Emission markets in EU

Jean Monnet Module: Energy Markets In The Framework Of EU Integration

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What is an Emmision Market

- An emission market is a form of carbon pricing that aims to limit and reduce greenhouse gas emissions by creating a market for them. It is also known as cap and trade or emissions trading scheme.
- An emission market works on the principle of supply and demand
- Those who emit more than their allowances must buy more allowances from those who emit less, or face penalties.

Emmision markets

- *There are different types of emission markets, such as:*
- Mandatory or voluntary markets. Mandatory markets are regulated by governments or international agreements and impose binding emission limits on participants. Voluntary markets are driven by private actors who choose to offset their emissions or meet corporate social responsibility goals.
- Compliance or offset markets. Compliance markets are linked to emission caps and allow participants to trade allowances within the cap. Offset markets are not linked to caps and allow participants to trade credits that represent emission reductions from projects outside the cap, such as renewable energy or forest conservation projects.
- Regional, national or international markets. Regional markets cover a group of subnational jurisdictions, such as states or provinces, within a country or across borders. National markets cover an entire country. International markets cover multiple countries that agree to link their emission markets under a common framework, such as the Kyoto Protocol.

Some examples of emission markets are:

- The EU Emissions Trading System (EU ETS), which is the world's largest and oldest emission market, covering around 40% of the EU's greenhouse gas emissions from more than 10,000 installations in the energy and industry sectors, as well as aviation operators operating within the EU and departing to Switzerland and the United Kingdom.
- The Regional Greenhouse Gas Initiative (RGGI), which is a regional emission market covering nine northeastern and mid-Atlantic states in the United States, limiting CO2 emissions from fossil fuel-fired power plants with a capacity of 25 MW or more.
- The China Emissions Trading Scheme (China ETS), which is a national emission market that was launched in 2021 and covers around 2,200 power plants that account for more than 40% of China's CO2 emissions.

What is Carbon pricing?

Carbon pricing is an approach to reducing carbon emissions (also referred to as greenhouse gas, or GHG, emissions) that uses market mechanisms to pass the cost of emitting on to emitters.

Carbon pricing forms

- Carbon taxes, which directly set a price on carbon by defining a tax rate on GHG emissions or on the carbon content of fossil fuels
- Emissions trading systems (ETS), which cap the total level of GHG emissions and allow emitters to buy and sell allowances within the cap, creating a market price for emissions
- Carbon crediting mechanisms, which allow emitters to purchase credits that represent emission reductions from projects outside their own activities, such as renewable energy or forest conservation projects

Carbon pricing benefits

- Reducing emissions in a cost-effective and flexible way, by letting emitters choose how and where to cut emissions
- Promoting innovation and investment in low-carbon technologies, by creating a price signal that shifts the market away from carbon-intensive activities
- Generating revenue for governments or other entities, which can be used for public spending, tax cuts, or redistribution to vulnerable groups
- Supporting sustainable development and social welfare, by reducing local air pollution, improving public health, enhancing energy security, and creating green jobs

The difference between carbon tax and trading system

- A carbon tax directly sets a price on carbon by defining a tax rate on GHG emissions or on the carbon content of fossil fuels. The tax rate is usually fixed or increases over time, providing certainty about the carbon price in the economic system
- An ETS caps the total level of GHG emissions and allows emitters to buy and sell allowances within the cap, creating a market price for emissions

Carbon tax vs ETS

- Administrative costs and complexity. A carbon tax may be simpler and cheaper to administer than an ETS, especially for developing countries with limited institutional capacity.
- Price volatility and flexibility. A carbon tax may provide more price stability and predictability than an ETS, which can help emitters plan their investments and reduce uncertainty. A carbon tax can also be adjusted over time to reflect changing circumstances or new information.

Carbon tax vs ETS

- Cost-effectiveness and efficiency. Both policies can achieve cost-effectiveness and efficiency by allowing emitters to choose the least-cost way of reducing their emissions. However, a carbon tax may have some advantages over an ETS in terms of minimizing distortions and leakage in the economy.
- Distributional impacts and equity. Both policies can have distributional impacts and equity implications for different groups of stakeholders, such as consumers, producers, workers, regions, or countries. However, a carbon tax may have more flexibility than an ETS in addressing these issues through the use of revenue

The leakage problem

- ***Carbon leakage*** is a situation where a company decides to move their production from a country with stringent carbon policies, such as a carbon tax or an emissions trading system, to a country that is more lenient, leading to an increase in greenhouse gas emissions.
- Carbon leakage can undermine the effectiveness of carbon pricing policies and create unfair competition for companies that remain in the country with higher carbon costs

Carbon leakage happens:

- **Cost competitiveness**. If a carbon pricing policy increases the production costs of a company, it may lose market share to competitors from countries with lower or no carbon costs.
- **Demand and supply effects**. If a carbon pricing policy reduces the demand for carbon-intensive goods or services in a country, it may lower their prices in the global market.

Carbon leakage can be prevented :

- Border carbon adjustments.
- Free allocation of allowances.
- Output-based rebates.
- International cooperation.

Thank you for your attention!

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