

Title: EU ETS Article 27 and Article 27a Schemes for Phase IV IA No: BEIS041(C)-18-CG RPC Reference No: Lead department or agency: Department for Business, Energy and Industrial Strategy Other departments or agencies: Her Majesty's Treasury (HMT), Devolved Administrations (DAs)	Impact Assessment (IA)			
	Date: 02/05/2019			
	Stage: Consultation			
	Source of intervention: Domestic			
	Type of measure: Secondary legislation			
Contact for enquiries: eu.ets@beis.gov.uk				

Summary: Intervention and Options	RPC Opinion: N/A
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Cost of Preferred (or more likely) Option (2016 prices, 2017 present value as standard)				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANDCB in 2016 prices)	Business Impact Target	Status
-141.8m	-101.8m	-10.2m	Not a regulatory provision	

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

The Political Declaration setting out the framework for the future relationship between the EU and the UK stated the UK's intention to cooperate with the EU on carbon pricing through establishing a UK national greenhouse gas emissions trading system (UK ETS) linked to the EU Emissions Trading System (EU ETS). However, proposals for implementation of Phase IV of the EU ETS are covered in this 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. This Impact Assessment (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). The UK offered the Article 27 opt-out, "UK Small Emitter and Hospitals Opt-Out Scheme", in Phase III (2013-2020). This IA updates the Phase III IA analysis, taking into account the new "Article 27a" element to underpin consultation on both keeping the Article 27 scheme and introducing the Article 27a scheme for Phase IV.

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)

Four options were considered:

Option 0: Assume neither discretionary scheme is used (baseline); all UK emitters and hospitals remain in the EU ETS.

Options 1-3: Eligible installations are given the choice of opting out from the EU ETS in Phase IV.

- Option 1: eligible installations have the choice of the Article 27a scheme only,
- Option 2: eligible installations have the choice of the Article 27 scheme only, or
- Option 3: eligible installations have the choice of both the Article 27 and 27a schemes.

Alternatives to regulation would not meet the requirements of the Directive but each of options 1-3 are deregulatory. Option 3 is the Preferred Option as it offers the greatest range of possibilities for savings to small emitters and hospitals.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: Before 2025				
Does implementation go beyond minimum EU requirements?		Yes		
Are any of these organisations in scope?		Micro Yes	Small Yes	Medium Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded: -17.0		Non-traded: +17.2

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
SELECT SIGNATORY: **Date:**

Summary: Analysis & Evidence

Policy Option 1

Description: Eligible installations have the choice of only the Article 27a (ultra-small smitters) scheme 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:	High:	Best Estimate: 17.6

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			
High			
Best Estimate	0.0	0.9	7.9

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

There are no notable costs on installations covered by the Article 27a scheme, relative to the counterfactual, as they are almost fully excluded from the system (they are only required to monitor their emissions). There is an estimated cost to government (of £7.9 million in the 'best' estimate) across the phase in terms of the non-traded liability (if emissions are assumed to remain constant, this is the cost of abating the same amount of carbon which would have been abated in the traded sector through policies in the non-traded sector).

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

There is negligible cost to government in terms of loss of auction revenue as the EU ETS does not adjust the total number of allowances based on the Article 27a scheme, but there will be a very small reduction in demand for allowances.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate	0.4	2.6	25.4

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

The main impacts on eligible businesses, relative to the counterfactual, is a saving from not having to purchase EU allowances, which is estimated to be £9m, and a saving on admin costs of £16m. Part of admin cost savings are transition benefits of £0.4m should installations choose not to produce and submit a full national data collection once opted out in 2024. These benefits sum to £25.4m in the 'best estimate'

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

It is not yet clear how overall administrative costs to regulators will change. Their main duties will largely still be the same and relate to the same data. One difference is that the installations in A27a will have no reporting requirement (although these installations will need to reconfirm after five years). This is likely to reduce costs for regulators as there will be less reports to review when compared to a baseline of there being no opt-out schemes. UK installations will not be put at a competitive disadvantage as a result of the EU ETS compared to counterparts elsewhere in the EU who are offering opt-out schemes. Also changes to administrative costs of regulators may change and be a benefit (see above).

