

THE FUTURE OF UK CARBON PRICING

Sandbag's response to the joint consultation of the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland





Sandbag recommendations

- 1** **Carbon pricing is not a panacea.** Whether in or out of the ETS, taking the UK to net zero emissions will require direct regulation and significant public funding. A carbon price can help steer clean investment, but it alone will not solve climate change.

- 2** **The UK should aim to remain a part of the EU Emissions Trading System, retaining a shared Europe-wide approach to pricing carbon emissions.** Within this system, the UK should argue for an EU-wide auction reserve price to reduce market volatility.

- 3** **If the type of Brexit pursued causes the UK to leave the EU ETS, the UK should pursue a linked system or attempt to rejoin. Whilst these negotiations take place, a carbon tax should be implemented on power, industry and aviation - with a floor set at least at the average EU ETS carbon price of the preceding year.**

- 4** **The UK should not attempt to set up the proposed standalone UK ETS.** There is a significant risk that this market would not be functional, condemned to high volatility, and plagued by speculators. The UK has declared a climate emergency - we cannot afford a decade of weak green investment due to low or highly volatile carbon prices.



A carbon tax is preferable to the government's proposed standalone UK ETS

There is a significant risk that a standalone UK ETS would not produce a functional price or market.

Coal-to-gas switching in the power sector will no-longer be possible following the closure of the UK coal fleet. Gas power plant carbon costs can be passed through to the power price and power-sector emissions will become unresponsive to carbon price changes (at least over the short-term).

- Power-sector emissions will be increasingly volatile as the share of renewables increases.
- The market will be reliant solely on industry for all short-term emissions flexibility to balance power-sector volatility and ensure that emissions stay under the cap. We are concerned that the ability of industry to respond over the short-term is untested and may be limited.
- Additionally, free allocation of allowances shields much of industry from the carbon price further reducing its impact on actual industrial emissions levels.

- Therefore, with limited market flexibility, a standalone UK ETS could be vulnerable to carbon price spikes, crashes and generally high levels of volatility.
- For a standalone UK ETS to produce a stable price, at a minimum it would require both a narrow price corridor and a finely tuned surplus allowance reserve. Even with these features in place, the market's small size (128m allowances in 2018) would still leave it vulnerable to gaming and speculation.

Each large industrial facility would represent a notable percentage of the total cap (the top 20 industrial installations represent more than 50% of the non-power cap).

The closure of any of them (particularly the iron & steel installations e.g. British Steel) would immediately threaten market integrity. The UK ETS would require an annual resetting of the cap to maintain a carbon price signal.

A UK standalone ETS would be unlikely to mirror the EU-ETS price, even if the carbon market framework is identically designed. This could lead to continued large price differences between the schemes, harming competitiveness.

A UK ETS risks suffering the same growing pains as the EU ETS, including windfall profits to incumbent high-carbon industry. The UK has declared a climate emergency - we cannot afford a decade of weak green investment due to low or highly volatile carbon prices.

As we approach net zero, each of these ETS problems become magnified. Taxing is possible to the last tonne, but trading is not.

SUMMARY

Rank	Installation	Sector	tCO2e	% of total	Cumulative % of total
1	Port Talbot Steelworks (Tata)	Iron and steel	5,814,379	9%	9%
2	Scunthorpe Iron & Steel Works (British Steel)	Iron and steel	5,073,764	8%	17%
3	Esso Refinery	Mineral oil	2,530,088	4%	21%
4	Valero Energy (Chevron)	Mineral oil	2,276,524	4%	25%
5	Humber Refinery (Phillips 66)	Mineral oil	2,112,338	3%	28%
6	Stanlow Manufacturing (Essar Oil)	Mineral oil	1,880,351	3%	31%
7	Grangemouth Refinery (Ineos)	Mineral oil	1,638,115	3%	33%
8	Lindsey Oil Refinery (Total)	Mineral oil	1,474,041	2%	36%
9	Wilton Olefins 6 Cracker (Sabic)	Chemicals	1,096,011	2%	38%
10	Hope Cement (Breedon)	Cement and Lime	1,048,805	2%	39%
11	Rugby Works (Cemex)	Cement and Lime	1,011,640	2%	41%
12	Billingham Fertiliser Works	Chemicals	863,911	1%	42%
13	Fife Ethylene Plant (Exxon)	Chemicals	850,700	1%	43%
14	Ketton Works (Heidelberg)	Cement and Lime	642,493	1%	44%
15	Grangemouth Chemicals (Ineos)	Chemicals	619,517	1%	45%
16	Cauldon Cement (Lafarge)	Cement and Lime	605,753	1%	46%
17	Tunstead Cement (Tarmac)	Cement and Lime	582,793	1%	47%
18	Dunbar Plant (Tarmac)	Cement and Lime	573,545	1%	48%
19	Padeswood Works (Heidelberg)	Cement and Lime	553,353	1%	49%
20	Ribblesdale Works (Heidelberg)	Cement and Lime	538,296	1%	50%

