

In defence of MONRE's CO₂ emissions monitoring plans

Dr. Minh Hà Dương, Directeur de recherche CIRED/CNRS

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A domestic carbon market should open in Vietnam on January 1st, 2028. This is what the Ministry of Natural Resources and the Environment (MONRE) wants, according to the draft application decree¹ detailing articles 91, 92 and 139 of the new Environmental Protection Law². This new Law gave MONRE three missions to reduce greenhouse gas emissions. The first is to establish a national greenhouse gases inventory system. The second is to establish a national monitoring, reporting and verification (MRV) system to control large emission sources. The third is to establish a carbon market, also called an emission trading system (ETS).

Economists invented emission trading systems as a market-based solution to reduce pollution. ETSs are used when pollution is emitted by multiple sources spread over a large geographical area, such as sulfur emissions causing acid rain or greenhouse gas emissions causing climate change. In an ETS, the government allocates a controlled number of emissions permits to polluters, which are required to limit their emissions to the number of permits they hold. If a polluter wants to increase its emissions, it has to buy permits from others willing to sell them.

An emission trading system provides environmental certainty since the number of permits is controlled, and a permit can be used only once. This certainty is an essential difference with the pollution tax approach, which penalizes polluters for their emissions, but cannot guarantee the environmental result. An ETS also provides flexibility for each polluter to organize its compliance according to their own technical and economic conditions. This flexibility allows an ETS to be cheaper to society than a command and control approach, such as a performance standard. Finally, an emission trading system may provide a revenue

source to the government, as a fraction of permits can be auctioned instead of given free.

In practice, governments usually start by giving permits according to the polluters' baseline emissions and progressively reduce the number of permits allocated every year to reduce pollution. Policy instruments are not mutually exclusive, so implementing Vietnam's carbon market will likely be on top of existing regulations, that already include environmental taxation and performance standards for many sectors like steel or cement production.

It is easy to say that today, carbon trading could not work in Vietnam. But this reminds me of my university professor who used to say, in the first school semester, that we would fail if we took the exam right now. Before discussing if carbon trading could work in Vietnam we have to discuss MONRE's other two missions.

The first MONRE mission is to establish the national GHG inventory system. For statistical purposes, there are two classes of GHG emissions. One is diffuse emissions, those coming from a large number of small sources, like motorcycles. The other is concentrated emissions, those coming from a small number of large sources, like thermal power plants. Accordingly, the inventory will rely on two mechanisms. For diffuse emissions, Ministries responsible for Industry and Trade (MOIT), Transportation, Agriculture, Construction, Land use and forestry will be produce the inventory for their sector. They will collect GHG data from the Provincial People's Committees, aggregate and report it to MONRE. For concentrated emissions, MONRE will prepare the list of big emitters, and the designated establishments will report directly to MONRE.

Once the system work, it will vastly improve from the existing inventory method. The latest national GHG inventory³ reports emissions made in 2014, and relied mostly on national statistics. Under the new system, inventory will be based on primary data at least for big emitters, and reporting will be every two years.

The second MONRE mission is to establish a monitoring, reporting and verification (MRV) system for large carbon emitters. The draft decree¹ defines large emitters as establishments releasing more than 3 000 tCO₂eq per year. The list, to be published in 2022, will include :

- Establishments consuming more than 1 000 tons of oil equivalent (TOE) per year in the energy, industry, transportation or building sector.
- Solid waste treatment facilities with a capacity of over 65 000 tons per year (about 180 t/day), and farms with over 500 cattle heads.

The MONRE list overlaps to the MOIT list of key energy users, which also includes industrial and agricultural production establishments and transport units using over 1 000 TOE per year. The total number of key energy users in 2019 was 3 006 establishments, including 2 441 industrial, 15 agricultural, 84 transport and 466 construction units. The MONRE list does not include buildings consuming between 500 TOE and 999 TOE per year, which are included in the MOIT list. On the other hand, the MONRE list includes thermal power plants as well as waste management facilities and large farms which are methane emitters.

