Title: EU ETS Article 27 and Article 27a Schemes for Phase IV **IA No:** BEIS014(F)-19-CG	**Impact Assessment (IA)**
RPC Reference No: N/A	**Date:** 31/10/2019
Lead department or agency: Department for Business, Energy and Industrial Strategy	**Stage:** Final
Other departments or agencies: Her Majesty's Treasury (HMT), Devolved Administrations (DAs)	**Source of intervention:** Domestic
	Type of measure: Secondary legislation
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Summary: Intervention and Options

RPC Opinion: N/A

Cost of Preferred (or more likely) Option (2016 prices, 2017 present value as standard)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
£144.4m	£105.7m	-£10.6m	Not a regulatory provision

What is the problem under consideration? Why is government intervention necessary?

The Future of UK Carbon Pricing consultation sought views on the policy proposals for several possible future carbon pricing options following the UK's exit from the EU. The consultation noted UK Government's and the Devolved Administrations' preference to establish a UK Emissions Trading System (ETS) that is linked to the EU ETS, but noted the need to consider alternative carbon pricing options in the event a linking agreement cannot be secured.

Proposals for implementation of Phase IV of the EU ETS are covered in this Impact Assessment (IA) because, while the UK is still within the EU or within any Implementation Period, it has an obligation to transpose Phase IV revisions to the EU ETS Directive into UK law. Transposing also ensures that the UK has the legislative framework in place to participate in the EU ETS post 2020 should this be required. This IA addresses those proposed amendments which relate to implementation of schemes under Articles 27 (small emitters) and 27a (ultra-small emitters) of the revised EU ETS Directive. The administrative burden (costs of monitoring, reporting and verification of emissions and fees to regulators) of the EU ETS on smaller installations is disproportionately large. This led to Articles 27 and 27a of the revised EU ETS Directive providing for the opt-out of these emitters in Phase IV (2021-2030). This IA updates the Phase IV (Consultation Stage) IA analysis which evaluated options for implementing the Article 27 and Article 27a scheme.

What are the policy objectives and the intended effects?

The objective in offering two types of opt-out is to minimise the regulatory cost burdens to UK small and ultra-small emitters whilst meeting EU legislative requirements. Implementation of the schemes in the UK would aim to not significantly affect the emissions reductions achieved by UK operators and ensure that UK industry is not placed at a competitive disadvantage as a result of the EU ETS, compared to counterparts elsewhere in the EU who are offering opt-out schemes. Within the constraints of the EU ETS Directive, those eligible operators for the Article 27 scheme in Phase IV will be required to reduce emissions through an alternative measure whilst those eligible for the Article 27a scheme are deemed to have too little impact to require any such equivalent measures.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

This IA looks at the preferred policy option of implementing both the Article 27 and Article 27a schemes compared to the counterfactual of not introduding either scheme, i.e. that all UK emitters and hospitals in scope remain in the EU ETS. The consultation IA considered options to only impliment Article 27, or only implement Article 27a in addition to the preferred policy option, but following the consultation where respondants were broadly in favour of the preferred option[1], only the preferred option has been taken forward for this IA.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** By 2025

Does implementation go beyond minimum EU requirements?		Yes		
Is this measure likely to impact on trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** -16.8	**Non-traded:** +16.9	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Kwasi Kwarteng Date: 30/10/2019

[1] https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing

Summary: Analysis & Evidence — Final, Preferred Option

Description: Eligible installations have the choice of both Articles 27 and 27a schemes in Phase IV (2021-2030)
FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2019	Time Period Years 12	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:** 164.3

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low				
High				
Best Estimate	0.0		2.6	**24.3**

Description and scale of key monetised costs by 'main affected groups'

There is a cost to government in terms of the non-traded liability for installations in terms of the UK carbon targets covered by Article 27a (assuming emissions remain constant for these installations, rather than reducing: this is £8.3 million). There is a cost to government from loss of auction revenue of £16.0m from Article 27 emissions being removed from EU ETS.

Other key non-monetised costs by 'main affected groups'

In terms of the non-traded liability for installations covered by Article 27, current Phase III data shows that, overall, these installations reduced emissions within target (no cost in central scenario).

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate	0.8		19.9	**188.6**

Description and scale of key monetised benefits by 'main affected groups'

This £188.6m benefit is the sum of there being no requirement for those opting out to purchase allowances (£164.8m) plus a saving on administration costs (£23.8 million). Part of this admin cost saving is a transition benefit (£0.8m) should businesses choose not to produce and submit a full national data collection once opted out in 2024. For businesses specifically, their savings are reduced by paying "civil penalties" (£68.4m) for the proportion that go over their targets, which are set in line with the cap reduction for Phase IV (this counts as an economic transfer to government in terms of total benefit and therefor sums to zero for total benefits). This means there is a net (£164.8m – £68.4m =) £96.4m benefit to businesses for moving from allowances to civil penalties, along with their saving on administration costs (for a total of £23.8m + £96.4m = £120.2m).

Other key non-monetised benefits by 'main affected groups'

It is not yet clear how overall administrative costs to the regulators will change. Their main duties will largely still be the same and relate to the same data. Some of the approaches, such as using one target, aim to simplify the processes, but additional savings are expected to be small. One difference is that the installations in A27a will have no reporting requirement (although they will need to reconfirm eligibility after five years). This is likely to reduce some costs for regulators; although the extent, given that these installations produce few emissions in the current scheme, is not clear. For UK emitters within scope of the schemes, a benefit is they will not be put at a competitive disadvantage compared to counterparts elsewhere in the EU who are offering equivalent schemes as a result of the EU ETS.

Key assumptions/sensitivities/risks — **Discount rate (%)** 3.5

Almost all (95%) of eligible Article 27a installations will opt out and the majority (70%) of eligible Article 27 installations will opt out. A 2016 installations' costs survey, conducted on behalf of BEIS, has been used to estimate administration costs. Free allocation (to estimate the number of allowances remaining that would be purchased in the baseline scenario) has been estimated based on the UK's share of free allowances in Phase IV, using Phase III data. The BEIS 2018 published short term traded modelling carbon values for cost of allowances (with low and high price sensitivities) are used for the future cost of allowances. The size of the non-traded liability is uncertain. The central estimate is zero for those covered by Article 27 (and assumes those covered by Article 27a do not abate).

