

# Extra Territoriality and the Failure of the EU's Emissions Trading Policy

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“Let’s talk real,” he said. “The ETS is bust, it’s dead.” “I don’t know a single person in the world that would invest a dime based on ETS signals,” Johannes Teysen, chief executive of Eon, (Chaffin, Emissions trading: Cheap and dirty, 2012)

## Introduction

The release of greenhouse gases (GHG) is a classic example of market failure associated with the environment as a public good where the atmosphere exhibits both non-rival and non-excludable features. That is, additional users of the atmosphere do not impact upon fellow polluters and are difficult to exclude, unless specific action is taken against them. The justification for environmental charges is that the market fails to take account of the damage caused by pollution. This then leads to a debate about how to overcome this failure. It could be argued that regulation also has significant shortcomings so the way to overcome the market failure is create a market that does work in the way that writers like Coase have suggested (RH Coase, 1960). That is the users should pay for the use of the environment.

The European Union's Emissions Trading Scheme (ETS) is the largest of its type in the world and came into existence as a devolved alternative to a failed attempt to introduce an EU wide carbon tax. When it was launched in 2005, the ETS was regarded by some as a major step towards combating climate change because it was market based and put a ceiling on the level of emissions generated by the participants. However, by 2013 it is generally believed to have failed to deliver the promised reductions in carbon emissions. Instead it has created a mechanism which is susceptible to fraud, gross levels of profiteering and it is a mechanism which has been subject to gaming by many industry players. A combination of too many permits being issued and a falling off in demand for permits due to the recession, along with real technological improvements led to a surplus of credits. Whilst these events might well have been unforeseen, the result was that the price of carbon credits fell and the main driver of reductions in emissions could be attributed the state of the economy. So ETS has proved to be a poor substitute for the carbon tax or even no action at all. Added to this, the attempt to widen the scheme to include international airline traffic led to threats of sanctions from the EU's trading partners, including the possibility of a boycott of the Airbus by China. The decision has been made to suspend the extending of the scheme “stopping the clock”. This

paper argues that ETS is not only a distraction but also an inefficient way to reduce emissions. However, it may well be that international pressure actually benefits the EU by forcing it to either introduce major reforms or even abandon it.

The ETS is an attempt to create a market based system for the right to pollute the atmosphere and is an acknowledgement that it is virtually impossible to have a situation where there is zero pollution, so the alternative to this is to place a market price on the right to discharge pollutants into the atmosphere. The scheme allocates permits to release carbon dioxide or equivalent greenhouse gasses, but the allocation of permits is reduced overtime leading to a declining cap on the quantity of gasses released into the atmosphere. If a growing business or a particularly poorly performing environmental performer requires additional permits to discharge more gasses into the environment they have to bid for additional licenses from companies whose businesses have been shrinking or who have had a managed to achieve superior environmental outcomes. The bidding for additional permits takes place within a market based structure and the idea is that market signals generated by the buying and selling of permits should in theory encourage businesses to reduce their output of CO<sub>2</sub>, so that if the scheme is working well there is an incentive because of the possibility of rising prices to become more efficient. It is a scheme beset by problems associated with the recession which has not only reduced the demand for permits, because there has been a decline in the discharge of CO<sub>2</sub> anyway.

## **The Carbon Tax**

The 1988 Toronto Climate Change Conference saw several countries pledging to reduce their CO<sub>2</sub> emissions by 20 per cent, specifically the Nordic states. (Elkins, 2009) In 1990, the Dublin European Council undertook to restrict carbon dioxide CO<sub>2</sub> as part of its commitment to limit the extent of climate change. Part of the strategy suggested in the “Environmental Impact Declaration” which was adopted by the Council, was to use supplement command and control methods where appropriate by economic and fiscal instruments (European Council, 1990).

In 1992, the Commission proposed the introduction of a carbon tax to limit CO<sub>2</sub> emissions. The Framework Convention on Climate Change (UNFCCC) which aimed to stabilise greenhouse gas emissions, was adopted in 1992 and subsequently signed and ratified by some

195 parties, including the EU and the Member States. This was followed by the 1997 Kyoto Protocol which committed the EU to reducing its greenhouse gases emissions by 8% during the period 2008-2012 in comparison with 1990 levels. In practice, this required an estimated reduction of 14% compared to what might have been the case without intervention (Commission of the European Communities, 2000).

