

Title: The Greenhouse Gas Emissions Trading Scheme (Amendment) Regulations 2013 ("the proposed Regulations") IA No: DECC0132 Lead department or agency: Department of Energy and Climate Change Other departments or agencies: Department for Transport	Impact Assessment (IA)		
	Date: 18/03/2013		
	Stage: Consultation		
	Source of intervention: EU		
	Type of measure: Secondary Legislation		
Contact for enquiries: Aproop Bhawe, DECC			

Summary: Intervention and Options	RPC: N/A
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Cost of Preferred (or more likely) Option							
Total Net Present Value		Business Net Present Value		Net cost to business per year (EANCB on 2009 prices)		In scope of One-In, Measure qualifies as One-Out?	
£m	N/A	£m	N/A	£m	N/A	No	N/A

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

A global market-based measure agreed and implemented by all states is the best means of reducing the greenhouse gas emissions from aviation. The problem under consideration is how action at European level can best contribute to an ambitious international agreement at the UN body for aviation, the International Civil Aviation Organization (ICAO). The European Commission has proposed to suspend elements of the EU Aviation Emissions Trading System (ETS) in recognition of progress made by the ICAO Council in November 2012. This is intended to reinforce the positive momentum at ICAO, and enhance the chances of a successful outcome at the 2013 General Assembly. If there is agreement to the proposal in the EU, Government intervention will be necessary to implement certain elements of the proposal in UK law.

What are the policy objectives and the intended effects?

The key objective of the European Commission's proposal is to suspend elements of the EU climate measure in order to encourage constructive discussions and ultimately facilitate an ambitious international agreement to limit aviation emissions at the 2013 ICAO General Assembly. The objective of UK intervention is to implement certain elements of this proposal in UK law, to provide legal certainty for the Environment Agency. This will ensure that airline operators will not face penalties when they do not submit emission permits to cover their flights outside of Europe, therefore ensuring consistency with the EU's proposal.

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

The European Commission's "Stop the Clock" proposal is to introduce a derogation to temporarily suspend the enforcement of obligations for flights between the European Economic Area (EEA) and third countries, provided that aircraft operators have returned (or not received) free allowances in respect of these flights. Current domestic legislation is not consistent with certain elements of the proposed "Stop the Clock" Decision.

A scenario where the UK takes no action is not viable because this would place the UK in breach of its duty under EU law to implement with sufficient legal certainty, and has not been considered in this Impact Assessment.

There are two ways in which the derogation could be implemented in UK domestic law:
Option A: Change the UK regulations to constrain the regulators' powers of enforcement - This is the preferred option as it provides legal certainty to both the regulators and the UK government.
Option B: Issue a direction to the UK regulators not to enforce against obligations on extra-EEA flights - This option is not preferred as the resulting legal position would not be sufficiently transparent.

Will the policy be reviewed? The temporary derogation will not be reviewed.

Does implementation go beyond minimum EU requirements?	No.				
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro Yes	< 20 Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: 0		Non-traded: 0		

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:  Date: 18 March 2013

Summary: Analysis & Evidence

Policy Option A

Description: Change the UK regulations to constrain the regulators' powers of enforcement

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)			
			Low:	N/A	High:	N/A

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low				
High				
Best Estimate		N/A	N/A	N/A

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

Given the available analytical tools, it is not possible to estimate the impact of a change in UK regulations alone.

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

N/A

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate		N/A	N/A	N/A

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

Given the available analytical tools, it is not possible to estimate the impact of a change in UK regulations alone.

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

Benefits to both UK regulators and the aircraft operators they regulate in having legal clarity as to the operators' obligations in respect of pre-2013 emissions from extra-EEA flights as a result of the "Stop the Clock" Decision.

Key assumptions/sensitivities/risks

Discount rate (%)

N/A

Since it is likely that aircraft operators would be able to rely on the direct effect of the "Stop the Clock" Decision to take advantage of the derogation available to them, the extent to which a change in UK Regulations would have any additional costs/benefits is uncertain.

BUSINESS ASSESSMENT (Option A)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as			
Costs:	N/A	Benefits:	N/A	Net:	N/A	No	N/A

Evidence Base (for summary sheets)

1. Introduction

1. Globally, the aviation sector is responsible for about one to two per cent of greenhouse gas (GHG) emissions¹. In the UK, domestic and international aviation² emissions account for about five per cent of GHG emissions or 21 per cent of the transport sector's GHG emissions. Aviation is, however, likely to make up an increasing proportion of the UK's total GHG emissions as other sectors decarbonise more quickly over time.
2. The Government's objective is to ensure that the aviation sector makes a significant and cost effective contribution towards reducing global emissions. The emphasis is on action at a global level as the best means of securing UK objectives.
3. The EU Emissions Trading System (EU ETS) was established under the European Directive 2003/87/EC which entered into force on 25 October 2003. The purpose of the EU ETS is to promote cost-effective reductions in greenhouse gas (GHG) emissions. It supports the EU's commitment to a global carbon market as a key instrument for tackling climate change, and will be central in enabling the EU to achieve its stated goal of reducing emissions by 20% in 2020 compared to 1990 levels.
4. In September 2005, the European Commission adopted a Communication³ which considered a variety of policies and instruments, and concluded that in view of the likely future growth in international air traffic, a new market-based instrument at EU level, such as emissions trading, was preferable to other financial measures. The Directive to include aviation in the EU ETS (2008/101/EC)⁴ ("the Aviation Directive") was adopted by the Council of the European Union on 24 October 2008, and aviation was fully included in the EU ETS for the first time in 2012.
5. Under the Aviation Directive, all aircraft operators who fly into or out of aerodromes in the European Economic Area (EEA) are required to monitor their carbon emissions each calendar year from 1 January 2010. Aircraft operators are required to then submit an independently-verified report of their carbon emissions for these flights to their respective regulator, by 31 March of the following year. Subsequently, from 30 April 2013 aircraft operators must surrender the corresponding number of carbon allowances and/or project credits to their designated regulating body to account for their annual verified emissions in the previous year. Note that micro businesses are not exempt from the EU ETS. Exemptions are already contained in Annex I of the EU ETS Directive and are based on emissions and number of flights rather than size of business. Detailed information on the classification of UK regulated aircraft operators by size of business is not available.⁵

