



The Asia Foundation

Carbon Taxes & Emissions Trading: Impacts on Power Markets

Michael DiGregorio
The Asia Foundation

Carbon Tax or Cap and Trade

CARBON TAX

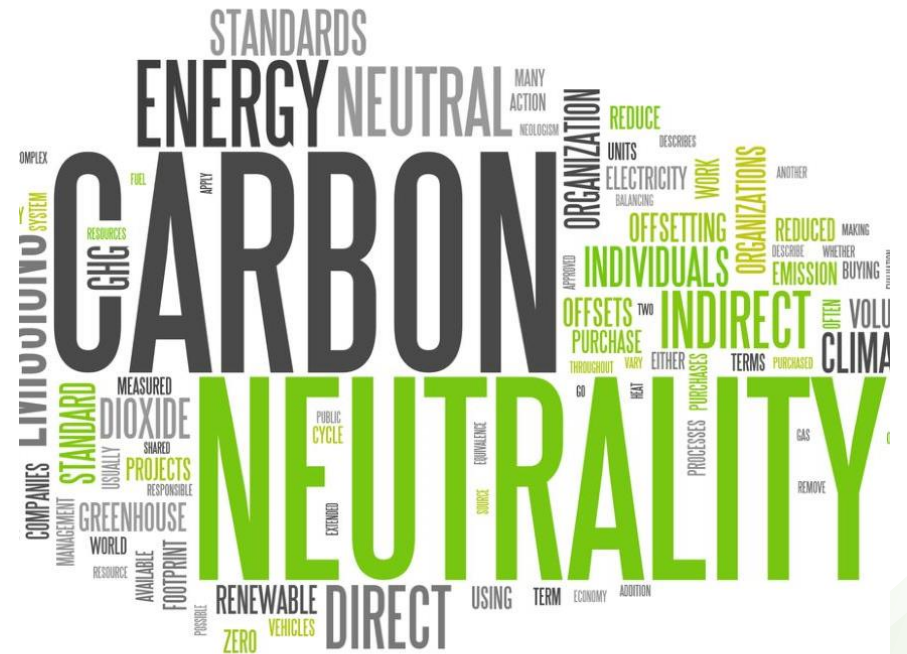
- Anywhere in the supply chain, from source to consumption
- Easy administration, especially at source, as it is administered by existing tax departments
- Price set by the “social cost of carbon” which, in truth, is a public policy decision made by political parties in power
- Cannot be used to monitor implementation of emissions reduction targets

CAP AND TRADE (ETS)

- Cap set by public policy
- Focused on key sectors and major GHG emitters at the facility level
- Allowances are tradable and price is determined by market scarcity
- Requires an effective monitoring, reporting and verification system
- Can be used to monitor implementation of emissions reduction targets

The EU's ETS (Cap & Trade)

- 2005-07: Free emissions allowances based on historic emissions, aka “benchmarks”
- 2008-12: Fewer allowances were issued but EU member states were allowed to auction up to 10% of their allowances as a revenue sharing measure
- 2013-20: Created a “reserve” of unused allowances to buffer the market and set an emissions cap reduction of 1.74% annually over the five-year period
- 2021-30: Goal of reducing emissions by 55 percent below 1990 levels by 2030. Emissions cap to decrease by 2.2% annually.





Carbon Border Adjustment Mechanism

- Covers 30 categories of products imported into the EU; others may be included in future
- Pilot period starting 2023
- From 2026 the cost of allowances will be equal to the weekly average cost of EU emissions allowances, weighted for a declining number of free allowances for iron and steel, aluminum, fertilizer, cement.
- The current cost of emissions allowances = €75/ton
- Importers can request reimbursement for emissions allowances and carbon taxes paid in the exporting country
- **DRAFT REGULATIONS ONLY INCLUDE DIRECT EMISSIONS!**

So then,
does
Vietnam
have a
carbon tax?

