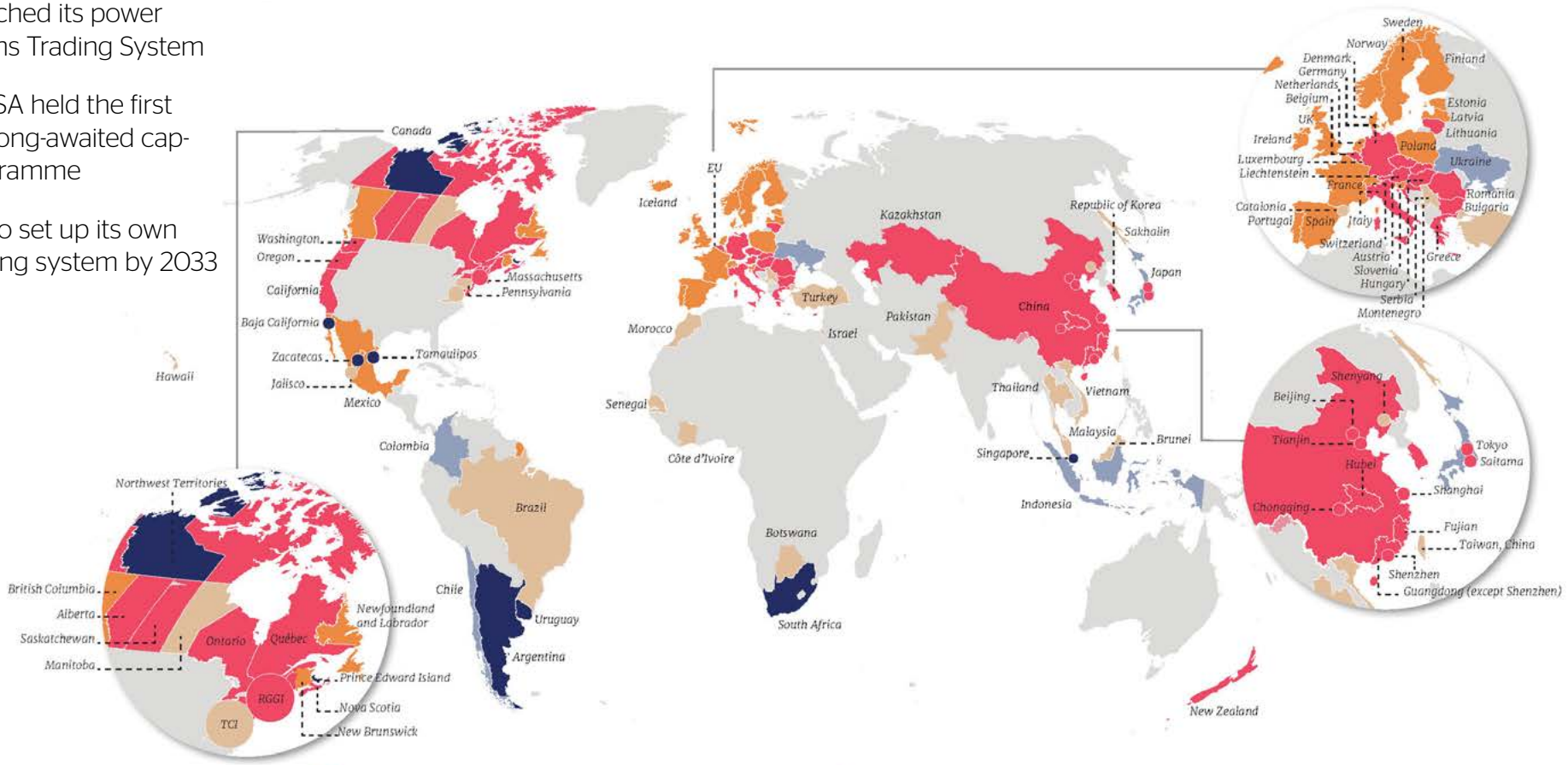
Border Carbon Adjustments

Border carbon adjustments put a price on the embedded emissions of imported products. They are to be implemented to ensure that domestic producers are not disadvantaged by having their emissions priced when their foreign competitors have not.