2. Problem Under Consideration

6. The emission of greenhouse gases (GHGs) into the atmosphere leads to climate change. The most effective means of reducing or mitigating aviation emissions is at an international level through the UN body for civil aviation: the International Civil Aviation Organization (ICAO). At ICAO's General Assembly in 2010, a global aspirational goal of carbon neutral growth from 2020 was agreed. ICAO has developed a basket of measures to address aviation emissions which includes measures like the development of biofuels, fuel efficiency, improved operational measures and the introduction of market based measures. The ICAO Assembly asked the ICAO Council to develop a framework for market based measures and to explore the feasibility of a global market based measure for aviation.

¹ *Reducing Transport Greenhouse Gas Emissions: Trends & Data*, International Transport Forum, 2010, <http://www.internationaltransportforum.org/Pub/pdf/10GHGTrends.pdf>

Greenhouse Gas Emissions from Aviation and Marine Transportation: Mitigation Potential and Policies, Prepared for the Pew Center on Global Climate Change by David McCollum, Gregory Gould and David Greene, 2009, <http://www.c2es.org/docUploads/aviation-and-marine-report-2009.pdf>

² There is currently no internationally agreed way of allocating international emissions to individual countries. The percentage shares are based on the percentage of bunker fuel sales to the aviation sector from the UK.

³ Document number COM(2005) 459 (2005), *Reducing the Climate Change Impact of Aviation*, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52005DC0459:EN:NOT>.

⁴ Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0101:EN:NOT>.

⁵ Note however that in May 2011 the CAA estimated that about 150 aircraft operators had fewer than 10 employees, which is one of the criteria for classification as a micro-business.

7. Progress on these workstreams to date has been slow and a number of issues have emerged which have blocked discussions, including the international opposition to the Aviation ETS in Europe, which is perceived by many non-EU states to be extra-territorial. To assist in resolving the impasse, the ICAO Council meeting in November 2012 agreed that a High Level Group of senior officials from 17 states should be formed to resolve the political barriers to creating a global system. On the back of this move, the European Commission proposed to temporarily suspend elements of the Aviation ETS.

“Stop the Clock” Proposal

8. In November 2012 the European Commission announced that it would “Stop the Clock” on the implementation of the “international” aspects of the Aviation Emissions Trading System. On 20th November it published its proposed Decision to temporarily derogate from the Directive 2003/87/EC. The derogation is optional for aircraft operators.
9. The “Stop the Clock” proposal aims to temporarily suspend the enforcement of the obligations of aircraft operators operating flights to or from aerodromes located in the European Economic Area (EEA) (including for this purpose Croatia, Switzerland and the dependent territories of EEA States) and third-party countries under the Aviation ETS. The effect of this is that only aircraft operators’ flights between EEA aerodromes will face enforcement for failing to submit emissions reports and surrender allowances and project credits for their 2012 emissions. The suspension of compliance obligations is on the condition that aircraft operators return any free allowances that have already been allocated for 2012 in respect of their flights between EEA and third countries.
10. The proposal aims to foster goodwill at ICAO and allow negotiations to re-focus on a global measure to reduce aviation emissions, free from the distraction of opposition to the Aviation ETS. Should no “clear and sufficient” progress be made, obligations on flights between EEA and third countries will once again apply. However, if ICAO progress is made in developing a global market-based measure and adopting a framework to facilitate its application, then the Commission states it will propose further legislative action. Article 25a of the EU ETS Directive (2008/101/CE) allows amendments to be made to the scope of the aviation activities covered, in the case of equivalent measures being adopted by one or more third countries, or of a global agreement.
11. **The UK needs to implement certain elements of this proposal in UK law, to ensure legal certainty for the Environment Agency and aircraft operators.**

3. Rationale for Intervention

12. The rationale for the specific intervention considered in this Impact Assessment is to make the UK’s national legislation consistent with the European Commission’s “Stop the Clock” proposal so that UK regulators will no longer be under a duty to enforce against aircraft operators who do not comply with Aviation EU ETS where a derogation is available under the “Stop the Clock” Decision.

4. Policy Objective

13. The objective is to provide legal certainty and to ensure the proper implementation of the “Stop the Clock” Decision.

5. Description of Options Considered

Options for the UK

14. The UK has welcomed the “Stop the Clock” proposal and thinks it is right to give the ICAO process room to make progress on a global agreement to reduce emissions. The proposed Decision will proceed through the Ordinary Legislative Procedure (previously known as co-decision) and will need to be agreed by both the European Parliament and the Council.

15. If the proposal is agreed by the European Commission, the Council and the European Parliament, and no action is taken to amend UK national legislation, the UK regulators would, under the terms of that legislation, be under a duty to enforce against aircraft operators who do not comply with the Aviation EU ETS, even where a derogation is available under the Decision. Although it is likely that an operator would be able to rely on the direct effect of the Decision in order to avoid such compliance, the legal position would not have been made sufficiently clear. The UK would therefore be in breach of its duty under EU law to implement the Regulations with sufficient legal certainty. Thus, a scenario where the UK takes no action to implement the “Stop the Clock” Decision in UK legislation is not a viable option given the legal risks.