BUSINESS ASSESSMENT (Final, Preferred Option)

Direct impact on business (Equivalent Annual) £m: (2019 prices)			Score for Business Impact Target (qualifying provisions only) £m: N/A
Costs: 0.0	**Benefits:** 12.0	**Net:** -12.0	

Overview

1. On leaving the European Union, the UK Government and the Devolved Administrations are firmly committed to carbon pricing as an effective tool for achieving their carbon emissions reductions. This future approach will be at least as ambitious as the current EU Emissions Trading System (EU ETS), will provide a smooth transition for relevant sectors and will form part of the UK's pathway to its "Net Zero" target to end its contribution to global warming by 2050.
2. The Future of UK Carbon Pricing consultation sought views on the policy proposals for several possible future carbon pricing options following the UK's exit from the EU. The consultation noted UK Government's and the Devolved Administrations' preference to establish a UK Emissions Trading System (ETS) that is linked to the EU ETS, but noted the need to consider alternative carbon pricing options in the event a linking agreement cannot be secured.
3. There are several reasons why proposals for implementation of the Phase IV of the EU ETS are covered by the Government's response to the consultation[1] and evaluated in this Impact Assessment (IA). While the UK is still within the EU or within the Implementation Period, the UK has an obligation to transpose the Phase IV revisions to the EU ETS Directive into UK law. Transposing also ensures that the UK has the legislative framework in place to participate in the EU ETS post 2020 should this be required. Also, there are proposed Phase IV implementation features which may also be incorporated within a new UK Emissions Trading System (UK ETS): this IA considers those proposed amendments to UK legislation which relate to Articles 27 (small emitters) and 27a (ultra-small emitters).
4. This Final Stage IA relates to the chapter of the consultation document which set out and sought views on the business as usual amendments to UK legislation which are necessary to implement the changes to the EU ETS Directive for Phase IV, and further discretionary improvements.

Background

EU Emissions Trading System

5. The EU ETS was launched in 2005 as one of the key policies introduced by the EU to help meet its greenhouse gas (GHG) emissions reduction target. This target was 8 per cent below 1990 levels by 2012, as specified in the Kyoto Protocol[2]. The EU ETS works on a "cap and trade" basis, where there is a cap on all greenhouse gas emissions from covered installations and aviation operators. The cap is reduced over time to ensure that total emissions fall. Each year, operators must surrender sufficient allowances to cover their greenhouse gas emissions. Allowances are awarded free to participants considered at risk of "carbon leakage" (where, due to the cost of emission allowances, industry relocates to regions outside the EU with a lower carbon price)[3]. Allowances are also auctioned directly by Member States, and traded on the secondary market between operators and other market participants.
6. The theory behind a cap-and-trade system is that it enables emission reductions to take place where the cost of the reduction is lowest, thus lowering the overall cost of tackling climate change. More abatement will be undertaken by operators with lower abatement costs, therefore reducing the

[1] https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing
[2] The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which **sets** internationally legally binding emission reduction targets for 37 countries.
[3] For each installation in the EU ETS, the amount of free allocation is calculated based on a formula where its production quantity (in tonnes of product) is multiplied with the benchmark value for that particular product (measured in emissions per tonne of product). Installations in **sectors exposed** to a significant risk of carbon leakage in principle are eligible to receive free allocation at 100 per cent of this quantity. For installations in **other sectors**, not on the carbon leakage list, the free allocation is gradually reduced across phase 3 (80 per cent in 2013, reducing every year to reach 30 per cent in 2020). Since the benchmarks are based on the performance of the most efficient installations, only the most efficient installations in each sector receive enough free allowances to cover all their needs.

overall costs of meeting the emissions target (or cap) set by the trading system. The EU ETS covers mainly power, heavy industry and aviation sectors and comprises around 45 per cent of the EU's greenhouse gas emissions.

7. The EU ETS is regulated in the UK by the Environment Agency ("EA") in England, the Scottish Environment Protection Agency ("SEPA") in Scotland, Natural Resources Wales ("NRW") in Wales, the Chief Inspector in Northern Ireland and BEIS offshore. Some of the regulators' costs of administering the scheme are recovered through operator fees and others are charged directly to BEIS and devolved governments.

8. The System is structured into phases: Phase I operated from 2005-2007, Phase II 2008-2012, Phase III operates from 2013-2020 and Phase IV will operate from 2021-2030.

Phase IV (2021-2030)

9. In July 2015 the European Commission issued proposals to amend the EU ETS Directive for Phase IV (2021-2030). The proposals covered the overall framework of the System, including the level of EU emissions reductions required to deliver the 2030 climate and energy policy framework for the EU, which was agreed by the European Council in October 2014. The climate and energy policy framework endorsed a binding EU target of at least a 40 per cent domestic reduction in greenhouse gas emissions by 2030 compared to 1990[4]. This demonstrated the EU's commitment to international agreement to reduce greenhouse gas emissions, which was adopted in Paris in December 2015. The Paris agreement is the first legally-binding global climate deal, where 195 countries committed to reduce average global temperature increases to below 2ºC of pre-industrial levels.

10. Political agreement on Phase IV was reached between the European Commission, European Parliament and Council in November 2017, and approved by the European Parliament and Council of Ministers in early 2018. The key elements of the agreed package are:

    - Ambitious short- and longer-term strengthening measures, including increasing the rate at which allowances will be added to the Market Stability Reserve (MSR)[5] and cancellation of allowances placed in the MSR from 2023.
    - To protect industry in the EU ETS against the risk of carbon leakage and safeguard their competitiveness, a number of measures were agreed to help ensure there is adequate free allocation of allowances for the most vulnerable industrial sectors. The package strikes a balance between providing more free allowances for industry and preventing a large reduction in the amount of allowances auctioned.
    - Establishment of an innovation fund to fund low carbon technology and innovation projects.
    - Establishment of a Modernisation Fund to support lower income Member States to modernise their energy systems.
    - An optional exemption from the EU ETS for Article 27a (ultra-small) emitters (for installations emitting below 2,500 tonnes of CO_2 per annum or which operate generators for less than 300 hours per annum), to help to reduce administrative burden and support those who face disproportionate costs.
    - No change to the 25,000 tonnes of CO_2 per annum emissions threshold (and the 35MW thermal threshold) for installations to opt-out of the EU ETS, though there was agreement to provide a further opportunity for eligible installations to be able to join Member State schemes during the middle of a Phase.