The GHG data and statistics system under MONRE compares to the energy data and statistics system under MOIT. Both are upgrades to the State management capacities, requiring national-scale efforts, with ample international cooperation available under the Climate Convention framework. MONRE is perhaps more advanced than MOIT when

it comes to inventory: it has produced three inventories since Vietnam's initial UNFCCC national communication³ in 2003, and it already obtained the legal mandate to collect data from the other Ministries. On the other hand, MOIT is perhaps more advanced when it comes to reporting and verification, as energy audits have been mandatory since the 2010 energy efficiency law.

Clearly, there are opportunities for synergies. Large industries would benefit from addressing both energy efficiency and greenhouse gas emission reduction at the same time, even if they have to report to two different Ministries.

The third MONRE mission is to organize the domestic carbon market. Emission trading cannot start before the MRV system is in place. Difficulties to ensure quality energy audits in Vietnam remind that implementing an MRV system take years, but MONRE plans to have it by 2025. By that year, large emitters should have their GHG inventory and management system in place, be assigned quotas and participate in a carbon market. The system would start with a two years voluntary trading period in 2026-2027, followed by a first mandatory trading period from 2028 to 2030. Box 1 describes the legal frame of Vietnam's carbon market. This is the outcome of years of policy research on how to best give a value to emission mitigation in Vietnam, supported by the World Bank's Partnership for Market Readiness and other development partners.

Vietnam will join many countries like China, Korea or the European member states already having an emission trading system. The International Carbon Action Partnership (ICAP), which is the international forum for governments and public authorities that have implemented or are planning to implement emissions trading systems, reports⁴ that jurisdictions making up to 54% of global GDP are using emissions trading, covering 16% of global GHG emissions.

The European Union ETS started phase 4 in 2021, with an annual cap reduction factor of 2.2%. The

Box 1: The legal basis for Vietnam's future carbon market

The mandate for MONRE to organize a carbon market was already present in Article 41 of the 2014 Law on Environment, but the 2020 update of the Law² is more specific. Article 139 lays the foundations of the carbon market as follows :

«2. GHG-emitting facilities [...] on the list specified in Clause 3 Article 91 of this Law are given GHG emission quotas and reserves the right to exchange and trade quotas on the domestic carbon market. [...]

4. GHG-emitting facilities are only allowed to emit GHGs within the allocated quotas; if they wish to emit GHGs in excess of the allocated quotas, they shall purchase quotas from other entities through the domestic carbon market. »

Participants in the carbon market will be the large emitters, traders, and the market making agency. MONRE will determine quotas and the method of allowances allocation. At least 10 % of the national quota shall be auctioned. Proceeds from the auctions will go to the Vietnam Environmental Protection Fund, to be used for operations management, monitoring , implementing activities to cope with climate change. Within a commitment period, facilities will be allowed to transfer unused carbon quotas for next year or to borrow carbon quotas from next year to use in the previous year.

Besides GHG emissions quotas, the market players will also trade carbon credits. A carbon credit represents emission reductions obtained by projects in Vietnam or elsewhere, as the market will be open to regional and international trade. Only carbon credits certified by MONRE can be used. Facilities can convert their unused GHG emission quotas into carbon credits on a 1:1 basis. Facilities are limited in how much carbon credits they can use to compensate their excess emissions: no more than 10 % of their allowed emission quota.

Article 8 of the draft decree¹ states that organizations, forest owners and individuals involved in forest management are expected to sequester greenhouse gases and obtain carbon credits by participating in the domestic and international carbon markets.

Republic of Korea ETS started phase 3 in 2021, also with stricter caps, and a share of auctioning for non emission-intensive and trade-exposed sectors increased to 10%. Japan only has a voluntary carbon market, but the linked Tokyo and Saitama ETS entered phase 3 in 2020, both increasing the reduction below baseline constraint by ~10 percentage points compared to the previous five years phase.

China's national ETS opened in July 2021 after an eight years long phase of trials, which started in 2013 with cities and province-scale pilot markets.. It targets the 2 245 power sector companies emitting more than 26 000 tons of CO₂ per year, covering 4 billion MtCO₂ which account for 40% of national

carbon emissions. To extend coverage, other sectors will be added during this five-year plan.

Other Vietnam's neighbors are moving in⁴. Indonesia is currently developing a legal framework and planning a limited pilot in the power sector. In the Philippines, a bill proposing a cap-and-trade system for the industrial and commercial sectors has been submitted. In Thailand, MRV systems are being developed for the voluntary reduction market, a pilot is being planned for the eastern economic corridor region, and work is beginning on the national legal framework.