16. As a consequence of the European Commission’s proposal, the UK has two main policy options:

A. Change UK Regulations to Constrain the Regulators’ Powers of Enforcement

- I. This would give regulators a clear duty not to penalise operators who fail to monitor and report emissions or surrender allowances for their extra-EEA flights prior to 2013, provided that the operator has returned (or not received) free allowances in respect of these flights. This is the preferred option since it would give a clear legal position to the UK regulator not to enforce compliance for 2012 emissions from extra-EEA flights in light of the “Stop the Clock” proposal.

B. Issue a Direction to the Regulator Not to Enforce Against Aircraft Operators

- I. The UK regulations are not changed, but the DECC Secretary of State issues a direction to the regulator not to enforce against aircraft operators who fall within the terms of the derogation. A corresponding direction would be given by the Scottish Ministers in the case of those operators regulated by the Scottish Environment Protection Agency (SEPA).
- II. However, there would then be a conflict between the terms of those directions and the text of the implementing Regulations, and the legal position would arguably not be sufficiently transparent. Furthermore, the effect of the Regulations would have been modified without full Parliamentary scrutiny.

6. Monetised and non-monetised costs and benefits of each option (including administrative burden)

17. This section sets out our assessment of the costs and benefits relating to those Regulations that are the subject of the accompanying consultation. This Impact Assessment considers the impacts of a change in UK Regulation relative to a counterfactual where a “Stop the Clock” Decision has been made and the UK takes no action to change its domestic legislation.

18. It has not been possible to monetise the costs and benefits associated with Option A or Option B, but it is likely that Option A will involve more benefits than Option B, as argued below.

Consultees are invited to provide any additional evidence relating to the costs and benefits and other impacts associated with the amendment to the Greenhouse Gas Emissions Trading Scheme Regulations 2012 that is the subject of the accompanying consultation.

Option A: Change UK Regulations to Constrain the Regulators’ Powers of Enforcement

19. Changing UK Regulations in line with the “Stop the Clock” Decision would, as outlined above, give regulators a clear duty not to penalise operators who fail to monitor and report emissions or surrender allowances for their extra-EEA flights prior to 2013, provided that the operator has returned (or not received) free allowances in respect of these flights. This is the preferred option since it would give the requisite legal clarity to both the operator and the UK regulator in relation to such flights.

20. With regard to the impacts of a change in UK regulations to implement “Stop the Clock” (Option A), the impacts of introducing the proposed Regulations would depend on whether UK regulated aircraft operators are able to rely on the direct effect of the EU Decision in order to avoid compliance with the EU ETS as regards extra-EEA flights prior to 2013 if the UK did not change its legislation. However, there seems little doubt that an aircraft operator would be able to rely on the direct effect of the Decision in order to avoid compliance with the EU ETS as regards extra-EEA flights prior to 2013. Therefore, the extent to which there would be additional costs and benefits from introducing the proposed Regulations (Option A) as compared to a scenario in which the UK takes no action, is uncertain.
21. The main benefit associated with Option A is the legal clarity associated with a change to UK Regulations, but it is not possible to quantify this. Although it is likely that operators would be able to rely on the direct effect of the Decision in order to take advantage of the derogation, Option A may also have the benefit of avoided legal costs for aircraft operators should they have needed to take legal action, or seek additional legal advice, to take advantage of the derogation. However, these benefits are also uncertain and it is not possible to quantify them.

Option B: Issue a Direction to the Regulator Not to Enforce Against Aircraft Operators

22. If UK Regulations were not changed, the DECC Secretary of State could issue a direction to the regulator not to enforce against aircraft operators who fall within the terms of the derogation. A corresponding direction would be given by the Scottish Ministers in the case of those operators regulated by SEPA.
23. However, there would then be a conflict between the terms of those directions and the text of the implementing Regulations, and the legal position would arguably not be sufficiently transparent. Furthermore, the effect of the Regulations would have been modified without full Parliamentary scrutiny.
24. Although Option B would provide some legal clarity as compared with a counterfactual scenario where the UK takes no action, the legal position under Option B would be less transparent than under Option A. Although it is not possible to quantify this, it is likely that the benefits associated with Option B would be smaller in magnitude than those associated with Option A. There are no significant costs associated with Option B.

Note: For the sake of completeness and in order to provide further information to stakeholders, an indicative assessment of the costs and benefits of the “Stop the Clock” proposal to the UK as compared with a counterfactual scenario without “Stop the Clock” has been considered separately in an annex to this Impact Assessment.

7. Wider impacts

Small Firms Impact Test

25. Implementation of the proposed Regulations is not expected to have any disproportionate impact on small firms.

Equality Impact Tests

26. An Equality Impact Assessment has not been completed for this Impact Assessment given the limited scope of the amending regulation.

Human Rights Test

27. The implementation of the Decision in the UK does not raise any new human rights issues as there is an existing civil penalty regime from which it provides an optional derogation.

Competition Impact Test

28. A change in the UK Regulations is unlikely to have a significant impact on competition since in line with OFT guidance⁶ it is not likely to directly or indirectly limit the number or range of suppliers or the ability or incentives of suppliers to compete vigorously.
29. The only market that may potentially be affected by the introduction of the proposed Regulations is that comprised of flights departing from or arriving at an airport situated within the EEA.

Would the proposal directly or indirectly limit the number or range of suppliers?