Carbon taxes are a levy on the energy sources that emit carbon based upon their carbon content. A carbon tax is an environmental fee normally charged by governments which is designed to promote emission reductions. If an EU wide tax had been introduced, it would have been paid by almost all citizens who consumed petrol, heating oil and aviation fuel. Emissions trading, which is discussed later in this paper, is an initiative which is restricted to the corporate sector.

The benefit of a carbon tax is that it can be used to make those who use the environment (because of pollution) pay for the cost they impose on society. Carbon taxes are market based instruments which normally means that the more emissions into the environment the more tax is paid. In this sense it is predictable and can be simple and quick to implement once the scope and the level of tax has been agreed to. If a business decides to expand production it will increase its expenditure on carbon taxes, in which case the government gains more revenue. Businesses can also mitigate the impact of the tax by becoming more efficient users of carbon. If they work well carbon taxes should;

- Give a long-term certainty to enable business planning
- Promote resource efficiency
- Provide an incentive for green innovation

The problem of trying to reduce emissions by the use of taxation is that this might have an impact upon industrial competitiveness. Lobbyists representing high energy users point to the fact that they would be disproportionately impacted upon by a carbon energy tax, but any attempt to mitigate this would mean that the burden of carbon reduction would be fall upon a narrower range of users (Nikos Kouvaritakis, 2005).

Governments have a choice about how they care to use the revenue. The revenue raised can simply be paid in to the exchequer or be recycled back into worthwhile projects. In this sense it can be a revenue neutral tax because it taxes something which is bad for the environment

and potentially reduces the taxes on things which are good for society for example employment. The appearance of tax neutrality is important from the point of view of the public perception and the reality of neutrality is important because of the need to retain the international competitiveness of the economy. This seems a compelling argument, but in reality it is less so in a global system which all the trading nations are subject to competitive pressures. Going it alone with respect to taxation systems can lead to a loss of competitiveness especially where the taxation is targeted on high energy usage, so it is not clear that new national taxes of this type will improve economic performance. Indeed many of the benefits claimed for carbon tax cannot easily be judged. However, any impact of going it alone can be mitigated by collective action, hence the need to think about a carbon tax for the whole of the EU.

Carbon taxes are not well liked by the general public because they are taxes. For this reason they can become highly politicised with decisions being delayed because of protests often whipped up by politicians who care little for the issues underpinning the introduction of the taxes. They can also be regressive, because they may place an increased burden on poorer households because they tend to spend a higher percentage of their incomes on heating than the more affluent.

The 1990's proposal for EU a carbon tax was not successful and was withdrawn in by the Commission in 2001 because of the combined opposition of key member states and industrial lobbyist. It is tempting to see this outcome as demonstrating, once again, that the need for unanimous agreement on taxation can frustrate fiscal innovation, however, there may not even been a qualified majority of states in favour of the initiative because of a widespread view that raising taxes remains the business of the member states. By 2009, carbon taxes were being discussed again and the new Commission which came into office in 2010 re-launched the idea of a minimum carbon tax in June 2010. This initiative illustrates the complexity of the policy process, with Algirdas Šemeta, the commissioner for Taxation leading the proposal, but with support from support from Connie Hedegaard, the commissioner for Climate Action, and Janez Potoc̃nik, the commissioner for Environment. Whilst there was support from some states for the idea, notably the Nordic states who had a national carbon tax, the requirement for unanimity in the Council of Ministers remains as a major hurdle. It was suggested that the tax would cover motor fuel, energy for heating and would apply to households and to sectors not covered by the ETS. Predictably the car industry was quick to respond to the threat because of a threat to raise the price of diesel,

which is taxed less than petrol in some member states. Other industrial groups were also concerned that such a proposal would impact upon their overall competitiveness. What might keep the issue on the political agenda is the growing number of states thinking of raising their own carbon taxes and the need to harmonise these initiatives. Also, many member states may see a national carbon tax as a way of raising additional revenue, so may be less concerned about tax neutrality issues.