3. Establishment of new mechanisms:

More countries and regions are setting up carbon price systems as part of their long-term decarbonisation strategies. In just the first few months of 2023:

- Indonesia launched its power sector Emissions Trading System
- Washington, USA held the first auction for its long-awaited cap-and-trade programme
- Japan agreed to set up its own emissions trading system by 2033



Carbon pricing initiatives are considered "scheduled for implementation" once they have been formally adopted through legislation and have an official, planned start date. Carbon pricing initiatives are considered "under consideration" if the government has announced its intention to work towards the implementation of a carbon pricing initiative and this has been formally confirmed by official government sources. TCI refers to Transportation and Climate Initiative. RGGI refers to the Regional Greenhouse Gas Initiative.

World Bank (2022): State and Trends of Carbon Pricing 2022

How will businesses be affected?

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Direct and Indirect Carbon Price Risk

Increased costs and compliance obligations due to your own emissions:

- More firms will be subject to regulatory carbon prices applied to their direct emissions (Scope 1), and these prices are increasing.
- The IEA projects that prices in advanced economies could reach an average of 140 USD/tCO_2e by 2030, rising to 250 USD in 2050. In contrast, the average EU ETS allowance price in 2022 was approx. 85 USD.
- The combination of rising prices and fewer free allocations means that carbon costs for regulated companies will soar unless they undergo rapid decarbonisation.

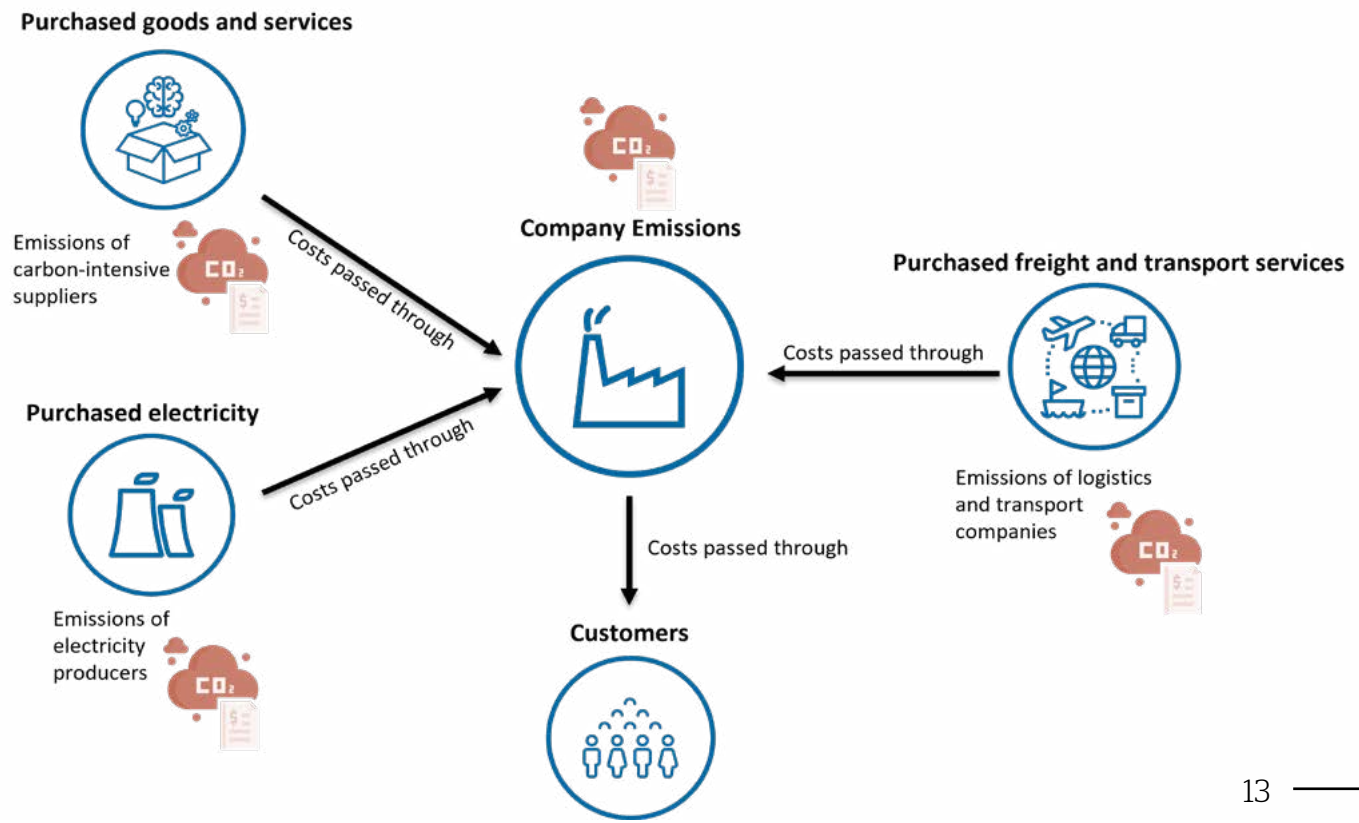
Increased costs due to supplier emissions:

Regulatory carbon pricing will be a financial risk for any businesses with significant indirect emissions (Scope 2 & 3):

- Indirect emissions often stem from energy-intensive inputs such as electricity, transportation, and chemicals. As carbon price mechanisms expand, directly regulated firms will increasingly pass costs through to their consumers.
- EcoAct research has found that several sectors previously spared from carbon costs will face significant surcharges by 2030. Notable areas include textiles, retail, and agriculture.

Carbon Price Compliance Analysis

EcoAct has helped clients assess the compliance implications of deploying new technologies and changing production levels. Analyses are based on in-depth understanding of the methodologies determining free allocation of emissions allowances and other system features.



How EcoAct can help

Calculate Your Emissions

Our carbon footprinting and product life cycle assessment (LCA) services allow you to determine where exactly your business stands in its decarbonisation journey. We can highlight operational carbon hotspots and identify the locations where you may be subject to the most material regulatory risks.

Engage Your Suppliers

EcoAct can lead you through the process of gathering information from suppliers to understand where carbon emissions arise in your supply chain. With this knowledge, we can help introduce formal processes that ensure your procurement strategy will remain robust in a low carbon business environment.

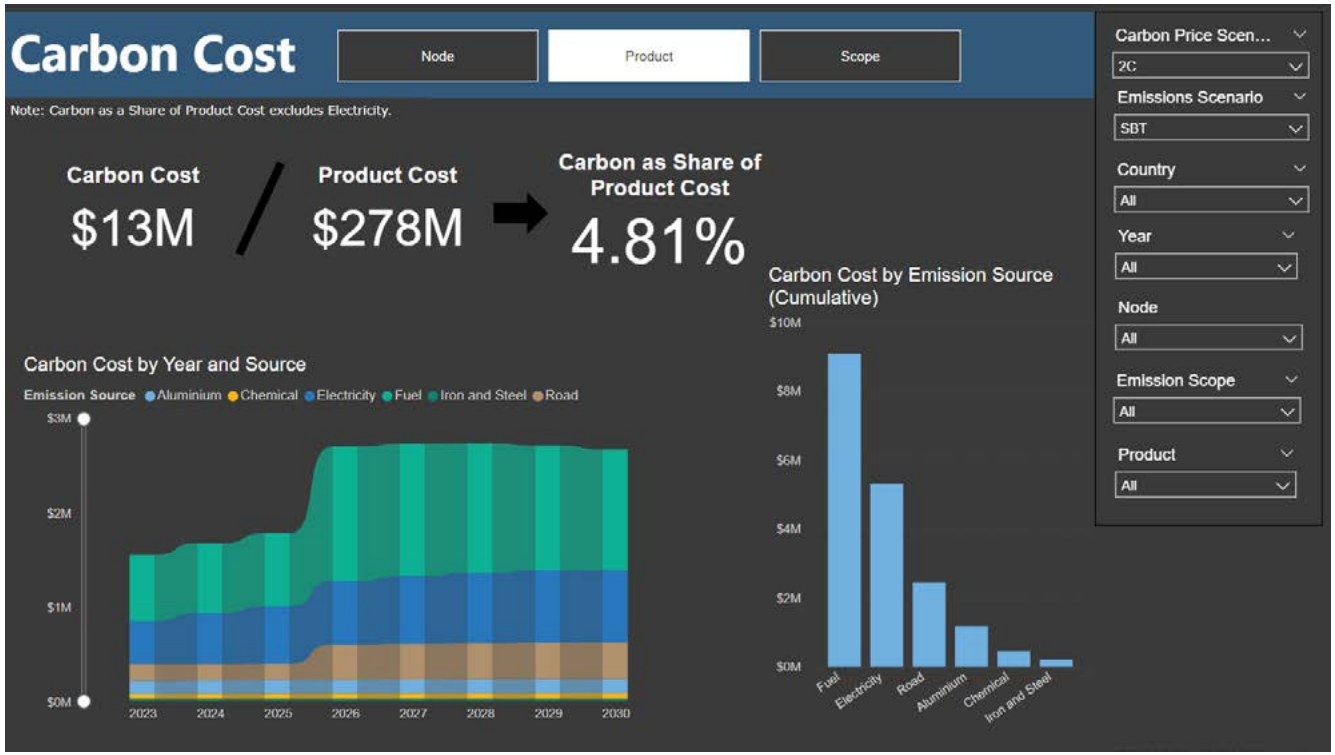
Understand Your Exposure

Based on an in-depth evaluation of your organisation, our regulatory experts can deliver qualitative and quantitative insights on the carbon price mechanisms that will be relevant to your business in the coming years.