11. The UK supported the package in Council, at the time, as a balanced and good overall outcome, which delivers the majority of what were then the UK negotiating objectives.

12. The reforms to be made to the EU ETS for Phase IV were published in the journal of the European Union on 8 April 2018.

[4] To achieve this target as cost-effectively as possible, the sectors covered by the EU ETS will need to reduce their emissions by 43 per cent by 2030 compared to 2005.

[5] The MSR controls the surplus of allowances in the market, removing or adding allowances from/to the market as the surplus increases and decreases. Further information on the MSR can be found here: https://ec.europa.eu/clima/policies/ets/reform_en

13. While most of the changes that need to be made are established by the ETS Directive, there are some areas where Member States have discretion over how to implement the provisions of the ETS Directive. There are also simplifications that can be made to the domestic legislation to reduce the legislative complexity and administrative burden of delivering the system, both for operators and regulators.

14. The areas of discretion include:

- The implementation of the Article 27 "opt-out" provision, for installations emitting less than 25,000 tonnes of CO_2 equivalent (tCO_2eq) per annum and less than 35 MW installed capacity.
- The implementation of the Article 27a exemption provision, for installations emitting less than 2,500 tCO_2eq per annum (or which operate generators for less than 300 hours per annum).

Note on Brexit Content[6]

15. The UK will leave the EU by 31 January 2019. Subject to agreement between the UK and the EU, there may then be an implementation period, in which the UK continues to participate in EU schemes and systems, including Phase III of the EU ETS.

16. As stated above, on leaving the European Union, the UK Government and the Devolved Administrations are firmly committed to carbon pricing as an effective tool for achieving carbon emissions reductions. As set out in the Clean Growth Strategy, the future approach will be at least as ambitious as the current EU Emissions Trading System (EU ETS) and will provide a smooth transition for relevant sectors. It will also form part of the UK's pathway to its new "Net Zero" target to end its contribution to global warming by 2050.

Rationale for Policy

17. While the UK remains a member of the EU, it has a legal obligation to transpose the Phase IV Directive. This IA considers those proposed amendments to UK legislation which relate to Articles 27 (small emitters) and 27a (ultra-small emitters). The UK has to take steps to implement both Article 27 and the new Article 27a for Phase IV as both are discretionary schemes. Therefore, the **counterfactual option** against which the impacts of final, preferred option has been monetised, represents no implementation of the opt-out scenarios under Article 27 or Article 27a. In this scenario, all UK stationary installations are in the full EU ETS in Phase IV of the scheme from 2021 to 2030 (inclusive).

18. The EU ETS is designed to support installations across the EU to deliver emissions reductions at least cost. In addition to the costs of compliance, operators participating in the ETS are subject to the costs related to monitoring, reporting and verification (MRV) and the fees resulting from competent authorities in Member States recovering the costs of administering the system. The work of operators and the competent authorities to deliver appropriate MRV is essential to ensuring the validity of emissions reductions and protecting the economic and environmental integrity of the system.

19. However, it continues to be recognised in Europe, that the administrative costs faced by Article 27 installations (small emitters and hospitals) under the EU ETS are disproportionately high per tonne of CO2, compared to the costs for installations with larger emissions. This has been demonstrated across Phase III to date (see the Cost of Compliance survey in paragraphs 44 to 45).

EU ETS Directive, Article 27 – opt-out of small emitters and hospitals

20. In recognition of the disproportionate administrative burdens of the EU ETS on small emitters and hospitals, Article 27 offers a way for installations emitting less than 25,000 tCO_2eq per annum to opt-out from the main compliance requirements of the EU ETS, providing that the Member State ensures they are subject to measures to effect equivalent emissions reductions. The UK offered this

[6] To note that in this section positions attributed to the UK Government do not necessarily extend to the Devolved Administrations of the UK.

derogation in Phase III and proposes to continue to do so in Phase IV. This is provided installations face equivalent measures in Member State law. The requirement for equivalence seeks to ensure that the environmental goals of the EU ETS are preserved, namely the delivery of GHG emissions savings.

21. According to Article 27, small emitters are defined as having annual emissions that are less than 25,000tCO2e and, where they carry out combustion activities, a rated thermal input not exceeding 35MW per year. Hospitals may be opted out irrespective of their emissions or thermal capacity relative to the thresholds. The Directive does not provide for new entrants to the ETS during Phase IV to opt out from the EU ETS, other than at the midway point. If an opted-out installation's emissions rose above 25,000tCO2 per year the installation would re-enter the EU ETS.

EU ETS Directive, Article 27a – opt-out of ultra-small emitters

22. Article 27a is a new provision that offers a way for installations emitting less than 2,500 tCO_2eq per annum to be exempt from the main compliance requirements of the EU ETS, with no equivalent measures being required. The UK proposes to offer this derogation for Phase IV. This Article does not include a rated thermal input threshold and consequently, some installations that would be eligible under Article 27a would not be eligible under Article 27.

    - Article 27a also allows Member States to exclude reserve or backup units from the EU ETS which do not operate more than 300 hours in each of the three years preceding a National Implementation Measures (NIMs) exercise. However, Government has several concerns with this provision, including practical implementation challenges, the risk of a large volume of emissions leaving the system and the lack of clear definition of a 'reserve or backup unit'. An emissions threshold for inclusion in the EU ETS is also more in keeping with the objectives of the Directive (to monitor and reduce emissions). As a consequence, it is only proposing to use the emissions definition (installations emitting less than 2,500 tCO_2eq per annum).