## **The EU's Greenhouse Gas Emission Trading System (EU ETS)**

The EU has attempted to control emissions by allowing polluters who own permits to use the environment, but at a price (Council, 2003). If they do not have sufficient permits to meet their needs, they must purchase them from other producers who have a surplus. Over time, the number of permits will be reduced making the businesses seek to improve their efficiency and reduce their level of emissions. This so called “cap and trade” system accepts that there will be pollution, but the extent of the damage must be reduced by charging a price for the environment, so that firms internalise a social cost within their pricing system which was regarded as free in the past. If the scheme works well, the overall level of discharge can be determined and capped. For example, starting from 1,974 million tonnes of carbon dioxide in 2013, the EU ETS cap will decrease by 1.74 per cent per year, arriving in 2020 at a reduction of 21 per cent below reported 2005 emissions.

The advantage of the EU Emissions Trading System is that there is a market for permits which allows those businesses that can reduce their emissions speedily to trade surplus permits to those who cannot. So heavy polluters must pay if they are less efficient or have less scope to reduce emissions. The idea behind the scheme is to create a scarcity of permits, so that those companies which reduce their emissions can sell their permits to others who find it not cost effective to do so or are not actually able to do so. In the longer term, even those who find it expensive to reduce emissions, businesses may choose to invest in improved technology.

The national regulatory authorities can allocate the permits in a number of ways

- Grandfathering - free, based upon historical usage – but not good for new entrants who have no rights
- Benchmarking – free, based upon the use of a particular technology

- Auctioning – to the highest bidder – prices have varied from under €3 per ton to nearly €30 per ton

The highest bidders in an auction are usually those businesses who find it difficult to reduce their emissions. The problem of such schemes comes when deciding who will have the permits in the first place. Many of the allocations were based upon historic pollution records, but, records have tended to be poor at an industry level, in part because the EU grown and its industrial structure has changed a great deal since the collapse of communism in the late 1980s. Issuing permits rewards those businesses or industries which have performed worst in the past. In such circumstances, lobbyists have proved adept at defending industries which have often had a poor pollution record. Particularly in the period prior to the introduction of such schemes, there is an incentive to do little to improve emissions, because this will take away the rewards of reducing emissions once the scheme is in operation.

The UK ran a voluntary Emissions Trading Scheme from 2002 to 2006, as a pilot prior to the mandatory EU scheme which is now in place. Participants were allowed a discount from the Climate Change Levy if they made reductions whilst participating in the scheme. At that time carbon trading was something of a novelty and it allowed for some of the practical lessons of operating such a scheme to be discovered.

The EU's ETS began operation in January 2005 is the centre of its strategy to combat the threat of climate change. Initially there were 2 billion tradable permits issued per year. Now there are over 11,000 installations in the industrial and energy sector participating in the scheme. These collectively cover nearly 50 per cent of the EU27's carbon dioxide emissions and 40 per cent of its (GHG) emissions, making this the world's largest multi-country, multi-sector Greenhouse Gas Emission Trading System. The scheme has been planned to operate over three phases so far. The first phase covered the period 2005 to 2007, in the second phase 2008 to 2012 the scope of the scheme was expanded, and in the third phase running from 2013 to 2020 there are proposals to set more ambitious targets.

ECN, an independent Dutch energy research organization, forecasts that without intervention there will be zero emissions reduction from ETS until at least 2020, indeed they thought that without a reduction in the number of permits the oversupply of these might last through 2025. The market is on course to have a surplus of 2.2 billion allowances in 2013, equivalent to a full year of emissions by industry (Scott, 2013).

A way of evaluating ETS is to try and project what might have happened if the scheme had not been introduced – what the UK government has called “business as usual” (BAU) (House of Lords, 2009). But of course these projections are based upon estimates which build upon past trends, but the counterfactual case can only be speculative; indeed there may be a range of potential outcomes. Overestimates for the BAU have the effect of exaggerating the success of the ETS and the initial level of credits. Also, the purchase of carbon credits may not actually lead to carbon reductions for example if the reduction would have happened anyway without being able to sell the credit onwards. So for example a company might be awarded credits for a plant that was due to close. In this case, the money received for the carbon credits would not be used to fund a reduction but would amount to buying “hot air”. In other cases, it has been possible for steel manufacturers to import semi-finished steel from outside the EU, which means that the reduced internal EU emissions are not real, because the main industrial process takes place elsewhere.