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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It is assumed that almost all (95%) of eligible Article 27a (ultra-small) installations will opt out based on informal feedback from the regulators and considering the benefits of the scheme. A 2016 survey of installations costs, 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 carbon modelling values (with low and high price sensitivities) are used for the future cost of allowances.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	Score for Business Impact Target (qualifying provisions only) £m: N/A
Costs: 0.0 Benefits: 2.5 Net: -2.5	

Summary: Analysis & Evidence

Policy Option 2

Description: Eligible installations have the choice of only the Article 27 scheme (small emitters) 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:	High:	Best Estimate: 147.4

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			
High			
Best Estimate	0.0	1.7	15.8

Description and scale of key monetised costs by ‘main affected groups’
 . There is a cost to government as the number of total allowances is reduced based on Article 27 opt-outs across the EU and therefore lower auction revenue for government (£15.8m in the ‘Best Estimate’).

Other key non-monetised costs by ‘main affected groups’
 There could be a cost to government in terms of the non-traded liability; however, the current 2017 Phase III data shows that, overall, installations covered by Article 27 are within target.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate	0.6	17.3	163.2

Description and scale of key monetised benefits by ‘main affected groups’
 The main impact on eligible businesses, compared to the counterfactual, is a net saving from not having to purchase EU allowances to the UK (£154m in the ‘Best Estimate’). This benefit is reduced for businesses by paying “civil penalties” for the proportion that go over their targets which are set in line with the cap reduction for Phase IV (this is an economic transfer to government of £65m) – resulting in a net benefit to businesses of £88m. There is also a saving on administration costs to businesses (£10 million). Part of this admin costs saving is a transition benefit (£0.6m) should installations choose not to produce and submit a full national data collection once opted out in 2024.

Other key non-monetised benefits by ‘main affected groups’
 It is assumed that overall administrative costs to the regulators will not change significantly as their main duties will largely still be the same and relate to the same data. Some of the approaches outlined in the consultation aim to simplify the processes, such as the proposals to use one target, but additional savings are expected to be small. UK Article 27 (small) emitters will not be put at a competitive disadvantage as a result of the EU ETS compared to counterparts elsewhere in the EU who are offering opt-out schemes. Also changes to administrative costs of regulators may be a benefit (see above).

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
<p>It is assumed that the majority (70%) of eligible installations will opt out based on the numbers that chose to opt out in Phase III and informal feedback from regulators. A 2016 survey of installations costs, 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 ‘Best Estimate’ of the size of the non-traded liability is zero in the central scenario. Some sensitivities are provided to demonstrate the range of uncertainty.</p>		

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:	Score for Business Impact Target (qualifying provisions only) £m: N/A
Costs: 0.0 Benefits: 9.8 Net: -9.8	

Summary: Analysis & Evidence

Policy Option 3

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:	High:	Best Estimate: 159.8

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			
High			
Best Estimate	0.0	2.5	23.3

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 covered by Article 27a (if emissions remain constant for these installations: this is £8 million). There is a cost to government from loss of auction revenue of £15m 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.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate	0.8	19.3	183.1

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

The main impact on eligible businesses, compared to the counterfactual, is a net saving from not having to purchase EU allowances (£159m in the 'Best Estimate'), reduced by paying "civil penalties" for the proportion that go over their targets (which are set in line with the cap reduction for Phase IV) (this is an economic transfer to government (£68m) – resulting in a net £91 million benefit to businesses. There is also a saving on administration costs (£24 million). Part of this admin cost saving is a transition benefit (£0.8m) should they choose not to produce and submit a full national data collection once opted out in 2024.

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 outlined in the consultation, such as the proposals to use 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 will need to reconfirm after five years). This is likely to reduce costs for regulators. UK emitters within scope of the schemes 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. Also changes to administrative costs of regulators may be a benefit (see above).

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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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 this assumes those covered by Article 27a do not abate).

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:	Score for Business Impact Target (qualifying provisions only) £m: N/A
Costs: 0.0 Benefits: 11.5 Net: -11.5	

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) and will provide a smooth transition for relevant sectors. The Political Declaration setting out the framework for the future relationship between the EU and the UK stated the UK's intention to cooperate with the EU on carbon pricing through establishing a UK national greenhouse gas emissions trading system (UK ETS) linked to the EU Emissions Trading System (EU ETS).
2. However, there are several reasons why proposals for implementation of the Phase IV of the EU ETS are covered in this 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 before 9th October 2019. Also, though HMG does not currently favour an extension of the Implementation Period, such a scenario would mean Phase IV participation for a limited time. Lastly, although remaining an EU ETS participant throughout Phase IV is not the UK's preferred approach, the Future Economic Partnership negotiations are not yet concluded. Also, there are proposed Phase IV implementation features which may also be incorporated within a new UK ETS: this IA considers those proposed amendments to UK legislation which relate to Articles 27 (small emitters) and 27a (ultra-small emitters).
3. This IA relates to the chapter of the consultation document which sets out and seeks 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 that are proposed.

