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Leaving an emissions trading scheme –
insights from the United Kingdom

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Abstract: The United Kingdom may opt to leave the EU Emissions Trading System (ETS) for greenhouse gases. If so, a central plank of UK climate policy will need to be replaced at short notice. The UK is a large importer of emission permits, and meeting its climate policy targets would be much harder and dearer without the EU ETS. The impact on the EU would be limited, although UK permits circulating in the rest of the EU would lose their legal standing between Brexit and 2021. Non-EU countries take part in the EU ETS, and this appears to be the best option for the UK post-Brexit.

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Key words: climate policy; tradable permits; Brexit; EU ETS

1. Introduction

The history of emissions trading schemes is generally one of expansion over time – increasing the coverage, adding new regions or countries. There is an extensive literature that addresses the issues arising and guides those in the policy process as they consider initiation or expansion (WorldBank 2016). There is no guidance as to whether and how to navigate proposals to depart from a trading scheme.

This issue is now facing the UK, which has decided to terminate its membership of the European Union (EU), Brexit for short. As a member of the EU, it is also a member of the European Union Emissions Trading Scheme (EU ETS) for greenhouse gases. Brexit may end the UK's participation in the EU ETS. ETSexit poses challenges for the European Union, but larger ones for the UK as it has to re-regulate emissions. Given the complexity of the issues to be addressed, including the tradeoffs that both the UK and the EU will face across a range of issues, it is difficult if not impossible to assign probabilities to outcomes. This Policy Brief will take this event as an opportunity to both elucidate the specifics of the issue, and to provide insights of the economic implications, and some policy guidance.

The UK does not need to leave the ETS when leaving the EU. Norway, Iceland and Liechtenstein are inside the ETS but outside the EU. But the UK would have to leave the ETS in order to completely withdraw from the jurisdiction of the European Court of Justice, as is the wish of Prime Minister May. The responsible departments, Business, Energy and Industrial Strategy (BEIS) and Environment, Food and Rural Areas (DEFRA), have yet to take a position on ETSexit, and the Commission for Climate Change has yet to recommend a course of action. A parliamentary committee has argued against ETSexit, particularly so before 1 January 2021. British politics is currently volatile and chaotic, but there is a distinct possibility that the UK will exit the ETS in March 2019.

The ETS is the world's largest market for emission permits, covering some 45% of EU greenhouse gas emissions from 11,000 installations. The ETS is currently in its third phase, which runs from 1 January 2013 to 31 December 2020. Permits are valid for the entire period. At the macro-scale, intertemporal fungibility is necessary because energy use and thus carbon dioxide emissions vary unpredictably with the weather, the business cycle, etc. Emissions for individual companies vary from year to year for a host of additional reasons. Multi-year permits make hedging much easier.

The multi-year emission budget complicates ETSexit. The easy solution is for the UK to leave the EU on 1 January 2021. The third phase of the ETS will conclude with the UK, and the fourth phase will start without it. The preparations for the fourth phase would need to be partly redone, but that is about it. However, as things stands, Brexit, and presumably ETSexit, will be on 30 March 2019. Complications arise.

The paper continues as follows. I first discusses the implication of ETSexit for the EU, and then for the UK. Section 4 explores possible solutions. Section 5 concludes.

2. Implications for the EU

The overall number of emission permits in the ETS will have to be adjusted downwards to reflect the share of the UK. This is not complicated in principle. Permits are issued and

auctioned at regular intervals. The UK's projected emission allocation for 2020 is around 140 million tonnes of carbon dioxide equivalent. This is small relative to 900 million allowances taken out of the 2014-2016 auctions and added to 2019-2020 auctions.¹ However, previous attempts to adjust the volume of permits² exposed the fragile compromise behind EU climate policy, reflecting the different priorities in Eastern, Western and Southern Europe (Chaton, Creti, and Peluchon 2015, Hu et al. 2015, Richstein, Chappin, and de Vries 2015, Grull and Taschini 2011).

ETSexit would imply the loss of the UK demand for EU27 permits. As the UK's share of EU emission is projected to fall to 8.2-8.4% in 2020,³ this would lead to a mild, downward shock in the price of emission permits.

Nonetheless, the average permit price at auction was €5.86/tCO₂ in the four weeks leading up to June 23, the date of the referendum, and €4.67/tCO₂ in the four weeks after, a price drop of 20%.⁴ See Figure 1. The price drop was probably due to a combination of factors, including reduced UK demand for permits, an expected slowdown of economic growth across Europe, and the departure of an environmental champion in the EU. Price volatility may increase in the run-up to ETSexit as UK companies sell the permits they stocked for the final years of the budget period, or the options to buy such permits.