Sandbag recommends a new UK carbon tax

- Should have a level and trajectory recommended by the Climate Change Committee and reviewed every 5 years, alongside the setting of the UK's carbon budgets - beginning with the CCC's appraisal of net zero and the sixth Carbon Budget next year.
 - » The CCC should recommend a carbon tax range required to meet the current carbon budget and an appropriate range for each of the future carbon budgets.
 - » HMRC must then set the carbon tax within the range.

THE FUTURE OF UK CARBON PRICING

- » In response to new climate science, technology or changes in the carbon pricing regimes of trading partners, HMRC may adjust the carbon tax in the Autumn Budget each year (as long as it remains within the CCC designated range).
- » [As recommended by Policy Exchange](#), any deviation from the trajectory recommended by the CCC would require a vote in Parliament and a public statement by the Chancellor.
- » This would require substantial extra capacity and funding for the CCC.
- Should mirror the Measurement Reporting and Verification requirements under the EU ETS, maintaining transparency and continuity, and ensuring future attempts to rejoin the EU ETS are simpler.
- Should begin at least at the average EU carbon price of the preceding year.
- The EU ETS price is approximately €25 ([a recent Grantham Institute study](#) suggests a carbon price of £40-£100 may be appropriate, whilst [in 2010 DECC suggested](#) a carbon price of £30 in 2020 to keep warming below 20C).
- Should initially set a tax exemption mirroring Free Allocation to industry under the EU ETS. The government should then implement measures to allow a carbon price to be applied to industry whilst addressing carbon leakage risk i.e. some combination of direct investment, low-carbon product standards and Border Carbon Adjustments. These should be applied on international products, but may also be required with the EU should there be a significant divergence in carbon prices.
- Should retain the power sector top-up (the Carbon Price Support) at least until all coal units have retired.



Recommendations applicable to both a carbon tax or ETS

Negotiations for a linked UK-EU ETS are very unlikely to be successful in the near-term, given the UK's loss of political capital with the rest of the European Union. Linking is simply not a near- or medium-term option.

Even if linking negotiations are eventually successful, the UK is likely to be simply a 'rule-taker' with regard to EU ETS rules, and will require a separate domestic carbon pricing scheme to reach the UK's more ambitious domestic Climate Change Act targets.

The carbon price be expanded to some other areas of the economy. Fossil gas is undertaxed in the UK, so this would be a good place to start. However, it is important to recognise that carbon-pricing may not be the most effective tool for decarbonising all sectors. Some, such as agriculture, are difficult to apply a price to and in these areas regulation may be more appropriate.

The carbon price should no longer treat large scale biomass burning as zero emissions.

This loophole is no longer justified given the significant reduction in the average emissions intensity of UK electricity generation. Instead we suggest the carbon intensity could be assessed by the CCC, and then taxed appropriately.

The IPCC have suggested lifecycle emissions of ~130–420gCO₂/kWh for energy crops and crop residues,¹ but emissions from the wood pellets mainly used in UK power plants will be different. This would add to carbon revenues, as well as incentivising the transition to BECCS for current biomass plants, to enable them to avoid a carbon cost.

Sandbag will shortly be publishing further analysis on this recommendation.

