

Creating an ambitious and equitable UK carbon market

It is highly likely the UK will leave the EU ETS (emissions trading scheme – for reducing greenhouse gas emissions) at the end of the Brexit Transition Period. The UK government is considering its main options, these being to re-establish a UK national ETS or to implement a carbon tax. Whichever option it chooses, the over-riding concern is that its approach must be both ambitious and equitable across the whole of society.

The challenge

One of the reasons we are facing a climate catastrophe today is that, ever since the Industrial Revolution, the atmosphere has been used as a limitless dump for greenhouse gases (GHGs) with no cost or penalty for the polluter. All polluters, industrial (e.g. electricity generators, heavy industry, manufacturing) and domestic (e.g. cars, central heating and hot water boilers), have simply vented their waste CO₂ emissions into the atmosphere through chimney stacks, exhaust pipes and flues. The atmosphere has now become so overloaded with greenhouse gases it is undergoing significant change, which is exactly what we are seeing with the earth's climate today.

“The Polluter Pays” principle, in which companies and people pay in some form for the GHGs they emit, is the primary weapon liberal societies have to curb emissions and encourage the use of cleaner solutions. Governments must apply this principle urgently and forcefully worldwide if we are to prevent a full-on climate catastrophe. But, at the same time, whatever governments do to address the climate crisis, the costs must fall in a fair and just way across society. No matter how *The Polluter Pays* principle is applied, it will inevitably increase the costs to the end-consumer. There needs to be a matching compensation made elsewhere within the economic system; otherwise, poorer people will be hit hard whilst wealthier people (who tend to have larger carbon footprints anyway) will be only lightly touched.

Governments face a two-part challenge. How do they apply *The Polluter Pays* principle effectively and efficiently, and what else should they do to ensure the result is equitable across the whole of society?

The answer

The answer to Part 1

It is widely recognised that the most economically efficient way to apply *The Polluter Pays* principle is by creating linked international carbon emissions trading schemes (ETSs)¹. In an ETS, regulators sell polluters within their jurisdiction annual permits which polluters are legally required to have in order to generate a given amount of GHG emissions (usually

¹ ETSs are one way to apply the principle, not the only way. And they are not a silver bullet. They serve as just one part (but an important part) of the broad array of government strategies, policies, plans and actions needed to address the climate crisis.

measured in tonnes of CO₂). Each regulator sets a cap on the amount of emissions permitted within its jurisdiction in any year, and uses market forces (the sale of permits by auction) to set a going price for each tonne of GHGs emitted. For the ETS to be effective, the price of a permit to emit a tonne of GHGs needs to be high enough to drive significant emissions reduction. And to protect mankind from catastrophic climate change, national emissions caps need to shrink each year at a rate sufficient to achieve net-zero by 2050 at the very latest.

There are many ETSs in operation today but they fall a long way short of achieving net-zero by 2050. The UK was the first to create a multi-industry ETS. It did this in 2002, partly as a learning exercise and partly as a forerunner to the forthcoming EU ETS into which the UK ETS was folded in 2005. An audit in 2006 concluded that the UK scheme did achieve some emission reductions, though more could have been achieved had it been more demanding.

The EU created a multi-national multi-industry ETS in 2005. It was, at that time, the largest ETS in operation and it remained so until 2017 when it was surpassed by the newly-created Chinese national ETS. The problem with the EU ETS is it suffers from timidity. It started off issuing more permits than its polluters needed so there was effectively no cap imposed on GHG emissions. And it allocated far too many of those permits free of charge so the going price for the remaining permits set by the auction market never got high enough to have much effect. The price of a permit to emit a tonne of CO₂ rose from a low of less than 1€/tonne in 2007 to 7€/tonne in March 2012 and 22€/tonne in March 2019. This is far too low to drive serious emissions reduction. If the EU's ambition to achieve net-zero by 2050 is to be credible, it has to be aiming for a price of €100-200/tonne.

Whether the UK remains within the EU ETS after the end of the Brexit transition period or leaves it, the UK will need to drive down its GHG emissions rapidly. This means it needs to be within an ETS that has the ambition and strength to be effective. If the UK decides not to stay within the EU scheme, it should relaunch a greatly invigorated, ambitious UK ETS immediately.

The answer to Part 2

The second part of the challenge facing the UK is that, if its ETS is to have enough ambition to be effective, it needs to be accompanied by other measures that ensure the price adjustments necessarily caused by the ETS fall in a way that is equitable for all members of society, regardless of wealth.