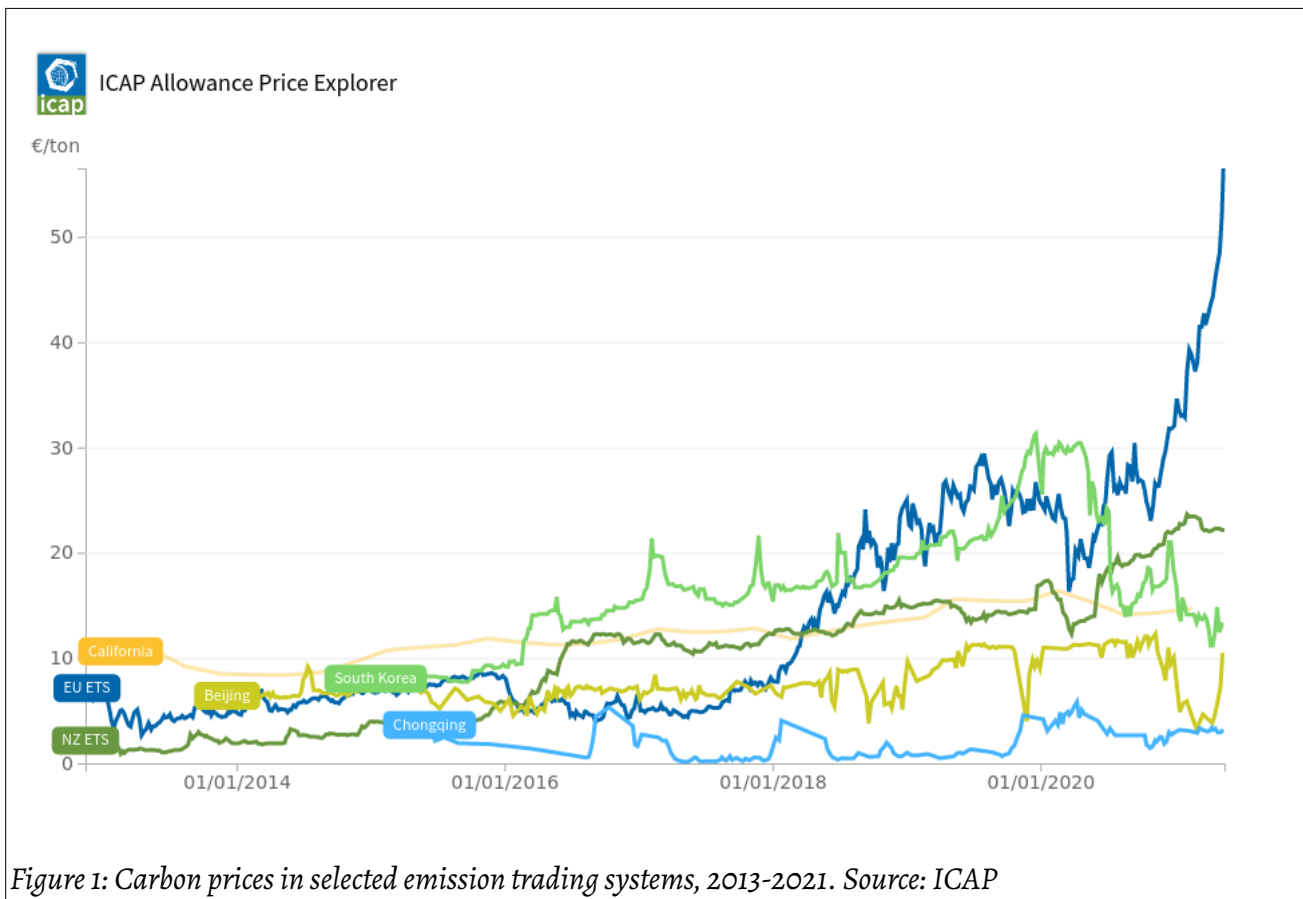


Figure 1: Carbon prices in selected emission trading systems, 2013-2021. Source: ICAP

International experience, illustrated in Figure 1, shows that emissions trading systems can work, at least in relatively rich countries. But what works in rich countries does not necessarily work in Vietnam, which would be one of the first income countries to implement an ETS. In my view, a carbon market can be pursued in Vietnam for three main reasons:

- First, something has to be done to reduce GHG emissions. Implementing the GHG inventory and the MRV systems is not only for the government to meet international agreements. It is the necessary first step in any case, regardless of the policy instruments to be used later. The climate consequences of economic choices have to be made visible, so that households and companies in Vietnam can consume and produce responsibly.