Background

EU Emissions Trading System

4. 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% below 1990 levels by 2012, as specified in the Kyoto Protocol¹. 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, and within this cap operators can buy, sell or trade allowances. 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),² auctioned directly by Member States, and traded on the secondary market.
5. 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 overall costs of meeting the emissions target (or cap) set by the trading system. The EU ETS covers

¹ 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.

² 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% of this quantity. For installations in **other sectors**, not on the carbon leakage list, the free allocation is gradually reduced across phase 3 (80% in 2013, reducing every year to reach 30% 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.

mainly power, heavy industry and aviation sectors and comprises around 45% of the EU's greenhouse gas emissions.

6. 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.
7. 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)

8. 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% domestic reduction in greenhouse gas emissions by 2030 compared to 1990³. 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 2°C of pre-industrial levels.
9. 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)⁴ 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 to 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.
 - A number of “solidarity mechanisms” to enable 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 CO₂ 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 CO₂ per annum emissions 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.
10. 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.

³ To achieve this target as cost-effectively as possible, the sectors covered by the EU ETS will need to reduce their emissions by 43% by 2030 compared to 2005.

⁴ 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

Article 27 and 27a schemes

11. 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. Member States have 18 months from this date (to 9 October 2019) to make the necessary changes to domestic legislation to reflect the changes to the ETS Directive.
12. 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.
13. The areas of discretion include:
 - The implementation of the Article 27 “opt-out” provision, for installations emitting less than 25,000 tonnes of CO₂ equivalent (tCO₂eq) per annum and less than 35 MW installed capacity.
 - The implementation of the Article 27a exemption provision, for installations emitting less than 2,500 tCO₂eq per annum (or which operate generators for less than 300 hours per annum).

Rationale for Policy

14. While the UK remains a member of the EU, it has a legal obligation to transpose the Phase IV Directive. This IA relates to those proposed amendments to UK legislation which relate to Articles 27 (small emitters) and 27a (ultra-small emitters). Therefore, the **counterfactual option** against which the impacts of the three options have 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). The UK has to take steps to implement both Article 27 and the new Article 27a for Phase IV as both are discretionary schemes. Also, logically, it makes more sense to consider the options against a counterfactual where there is no opt-out scheme. In practice, continuing to operate an Article 27 scheme is more complicated than keeping existing legislation – some legal changes would need to be made at the end of Phase III regardless of whether Article 27 is maintained or removed. However, the most sensible – and logical – presentation is that the counterfactual option is for there to be no discretionary scheme.
15. 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.
16. 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 46 to 47).

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

17. 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 tCO₂eq 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 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.

18. 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

19. Article 27a is a new provision that offers a way for installations emitting less than 2,500 tCO₂eq 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 tCO₂eq per annum).

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

20. 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.
21. 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

22. 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, Government is proposing to only use the historical emissions approach. This approach will be reviewed in light of consultation responses. Were installations to choose the free allocation approach, then the net compliance costs here, compared with being in the main scheme would be zero (as determined for the Phase III IA calculations) for those installations; as they would receive their free allocation share as for the main Phase IV scheme and would buy allowances to pay for being over their free allocation target. Overall, for this

Consultation Stage Impact Assessment, the proportionate approach is to assume that all operators would have their targets set by historical emissions (given the small numbers who chose otherwise for Phase III and the corresponding sense of magnitude).

Civil Penalties

23. Emitters opting out under Article 27 are subject to a penalty for any emissions that exceeds 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.

Note on EU Exit Content⁵

24. The UK will leave the EU by 31 October 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.
25. 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.
26. The Political Declaration setting out the framework for the future relationship between the EU and the UK stated its intention to cooperate with the EU on carbon pricing through establishing a UK national greenhouse gas emissions trading system (UK ETS) linked to the EU Emissions Trading System (EU ETS).

Other changes to legislations

27. There are a number of other changes to the legislation being proposed at the same time as the opt-outs are being considered. These seek to 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 across the options in this IA.

Cost Benefit Analysis (CBA)

28. The overall approach is to present the costs and benefits for each of the options being considered 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 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 Policy Options as compared with the counterfactual option is presented.

⁵ To note that in this section positions attributed to the UK Government do not necessarily extend to the Devolved Administrations of the UK.

Options considered

- 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).

