The EU-ETS: how to repair a dire policy mistake for the EU and the world. A practical policy proposal to improve the European Green Deal

Gjalt Huppes, 11 September 2020

The Problem

The European Union decided for the emissions trading scheme in 1998, following the 1997 line in the Kyoto Protocol, where emissions and their reductions in time were specified, in hard numbers. See (Skjærseth & Wettestad, 2009) for an historical survey. The EU-ETS is a cap-and-trade system, where permits to the total intended emissions, the *cap*, are distributed over all emitters, ideally, who then may *trade* in them.

Till the Kyoto Protocol the EU favored emission taxes, building on the extensive work by the OECD (OECD, 1972, 1992; Victor, 1992). Then in 1998, the Kyoto numbers were set as direct political targets and implemented as if reality then would follow these numbers. Reality differed for eight basic reasons, however, creating havoc in climate policy: limited effects with high costs directly and indirectly. Also, EU as a leading environmental policy country, has led the world in a damaging direction, for the same basic reasons.

Policies are fallible. But this single example of this EU scientific & policy mistake will overarch any other practical policy mistake, both in terms of costs and in environmental damages. Instead of induced broad emission reductions there now have been technology-specific subsidies in a substantially renationalized climate policy framework.

Eight issues involved in the dire mistake

Administratively

Administratively, the system requires each actual emitter to have emission permits covering all its emissions of the past year, with three months delay for administrative submission. As direct measurement of CO_2 emissions is not possible, an administrative process is required to establish the yearly total. Fossil resources, including processed fossils, as acquired and burned determine emissions, to be matched by the emission permits. For smaller firms this is too heavy an administrative burden, so effectively not much more than half of all CO_2 emissions are covered in the EU-ETS. The link to total EU emissions is therefore only soft, with boundaries shifting. A split-off into smaller emitting firms can be highly attractive. For the firms covered, and for their governments, there is a substantial administrative burden. The costs of trading, creating earnings not related to emission reduction, add to the ETS administrative system costs.

Politically

Politically, the system is vulnerable, as firms, and countries, in financially dear situations ask for additional and free permits. Oversupply resulting, exacerbated by the Clean Development Mechanisms, made the ETS not operational for emission reduction, with permit prices way too low to be relevant.

Economically I

Economically, modelling-wise, there is broad agreement that emission pricing is required as a prime instrument for deep emission reductions. Expected future emission prices will guide R&D and investments. There is more of course following then, such as several institutional rearrangements for energy markets and many more specific instruments to speed up the change to a near zero-emission society. For economists' prime modelling approach, equilibrium analysis, it does not make a difference if the quantity is fixed or the price: the outcome is where the supply and demand curves cross. For a deep

dynamic emission reduction, the equilibrium is hardly relevant, however. The most flexible economists approach is by the IEA/OECD (Hood, 2011), which already assumes that a relevant pricing policy will not come. All economic processes are to be detailed and controlled, also dynamically, as if the results of an ideal emission tax were implemented. This shows an optimism about political and administrative processes which seems well beyond any practical possibility, even in the harshest communist country. It also assumes full knowledge about the future, which we will never have.

Economically II

Micro-economically, there is a basic problem in a system where supply of permits is fixed, the 'cap', and demand is fixed on the short term. Inelastic demand and inelastic supply combine into erratic price changes. There then cannot emerge a long-term equilibrium price. When demand is low the price will drop to irrelevantly low levels, as has been the case with the EU-ETS during its existence. With the current economic slump, the permit price was more than halved. After incidental permit volume reductions, the price of ETS emission permits rose to around 25 Euro per ton CO_2, and then a reduction in demand because of Covid-19 the price halved again, and due to speculation on new policies rose again. If ever demand would rise faster than supply, the price would sky-rocket to unacceptable levels, causing the short-term demise of whole industries. That will then not happen, for good political reasons.

Adjoining policies conflicting

With the very low emission permit price, specific emission reduction measures started to be developed, both at country and EU level. Feed-in tariffs for wind and solar power, a subsidy system developed in Germany, were a great success, however reducing demand for ETS emission permits. Similar climate measures, from closing coal fired power stations to taking industries and areas off natural gas, reduce the ETS price further, therefor requiring more subsidies. Requirements for biomass fuel, national and EU, reduce the ETS price further again. There is no solution to this basic opposition between practical measures and the therefor failing EU-ETS.

Legal issues: tax fraud & evasion

Tax crime has been inherent in a tradable commodity existing on paper only, as Interpol has warned repeatedly (Interpol, 2013), with tax evasion as the soft version. Slight differences in set-up and timing of value added taxes remain a source of illegitimate income and lost tax receipts.

Global influence

At a global level, the EU cap-and-trade system has become a prime example of how to approach climate policy, though nowhere detailed into the encompassing system the EU has built. This following behavior will repeat the same damages, if really implemented, by upholding more adequate policy.