30. It is considered that the proposed Regulations will not have any impact in respect of the award of exclusive rights to supply; the procurement from a single supplier or restricted group of suppliers; the creation of a form of licensing scheme; or a fixed limit on the number of suppliers. It is therefore unlikely that the proposed Regulations would directly limit the number or range of suppliers relative to the counterfactual.
31. Under a scenario where the UK took no action to amend its legislation in light of the "Stop the Clock" proposal and an aircraft operator was not able to rely on the direct effect of the "Stop the Clock" Decision in order to take advantage of the derogation, there may be a possibility that introducing the proposed Regulations could impact on competition, specifically competition between aircraft operators. However, since there seems little doubt that aircraft operators would be able to rely on the direct effect of the Decision, impacts on competition are likely to be minimal.
32. In respect of indirectly limiting suppliers, airlines operating solely in the EEA have also raised concerns that foreign or UK airlines that operate both extra-EEA and intra-EEA flights may be able to cross-subsidise tickets on intra-EEA flights, causing them a competitive disadvantage on intra-EEA flights.
33. Some published studies have assessed whether additional cross subsidisation is likely to occur as a result of the inclusion of aviation in the EU ETS. For example, the European Commission's Impact Assessment⁷ on the inclusion of aviation in the EU ETS indicates that additional cross subsidisation is unlikely to occur as a result of the inclusion of aviation in the EU ETS regardless of the scope of the Aviation EU ETS. However, no published studies have been identified that have specifically assessed the potential for the "Stop the Clock" Decision to result in additional cross subsidisation. There is even less reason to suppose that a change in UK Regulations in light of the "Stop the Clock" Decision will result in additional cross subsidisation.
34. Nonetheless, with regard to the potential for the proposed Regulations to indirectly limit the number or range of suppliers, it should be noted that a change in UK Regulations in light of the "Stop the Clock" Decision would only result in a one-off reduction in costs for aircraft operators taking advantage of the derogation.

Would the proposal limit the ability or incentives of suppliers to compete vigorously?

35. It is considered unlikely that the proposed Regulations will have any impact on the ability of suppliers to compete. In particular, it is considered unlikely that the proposed Regulations would substantially influence the price an aircraft operator may charge on the basis of the points made above.
36. Finally, it is considered unlikely that the proposed regulations would have any adverse effects on the incentive of suppliers to compete.

⁶ "Completing competition assessments in Impact Assessments" (2007), available at http://www.offt.gov.uk/shared_offt/reports/comp_policy/oft876.pdf.

⁷ http://ec.europa.eu/clima/policies/transport/aviation/docs/sec_2006_1684_en.pdf

8. Summary and preferred option with description of implementation plan

37. The preferred option is option A: Change UK Regulations to Constrain the Regulators' Powers of Enforcement. Note that it has not been possible to quantify the costs and benefits associated with Option A, but it is considered that Option A is likely to lead to greater benefits than Option B owing to additional legal transparency. Furthermore, the extent to which there would be additional benefits from introducing the proposed Regulations as compared to a scenario where the UK takes no action is uncertain.

Implementation Plan

38. The "Stop the Clock" Decision will be implemented in the UK as per the current EU ETS. The UK Regulators⁸ are responsible for helping to ensure that aircraft operators comply with their obligations under the UK's 2012 EU ETS Regulations, in particular the requirement for operators to monitor, report and surrender the correct number of allowances to account for their annual emissions. The Regulators are also responsible for carrying out any enforcement action against operators that fail to comply with the regulations.

39. The enforcement powers available to Regulators are consistent with the requirement set in the ETS Directive for Member States to have a system of penalties for non-compliance that is effective, proportionate and dissuasive. In the UK 2012 EU ETS Regulations, there are powers to serve notices on operators requesting specific information or to require them to carry out certain steps to avoid further enforcement action. There is a civil penalty associated with breaching such notices. In addition there are civil penalties for not complying with certain regulations such as failure to report emissions. The UK 2012 EU ETS Regulations introduced greater powers of discretion for Regulators in serving civil penalty notices in order for a more proportionate and flexible approach to be taken to non-compliance cases. The only penalty where this discretion power does not apply is the penalty of €100 per tonne of CO₂ not accounted for by a surrendered allowance. This penalty is set in the ETS Directive.

40. As the "Stop the Clock" Decision is an EU wide measure there is an emphasis on co-ordinating communications with aircraft operators with the European Commission and other Member States. For example the competent authorities in all Member States wrote to their regulated aircraft operators using a Commission drafted template letter explaining what the "Stop the Clock" proposal was and how to comply with the proposal. There have also been discussions on enforcement issues where a co-ordinated approach has been acknowledged as the best way forward.

41. The key milestones for the implementation of the proposed regulations are as follows:

- On 31st March 2013, aircraft operators will submit verified emissions reports for their 2012 flights. Those reports from aircraft operators who intend to take advantage of the derogation and which therefore cover only their intra-EEA flights, are expected to be accompanied by a 'qualified verification report' from verifiers.
- On approximately 18th April 2013, the EU Decision is expected to come into force.
- On 30th April 2013, aircraft operators will surrender carbon allowances for either all of their 2012 flights, or, if they intend to take advantage of the derogation, of the allowances related to their intra-EEA flights.
- In mid-May 2013, the proposed UK regulations are expected to come into force to allow UK regulators not to carry out enforcement against aircraft operators who have taken advantage of the derogation.

On approximately 18th May 2013 (30 days after the EU Decision comes into force) aircraft operators who have taken advantage of the derogation will return the free allowances related to their extra-EEA flights.

⁸ In the UK the Environment Agency regulates the majority of aircraft operators. The Scottish Environment Protection Agency are also responsible for some aircraft operators.