Carbon revenues should be, at least in-part, delivered directly to citizens as a 'climate dividend'

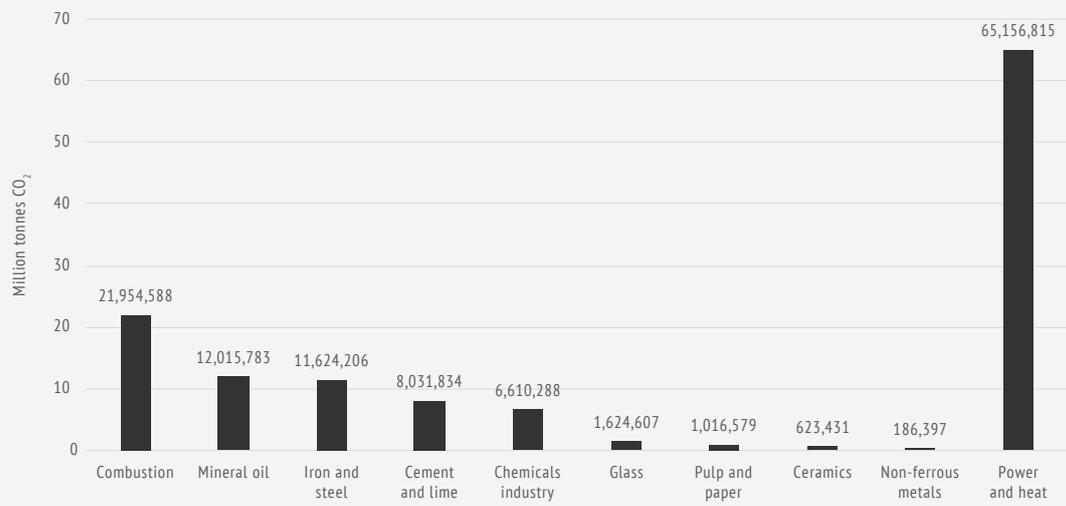
- to make carbon pricing as politically irreversible as the rising minimum wage; to encourage public engagement in climate action; and to offset the costs to consumers of the low-carbon transition.
- Revenues should be apportioned fairly to the devolved administrations
- Transparency in carbon revenue spend should be improved. Sandbag will shortly be publishing more analysis on this 'carbon dividend' recommendation.

The UK should switch to a 'gross' accounting system for emissions, rather than the 'net' system currently used (which treats emissions as equivalent to the UK's national allocation of carbon allowances under the EU Emissions Trading System). This would require the government to report actual domestic emissions for facilities against the UK carbon budgets, which would ensure greater accountability for government and a clearer direction of travel.

1. Dedicated biomass emissions intensity. IPCC AR5 (2014) p1335 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-iii.pdf

SUMMARY

Figure 1: Volume of annual emissions in UK sectors covered by the EU ETS (2018)



Published in July 2019 by Sandbag. This report is published under a [Creative Commons licence](#). You are free to share and adapt the report, but you must credit the authors and title, and you must share any material you create under the same licence.

Authors:

Phil MacDonald

Charles Moore

Image credits:

P2 - image by Peter H from Pixabay; P3 - image by Viktor Kiryanov from Unsplash; P6 - image by Thomas Peham from Unsplash.

Report design:

Wilf Lytton

Copyright © Sandbag, 2019

CHAPTER 1: Design of a UK Emissions Trading System

Questions without responses have been removed.

1 a) Are you a current participant of the EU ETS? (Y / N)

No

b) If you are a participant or a representative of a sector, which sector do you belong to?

N/A

c) If you are not a participant or a representative of a sector, which interest group do you represent?

Non-governmental organisation

2 Does your interest in the ETS relate to the operation of the system in a particular geographical area? a)England b)Wales c)Scotland d)Northern Ireland e)UK-wide

UK-wide

3 a) Do you agree with the proposed scope of a UK ETS? (Y/N)

No

b) Please expand on your answer, providing evidence in support of your response where possible.

UK carbon pricing should look to expand its scope, where complementary to other climate policy. See answers to Question 4.

4 a) Do you have any suggestions for which sectors might be included in scope in the future? (Y/N)

Yes

b) Please expand on your answer, providing evidence in support of your response where possible.