Carbon pricing tool:

The EcoAct Carbon Pricing Tool allows organisations to measure and map their exposure to regulatory carbon pricing, based on the location and scale of carbon intensive activities in their supply chains. The tool shows prospective carbon costs based on scenarios that vary according to the level of international climate action and specific institutional commitments to decarbonisation. Critical questions can be answered for users with significant direct or indirect emissions.

- Scenarios are constructed by trusted experts on international carbon markets.
- Prices are based on an up-to-date regulatory watch of national and regional mechanisms.
- Cost models are informed by scientific research on sector-specific impacts of carbon pricing.
- Costs can be broken down by timeframe, location, and emission scope.
- Users can estimate carbon cost savings from emission reduction action plans.
- Results are displayed via a user-friendly Power BI dashboard.



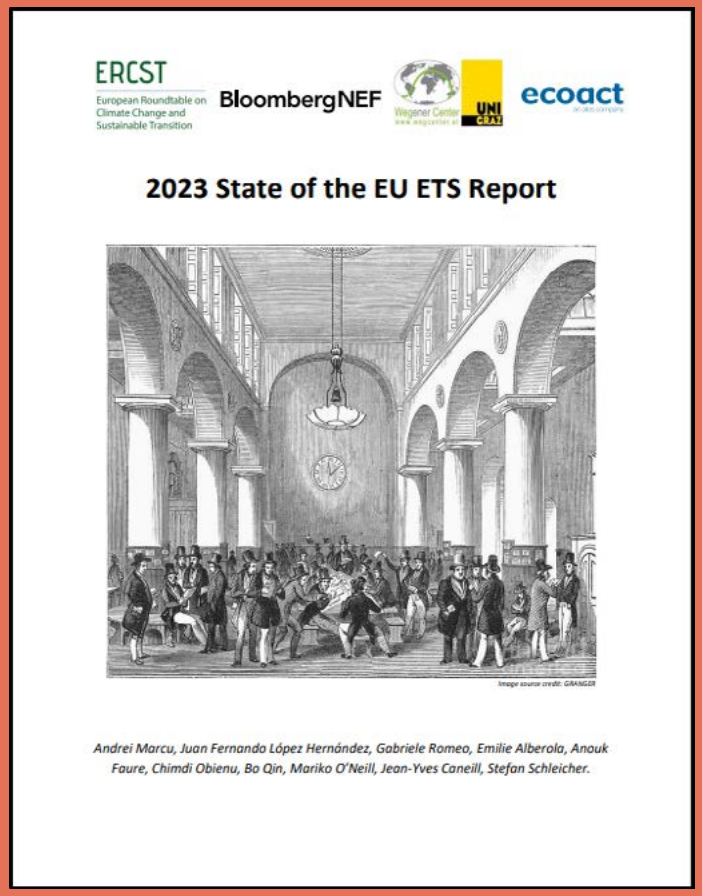
Case studies and industry experience

Case Study – Automotive manufacturing company

EcoAct provided a US-based firm in the manufacturing sector with an analysis of global regulatory carbon price exposure from its on-site fuel combustion and purchases of electricity, raw materials, and logistics services. The company's science-based emission reduction target was used to model its potential decarbonisation trajectory, which was compared with a business-as-usual emissions scenario. Costs were aggregated at the facility level to assess carbon hotspots, and the results were used to make a compelling economic case for enhanced climate action.

Case Study – Health & nutrition company

EcoAct helped a company known for its health and nutrition products to analyse its carbon pricing risk from purchased goods and services, primarily from the chemicals sector. Before doing the full cost calculation, a life cycle assessment was conducted to measure the CO_2 emissions embedded in products, through which suppliers may pass on carbon costs. The analysis has led the company to modify its procurement strategy to focus on suppliers that will be resilient in a world of stricter climate policies and consumer expectations.