ANNEX: Impacts of the “Stop the Clock” Decision

- 1. For the sake of completeness and in order to provide further information to stakeholders, an indicative assessment of the costs and benefits of the “Stop the Clock” proposal to the UK as compared with a counterfactual scenario without “Stop the Clock” has been considered separately. For reference, this assessment is presented in this Annex. The impacts considered in this Annex are different from the assessment of costs and benefits arising from a change in the UK Regulations that has been described in the Impact Assessment.**

Costs and benefits arising from the “Stop the Clock” proposal

2. The paragraphs below describe the following impacts of the “Stop the Clock” proposal:
 - Costs/benefits for aircraft operators
 - Costs/benefits for other operators
 - Costs/benefits for verifiers
 - Costs/benefits for consumers
 - Costs/benefits for UK Regulators
 - Costs/benefits for the environment

Costs/Benefits for Aircraft Operators

3. The UK regulates a number of aircraft operators, of whom approximately 80 are commercial airlines. Where aircraft operators take advantage of the derogation, their current legal obligations to monitor and report their emissions in 2010, 2011 and 2012 and surrender carbon allowances for 2012 will either be entirely removed, or significantly reduced. The derogation is optional for aircraft operators and it is expected that they will only choose to take advantage of the derogation if there is a benefit in doing so.
4. Aircraft operators may fall into one of five categories as a result of the “Stop the Clock” proposal:
 - a. aircraft operators that only operate intra-EEA flights. These operators would be impacted by a possible change in the carbon price.
 - b. aircraft operators that only operate extra-EEA flights which choose to comply with the full scope of the ETS and submit CO₂ data in March 2013 followed by the surrender of carbon allowances in April 2013. These operators would be impacted by a possible change in the carbon price.
 - c. aircraft operators that only operate extra-EEA flights which choose to take advantage of the derogation and so will not submit their CO₂ data or surrender carbon allowances. These operators will see reduced regulation as they will not need to verify and report their data or surrender carbon allowances. As the return of free allowances is voluntary, it is assumed that aircraft operators will only do so, if it is beneficial to them.
 - d. aircraft operators that operate both intra-EEA flights and extra-EEA flights, which choose to comply with the full scope of the ETS and submit CO₂ data in March 2013 followed by the surrender of carbon allowances in April 2013. These operators would be impacted by a possible change in the carbon price.
 - e. aircraft operators that operate both intra-EEA flights and extra-EEA flights, which choose to return their free allowances for extra-EEA flights and to report and account for only their intra-EEA flights. These operators will see reduced regulation as they will not need to surrender as many carbon allowances. There will be no change to the fees payable to the regulator for those aircraft operators that still need to report their intra-EEA emissions and surrender their allowances. They may however, need to conduct some additional internal administrative tasks in order to be able to complete their emissions report for their EEA flights. As the return of free allowances is voluntary, it is assumed that aircraft operators will only do so if there is a benefit in doing so.
5. Our initial analysis suggests those operators that will have the option of returning their allowances (categories c and e above) will include approximately 21 UK registered commercial aircraft operators (large, private businesses). At the current time, it is difficult to forecast whether

aircraft operators will choose to take advantage of the optional derogation, as it will depend on which option will economically or administratively benefit each individual aircraft operator. The Environment Agency has written to all UK-administered aircraft operators asking them to state their intention, and, as at 25th February 2013, 159 out of 201 UK-registered aircraft operators who have received free allowances have responded stating their intention to take advantage of the derogation.

6. The vast majority of commercial airlines have not removed their free allowances from their registry accounts, and thus these can be 'returned' to the Environment Agency (EA) with minimal additional administrative or regulatory burden. Two UK regulated airlines have removed their free allowances from their registry accounts and may encounter some cost in recovering an equivalent number of allowances in order to return them if the allowances have already been sold. However, these airlines may choose to continue to account for all their emissions, in which case, no return is necessary.
7. Where an aircraft operator benefits from the "Stop the Clock" Decision, the overall impact on the aircraft operator would depend on whether it chooses to pass on any of the benefits to its customers. In response to the inclusion of aviation in the EU ETS, some airlines have introduced a surcharge on tickets to cover their ETS costs – this has been in the order of \$3USD for trans-Atlantic flights and €0.25 for short-haul intra-EU flights. It will be a matter for those airlines that have passed on these costs to determine whether they return any financial benefits to consumers.
8. **In light of the uncertainties outlined above, the analysis in this Annex does not attempt to forecast whether operators will choose to take advantage of the derogation but instead assumes that they will all do so and does not attempt to quantify any administrative costs associated with this.**
9. Aircraft operators choosing to take advantage of the derogation could also experience further temporary benefits which have not been quantified here. In particular, prior to 2013, aircraft operators that only operate extra-EEA flights and choose to take advantage of the derogation would not need to verify or report their emissions data to the regulator. These aircraft operators could therefore temporarily benefit from a reduction in the administrative costs associated with the EU ETS (such as those associated with monitoring and reporting emissions), reduced verification costs and possibly reduced fees payable to the regulators. However, estimates for these are not readily available. It should also be noted that there are less than 10 commercial aircraft operators and approximately 120 private operators regulated by the UK in this position.
10. It is difficult to quantify these temporary benefits to the UK. Firstly, the extent to which benefits to the UK regulated aircraft operators would represent a benefit to the UK is uncertain. Secondly, the administrative costs to aircraft operators associated with the EU ETS are very uncertain as no evidence on aviation-specific costs is available, and it is uncertain to what extent these costs would change given the retrospective and temporary nature of the European Commission's "Stop the Clock" proposal. Thirdly, no evidence is available from previous impact assessments on the verification costs for aircraft operators.
11. In terms of the reduction in the fees payable by aircraft operators to the regulators, this impact would depend on the number of aircraft operators that only operate extra-EEA flights and choose to take advantage of the derogation, and which fees an aircraft operator would no longer have to pay as a result.
12. A change in the carbon price as a result to the "Stop the Clock" proposal will affect costs of purchasing allowances to comply with the EU ETS. The analysis in this Annex assumes that the prices of aviation allowances (EUAs) and general allowances (EUAs) are equal, in the absence of the availability of modelling analysis that separately considers impacts on prices of EUAs and EUAs.⁹ This assumption may not necessarily be borne out in practice.