Institutional damages

The lack of incentives as has been created as compared to an EU emission tax system still requires other instruments, with their damaging peculiarities. Feed-in systems ruin electricity markets, the open system as had been designed by the EU in the Unbundling Directive (EC, 2009 (2003), 2013). With prices guaranteed, the remaining market system becomes partial, nationalized, and destabilized. This reduces options for market penetration by renewables. An open real time priced electricity market seems an essential long-term requirement for a fossils free society, then supported by a European supergrid (Elliott, 2013; Teske et al., 2014). That option has been virtually closed as an indirect effect of the EU-ETS, as renewable energy has become substantially subsidized with national price guarantees and premiums. The costs created are extreme in terms of electricity costs, with wider economic damages resulting.

The current intention of the EU to introduce Border Tax Adjustments lacks a clear quantifiable basis, as would be given in the specified rising emission tax. It will create numerous trade conflicts and hence will

further weaken the WTO. That development is detrimental to global economic growth, and hence also EU economic development. It was China and other low-income countries entering the WTO that helped billions to escape from deep poverty. EU leadership should help strengthen the WTO and bring China in line. The BTAs for by necessity clumsy repairs for the EU-ETS then effectively follow in the steps of the US in breaking down the WTO.

A simple three-step solution

The clear solution for effective and efficient emission pricing is not fumbling further with a cap-and-trade system. A shift is required to a predictably rising emission price, as roughly emerged in the OECD discussions in 1992 already: as a tax. The rising emission tax as had been proposed in the Stern report (Stern, 2008) was introduced in the UK (Revenue&Customs, 2012 (2010)) as the Price Floor Tax. It is a complex combination with the EU-ETS, also involving many technology specific taxes and exemptions to avoid double taxations. It failed also because of international competition issues. The UK is just too small for going it alone, and the combination with the EU-ETS was killing, administratively and politically.
Transforming the EU-ETS into a relevant emission tax seems not a complex issue administratively, and politically, assuming a serious desire to dramatically reduce CO_2 emissions in the next few decades. There are the three basic steps to transform the EU-ETS.

1. Fixed rising permit price

Set a yearly rising price for the emission permits and adapt the volume of emission permits to realize that price. Administratively-technically this is quite simple. The predictable price rise is to create the incentive for emission reduction, also for R&D and investments long-term. The yearly price rise would be long term, for decades, in the order of €12.50 per year. As a reference, to compensate for the recent oil price drop of 50 dollar per barrel, from 90 to 40 dollar, an emission price of 110 dollar per ton CO_2 would be required. But at a price of $90 per barrel there would not be much of an emission reduction regarding oil, more for coal and less so for natural gas. Long-term the tax should therefore rise much higher than just 110 $/€ per ton CO_2. Starting at 25€ in 2020 the rise with €12.50 per year would result in a tax of 300 per ton CO_2 in 2042 and an induced oil price of €174, only slightly higher than the historical peak.

2. No trading

Stop trading in emission permits (*allowances* in the US-derived EU-speak), as the price is set already, equal for all emitters, fixed for the year of emission. All administrative costs of trading, public and private, reduce to zero, as do the options for tax evasion and tax fraud.

3. Upstream administration covering all emissions equally

Move the administrative implementation upstream, to imports and primary production, with a refund upon export and CCS. Then all fossil CO_2 emissions are covered, through normal market mechanisms. The number of taxable entities will be reduced by two orders of magnitude! Emitting firms would not have to keep an administration of their emissions anymore; their emissions are covered in the price for the fossils used, and the fossils derived products. At the same time, all emitters are covered, all equally. The tax on import of fossil energy carriers is not a border tax adjustment but forms the administrative part of purely EU national emission pricing.

Final considerations

This EU emission tax system is open for all countries to join, then abolishing all mutual taxing on imports from and refunding at export to these countries. These together form the Emission Tax Bloc, without

requiring a globally binding agreement. Countries exporting to the EU have an incentive to join as then the emission tax proceeds accrue to them and not to the EU countries (Dong, Ishikawa, & Hagiwara, 2015). The Border Tax Adjustment as proposed by the Commission would receive a clear basis, as a starting point only. As the cost of the tax will be avoided by producers and consumers, by shifting to lower emission options, these tax costs will reduce, already on short notice. That is the function of this tax: the tax proceeds should go to zero.

Real costs and results of the emission tax depend on adjoining measures, such as the creation of an electricity market adequate for a substantial role of the main intermittent renewables, wind and solar. An open to all, real time priced electricity market would be a key element. It creates incentives for market operations, also for small primary and secondary producers, as in using private batteries of cars, households, etc., to discharge to the grid at high prices. A long-distance pan-EU and pan-European high voltage supergrid would be a necessary step as well (as the Chinese mainly have implemented already). Spanish solar is less than half the price of Northern European solar. The technique for extremely cheap long-distance power transport is there already. The market structure to develop and use it is still to be developed. It does not induce costs or serious problems (de Rubens & Noel, 2019). It would also allow for a positive opening to Russia, already dealing with China on this subject (Zachmann, 2019) linking different time zones.

This emission pricing reform proposed here supports all more specific climate developments and supports other climate policy instruments now conflicting with the EU-ETS, see (Huppes, 2019). Many technology specific subsidies can be reduced or stopped, as also the many technology specific regulations now proliferating. With such an adapted emission pricing system the havoc created by the EU-ETS could have been avoided, and can still be avoided, at the same time contributing better to the common climate good. The damages need not continue.

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