UK approach to opt-out of Article 27 and 27a emitters

23. Consistent with the UK Government's 'Better Regulation' agenda, which aims to support good policy making and ensure that regulatory decisions are supported by robust, high quality evidence, the UK's approach seeks to better target EU ETS policy in the UK and continue to offer UK small emitters and hospitals an optional, lighter-touch policy alternative.

24. The Government developed its approach to the opt-out schemes with input from devolved administrations, UK competent authorities, UK industry and the European Commission. This approach aims to:

    - Ensure that the competitiveness of UK industry is not affected by the EU ETS, compared to the rest of the EU: other Member States are also expected to develop proposals for Article 27a (ultra-small) emitters and continuing with those for Article 27 emitters (small emitters and hospitals) from the EU ETS.
    - Continue to incentivise reductions in carbon emissions through the use of targets.

    Also, it aims to produce a proposal acceptable to the European Commission: Given the Commission has the power to object to Member States' opt-out lists, the design of these UK proposals has taken into consideration whether they are likely to gain Commission approval.

Targets

25. Emitters opting out under Article 27 will need to meet a target for emissions. For Phase III, installations had a choice of choosing to set targets according to their historical emissions or according to their free allocation share. When given the choice, only five per cent of installations

chose the free allocation method. For Phase IV, following consultation, where broadly reponses confirmed the proposal,[7] Government is only using the historical emissions approach.

Civil Penalties

26. Emitters opting out under Article 27 are subject to a penalty for any emissions that exceed their target. Civil Penalties are calculated every year in November using the latest futures prices (for end 2019), then published at the end of the month for the next year (e.g. civil penalties for 2019 are based on 2019 futures prices between 12 November 2017 and 11 November 2018 for the year 2019). Therefore 2/12^{ths} and 10/12^{ths} of each projected year are used.

Other changes to legislations

27. There are a number of other changes to the legislation alongside those for the opt-out schemes, such as for penalities.[8] These use this opportunity to simplify and improve the UK's legislative framework for the EU ETS and ensure the provisions are robust and fit for purpose. All other changes are considered to have an insignificant effect in monetary terms on businesses and regulators and do not vary between the counterfactual and the final, preferred option in this IA.

Cost Benefit Analysis (CBA)

28. The overall approach is to present the costs and benefits for the final preferred option against the counterfactual of there being no (neither) discretionary scheme. The monetised and the non-monetised costs and benefits are described. The monetised elements are then calculated. This section ends with a summary table and presentation of the final, preferred option.
29. The EU ETS, on account of being classified as an environmental tax for the purposes of Better Regulation, is out of scope of the Business Impact Target. For the sake of completeness, however, a brief description of direct costs and benefits to businesses resulting from the final, preferred option as compared with the counterfactual option is presented.

Options considered

30. Three options were considered during the consultation against the counterfactual (Option 0).

- Option 0: Assume neither discretionary opt-out scheme is used (baseline/counterfactual). All UK emitters and hospitals remain in the EU ETS.
- Option 1: Eligible installations are given the choice of opting out from the EU ETS in Phase IV into the ultra-small scheme (Article 27a) only.
- Option 2: Eligible installations are given the choice of opting out from the EU ETS in Phase IV into the small scheme (Article 27) only.
- Option 3: Eligible installations are given the choice of opting out from the EU ETS in Phase IV into either the small or the ultra-small scheme (Articles 27 and 27a).

The preferred option (option 3) appraisal has been taken forward in this Final Stage IA. Option 3 remains the preferred option after the consultation because the majority of respondents to the consultation favoured using both discretionary schemes.

[7] Where respondents answered the question, 86 per cent were in favour. Feedback from those respondents stated that the historical emissions methodology will reduce administrative burden for Operators in line with the scheme's objective. Some respondents also felt that it provided a more accurate target for Operators. [In the Government response, found shortly at: https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing

[8] These include mandatory requirements such as reporting compensation (which the UK already does), and updating dates and references; and they include some discretionary measures, such as adjusting penalties to make them more appropriate. Further details are given in the Government's response to the Consultation covering continued membership of the UK in the EU ETS for Phase IV.

Costs and benefits

31. The costs and benefits fall on installations (businesses), government and regulators, see Table 1.

Table 1: Summary of costs and benefits approach

Affected group	**Category**	**Main sources of evidence/methodology**
Installations	Area 1: Installations administrative cost savings (relative to the counterfactual): • Monitoring, reporting, verification • Maintenance of monitoring and reporting systems • Communicating any changes to regulator Area 2: Installations compliance net savings (relative to the counterfactual): • Not purchasing EU allowances (minus the cost of penalties for those who exceed targets).	Area 1: • Number of installations from Phase III regulator data • Survey conducted on behalf of BEIS in 2016 Area 2: • Number of installations from Phase III regulator data • BEIS short term traded modelling carbon values • Free allocation (to estimate the number of allowances remaining that would be purchased in the baseline scenario) has been estimated based on the UK's share of free allowances in Phase IV, using Phase III data. This cannot be done on an installation basis so is scaled based on Article 27 and/or Article 27a emitters' share of total emissions. These figures have been updated since the consultation due to an improvement in methodology around estimating free allocation.
Government / Regulators	Area 3: Government net savings from penalties and auctions.	Area 3: • Number of installations from Phase III regulator data • BEIS short term traded modelling carbon values • Free allocation (as above). Covered qualitatively where monetisation has not been possible
	Area 4: Non-traded sector liability	Area 4: Estimated using assumptions about emissions reduction. • Number of installations from Phase III regulator data • BEIS non-traded carbon values Covered qualitatively where monetisation has not been possible

Approach for monetised elements

Impact/Costs to installations

Administrative costs

32. The arrangements are slightly different for Article 27 scheme (small) and Article 27a scheme (ultra-small) emitters.

- Installations who opt-out of the ETS under Article 27 (small emitters and hospitals) are expected to realise savings from the more simplified lighter-touch approach.
- Installations who opt-out of the ETS under Article 27a (ultra-small emitters) would make cost savings as, under that scheme, as they have no formal reporting requirements.
- Installations who opt out under either scheme would not need to engage in the part of the data collection relating to calculating their free allocation for Phase IV. This saving is expected to be realised in 2024, but is also realised in the high sensitivity scenario in 2019.