These options are considered against a counterfactual of neither discretionary scheme being offered and all installations in the traded sector being in the EU ETS.

Costs and benefits

30. 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	<p>Area 1: Installations administrative cost savings (relative to the counterfactual):</p> <ul style="list-style-type: none"> • Monitoring, reporting, verification • Maintenance of monitoring and reporting systems • Communicating any changes to regulator <p>Area 2: Installations compliance net savings (relative to the counterfactual):</p> <ul style="list-style-type: none"> • Not purchasing EU allowances (minus the cost of penalties for those who exceed targets). 	<p>Area 1:</p> <ul style="list-style-type: none"> • Number of installations from Phase III and regulator data • Survey conducted on behalf of BEIS in 2016 <p>Area 2:</p> <ul style="list-style-type: none"> • Number of installations from Phase III and 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.
Government / Regulators	Area 3: Government net savings from penalties and auctions.	<p>Area 3:</p> <ul style="list-style-type: none"> • Number of installations from Phase III and regulator data • BEIS short term traded modelling carbon values • Free allocation (as above). <p>Covered qualitatively where monetisation has not been possible</p>
	Area 4: Non-traded sector liability	<p>Area 4: Estimated using assumptions about emissions reduction.</p> <ul style="list-style-type: none"> • Number of installations from Phase III and regulator data • BEIS non-traded carbon values <p>Covered qualitatively where monetisation has not been possible</p>

Approach for monetised elements

Impact/Costs to installations

Administrative costs

31. 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 the Article 27a 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

32. 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 tiny 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

33. 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. The effect of these options is discussed in turn.

Changes in fiscal revenues from the opt-out measures

34. 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.
35. Revenue from auctions will decrease slightly as a result of the Article 27 scheme. 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

36. 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 2008⁶ this means that emissions are transferred from the traded sector (EU ETS) to the non-traded sector (non-EU ETS emissions).
37. In terms of Carbon Budget accounting, the introduction of the opt-out schemes would mean that the emitters’ previous share of the cap under the ETS would be moved across to the non-traded sector. 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 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, 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 outlined in the consultation, such as the proposals to use one target based on historical emissions (see paragraph 22), 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 will need to reconfirm 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.

⁶ 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.

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 by option

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.

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.⁷

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)

45. Following feedback from informal engagement with regulators, this IA assumes that 95 per cent of eligible operators would choose to opt out. From data from the regulators for 2017, 95% of those eligible is 160 installations. If 95% of Article 27a emitters opted out, this would represent 0.09% 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”). 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.

⁷ As for other IAs, all figures are produced from the IA calculator.

Table 2: Average cost of compliance by emissions band for single installations, 2016 prices⁸

Category	Number of cases	Average cost for emissions band
Small emitters in opt-out scheme	21	£13,214
Main <25,000t CO ₂ e	18	£17,752
<i>Net opt-out savings</i>		<i>£4,538</i>
Main 25,000-50,000 CO ₂ e	9	£18,449
Main 50,000-500,000 CO ₂ e	15	£36,441
Main >500,000 CO ₂ e	9	£30,471

48. This 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. Therefore, this analysis assumes the same cost for both. Comparing small (<25,000 CO₂e) to the next category up (25,000 to 50,000 CO₂e), there is likely to only be a small difference – if any – between those covered by Article 27 and those covered by Article 27a; this may be an over-estimate for the latter.
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 is asking for feedback on whether any more formal arrangements should be made – but the planned approach, 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 administrative cost was calculated as the difference between the ongoing cost for Article 27-eligible emitters in the main scheme with those in the opt-out scheme (with the additional adjustment for not carrying out the free allocation data collection as above).
- The estimate of the net present saving is £19.5 million for Phase IV plus a £0.4 million transition cost saving; £15.9 million for both with the discount rate applied (2019 prices).

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). The estimated value of the saving from not requiring allowances purchases is £12.1 million; or £9.5 million with the discount rate applied (2019 prices).

⁸ This is Table 5 of the report on page 33.

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

- Compliance costs savings = £12.1m = (£12.1m saving from allowance purchases) – (£0m penalties cost), or **£9.5 million** with the discount rate applied (2019 prices) for Phase IV.

Area 3: Government net savings

54. 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 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.

Area 4: Non-traded sector liability

55. 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.

56. 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.

57. In this case, the non-traded carbon value is used to monetise these emissions (see Table 4).⁹

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

58. For Article 27a (ultra-small) emitters, assuming no abatement:

- The non-traded liability for Phase IV is £10.5 million or £7.9 million with the discount rate applied (2019 prices).