State of the EU ETS Report

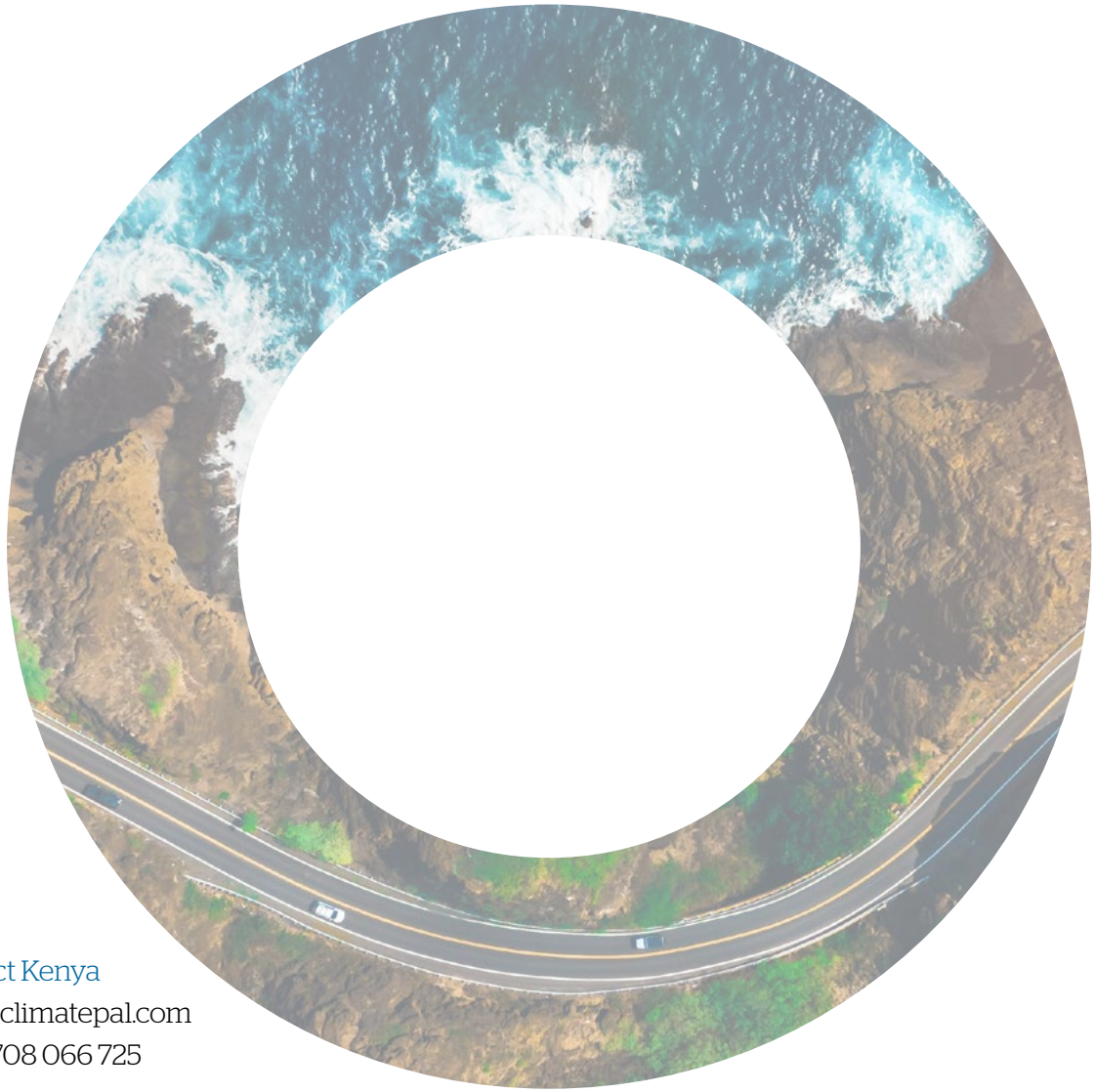
EcoAct co-writes this annual publication to inform stakeholders on the extent to which the EU Emissions Trading System is working as planned. The 2023 edition includes an EcoAct quantification of the financial impacts of upcoming reforms on EU industries. Partners include BloombergNEF and the European Roundtable on Climate Change and Sustainable Transition.

Factsheet

Climate action.
Commercial sense.

EcoAct, an Eviden business, is an international climate consultancy and project developer that supports companies to set robust science-aligned net-zero strategies and achieve their climate targets. Founded in France in 2005, the company now spans three continents with offices in Europe, North America and Africa.

With a team of more than 360 international climate experts, EcoAct's core purpose is to lead the way in delivering sustainable business solutions that deliver true value for both climate and client. EcoAct is a CDP Gold Partner, a founding member of ICROA, a strategic partner in the implementation of the Gold Standard for the Global Goals and reports to the UN Global Compact.



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