Since the launch of the scheme there have been doubts about its effectiveness of the ETS. The scheme is complex and difficult to understand in an operational context leading to a degree of inefficiency. As the scheme has operated over time, there have been a number of cases of fraud, involving as much as € billion. This fraud undermines the integrity of the scheme and suggests that more needs to be done to make the operation of the scheme transparent (Chaffin , 2011).

The scheme has been criticised for being too generous, with free permits giving the potential of windfall to polluters. Schemes such as this one always have problems dealing with volatile demand patterns, which can affect the price of permits significantly. The primary reason for the EU’s low carbon price is the economic recession, which has suppressed demand for emissions allowances because production is down, thus manufacturers’ emissions are too.

A secondary reason for the low carbon price is the high number of “generous” exemptions for the scheme handed out to energy-intensive industries, says Marcus Ferdinand, senior market analyst for Thomson Reuters Point Carbon, a carbon market information provider. In 2013, just over 50% of the 2.1 billion metric tons of allowances provided by the EU will be sold through auctions with the remainder due to be allocated free of charge. The fall in price could have taken away a signal to improve efficiency, had it not been for relatively high fuel prices. Permits are bankable, so in the longer term, surplus permits could be sold at a huge profit or kept for later use. Some estimates suggest that there may be as much as 700 million tonnes

worth of permits to carry over to the post 2012 period. This means that the market for permits is likely to remain highly liquid for some time, and therefore it is more likely to be subject to volatility.

At the start of the slump in 2008 supporters of ETS feared that the price of permits would fall. Point Carbon (an energy consultancy) forecasted in 2009 a price of €24 by 2012, down from a forecast of €29-€32 before the economic crisis took hold (Harvey, 2009). The reality was much more severe as the price of permits dropped to €2.63 in January 2013 (Clark, EU votes to prop up carbon prices on emissions trading system, 2013) from a peak of nearly €30 per tonne in July 2008. These low cost permits meant that the ETS provided no incentive to become more efficient. This led to lobbying within the EU and the eventual decision in July 2013 by the European Parliament to backload (withhold) the permits was taken initially in July 2013. The move was meant that reduce the supply of traded permits, but of course the practicalities of this kind of measure take time so that on the 22<sup>nd</sup> August 2013 the price was still only €4.43 per tonne.

The failure of the ETS scheme to operate as effectively, could weaken the EU's aim to offer global leadership in the fight against climate change. It could also make the prospect of a global carbon market a more distant prospect. If the price of carbon permits is too low, then perhaps the EU might consider placing a minimum floor price for permits or actually withdrawing permits from the market place. If on the other hand prices for permits are too high in the EU, then industrial competitiveness might suffer and some industries might consider moving production overseas. Schemes like the ETS take time to refine and operate best in fairly stable and predictable environments. If the scheme fails to verifiably reduce carbon emissions on its own account and does not deliver a stable price for carbon to be traded, it cannot be viewed as a success.

## **An Airline Tax**

A significant anomaly with respect to ETS was the exclusion of aviation from the original scheme. The aviation sector is international and there are problems with enforcing such a scheme. Aviation taxes are an effective way to raise money at a national level, but they do not appear to have dampened the enthusiasm for flying. Whilst there has been a fall in the total level of EU GHG emissions, international aviation grew by 100% in the period 1990 to 2006. This is despite the introduction of modern and efficient fleets of aircraft. Attempts were

made to include Aviation emissions in the scheme when it was amended in 2009 (Council, p. 2009) (Council, 2008).

As of 2012 airlines were to be included in the scheme, but not surprisingly there were protests from some of the 4000 airlines which are expected to take part. This is especially the case in those countries where there is already a passenger based tax, but this particular tax is more concerned with revenue raising rather than improving environmental performance. There is also a sense of grievance from those airlines that are based outside the EU, but appear to be trapped into participating in this scheme. The scheme caps airline emissions at 97% of their 2004- 2006 levels in 2012, falling to 95% in 2013. Although 85% of the permits will be free they will have to buy 15% of the permits through auction, which means that the scheme actually raises money from these sales. The base year for allocating the licences was 2010, a year when a large number of flights were cancelled because of the eruption of a volcano, illustrates the problem of setting allowances. No year is ever a normal year. Many airlines lost money during the 2008-2009 recession so the fear is that the scheme might cause further financial problems to the sector.