Compliance costs

33. The arrangements are different for Article 27 scheme (small) and Article 27a scheme (ultra-small) emitters.

- Opted out installations using the Article 27 scheme (small emitters), benefit from no longer having to purchase allowances (net of any allowances they would have received for free), but face the cost of measures that achieve an equivalent contribution to emissions reduction they would have had in the EU ETS. They are given an annual emissions reduction target to adhere to during the Phase. If they emit above their target, they pay a penalty to the government (as opposed to having to buy allowances for all their emissions in the EU ETS). This IA assumes that in aggregate Article 27 emitters meet their target due to the penalty measure, in practice, as in Phase III, it is expected that some emitters will be above target and pay penalties, and some will be below. The net savings are the benefit from not purchasing allowances minus the cost of the penalties.
- Opted out installations in the Article 27a scheme (ultra-small), also benefit from no longer having to purchase allowances (net of any allowances they would have received for free), but do not face equivalent measures. These installations emit only a very small proportion of all stationary emissions in the UK (less than 0.1 per cent).

No longer needing to purchase allowances is effectively an economic transfer from the EU ETS to the scheme participants. The payment of penalties is an economic transfer from scheme participants to the UK Government.

Impact/Costs to Government/Regulators

34. Government and regulators face two different monetary costs and benefits of the EU ETS: revenues raised from auctioning allowances and the governmental liability in terms of Carbon Budgets management as those opting out under Article 27a do not have the same incentives to reduce emissions (see paragraphs 36 to 38). The effect of these options is discussed in turn.

Changes in fiscal revenues from the opt-out measures

35. As noted above, installations who opt out under Article 27 (small emitters and hospitals), are given an annual emissions reduction target to adhere to during the Phase. If they emit above their target, they pay a penalty to government (as opposed to buying more allowances if they were in the EU ETS). These costs represent an increase in fiscal revenue and, as stated above, are an economic transfer from business to government.

36. Auction volumes are adjusted on an EU ETS wide basis to remove the total number of Article 27 opt-outs from all relevant Member States from the total number of allowances. In other words, that the UK would see its auction volumes reduced even if it did not have an Article 27 opt-out itself because of the opt-outs of other Member States. Compared to the counterfactual, the number of auctionable allowances – from the UK opt outs – decreases across the EU and the UK's share of auctionable allowances decreases proportionately as a result. This means that the adjustment to UK auctions is for the UK's auction share (compared to the EU) of the UK opt outs rather than all

allowances from UK opt outs. There is no adjustment made in the EU ETS for the implementation of Article 27a to auctions. This IA takes this into account.

Changes in the costs of the liability in terms of UK carbon targets

37. The emissions of installations in the opt-out schemes are not included in the EU ETS cap. For the purposes of accounting for Carbon Budgets under the Climate Change Act 2008[9] this means that emissions are transferred from the traded sector (EU ETS) to the non-traded sector (non-EU ETS emissions). This has no impact on the UK's performance against the Carbon Budget as the opt out installations emit the same as their previous cap. A positive or negative impact against the Budget would come if the emitters emitted less or more compared to their previous share of the cap.

38. A significant impact on Carbon Budgets due to the opt-outs is not expected due to their design. Article 27 installations (small emitters) will continue to have emissions reduction targets outside of the ETS that are in line with progress expected prior to opt-out. For Article 27a installations (ultra-small), their total emissions are a small percentage (less than 0.1 per cent of all UK stationary emissions) and therefore have a minimal effect on Carbon Budgets.

39. If opted-out installations are above their total target, or what would be their share of the cap in the counterfactual scenario, there is an emissions cost to Government in terms of non-traded sector liability (there is also a financial penalty for exceeding targets for those emitters in the Article 27 scheme – see paragraphs 32 and 34). As emissions are transferred from the traded to the non-traded sector, these emissions are monetised based on non-traded carbon values. In the calculations that follow, the central and low scenarios for emitters covered by Article 27 make reductions in line with the targets. Those covered by Article 27a are assumed to not reduce their emissions, so have constant emissions in all sensitivity scenarios.

Non-monetised elements

Administrative: Government/Regulators

40. The Environment Agency, Scottish Environment Protection Agency, Northern Ireland Chief Inspector, Natural Resources Wales and BEIS are the regulators responsible for administering and enforcing the EU ETS and responsible for the UK's voluntary opt-out scheme.

41. It is not yet clear how overall administrative costs to the regulators will change in Phase IV and with the introduction of Article 27a. However, any impact is expected to be small given their main duties will still be the same and relate to the same data. The regulators in the UK already manage the Article 27 (small emitters) scheme for Phase III. Some of the approaches, such as using one target based on historical emissions (see paragraph 24), aim to simplify the processes, but additional savings are expected to be small compared to those outlined. One difference is that the installations in Article 27a will have no reporting requirement (although they will need to reconfirm the eligibility of the scheme after five years). This is likely to reduce costs for regulators; although the extent, given the role these installations have in the current scheme producing few emissions, is not clear.

Impacts on the environment

42. For the Article 27 (small) emitters, it is expected that there will be no impact on the environment as the targets are in line with those for Phase IV and the evidence from Phase III is that they are – on average – within these. For Article 27a (ultra-small) emitters, there is not the same incentive to reduce emissions, but these emitters are, by definition, ultra-small and have a minimal impact (less than 0.1 per cent of all stationary emissions).

Analysis: monetised elements

43. The analysis for these options used the latest available data on emissions and thresholds for installations from regulators and drew on the lessons learned from the work carried out for the Phase III Impact Assessment and any consequent analysis, where these were still relevant.

[9] UK Carbon Budgets set limits on the amount of greenhouse gases which the UK can emit over a five-year period. This is currently in the 3rd budget period, running from 2018 to 2022.