- Combustion of fuels in installations with a total rated thermal input exceeding 20 MW should no longer exclude biomass.
- The UK should consider including fugitive methane within the scope (particularly at fossil fuel extraction points).
 - Waste handling and fossil fuel extraction installations are already required to report their CH₄ emissions under European Pollutant Release and Transfer Register regulations. Options are already available for better control of such emissions. Examples of such options include collection of landfill gas for power generation and diverting organic refuse from landfill to other biogas generation options. Requiring fossil fuel extractors to buy emissions allowances to cover fugitive CH₄ emissions would provide an instant additional financial incentive to plug leaks and to invest in technologies (such as staged separation) to facilitate useful capture of waste gas that is currently vented or flared. Monitoring and verification challenges should not be dismissed out of hand but, given the increased attention on controlling CH₄ emissions in recent years, it is time to explore the use of carbon pricing to support other more direct regulation approaches for reducing these emissions.
- The government should investigate including interconnectors within the scope of the Carbon Price Support. This would reduce the import of high-carbon (coal) electricity from the Netherlands and Germany, whilst incentivise lower-carbon domestic production.

5 a) Do you agree that costs to business alongside climate ambition are the appropriate ones to be considered for the final decision on setting the cap and trajectory? (Y/N)

No - The necessity to reach net zero by 2050 at the latest should take precedent in cap setting over other concerns. The avoided costs in reducing dangerous climate change then need to be factored into business costs.

b) What other factors should be prioritised in the setting of the cap and trajectory?

A clear mechanism for a Paris ratchet, to continually accelerate ambition alongside the improved pledges of other states. A mechanism to rebase the cap following large installation decarbonisation or closure.

c) Please expand on your answer, providing evidence in support of your response where possible.

6 What would the implications be for your business if the cap for a standalone UK ETS was set at a tighter level than the UK's anticipated notional share of the EU ETS cap?

The cap for a standalone UK ETS would, by necessity, be tighter than the UK's anticipated notional share of the EU ETS cap, as current UK climate targets are more ambitious than the EUs. This tighter cap should serve to enhance low-carbon innovation in the UK, and alongside other climate policies, benefit our economy.

7a) Do you agree with using the EU ETS Phase IV Carbon Leakage List and Benchmarks for determining UK ETS free allocation? (Y/N)

No

b) Please expand on your answer, providing evidence in support of your response where possible.

- As well as using significantly out of date data, EU ETS benchmarks often support high-carbon incumbent businesses, at the expense of lower-carbon competitors, as we have shown in Barriers to Industrial Decarbonisation (2018) <https://sandbag.org.uk/project/results-barriers-to-decarbonisation-call-for-evidence/> Benchmarks should allow for process and product substitution.
- The government should implement measures to address carbon leakage risk for industry i.e. some combination of direct investment; low-carbon product standards; and Border Carbon Adjustments, initially on power, and then extended to cement and steel. This will allow the Free Allocation/carbon tax exemptions given to UK industry to be gradually rolled back, boosting growth in globally competitive UK zero-carbon industry.

8 a) Do you agree with using the Phase IV approach to the Carbon Leakage Exposure Factor for a UK ETS? (Y/N).

No

b) Please expand on your answer, providing evidence in support of your response where possible.

Sandbag recommends a tiered approach to carbon leakage protection, rather than the binary system used in the EU ETS. This allows targeting of protection to those installations truly at risk. (E.g. see our 2018 paper <https://sandbag.org.uk/project/carbon-leakage-consultation-response/>)

11 a) Do you have any further comments regarding our approach to free allocation?

(Y/N)

Y

b) Please expand on your answer, providing evidence in support of your response where possible.

The UK should look to provide more data transparency around installation classifications (e.g. NACE codes), free allocations and emissions intensities.

12 a) Do you agree with the concept of introducing a SAM, similar in function to the EU ETS MSR, for a UK ETS? (Noting that a SAM cannot be operational immediately and we will consult on the specific details at a later date.) (Y/N)

Yes

b) Please expand on your answer, providing evidence in support of your response where possible.

Sandbag believes a standalone UK ETS is unlikely to produce a functional carbon price or market. A SAM would be helpful in mediating the flow of allowances to market, but is unlikely to be able to stabilise such a small pool of allowances.

14 What factors should be considered in determining at what point in Phase I of a standalone UK ETS a SAM should be introduced?

A SAM would be required immediately to stabilise the market supply.