⁹ In theory, given the one-way link between aviation and the rest of the EU ETS, prices of EUAs and EUAs would be equal as long as there is sufficient demand for EUAs. Note however that in reality EUAs have been trading at lower prices than EUAs recently. This may be driven by

13. Exclusion of extra-EEA flights in 2012, by temporarily reducing the scope of the EU ETS, may lead to a slight change in the carbon price and consequently the costs of purchasing allowances to comply with the EU ETS. The estimated price impacts listed in the tables below indicate that exclusion of part of the aviation sector from the EU ETS has the effect of marginally increasing the modelled price over the period 2013-2020. This result is driven by postponement of hedging demand by aircraft operators, which leads to a slight increase in demand in future years. Note that market expectations can also drive movements in prices. However, it is not possible to directly incorporate a change in expectations in modelling analysis and as such this is not captured by the analysis presented here.
14. The estimated impact on the carbon price of “Stop the Clock”, with the exclusion of extra-EEA flights from the EU ETS in 2012 and their subsequent return to the EU ETS 2013 onwards has been considered, using two alternative approaches:
- Approach 1, under which carbon prices before and after “Stop the Clock” for 2013-2020 are based on modelling analysis commissioned from Bloomberg New Energy Finance.¹⁰
 - Approach 2, under which carbon prices before “Stop the Clock” are in line with DECC’s 2012 short-term traded carbon values, and after “Stop the Clock” are equal to DECC’s 2012 short-term traded carbon values plus the difference in prices between scenarios with and without “Stop the Clock” as estimated under Approach 1.
15. As indicated in the tables below, the difference in price between scenarios with and without “Stop the Clock” is the same under both approaches. Approach 2 uses values that are consistent with published carbon values used for appraisal purposes and is therefore treated as the central case in this Annex, with Approach 1 being a sensitivity case.

Table 1.1: Impact on the carbon price under Approach 1

		2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated carbon price (€/tCO ₂ , nominal)	Under a counterfactual scenario without ‘stop the clock’	7.36	4.67	8.92	14.24	16.65	19.07	24.17	28.42	32.97
	Under a scenario with ‘stop the clock’	7.36	4.70	9.00	14.29	16.74	19.20	24.20	28.50	33.00
Change in estimated carbon price owing to “Stop the Clock” (€/tCO ₂ , nominal)		0.00	0.03	0.08	0.05	0.09	0.13	0.03	0.08	0.03

Notes: Prices for 2013 to 2020 are based on Bloomberg New Energy Finance’s modelling. Since it is not possible to back-cast and estimate prices for 2012, the price for 2012 above is based on the average of daily closing market prices of end year EUA futures contracts over 2012. The “Stop the Clock” proposal which was announced in November 2012 would have affected less than two months of hedging activity in the aviation sector and thus have had a negligible impact on the carbon price in 2012. Any possible impact on the carbon price due to a change in access to project credits has not been considered in this analysis.

the “Stop the Clock” proposal and uncertainty amongst market participants about the future of international aviation in the EU ETS. To the extent that the level of EUAA prices and magnitude of impact on EUAA prices may be lower in reality than assumed, the analysis here may be overestimating some impacts.

¹⁰ Prices up to 2016 are estimated using medium term modelling analysis which is based on an assessment of the quarterly balance between demand and supply of allowances and estimation of probability distributions for quarterly price movements. Prices beyond 2016 are estimated using fundamentals-based modelling of demand and supply of allowances.

Table 1.2: Impact on the carbon price under Approach 2

		2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated carbon price (€/tCO ₂ , nominal)	Under a counterfactual scenario without 'stop the clock'	6.64	7.06	7.56	8.01	8.49	9.26	10.09	11.00	12.01
	Under a scenario with 'stop the clock'	6.64	7.09	7.64	8.06	8.58	9.39	10.12	11.08	12.04
Change in estimated carbon price owing to "Stop the Clock" (€/tCO ₂ , nominal)		0.00	0.03	0.08	0.05	0.09	0.13	0.03	0.08	0.03

Notes: The difference in prices between the two scenarios is the same as in Table 1.1 above.

16. The level of the carbon price is significantly different in both approaches, especially in the second half of the period under consideration. Approach 1, which uses price estimates from Bloomberg New Energy Finance, uses a forward-looking fundamentals-based model that estimates the carbon price based on the demand and supply for abatement. On the other hand, the carbon prices under Approach 2, which uses DECC's published 2012 short-term traded carbon values, are based on market prices of EUA futures contracts. Nevertheless, the costs and benefits assessed in this Annex depend primarily on the difference in prices between scenarios with and without "Stop the Clock" and are less dependent on the absolute levels of prices under these scenarios.
17. The "Stop the Clock" proposal, by leading to a change in compliance requirements for operators of extra-EEA flights and a change in the carbon price, will affect the costs of compliance (i.e. costs of purchasing allowances) for aircraft operators. As described earlier, the analysis in this Annex takes the estimated impacts on "UK aviation" as a proxy for the impacts on the UK.
18. As noted in the previous 2010 Impact Assessment relating to the inclusion of aviation in the EU ETS¹¹, a variety of metrics could be used to apportion EU aviation sector costs and benefits to the UK. The approach taken here, which is consistent with the approach in the previous Impact Assessment, involves estimating the costs and benefits for aircraft operators in relation to a) flights departing from UK airports (the 'all departing flights' scenario) and b) flights departing from and arriving at UK airports (the 'all departing and arriving flights' scenario), with the former being an illustrative central case and the latter a sensitivity test. With regards to the 'all departing and arriving flights' scenario, it should be noted that if other EEA countries were to undertake similar analysis on the same basis, intra-EEA flights would be double-counted.
19. The CO₂ emissions from UK aviation, the indicative emissions cap for UK aviation and the free allocation received by aircraft operators in relation to UK aviation have been estimated as follows:
- For the purposes of this analysis, "Intra-EEA flights" are defined as flights to the EU27 countries, Croatia, Switzerland, Iceland, Liechtenstein and Norway, and international flights are defined as flights between the UK and another country.
 - For the 'all departing flights' scenario, the CO₂ emissions from "UK aviation" between 2012 and 2020 are assumed to be equal to the central forecast of the CO₂ emissions from flights departing the UK published by the Department for Transport in January 2013¹² under both "Stop the Clock" and the counterfactual scenario without "Stop the Clock" (e.g. it is assumed that "Stop the Clock" would have no impact on demand or the level of abatement undertaken).
 - The breakdown of the total CO₂ emissions from international flights departing from UK airports in 2012 between "intra-EEA flights" and "extra-EEA flights" has been estimated by the Department for Transport. The estimate of the share accounted for by "intra-EEA