One simple and effective way to do this would be to pair the ETS with the reduction or even removal of VAT. When a government sells ETS permits, polluters incur a cost and the government generates new revenues. The polluters pass those costs on to the consumers of their products and services. In this way, charging for permits acts as a consumption tax on consumers, with that tax being aligned with the level of GHGs emitted in the production of the product or service consumed. We already have a consumption tax; it is called VAT. To prevent this new GHG tax from adding to the tax burden for consumers, the revenues it generates should be used to reduce or replace VAT. The ETS emissions cap should be set on a trajectory to achieve net-zero by 2050 and the revenues the government collects from the

sale of permits should be used to reduce the VAT rate and, if possible, to eliminate VAT entirely.

Conclusion

This solution of pairing an ETS with the replacement of VAT achieves all the goals. The ETS increases the cost to the polluter of emitting GHGs and incentivises the development of less-polluting solutions. Consumers would see high price rises for high-emissions options (e.g., driving an old low-mpg SUV), only partly offset by the reduction in VAT, and low price rises for low-emissions options (e.g., driving a small hybrid or electric car), which would be more than offset by the reduction in VAT. This would motivate consumers to choose low- or zero-emissions options and spur the market to provide those options. With the revenues from the ETS being used to reduce the VAT rate, the change would be broadly neutral for the economy whilst aligning consumption costs more strongly with the amounts of GHGs emitted by that consumption. This would be fair and just for people across all levels of wealth in society.

Creating an ETS hand-in-hand with the reduction of VAT is a win-win solution. It is a solution that works within a market economy. GHG emissions would be driven down. The costs would be fair for consumers. And it would no longer be free for polluters to pollute. What's not to like about that?

Supporting addendum

How pragmatic is an ETS?

A 'price on carbon' is a cost applied to GHG emissions to encourage emitters to reduce the amount of GHGs they pump into the atmosphere. It usually takes one of two forms, either an emissions tax imposed on polluters (a carbon tax) or a legal requirement for emitters to purchase permits from the government to enable them to emit, usually administered through an Emissions Trading Scheme or ETS. Putting a price on carbon is widely agreed to be the most economically efficient way for nations to reduce global warming emissions^[1], and carbon pricing is now in place in 46 national and international jurisdictions, covering around 20% of global emissions^[2].

In a market economy, market forces create a linkage between the price of carbon and the level of GHG emissions produced. As the carbon price increases, the level of emissions should fall. If the carbon price is achieved by setting a carbon tax, the charge for each emissions unit (i.e. for a tonne of CO₂ emitted) is fixed directly by the tax and the level of emissions that results is arrived at indirectly through the action of market forces. If a carbon price is achieved by setting a cap on the permitted level of emissions, the level of emissions is fixed directly by the cap and the going price for an emissions unit is arrived at through the action of market forces. Both approaches, setting a carbon tax and setting an emissions cap, have their pros and cons though, generally, when the primary objective is to contain the level of atmospheric GHGs within a safe level rather than to generate a given amount of revenue, an ETS is the more appropriate approach to adopt^{[3][4]}.

Emissions trading schemes have been in existence for around 20 years. Emissions trading was recognised as a suitable mechanism for countries to reduce their GHG emissions in the Kyoto Protocol (adopted in 1997 and entered into force in 2005). The UK created the first multi-industry trading scheme in the world in 2002, as a learning experience and as a pilot for the EU ETS that was to come. An audit of the UK ETS in 2006 concluded that the ETS did achieve some emissions reductions, though more could have been achieved had targets been more demanding^[5].

The EU created its multi-national multi-industry ETS in 2005. The EU ETS was the first large greenhouse gas emissions trading scheme in the world, and it remained the largest until 2017 when it was overtaken by the newly formed Chinese national ETS^[6]. It encompasses more than 12,000 large emitting installations across 31 countries — all 27 member states of the EU plus the UK, Iceland, Norway, and Liechtenstein. However, it does not cover transport in full, or domestic and office heating, or agriculture, all of which are significant emitters of GHGs. In 2016, the installations regulated by the EU ETS were collectively responsible for close to half of the EU's anthropogenic emissions of CO₂ and 40% of its total greenhouse gas emissions^[2]. A 2020 study estimated that the EU ETS had reduced CO₂ emissions by more than 1 billion tonnes between 2008 and 2016^[7] though this is equivalent to only 3.8% of the total EU-wide emissions during that time. Hence, even though the EU ETS is one of the two largest schemes currently in operation, its effects have remained small.