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)

59. Whilst the Article 27 (small emitters and hospital) scheme opt-out aims to reduce costs for installations, not all installations consider it beneficial to take advantage. Not all eligible installations consider it an advantage, a number do not like the use – and language of “civil penalties”, others are close to the threshold and might breach 25,000 emissions.¹⁰

⁹ 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. It then assumes that this number of emissions remains constant and values the amount over the cap by the non-traded carbon value.

¹⁰ Data from Phase III shows that the proportion in the scheme of those eligible started at 75 per cent and is currently around 60 per cent. The percentage from Phase IV is expected to be more consistent and it would tail off over two periods of five years, rather than one of eight years.

60. Looking at the take-up rate in Phase III and following feedback from informal engagement with regulators, it is assumed that 70 per cent of eligible operators would choose to opt-out under Article 27. From data from regulators for 2017, 70 per cent of those eligible is 240 installations who would choose to opt-out under Article 27. If 70% of eligible Article 27 emitters opted out, this would represent 1.45% of the UK's stationary ETS emissions based on 2017 data.

Area 1: Business administrative cost savings

61. As for the other options, business administrative cost savings were calculated using data from the Cost of Compliance survey carried out in 2016 (See Table 2), using 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.
- The estimate of the net present annual saving is £11.4 million over the Phase plus a £0.6 million transition cost saving; or £9.7 million for both with the discount rate applied (2019 prices).

Area 2: Business compliance net savings

62. As for other options, installations participating in the opt-out scheme also obtain savings from no longer having to purchase allowances for emissions not covered by their free allocation (using traded carbon price projection, see Table 3). The saving to participants from no longer having to purchase allowances is £195.6 million or £153.5 million with the discount rate applied (2019 prices).
63. 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 targets¹¹, this figure of the estimated exceeded emissions¹² 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 £84.3 million or £65.4 million with the discount rate applied (2019 prices).
- Compliance costs savings = £111.3m = (£195.6m saving from allowance purchases) – (£84.3m penalties cost) or **£88.2 million** with the discount rate applied (2019 prices).

Area 3: Government net savings

64. 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.
- For this option, government receives £84.3 million in revenue from penalties or £65.4 million using the discount rate (2019 prices).
 - 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, multiplied by the decrease in allowances that would have been bought at auction by UK Article 27 opt-outs. This is a cost to government of £20.1m, or £15.8m discounted (2019 prices).
 - The net savings to government are therefore £64.2m, or £49.6m discounted.

¹¹ 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 106 installations out of 181, exceeding by 305 thousand CO₂e out of 1,709 thousand CO₂e total emissions.

¹² This proportionate approach assumes a constant amount in each year to reflect similar behaviour as in Phase III.

Area 4: Non-traded sector liability

65. As discussed earlier, if 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.
66. 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.¹³ Banking is a legitimate part of Phase III and is also planned for Phase IV.

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

67. For Article 27 emitters (with no opt-out scheme for Article 27a emitters), assuming abatement:
- The non-traded liability for Phase IV is £0 million.

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)

68. Under this option, consistent with options 2 and 3, 95% of installations eligible for the ultra-small are assumed to opt out under Article 27a and 70% of those eligible only for small will opt out under Article 27 (see above). There is some overlap between the categories; where installations emit less than 2,500 tCO₂eq per annum **and** have less than 35 MW installed capacity they are eligible for both schemes.¹⁴ 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% of the UK’s stationary ETS emissions, based on 2017 data.

Area 1: Business administrative cost savings

69. As for the other options, business administrative cost savings were calculated using data from the Cost of Compliance survey carried out in 2016 (See Table 2), using 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).

¹³ 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.

¹⁴ We have assumed 95% of those installations eligible for Article 27a and then 70% of those eligible for Article 27 (but not Article 27a).

Area 2: Business compliance net savings

70. As for other options, installations participating in the opt-out schemes also obtain savings from no longer having to purchase allowances for emissions not covered by their free allocation (using traded carbon price projection, see Table 3). The saving to participants from no longer having to purchase allowances is £202.9 million or £159.3 million with the discount rate applied.
71. For those covered by Article 27, as stated earlier, civil penalties apply to emissions above targets. This is a civil penalties cost of £88.2 million or £68.4 million with the discount rate applied. (Note that those in the Article 27a scheme do not pay penalties).
- Compliance costs savings = £114.7 = (£202.9m saving from allowance purchases) – (£88.2m penalties cost) or **£90.9 million** with the discount rate applied in 2019 prices.