¹¹ DECC / DfT, 2010, *Impact Assessment of Second Stage Transposition of EU Legislation to include Aviation in the European Union Emissions Trading System (EU ETS)*, available here: <http://tools.decc.gov.uk/assets/decc/consultations/euetsaviationsecondstage/909-ia-second-stage-transposition-euets.pdf> See section 4.1.3

¹² DfT, 2013, *UK Aviation Forecasts*, available here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/70259/aviation-forecasts.pdf

flights” is based on the estimates for Western Europe model areas which underpin the central forecasts published in January 2013. Where appropriate, scaling factors have been used to convert to the precise geography of “intra-EEA flights” as defined above.

- The CO₂ emissions from “UK aviation” between 2012 and 2020 under the ‘all departing and arriving flights’ scenario have been estimated on the assumption that the CO₂ emissions from international flights arriving at UK airports are equal to the CO₂ emissions from international flights departing from UK airports. This assumption has also been made when estimating the indicative UK aviation emissions cap for this scenario.
- For each of these scenarios, two methods have been used to calculate a high and low estimate of the indicative gap between emissions and the cap for UK aviation emissions.
- The ‘low’ estimates comprise a cap that has been estimated using the approach adopted in the previous Impact Assessment¹¹, and the latest estimates of the CO₂ emissions from flights departing from the UK in 2004, 2005, and 2006 that were published by the Department of Energy and Climate Change in February 2013¹³.
- The ‘high’ estimates are comprised of an estimate of the cap produced by the UK Committee on Climate Change¹⁴ for UK international aviation and the approach taken for the ‘high’ estimate for UK domestic aviation.
- Given the uncertainties involved, this Annex treats the mid-point of the range across both ‘high’ and ‘low’ scenarios (as described above) as the best estimate.

20. Under all of the scenarios, the free allocation received by aircraft operators in relation to UK aviation has been assumed to be 85% of the indicative emissions cap for UK aviation in each year.
21. It has also been assumed that aircraft operators will meet their compliance requirements only by surrendering allowances. As a result, this assessment does not take account of any impact that access to project credits will have on UK operators’ compliance costs. The volume of project credit access that operators will have from 2012 to 2020 to meet their compliance obligations could affect estimated changes in compliance costs significantly.¹⁵
22. The estimated impact on UK aviation under different scenarios has been calculated using the carbon prices in Tables 1.1 and 1.2 above multiplied by estimates for the volume of allowances that aircraft operators need to purchase over and above their free allocations. These volumes are calculated as the difference between the estimated CO₂ emissions and free allocation under each scenario.

Table 2.1: Impact on compliance costs of aircraft operators under Approach 1

			2012	2013	2014	2015	2016	2017	2018	2019	2020	PV (in 2013 £m)
Change in compliance costs as compared to scenario without ‘stop the clock’ (nominal £ m)	Based on departing flights only	Low	-20.4	0.1	0.4	0.3	0.5	0.8	0.2	0.6	0.3	-19.1
		High	-28.7	0.2	0.5	0.3	0.6	1.0	0.2	0.8	0.3	-27.2
	Based on arriving and departing flights	Low	-40.8	0.3	0.8	0.5	1.0	1.6	0.4	1.2	0.5	-38.3
		High	-57.3	0.4	1.0	0.7	1.3	2.0	0.5	1.5	0.6	-54.4

¹³ DECC, 2013, *2011 final UK figures: Data tables*, available here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/73149/2011inventorydatatables.xlsx

¹⁴ Committee on Climate Change, 2012, *Scope of Carbon Budgets: Statutory advice on inclusion of international aviation and shipping*, available here: http://hmccc.s3.amazonaws.com/IA&S/CCC_IAS_Core_ScopeOfBudgets_April2012.pdf See Box 2.1

¹⁵ Aircraft operators are able to surrender project credits amounting to up to 15% of the total amount of allowances they are required to surrender to account for their emissions in 2012, and that the percentage of project credits that aircraft operators’ will have access to will not be set below 1.5% of the total amount of allowances they are required to surrender to account for their emissions each year between 2013 and 2020. Furthermore, it should be noted that taking advantage of the derogation would therefore influence the total quantity of project credits that an aircraft operator would be able to surrender to account for their emissions in 2012.

Table 2.2: Impact on compliance costs of aircraft operators under Approach 2

		PV (in £m)										
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2013
Change in compliance costs as compared to scenario without 'stop the clock' (nominal £ m)	Based on departing flights only	Low	-18.4	0.1	0.4	0.2	0.4	0.6	0.1	0.4	0.2	-17.0
		High	-25.8	0.2	0.5	0.3	0.6	1.0	0.2	0.8	0.3	-24.2
	Based on arriving and departing flights	Low	-36.8	0.3	0.8	0.5	1.0	1.6	0.4	1.2	0.5	-34.1
		High	-51.7	0.4	1.0	0.7	1.3	2.0	0.5	1.5	0.6	-48.4

23. It is estimated that there is a significant reduction in compliance costs in 2012 as a result of “Stop the Clock” owing to the derogation for operators of extra-EEA flights and smaller increases in compliance costs for future years driven by slightly higher carbon prices. The estimated fall in compliance costs for aircraft operators in relation to UK aviation over 2012-2020 as a result of “Stop the Clock” on a ‘departing flights’ basis is **£17.0 to £27.2 million**, and on a ‘arriving and departing flights’ basis is **£34.1 to £54.4 million** (all figures in 2013 present value terms). The best estimate for the reduction in aircraft operators’ compliance costs (based on ‘departing flights, mid-point of ‘high’ and ‘low’ scenarios under Approach 2) is **£ 20.6 million** (in 2013 present value terms).