The EU ETS operates in phases called ‘trading periods’. The first trading period was Jan 2005 – Dec 2007 and was considered “a learning period”. The second was Jan 2008 – Dec 2012. The third was Jan 2013 – Dec 2020. In both the first and second trading periods there was an oversupply of permits and too many of those permits were allocated (issued free) to existing emitters rather than auctioned^[8]. This led to the price of an emissions unit remaining far too low for far too long (at one point, falling to less than 1€/tonne) such that it provided little incentive for significant emissions reduction. This was exacerbated by the credit crisis in 2008 and the subsequent ‘natural’ reduction in European GHG emissions as a result of the recession.

To incentivise the development of low-carbon solutions (e.g. sustainable electricity generation, electric vehicles, ground-sourced heating for buildings, emissions-lite manufacturing), carbon prices need to be kept stable and sufficiently high^[2]. Recognising this, the EU has moved to strengthen the effectiveness of its ETS and improve price stability during the third trading period. The over-supply of permits has been addressed, the EU ETS cap is set to fall predictably over time, and an increased proportion of permits will be auctioned rather than allocated. Following these reforms, the price of allowances has increased reaching a level of 22€/tonne in March 2019. However, even this is too low to generate much incentive for emissions reduction^[9]. To put this price into context, a recent report by the Grantham Research Institute has recommended that the UK Government should be aiming for a price of £100-160/tonne if its ambition to achieve net-zero by 2050 is to be credible^[10].

How to use the revenues generated

It is unclear at this time how much revenue an ETS could be expected to generate each year as emissions caps tighten and the carbon price grows, and whether that would become sufficient to replace VAT or just to make a large dent in the prevailing VAT rate. Whatever the answer, the purpose of using the revenues to mitigate VAT is to make the solution more equitable than it would be on its own without something being done to compensate for the higher costs consumers would face.

Other options besides mitigating VAT include using the revenues to fund primary research (such as developing efficient and scalable ways to capture CO₂ directly from the atmosphere) and providing citizens with an annual flat-rate cash payment (a ‘citizen’s premium’). If the funds were used for research, they would not be returned directly to consumers and the equity requirement would remain to be satisfied in some other way. A citizen’s premium would be more progressive than a reduction in the VAT rate, but this would then open up a whole new, possibly quite contentious discussion around the principle of giving citizens direct cash payments. It might be difficult to get the level of democratic approval needed for that idea.

Using the revenues to mitigate VAT is a compromise solution that responds to the equity requirement whilst minimising the risk to achieving a sufficient carbon price that would come from tying it to politically difficult arguments about how to compensate consumers.

Postscript

It is likely the UK will no longer remain a member of the EU ETS following its exit from the EU. This would give the UK the opportunity to take back control of its implementation of the UK ETS and address the recognised shortcomings of the EU scheme. With its mature carbon market and high levels of expertise, the UK is well-placed to develop a much more ambitious emissions trading scheme with a far greater downward effect on national emissions. It could become a global leader setting a credible course for net-zero emissions by 2050 and driving improvements in carbon markets across the world.

The UK Government's stated position on remaining within the EU ETS or going it alone is^[11]:

The UK Government and Devolved Administrations consulted on the future of carbon pricing in the UK after EU Exit in May 2019. [A response to this consultation was issued in June 2020.](#)

As stated in 'The Future Relationship with the EU: The UK's Approach to Negotiations' the UK would be open to considering a link between any UK Emissions Trading Scheme (ETS) and the EU ETS (as Switzerland has done with its ETS), if it suited both sides' interests.

If a linking agreement is not agreed, the UK Emissions Trading system will operate as a stand alone system or a Carbon Emissions Tax will be implemented as an alternative means of ensuring a carbon price remains in place in all scenarios. A consultation on the Carbon Emissions Tax is open until 29 September 2020.

The UK government and the devolved administrations are firmly committed to carbon pricing as an effective tool for achieving our carbon emissions reductions targets for net zero. Any future system will be at least as ambitious as the existing scheme. Leaving the EU will not affect our statutory commitments under the UK's Climate Change Act, which is domestic legislation. The UK will also remain a Party to international climate change agreements, including the Paris Agreement. Its commitment to them will remain as strong as ever and will be unaffected by leaving the EU.

References

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