The ETS is administered by DG Climate Action of the European Commission but monitoring of emissions and enforcement of emission reduction is the responsibility of the Member States. More precisely, the Member State in which the permit originates ensures that permits sold correspond to emissions reduced. The UK has been a net importer of permits, but nonetheless many permits from the UK circulate in the rest of Europe.⁵ These permits are issued and regulated by the devolved administrations of the UK. Upon ETSexit, these agencies will need to continue to implement Directive 2003/87/EC and its amendments⁶ lest UK permits lose their legal standing in what remains of the EU.

This is what happened when New Jersey left the Regional Greenhouse Gas Initiative. New Jersey stopped issuing new emission permits after 2011, but committed to uphold the validity of permits issued before 2012. The other states continued to recognize New Jersey permits.⁷ While elegant, this solution requires that the UK accepts the jurisdiction of the ECJ until all UK permits will be surrendered.

¹ See https://ec.europa.eu/clima/policies/ets/reform_en

² This was in response to persistently low permit prices, due to overallocation of permits or rather lacklustre economic growth.

³ See <https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015>

⁴ Source <https://www.eex.com/en/market-data/environmental-markets/spot-market/european-emission-allowances#!/2017/06/13>

⁵ It has not been possible to estimate how many UK permits circulate in Europe. The ETS Transaction Log holds no data after April 2014. It records sales by nationality of the current permit owner, rather than the original owner. In 2013, UK registered companies sold 1.7 billion permits to companies registered elsewhere. In 2013, total UK emissions were 0.5 billion tonnes of carbon dioxide equivalent. This does not tell us anything about the amount of UK permits circulating in the rest of Europe but it does highlight the central role of London in the carbon market. The EU seeks to move the euro-clearing business from London once it loses its single market protections. Carbon markets may follow.

⁶ See <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02003L0087-20140430&from=EN>

⁷ RGGI also recognizes New Jersey permits issued for the years 2012-4, even though New Jersey does not. This increases the emissions cap. Pizer and Yates (2015) discuss the impact of delinking on futures markets.

If not, the EU should validate UK permits. This is a de facto weakening of the emissions cap, but it would preserve the integrity of the EU ETS.

3. Implications for the UK

In recent years, the UK has been a net importer of emission permits. In 2013, UK imports equalled 44 million tonnes of carbon dioxide equivalent, and 59 MtCO_{2e} in 2014.⁸ The UK aimed to reduce emissions by 232 MtCO_{2e}.⁹ Therefore, 18.9% and 25.4% of the UK emission reductions in 2013 and 2014, respectively, were achieved by imported permits. ETSexit means that the UK would have to actually cut emissions.¹⁰ This implies a sharp, upward shock – of at least 40%, assuming a quadratic cost function; see Tavoni and Tol (2010) – in the economic cost of emission reduction.

It is beneficial for the UK to stay permanently in the ETS. Upon ETSexit, a major part of UK climate policy disappears. The UK is committed to its emission reduction targets,¹¹ indeed Westminster has always argued for more stringent targets than Brussels (Veenman and Liefferink 2012). Without the ETS, it will be more difficult to meet those targets. The UK will have to set-up alternative regulations in time for ETSexit, or adopt more lenient targets for greenhouse gas emission reduction.

UK companies may protest the de facto expropriation of the excess EU permits and futures that they own, or the losses incurred as they sell off permits, at suppressed prices, in the months leading up to ETSexit. Other companies have taken long-term hedges on the energy market, counting on the UK being part of the ETS, or borrowed money against their stocks of permits. The additional regulatory uncertainty will hit investment in energy, a sector that already suffers from an excess in regulatory uncertainty and a dearth in investment.

The implications of Brexit go beyond the ETS. Nuclear power and interconnection are two additional planks of UK climate policy. Rejecting the jurisdiction of the ECJ implies leaving EurAtom so that the UK no longer complies with the Nuclear Non-Proliferation Treaty. Foreign companies are then forbidden to build, operate or supply nuclear power stations in the UK.

Investment in interconnectors is hampered by regulatory uncertainty in the two markets connected. The European Commission has worked hard to increase predictability and transparency and to harmonize power market regulation. Brexit will thus deter commercial investment in new interconnection capacity. Brexit will also end investment by the European Commission and the European Investment Bank.

4. Possible ways forward

⁸ See <https://www.eex.com/en/market-data/environmental-markets/spot-market/european-emission-allowances#!/2017/06/13>

⁹ See <https://www.theccc.org.uk/tackling-climate-change/reducing-carbon-emissions/carbon-budgets-and-targets/>

¹⁰ Note that, after the Brexit referendum, the House of Commons voted to maintain the strict emission reduction targets of the Climate Change Act 2008. See <http://www.bbc.co.uk/news/science-environment-36673894>

¹¹ See <https://www.theccc.org.uk/2016/07/20/fifth-carbon-budget-infographic/>

At the time of writing, we do not know which European institutions the UK will brexit. Leaving the ETS would pose a problem to the EU unless it happens on the 1st of January 2021. Leaving the ETS would be problematic for the UK at any time. It would therefore be advisable for the UK government not to ETSexit. If not, it should prepare for an overhaul of UK climate policy.