Following the Consultation Stage IA, there was also an improvement in methodology around estimating free allocation.

44. The main assumptions are the standard BEIS GHG appraisal approach. Note that:

- The appraisal length is twelve years (transition begins in 2019 with a National Implementation Measures (NIMs) exercise, Phase IV is 2021 to 2030)
- Prices are 2019.

As is standard for the department, costs and benefits on the front page are given in 2016 prices and 2017 present value.[10]

Final, preferred option: Eligible installations are given the choice of opting out from the EU ETS in Phase IV into either the small or the ultra-small scheme (Articles 27 and 27a)

45. Following feedback from informal engagement with regulators, this IA assumes that 95 per cent of installations eligible for the ultra-small scheme under Article 27a and 70 per cent of those eligible only for the small scheme will opt out under Article 27. There is some overlap between the categories; where installations emit less than 2,500 tCO_2eq per annum and have less than 35 MW installed capacity they are eligible for both schemes.[11] Using 2017 data from regulators and adjusting for these percentages, 355 installations are estimated to opt-out in Phase IV. If these proportions of eligible installations opted out, this would represent 1.51 per cent of the UK's stationary ETS emissions, based on 2017 data.

Area 1: Business administrative cost savings

46. These were calculated using data from the Cost of Compliance survey carried out in 2016 (the report produced on this work was "Assessment of Costs to UK Participants of Compliance with Phase III of the EU Emissions Trading System"[12]). This is still the most recent source of administrative costs available.

47. Table 2 below shows the average total costs incurred by installations by the end of the first year of Phase III taken from this report.

Table 2: Average cost of compliance by emissions band for single installations, 2016 prices[13]

Category	Number of cases	Average cost for emissions band
Small emitters in opt-out scheme	21	£13,214
Main <25,000t CO2e	18	£17,752
Net opt-out savings		*£4,538*
Main 25,000-50,000 CO2e	9	£18,449
Main 50,000-500,000 CO2e	15	£36,441
Main >500,000 CO2e	9	£30,471

48. This survey information is used to assess the cost to Article 27 (small) emitters if they sat in the main scheme. A limitation of the data is that the survey does not distinguish between emitters covered by Article 27 and those covered by Article 27a. Comparing small (<25,000 CO2e) to the next category up (25,000 to 50,000 CO2e), indicates there is likely to only be a small difference – if any – between those covered by Article 27 and those covered by Article 27a. Therefore, this analysis assumes the same cost for both.

[10] As for other IAs, all figures are produced from the IA calculator.
[11] We have assumed 95 per cent of those installations eligible for Article 27a and then 70 per cent of those eligible for Article 27 (but not Article 27a).
[12] Department of Business, Energy and Industrial Strategy, Assessment of Costs to UK Participants of Compliance with Phase III of the EU Emissions Trading System, May 2019. This can be found shortly at: https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing
[13] This is Table 5 of the report on page 33.

49. The administration costs for Article 27a (ultra-small) emitters under the opt-out scheme were considered and, following feedback from informal engagement with the regulators, the conclusion was that installations would not have any significant ongoing costs. The consultation asked for feedback on whether any more formal arrangements should be made – the conclusion, reflected within this IA, is that there would not be any.

50. Finally, the issue of transition costs that those who opted out (under Articles 27 and 27a) would not pay was considered. It was confirmed that those who opted out would not need to engage in the part of the data collection relating to calculating their free allocation for Phase IV. The Cost of Compliance survey estimated this as £2,199 (2016). Two adjustments have been made for this, at the start of the Phase in the high sensitivity scenario only, and in 2024 for all scenarios (when the collection is repeated).

51. The total administrative cost was calculated as the difference between the average administrative cost of compliance for small emitters in the Article 27 opt-out scheme and small emitters in the main EU ETS scheme. (This was applied to those in both Article 27 and 27a schemes.)

- The estimate of the net present saving is £28.8 million over the Phase plus £0.8 million transitional cost savings or £23.8 million for both with the discount rate applied (2019 prices).
- **This £23.8m is one of the two elements of the benefits costed in the summary (on the second page of this IA).**

Area 2: Business compliance net savings

52. Aside from administration costs, installations participating in the opt-out scheme also obtain savings from no longer having to purchase allowances. If these installations had stayed in the EU ETS, some of their emissions would be covered free of cost through free allocation, but the remainder would have to be fulfilled by purchasing allowances. However, in the Article 27a scheme, emitters, if they remain below 2,500 emissions, do not have to make any payment with respect to their emissions.

53. The approach estimated the free allocation (as detailed in table 1) that these installations would have received and subtracted this from their estimated emissions. These calculations use the traded carbon price projection (see Table 3).

Table 3: Latest traded carbon values for modelling (2018 publication (real 2019 £/t))

Time Period	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Traded carbon values	£14.78	£15.34	£15.93	£16.53	£17.98	£24.33	£28.02	£31.24	£36.15	£43.33

54. The saving to participants from no longer having to purchase allowances is £210.6 million or £164.8 million with the discount rate applied.

- **This £164.8 million is the second of the two elements of benefits costed in the summary.**

55. However, in the Article 27 opt-out scheme, installations are given an annual emissions reduction target to adhere to during the phase. If they emit above their target, they pay a penalty to the government (as opposed to buying more allowances if they were in the EU ETS). The projected carbon value is used to project the civil penalties as these are based on the values for each year (see earlier section about the civil penalties value). Using regulators data of only installations which exceeded targets[14], this figure of the estimated exceeded emissions[15] is adjusted for the number of installations expected to be in the scheme in Phase IV and then used across the period for a civil penalties cost of £88.2 million or £68.4 million with the discount rate applied (2019 prices). (This is an economic transfer from business to government see paragraph 55.)

[14] This was a subset of installations and there was equally a set of installations who emitted below targets leading to overall emissions being below targets. The number who exceeded their targets in 2017 was 125 installations out of 214, exceeding by 351 thousand CO2e out of 2,004 thousand CO2e total emissions.

[15] This proportionate approach assumes a constant amount in each year to reflect similar behaviour as in Phase III.