- Second, Vietnam's trade partners also want to consume responsibly. Markets for green products are growing. The threat of carbon tariffs looms at the ten-fifteen years horizon. Even if the European Commission signed a free trade agreement with

Vietnam, for example, many Europeans support taxing the import of goods produced in countries which freely emit CO₂ in the atmosphere.

- Third, the command and control approach to GHG mitigation is inefficient and infeasible. MONRE cannot decide, in the name of optimizing the nation's annual carbon budget, when to run each thermal power plant. In a market-oriented economy, the alternative to the ETS approach is to levy a carbon tax. The carbon tax is politically more difficult in Vietnam at the moment. There is already a small environmental tax on polluting activities. But the government uses the price of energy as a tool to protect households and companies from excessive inflation, rather than as an instrument to incite them to reduce consumption.

As a bonus, the emission trading system can strengthen the Vietnam Environmental Protection Fund, which was created in 2002 and previously responsible to manage the emission reduction projects under the Clean Development Mechanism. If

we estimate that in 2028 MONRE will auction 20 million tons quotas, that is 10% of 200 million CO₂eq, and that the auction price is five dollars per quota, then the proceeds would be 100 million USD per year. This would allow to offer preferential loans and technical expertise on GHG control to a significant number of large emitters.

However, there are also risks with creating a carbon market. We are certain that the MONRE is aware and designed the rules to minimize the risks, but they are worth reminding because they cannot be completely eliminated.

Experience has shown that carbon markets are difficult to implement well. For example, the Kyoto Protocol carbon market mechanisms largely failed. Their idea was that low-carbon projects implemented in non-Annex I countries, such as new hydroelectricity in Vietnam for example, would receive tradable certificates of emission reduction which they could receive money for. In practice, the efforts of Vietnam to submit many projects to the Clean Development Mechanism were mostly a waste of time. The value of certified emission reduction crashed to below 50 cents per tCO₂eq in 2012 and the market never recovered.

The European emission trading system history reminds us that the risks of fraud and cybercrime are always there. It also illustrates the fundamental problem of ETS: how many quotas are created. The decision can be the outcome of a political balance of power between MONRE and the large emitters. In Europe, for the first commitment period, the large emitters won the game. They received more quotas than was needed, and eventually the oversupply drove the price of carbon to zero in 2007 on the EU ETS. The market practically crashed again in 2012, but prices have been recovering to more normal levels ever since. This is not only because the European Commission regulators got a better understanding of the system, but also because the companies participating in the ETS became less

afraid of the system's novelty and more environmentally responsible.

In the context of Vietnam, however, there is a risk that the number of quotas allocated may not decrease from the first to the second period, if the government decides to put economic growth first. With the carbon market, MONRE will have a tool to limit GHG emissions of Vietnam. But the political decision will require social convergence, including the large GHG emitting companies such as EVN.

It is intrinsically difficult to fine-tune the amount of quotas since the demand for energy is influenced by random weather and business cycles. If there is lots of rain, or a pandemic, there will be less need to run the coal power plants. The randomness creates price volatility, as we have seen before. This can cause some large emitters to receive more quotas than they need, and realize windfall profits by pure luck, without efforts to reduce emissions. The method by which quotas will be allocated is not defined yet in the Law. There are certainly exciting legal discussions ahead.

To conclude, in its 2020 Nationally Determined Contribution, Vietnam committed to reduce GHG emissions in 2030 « 9% or 27% below the baseline », which is a weak proposition since the baseline is a projection in the future. Having a GHG inventory and MRV system will allow the Government to switch the discourse to a strong verifiable basis. They will enable to cap the level of Vietnam's GHG emissions, at last.

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