The UK could have its own ETS. Given the short time to prepare for Brexit, the UK ETS would likely be a carbon copy of the EU ETS. The UK ETS could be linked to the EU ETS – so that carbon prices are uniform, as they should be (Baumol and Oates 1971). Switzerland has in principle agreed to do exactly this. Linking permit markets is feasible (Jaffe, Ranson, and Stavins 2009, Helm 2003, Haites and Mehling 2009, Metcalf and Weisbach 2012, Rehdanz and Tol 2005), but it does require mutual recognition of emission permits, and a conflict resolution mechanism. The EU-Switzerland Linking Agreement has yet to be published, and the envisaged cross-border legal oversight is unknown to the current author. Switzerland does accept the jurisdiction of the European Court of Justice in selected issues.

Alternatively, the UK could abandon the ETS altogether in favour of its carbon tax. Tinbergen (1952) would have objected to current UK climate policy, with its double regulation by carbon tax and permit trade. Like a UK ETS, this option continues existing policy and is therefore neither legislatively nor administratively onerous. It does, however, create friction at the UK-EU border. Even though price instruments are generally preferred to quantity instruments for problems such as climate change (Weitzman 1974), here tradable permits may be better.

5. Conclusion

UK climate policy is tightly integrated with the EU. The decision by the UK to leave the EU means higher costs for its climate policy, and lower chances of meeting its emission reduction targets. The indecision by the UK what it wants instead of EU membership leaves HM Civil Service little time to replace Brussels by Westminster regulations. In order to buy time and minimize disruption to the EU ETS, the UK could negotiate a transition period and depart on 1 January 2021 – or better still, not depart at all. If that is politically infeasible, the UK should either create a UK ETS, closely modelled on the EU ETS, or raise its carbon levy.

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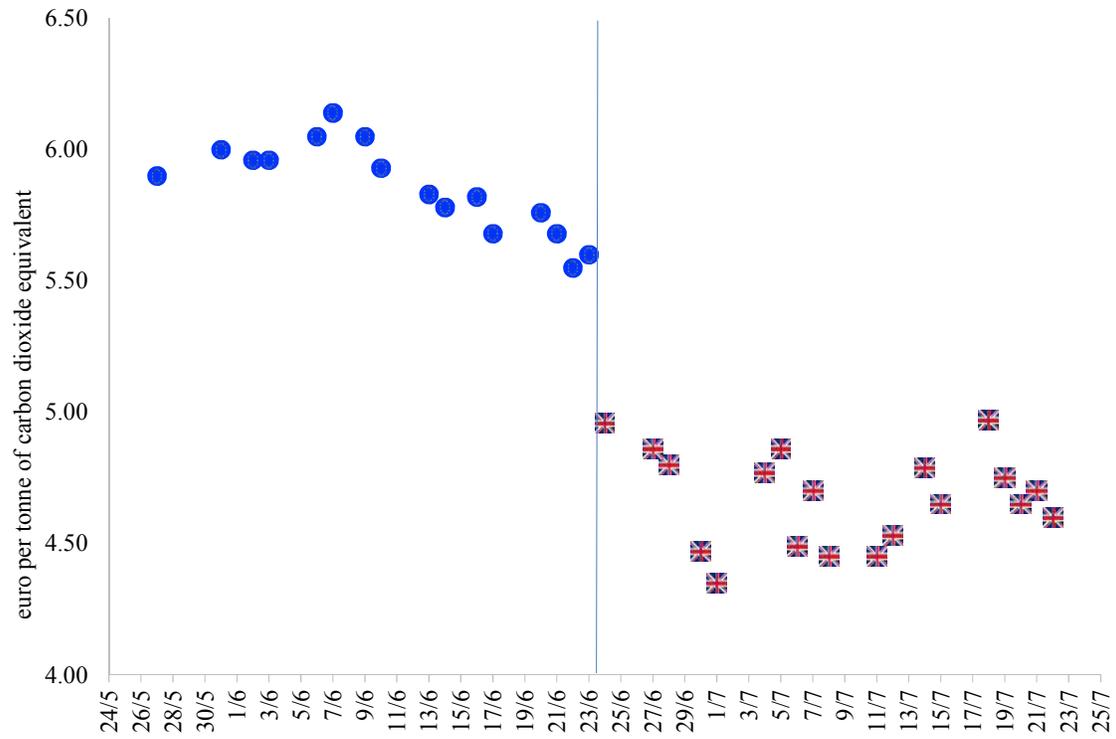


Figure 1. The auction price of greenhouse gas emission reduction permits in the four weeks before the referendum (23 June 2016) and the four weeks after.