- Compliance costs savings = £122.4 = (£210.6m saving from allowance purchases) – (£88.2m penalties cost) or **£96.4 million** with the discount rate applied in 2019 prices. This £96.4 million is specific as savings to businesses only and is referred to as such in the benefits section of the summary sheet.

Area 3: Government net savings

56. For Article 27 participants, the costs to business in terms of penalties are also a benefit to government in terms of revenue (economic transfer). In addition, any reduction in auction volumes is a loss in auction revenue. As installations who opt out under Article 27a do not pay penalties and as auctions are not adjusted for their removal, a monetised change to government savings for Article 27a participants has not been calculated. However, as also noted the non-monetised section, there would be small reduction in the demand for allowances across the EU ETS which may lead to a negligible dampening of auction prices.

- For this option government receives £88.2 million in revenue or £68.4 million with the discount rate applied in 2019 prices. This is a transfer from business to government, so cancels out in the Benefits section of the summary sheet.
- Allowances from Article 27 participants are taken out of the EU total of allowances; this reduction is spread across Member States. This means that, compared to the counterfactual, the UK auctions have fewer allowances. As mentioned in paragraph 35, the reduction is based on the UK share of EU auctionable allowances (10.3 per cent), multiplied by the number of allowances that would have been bought at auction by UK Article 27 opt-outs per year (which represent 2.1 per cent of the total, decreasing over the decade in line with the Phase IV cap) multiplied by the carbon values for each year (as for Table 3). Summing over the decade, the cost to government is £20.4 million, or £16.0 million discounted (2019 prices). **This £16.0 million is the first of the two elements of the costs costed in the summary.** *(Note that this does not cancel against the revenue that the businesses do not have to pay as those saved allowances are not necessarily bought from the UK Government).*
- The net revenue to government is therefore £67.8m, or £52.4 million discounted.

Area 4: Non-traded sector liability

57. If the additional emissions from opt-out installations are above their target this will result in higher NTS emissions, thus reducing performance against the budget level. These above-target emissions are the cost of moving to the opt-out / the non-traded liability.
58. Looking at the data for Article 27 emitters (small emitters and hospitals) from Phase III, it is not clear that there will be any emissions above those previously expected within the EU ETS (as explained above) as, for recent years, emissions are below their targets overall. This is, in part, because installations can "bank" emissions; which means that they can carry forward the surplus between emissions and targets to future years.[16] Banking is a legitimate part of Phase III and is also planned for the two allocation periods in Phase IV (although not between allocation periods).[17]
59. Therefore, overall, Article 27 (small) emitters in aggregate are assumed to reduce their emissions in line with targets (in practice some will be over target and some under). This approach seems

[16] Banking of overachievement against the emissions reduction target:

- Where operators overachieve in relation to their target they are able to bank that overachievement for compliance in the next year. This banking is carried out automatically by regulators with the target in the installation's permit amended to take into account the banked amount.
- Banked amounts that are not used for compliance in the following year will be banked again. However, for small emitter installations targets may not exceed 24,999tCO2e in any one year.

Banking aims to incentivise early action and to accommodate the fact that for some installations the target will become significantly more stringent over time.

[17] See the Government response shortly at: https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing

plausible for Article 27 emitters who have targets and pay penalties when those targets are exceeded. However, this is reconsidered under sensitivities.

60. There is no data from Phase III relating to the behaviour of Article 27a (ultra-small) emitters nor relating to the removal of targets. However, under this option, the scheme does not provide an incentive to reduce emissions. Therefore, for the purposes of this IA it is assumed that article 27a emitters do not reduce their emissions.

61. In this case, the non-traded carbon value is used to monetise these emissions (see Table 4).[18]

Table 4: Latest non-traded carbon values for appraisal (2018 publication (real 2019 £/t))

Time Period	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Non-traded carbon values	£71.53	£72.70	£73.87	£75.05	£76.22	£77.39	£78.56	£79.74	£80.91	£82.08

62. For emitters in the opt-out schemes, assuming no abatement for Article 27a (ultra-small) installations, but abatement for Article 27 (small) installations:

- The non-traded liability for Phase IV is £11.1 million (this is the difference each year between assuming constant emissions for ultra-small emitters and assuming that they reduce in line with the Phase IV cap multiplied by the carbon values for each year (see Table 4)) or £8.3 million with the discount rate applied in 2019 prices. **This £8.3 million is the second of the two elements of the costs costed in the summary.**

Summary table of monetised impacts

Table 5: Savings for the final, preferred option (£ million, 2019 prices, PV base year 2019, discounted)

Areas		**Final, preferred option**
		Both Article 27a and 27 schemes offered
Number of installations assumed to take option		355[4]
Opt-out emissions as a proportion of total UK stationary ETS emissions %		1.5
		Cost relative to counterfactual (option 0) (£m total)
Area 1: Business administrative cost savings (includes transition)		23.8
Area 2: Business compliance net savings		96.4
Total savings to business		**120.2**
Area 3: Government net savings[1]		*52.4*
Area 4: Non-traded sector liability[2] (Ultra-small does not abate, small does)		*-8.3*
Total Net Present Value[3]	2019 prices, PV base year 2019	164.3
	2016 prices, PV base year 2017	144.4

[1] These savings are a cost to business, so should not be summed with the savings to business.
[2] This is a liability and is expressed as a negative to be consistent with the rest of the table.
[3] Prices in this table (and in the main pages) differ from the values on the front of this impact assessment as standard practice is to include both and have the 2016 prices, 2017 base year values on the front for comparison with other IAs. Therefore, Total Net Present Value is presented both in terms of the

[18] This uses a calculation of emissions for these emitters applying the proportion of emissions covered by those ultra-small emitters for 2017 of the total and then applying it to expected UK emissions at the start of Phase IV, based on current reductions (these figures have been adjusted since the consultation). It then assumes that this number of emissions remains constant and values the amount over the cap by the non-traded carbon value.

table/main sheets context and for comparison with the front page box.
[4] This is 160 installations in the Article 27a (ultra-small) scheme and 195 installations in the Article 27 (small) scheme.