DIESEL

- EPT rate of VND 2,000/liter:
- 1,150 liters per metric ton of diesel
- The EPT tax per ton of diesel fuel =
 $1,150 \text{ liters} \times 2,000 \text{ VND} =$
2,300,000VND/ton of diesel
- There are approximately 2.4 kg of CO₂ emissions per liter of diesel burned, therefore,
- $2.4\text{kg CO}_2 \times 1,150 \text{ liters} =$ **2,760 kg (2.76 tons) of CO₂ per ton of Diesel** burned, therefore,
- The cost per ton of carbon emissions from the burning of diesel equals =
 $2,300,000\text{VND}/2.76 =$ **833,333 VND (36.71 USD)**

BITUMINOUS COAL

- EPT tax on bituminous coal =15,000 VND per metric ton
- Bituminous coal produces approximately **2.44 metric tons of CO₂** per ton of fuel burned, therefore
- The cost per ton of CO₂ emissions from the combustion of bituminous coal equals $15,000\text{VND}/2.44$, or **6,148 VND (0.27 USD)**

ANTHRACITE COAL

- The EPT tax on anthracite coal is 30,000 VND per metric ton.
- Anthracite coal produces **2.62 metric tons of CO₂ per ton** of fuel burned, therefore.
- The cost of per ton of CO₂ emissions from the burning of anthracite coal equals $30,000\text{VND}/2.62$, or **11,450 VND (0.50 USD)**.

And, does Vietnam have an ETS?

NOT YET, BUT COMING SOON:

1. Decree No.: 06/2022/NĐ-CP

- Emissions inventory in 2023
- Pilot in 2025
- Fully operational in 2027

VN ETS WILL INCLUDE ABOUT 2,000 FACILITIES

2. GHG-emitting facilities subject to GHG inventory are those with annual GHG emissions of 3,000 tons of CO₂ equivalent or more or in one of the following cases:

- a) **Thermal power plants**, industrial production facilities with total annual energy consumption of 1,000 tons of oil equivalent (TOE) or more;
- b) Cargo transport companies with total annual fuel consumption of 1,000 TOE or more;
- c) Commercial buildings with total annual energy consumption of 1,000 TOE or more;
- d) Solid waste treatment facilities with annual operating capacity of 65,000 tons or more.

REIMBURSABLE

- IMPORTERS can request reimbursement of carbon taxes and fees paid in Vietnam
- Vietnam currently exports about €1 billion in goods covered by the draft CBAM
- The current cost of EU emissions allowances is around €75/ton
- Importers would have to buy around 1.7 million allowances only for iron and steel at current export levels
- At full cost, that would equal €127.5 million
- AND – this only considers DIRECT emissions

IMPORTANT: CBAM fees paid in the EU stay in the EU; taxes and quota costs paid in Vietnam stay in Vietnam where they can be used to support transition to a lower carbon economy



VN exports to EU (products included in CBAM, Jul20-Jun21)	
Aluminum	€27,865,122
Cement	€12,716,283
Fertilizer	€629,594
Iron & Steel	€957,457,701
Grand Total	€998,731,001

BUT...

EurElectric complains
the CBAM is unfair:

Indirect CO₂ emissions from
the electricity used in the
production
of imported goods should be
counted

- Eurelectric points out that because the CBAM currently only applies to **direct** CO₂ emissions, a potentially significant share of emissions embedded in imports will not be subject to a CBAM charge.
- This could lead to competitive distortions between EU producers and exporting countries, as it puts less pressure on these countries to decarbonize their power sector.
- May also benefit exports from countries whose power sector is highly dependent on coal.
- EurElectric proposes to ***base default values for indirect emissions on the 10% worst performing power generators in the exporting country***
- If individual power generators provide data to the European Commission that shows their emissions per kW/h are lower than the worst 10%, then their actual emissions per kW/h can be carried over to their industrial users.

What should Vietnam's Power Sector expect?

- Indirect emissions have to be included in the EU's CBAM, though maybe not immediately
- MONRE's emissions inventory will provide a baseline for the power sector and individual generators
- Generators will not be able to buy carbon offset credits to reduce their emissions intensity
- An increasing number of multinational corporations and companies in their supply chains will require access to Renewable Energy on rooftops, through RECs, or through DPPAs in order to meet their own emissions reduction goals and reduce the cost of potential border adjustments
- Areas that cannot provide access to renewable energy through these means will have more difficulty attracting multinational corporations
- Carbon intense industries like steel and cement will have to reduce their emissions to reduce domestic carbon taxes and the cost of emissions quotas in Vietnam and the EU. If not, they will become increasingly uncompetitive.