Area 3: Government net savings

72. 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.
- For this option government receives £88.2 million in revenue or £68.4 million with the discount rate applied in 2019 prices.
 - As noted earlier, allowances from Article 27 participants are taken out of the EU total of allowances; this reduction is spread across Member States; there is no cost in terms of the Article 27a scheme, as these allowances are not removed from the EU-wide total. The cost to government is £19.7 million, or £15.4 discounted (2019 prices).
 - The net revenue to government is therefore £68.6m, or £52.9 million discounted.

Area 4: Non-traded sector liability

73. As discussed earlier, 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.
74. Therefore, 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). Article 27a (ultra-small) emitters are assumed to not reduce their emissions for the purposes of this IA.
75. In this case, the non-traded carbon value is used to monetise these emissions (see Table 4).
76. 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 £10.5 million or £7.9 million with the discount rate applied in 2019 prices.

Summary table of monetised impacts across options

Table 5: Options by savings (£ million, 2019 prices, PV base year 2019, discounted)

Areas	Option 1	Option 2	Option 3	
	Only Article 27a (ultra-small) scheme offered	Only Article 27 (small) scheme offered	Both Article 27a and 27 schemes offered	
Number of installations assumed to take option	160	240	355 ⁴	
Opt-out emissions as a proportion of total UK stationary ETS emissions %	0.1	1.5	1.5	
Cost of option relative to option 0 (£m total)				
Area 1: Business administrative cost savings (includes transition)	15.9	9.7	23.8	
Area 2: Business compliance net savings	9.5	88.2	90.9	
Total savings to business	25.4	97.8	114.7	
<i>Area 3: Government net savings¹</i>	<i>0.0</i>	<i>49.6</i>	<i>52.9</i>	
<i>Area 4: Non-traded sector liability² Ultra-small does not abate, small does</i>	<i>-7.9</i>	<i>0.0</i>	<i>-7.9</i>	
Total Net Present Value ³	2019 prices, PV base year 2019	17.6	147.4	159.8
	2016 prices, PV base year 2017	15.6	130.8	141.8

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 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

77. 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.

78. Table overleaf shows the high and low ranges from using the high and low carbon values:

- the low scenario for each option 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, 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.

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

Areas	Option 1			Option 2			Option 3		
	Only Article 27a (ultra-small) scheme offered			Only Article 27 (small) scheme offered			Both Article 27a and 27 schemes offered		
Number of installations assumed to take option	160			240			355		
	Cost of option relative to option 0 (£m per year av.)								
	Low	Central	High	Low	Central	High	Low	Central	High
Area 1: Business administrative cost savings	15.9	15.9	16.3	9.7	9.7	10.2	23.8	23.8	24.6
Area 2: Business compliance net savings	1.6	9.5	18.6	14.5	88.2	173.4	15.0	90.9	178.8
Total savings to business	17.6	25.4	35.0	24.2	97.8	183.6	38.8	114.7	203.4
Area 3: Government net savings ¹	0.0	0.0	0.0	9.4	49.6	97.4	10.0	52.9	104.1
Area 4: Non-traded sector liability ²	-3.9	-7.9	-11.8	0.0	0.0	-190.8	-3.9	-7.9	-197.9

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. 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.)

79. 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 options have been recalculated using the high and low, traded and non-traded values (see Summary).
80. 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.
81. 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 seems 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

82. Direct costs to business are provided here for completeness; all are presented as the comparative costs to the counterfactual of not having the opt-out schemes. There are no comparative costs for option 1 (which covers the Article 27a scheme only). For options 2 and 3 (both of which cover the Article 27 scheme), 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.

83. 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.
84. Table 7 below shows net direct cost to business per year across options.

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

	Option 1	Option 2	Option 3
Net direct cost to business per year	-2.5	-9.8	-11.5

Note: Figures are negative as these are savings.

Wider impacts

Small and Micro Business Assessment

85. 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 are¹⁵; this legislation follows the spirit of reducing burdens. The numbers of employees in the installations is not known.

Equality Impact Tests

86. 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

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

Preferred option

88. The Government's preferred option is 3, where both the Article 27a (ultra-small) and the Article 27 (small) scheme 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. This option provides the greatest net savings to installations of £144.3 million across the period; or £114.7 million discounted. The net saving to society is £202.4 million across the period, or £159.8 million discounted.

¹⁵ Micro businesses are 1-9 employees and small businesses are 10-49 employees.