15 a) Do you agree that the proposed CCM (Cost Containment Mechanism) strikes the appropriate balance between effectively addressing in-year price spikes without responding too frequently to shorter term upward price fluctuations, thereby avoiding market disruption? (Y/N)

No

b) Please expand on your answer, providing evidence in support of your response where possible.

It is not clear that the CCM will be able to prevent extreme price spikes. A market of less than 130 million allowances a year is very vulnerable to gaming, and the small increase in supply the CCM is capable of leaves the UK market open to speculation.

16a) Should a transitional Auction Reserve Price be implemented to provide minimum price continuity during the transition from the EU ETS to a UK ETS?

Yes

b) Please expand on your answer, providing evidence in support of your response where possible.

Given past experience in emissions trading, there is a high probability that the carbon price falls to too low a level to drive low-carbon investment. A price floor set at least at the preceding year's average EU ETS carbon price is necessary (i.e. approximately €25, but the precise range should be recommended by the Climate Change Committee). The UK should encourage the EU to set a similar floor.

17 a) Do you agree with the proposed approach to phases? (Y/N)

No

b) Please expand on your answer, providing evidence in support of your response where possible.

The EU ETS reform experience has shown carbon markets require near-constant reform to deal with unintended outcomes.

18 a) Do you agree with the proposed approach to reviews? (Y/N)

Yes

22

a) Do you have any other comments on our proposals for an Ultra-Small Emitters Exemption in a UK ETS? (Y/N)

Y

b) Please expand on your answer, providing evidence in support of your response where possible.

It's important that Ultra-Small Emitters cannot be 'stacked' to create a larger facility. We believe this issue is already occurring with chained rows of gas 'peaking' reciprocal generators avoiding a carbon cost.

25 a) Do you consider that we should create a fund for industrial decarbonisation under a linked or a standalone UK ETS? (Y/N)

Yes

b) Please expand on your answer, providing evidence in support of your response where possible.

Carbon pricing alone cannot drive rapid decarbonisation. A fund for deployment of innovative low-carbon industrial projects is necessary, alongside a method for tackling carbon leakage risk.

26 What lessons and improvements can be drawn from your experience of EU ETS funds, and other forms of financial support for industrial decarbonisation, in order to maximise the impact of any funding?

Funds need to be deployment focused, and cover both capex and some initial running costs.

32 Do you think there is potential for the use of offsets by operators to meet their compliance obligations in the UK ETS?

No. Emissions reductions must be domestic, and must occur in all sectors. A source of verifiable, additional carbon offsets is yet to materialise.

33 How could a UK ETS evolve over the coming years in order to ensure the system delivers for future challenges and encourages innovation within business?

A standalone UK ETS would be unlikely to drive cost-effective low-carbon innovation. A linked UK ETS would be tied to accepting changes agreed by the EU, and would not be able to independently evolve.

CHAPTER 2: Operation of a UK ETS

34 a) Do you agree with any (or all) of the proposals for MRV simplification in a UK ETS? (Y/N)

No

b) Do you agree with those proposals that would also apply to a Carbon Tax? (Y/N)

No

c) Please expand on your answer, providing evidence in support of your

response where possible.

Verification visits under the UK's current participation in the ETS already risk MRV failures, following the reduction in Government funds to the Environment Agency. Verification should not be further reduced.

35 a) Do you agree with these proposals for the arrangements in relation to Enforcement, Appeals and Penalties as described above? (Y/N)

Yes

36 a) Do you agree with the proposals that the auction success criteria in a standalone UK ETS should be changed as described above? (Y/N)

Yes

b) Do you agree with the proposed method of redistributing unsold allowances across future auctions and a reserve? (Y/N)

Yes

c) Please expand on your answers, providing evidence in support of your response where possible.

37 a) Do you agree with the proposal that banking and borrowing arrangements in a UK ETS should mirror those of Phase IV in the EU ETS as described above? (Y/N)

No

b) In the case of a standalone UK ETS how can we best balance the potential ability to bank allowances with the UK's wider decarbonisation goals?

The UK should take this opportunity to explore a banking limit on allowances, for example of five years, to reduce market manipulation and speculation opportunities.

c) Please expand on your answer, providing evidence in support of your response where possible.