Airlines are expected to engage in the ETS if they wished to expand their activities across European skies. By doing so the EU included non-EU countries into a taxation scheme which had many hallmarks of extraterritoriality. That is, airlines found that they had to pay for carbon credits by engaging with ETS, when in the past they could avoid doing so. There might well not be taxation issues of course, given that airlines were given 85 per cent of their quota of permits for free, but it was estimated that it might put €6 to €12 surcharge on a transatlantic ticket (Chaffin, 2012). There are other charges which foreign airlines face when operating in the EU, including landing charges and taxes on airline tickets.

There were significant protests from number of important countries against the scheme creating a coalition of the states' unwilling to participate including the US, China, India, the Russia Federation, South Korea and Japan. The claim was that extending the scheme violated International Civil Aviation Organization (ICAO) rules. The ICAO had not been very effective at introducing a worldwide scheme, which was the justification for the EU ETS extending itself into this area. However, the scheme was regarded as being hostile to international carriers, in particular because the scheme claimed jurisdiction by involving the part of the flights outside EU airspace. Also it was contrary to ICAO rules which prohibit fuel taxes. The issue succeeded in uniting the world against the EU as well as creating concern

amongst the EU's aerospace manufacturers. The purchase of new aircraft by China proved to be a powerful weapon against ETS for airlines. In April 2012 it was suggested that as much as \$14 billion of orders could have been delayed by the dispute (Clark, 2012). The continued boycott of aircraft purchase could have had a serious impact on a very important EU industry and cause significant job losses.

As a result of the issue threatening to damage relations with important trading partners, the Commission decided to suspend the scheme in November 2012 for one year, which will give the ICAO an opportunity to devise a scheme of its own. Meanwhile the EU is still attempting to require the surrender of permits for the proportion of the flight taken in EU airspace. The result was that the Commission suggested that eight Chinese and two Indian airlines faced fines totalling €2.4 million from the member states for their non-participation (AFP, 2013). Agreement will be difficult especially in the light of the Chinese Government's view that;

"We will not participate in the EU's Emissions Trading Scheme (ETS), submit emission monitoring data to EU member states, nor enter into talks with the EU for possible preferential terms," Chai Haibo, deputy secretary-general of the China Air Transport Association (CATA) (People's Daily on line, 2013)

Many airlines were issued with credits which they did not have to use and so were able to cash these in. In addition the airlines also gained where they actually raised their prices in anticipation of their being impacted by ETSUS airlines raised their ticket prices by \$3 each. One estimate of the so called "stopping the clock" was that the airlines gained a windfall of between €679 and €1,358 (Faber, 2012). It is thought that because intercontinental airline traffic increased significantly from 2004-6 when the allowances were based to 2012 that they would have had to make purchases of permits, even allowing for aircraft becoming more efficient.

## Conclusion

Despite claims to the contrary, the ETS operates as a de facto tax, but in environmental terms the market signals generated by the price of permits is highly erratic at best. The price of

permits could be said to generate counter cyclical messages with 2008 being a high point in the market and 2013 being a low point, because of the recession. These highly erratic swings mean that the investment that business takes will often be by short term imperatives because the longer term benefits cannot be relied upon. But the highly erratic price signals are not caused entirely by the economic cycle; they are more a product of the schemes mismanagement.

The scheme will continue for some time however, largely because of the political capital that has been invested in it. In addition to this, the making of a market gives opportunities for traders to operate and generate a profit. It is in the interest of all concerned in both government and traders to see the scheme as one where the actors are learning and so the excuse for the poor performance is that unplanned events distort the market processes. Also it is difficult to envisage that an alternative could be easily put in place. Whilst amendments to the scheme through backloading can be achieved via administrative orders it will take the 28 member states to agree (with unanimity) to the introduction of a carbon tax. So the ETS carbon permits will have to remain, and will continue to be, in the phrase of the secretary-general of EURELECTRIC, an electricity providers' association, "junk bonds" (Economist, 2013). Capping of carbon output seemed to be an easy way forward, but the reality it is much easier to adjust price through a tax.

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