Sensitivity Analysis

63. These calculations use a number of assumptions including carbon values, the proportions of installations that choose to opt out, free allocation and the effectiveness of schemes. This section examines the sensitivities of these.

64. Table 6 shows the high and low ranges from using the high and low carbon values:

    - the low scenario uses the low carbon values and assumes that those installations covered by Article 27 as a total reduce their emissions in line with the Phase IV cap, in line with the central scenario, and
    - the high scenario uses the high carbon values and assumes that those installations covered by Article 27 do not reduce their emissions over Phase IV. It also assumes savings from the first NIMS collection.

Table 6: Sensitivities on options by savings (£ million, 2019 prices, discounted)

Areas	**Final, preferred option**		
	Both Article 27a and 27 schemes offered		
Number of installations assumed to participate in Articles 27 and 27a	355		
	Cost relative to counterfactual (option 0) (£m)		
	Low	**Central**	**High**
Area 1: Business administrative cost savings	23.8	23.8	24.6
Area 2: Business compliance net savings	16.6	96.4	189.5
Total savings to business	**40.4**	**120.2**	**214.2**
Area 3: Government net savings[1]	*9.9*	*52.4*	*103.1*
Area 4: Non-traded sector liability[2]	*-4.2*	*-8.3*	*-209.7*

[1] These savings are a cost to business, so should not be summed with the savings to business.
[2] This is a liability (to government) and is expressed as a negative to be consistent with the rest of the table. For the low and central values, Article 27 (small) emitters are also assumed to not abate. (Technically, the high and low values could be reversed for this element as they are presented based on magnitude.)

65. The assumption with the largest effect on business savings is the carbon values. This is because the high and low ranges of carbon values are roughly double and half those of the central values. This provides a much greater range than other adjustments, such as changes to the numbers opting out. Therefore, these figures have been recalculated using the high and low, traded and non-traded values.

66. Another sensitivity is the number of those choosing to opt out. The calculations used here all have a roughly, linear, relationship to the number of installations joining the Article 27 (small) and Article 27a (ultra-small) emitter schemes. Therefore, changes to those numbers will impact on the saving in a roughly linear relationship. This means that if the number of eligible emitters opting for the Article 27 scheme is 60 per cent rather than 70 per cent, savings will be roughly 60/70ths of those

previously estimated. This is a much smaller adjustment than for changing the carbon values, so this is noted, but as the impact is likely to be small, no further analysis is provided.

67. Finally, for the non-traded liability; overall, Article 27 (small) emitters are assumed to reduce their emissions in line with targets (in practice some will be over target and some under). This approach is plausible for those emitters who have targets and pay penalties when those targets are exceeded. However, a calculation is included where Article 27 emitters do not reduce emissions to provide a comparable “high” estimate.

Direct costs to business

68. Direct costs to business are provided here for completeness (as noted in paragraph 28, this is classified as an environmental tax for the purposes of Better Regulation, and is out of scope of the Business Impact Target); all are presented as the comparative costs to the counterfactual of not having the opt-out schemes. The costs are the civil penalties that installations in the Article 27 scheme would pay if they were above target. These estimates are based on the emissions above target that have been observed during Phase III in that scheme.

69. There will be other direct costs to businesses within the opt-out schemes, but in all other cases, calculations show that they would be less than the comparative cost of remaining in the main EU ETS scheme. Because all costs in this IA are comparative to the counterfactual, this means that they are reflected as benefits (i.e. the difference between the costs). In the case of civil penalties, they are not paid in the wider EU ETS scheme, so the amounts are given as costs only. The admin savings presented in sections above are direct cost savings. Whilst there are still admin costs in the policy options proposed, the cost is lower than in the counterfactual, meaning all policy options would lead to an admin cost saving. Table 7 below shows net direct cost to business per year across options.

Table 7: Net direct cost to business per year (£million 2019 prices, discounted)

	Final, preferred option
Net direct cost to business per year	-12.0

Note: Figures are negative as these are savings.

Wider impacts

Small and Micro Business Assessment

70. These provisions are specifically aimed to reduce costs for ultra-small and small emitters. Whilst ultra-small and small installations are not defined by numbers of employees in the way that small and micro businesses are[19]; this legislation follows the spirit of reducing burdens. The numbers of employees in the installations is not known.

Trade and investment

71. The Article 27 and 27a measures will be implemented at the discretion of each Member State, they are an optional measure. This policy is aimed at reducing burdens on smaller installations. There is no impact expected on trade and investment, either from the EU or internationally.

Equality Impact Tests

72. There is no indication that there will be any disproportionate impacts on protected groups: we expect cost savings for installations, therefore no pass-through costs to consumers and no disproportionate impacts as a result.

Human Rights Test

[19] Micro businesses are 1-9 employees and small businesses are 10-49 employees.

73. In respect of the European Convention for the Protection of Human Rights and Fundamental Freedoms, no issues arise.

Final, preferred option

74. The Government's final, preferred option is where both the Article 27a (ultra-small) and the Article 27 (small) schemes are available. It provides continuity for businesses following the Article 27 opt-out in Phase III and the negotiations over the Article 27a opt-out.

    - It provides net savings to installations of £151.9 million across the period; or £120.2 million discounted (as noted in the Benefits section on the summary sheet).
    - The net saving to society is £208.7 million across the period, or **£164.3 million discounted as shown on the summary sheet**.

75. The below table (Table 8) outlines the main metrics of the final, preferred option.

Table 8: Main metrics

	Present Value Costs, 2019 prices, £ million	**Present Value Benefits, 2019 prices, £ million**	**Net Present Value, 2019 prices, £ million**	**EANDCB, 2016 prices, £ million**	**MtCO2e increase over Phase IV period (2021-30)**
Final, preferred option *(both schemes)*	24.3	188.6	164.3	-10.6	+0.1

Note: The emissions increase compared to the counterfactual are those from ultra-small emitters who have no incentive to reduce emissions under the Article 27a opt-out (16.9MtCO2e – 16.8MtCO2e).