Costs/Benefits for other operators

24. The change in carbon price will also affect the cost of compliance for stationary (i.e. non-aviation) operators in the UK arising from the EU ETS. The change in compliance costs for the stationary sector arising from the EU ETS has been calculated using the change in carbon prices in Tables 1.1 and 1.2 above and estimates for the volume of allowances that UK operators are expected to need to purchase over and above their free allocations. These volumes have been estimated using the UK’s net purchase of allowances taken from DECC’s October 2012 Updated Emission Projections¹⁶ and estimates for UK auction volumes for allowances. Given that the “Stop the Clock” proposal is a temporary measure and is likely to have a small impact on emissions and abatement in stationary sectors, the volume of allowances they would be expected to purchase with or without “Stop the Clock” has been assumed to be the same.

Table 3: Impact on compliance costs of UK stationary operators (nominal £m)

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Change in EU ETS compliance costs as compared to scenario without 'stop the clock' (nominal £ m)	0.0	2.9	6.9	4.2	5.7	7.4	1.4	3.4	0.9
Total PV (in 2013 £ m)									27.8

Note: Since the estimated impact on compliance costs of UK operators depends only on the change in carbon price rather than the level of the price, it is the same under both Approaches 1 and 2.

25. EU ETS compliance costs faced by stationary operators in the UK are estimated to rise by **£27.8 million** (in 2013 present value terms) over 2012-2020 as a result of “Stop the Clock”.

Costs/Benefits for Verifiers

26. Emissions reports submitted by aircraft operators must be independently verified. UK verifiers which offer their verification services and the UK Accreditation Service (UKAS) will also be impacted as they will need to familiarise themselves with any new requirements as a result of the adoption of this Decision.

27. Officials have met with the UK Emissions Trading Group (ETG), the key stakeholder group for industry and verifiers working within the EU ETS, to clarify and raise awareness of the proposals. Verifier representatives have stated that the proposal will not result in increased administrative or regulatory burden for verifiers, as the separate calculation of intra-EEA and extra-EEA flights is already a necessary part of the verification process.

¹⁶ Available here: <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-and-emissions-projections>

28. The implied reduction in the amount of data verified should not result in the majority of verifiers suffering from a reduction in the amount of anticipated income. For those aircraft operators who choose to take advantage of the derogation and who operate both intra-EEA and extra-EEA flights, verifiers must continue to analyse all the flight data of an aircraft operator in order to determine that the number of flights classified as EEA flights is accurate.
29. Consequently, only those verifiers who only provide services to aircraft operators who had 100% extra-EEA flights in 2012 are likely to see reduced business as a result of the proposal. As there are only less than 10 commercial aircraft operators and approximately 120 private operators regulated by the UK in this position, and the full verification obligations resume from 1st January 2013, the costs of this are considered to be minimal.

Costs/Benefits for Consumers

30. The analysis in this Annex does not attempt to quantify the impact on consumers via a change in air fares since “Stop the Clock” is a temporary measure that is estimated to lead to a very small change in the carbon price. Consequently, it is expected that this measure will have a small impact on air fares going forward. For example, under the assumption of 100% cost pass through of both the financial costs and opportunity costs to passengers, the Department for Transport’s Aviation Forecasts 2013¹⁷ estimate the carbon costs per passenger per flight at around 1% of air fares on average across all flights departing from UK airports between 2012 and 2020 in the absence of the “Stop the Clock” Decision.

Costs/Benefits for UK Regulators

31. The Environment Agency (EA) may incur some costs in updating their reporting software to reflect the new obligations. The EA has already incurred the costs of work carried out for aircraft operators throughout 2012 and will need to recover these costs.
32. It is expected that many aircraft operators will remain in the scope of the EU ETS as most aircraft operators have at least a small number of intra-EEA flights. Initial analysis suggests less than 10 commercial aircraft operators and approximately 120 private operators regulated by the UK (but not necessarily UK companies) could be exempted from the current scope of the EU ETS if they return their free allowances. Given the temporary nature and small impact of “Stop the Clock”, and the lack of easily available information on UK regulators’ costs, this analysis does not attempt to quantify the costs/benefits for UK regulators.

Costs/Benefits for the Environment

33. The “Stop the Clock” proposal will place emissions from extra-EEA flights in 2012 outside the scope of the EU ETS. Since these emissions will no longer be capped, a change in emissions that may result from “Stop the Clock” would constitute an environmental impact. The change in emissions as a result of “Stop the Clock” can be measured by the difference between CO₂ emissions from UK aviation and its indicative share of the aviation EU ETS cap for 2012. A similar approach as that outlined at paragraph 20 above has been used based on emissions from ‘all departing flights’ and ‘all departing and arriving flights’ and further high and low scenarios for their indicative share of the aviation EU ETS cap for 2012 under each. The estimated change in UK emissions is as below.

¹⁷ DfT, 2013, *UK Aviation Forecasts*, available here:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/70259/aviation-forecasts.pdf

Table 5: Estimated change in UK emissions as compared to a scenario without “Stop the Clock” (MtCO₂)

		2012	2013-2020
Based on departing flights only (MtCO ₂)	Low	0.00	0
	High	1.22	0
Based on departing and arriving flights (MtCO ₂)	Low	0.00	0
	High	2.43	0

34. Note that under the low scenario, estimated emissions from extra-EEA UK aircraft operators are below the cap, so exclusion of extra-EEA operators from the EU ETS as a result of “Stop the Clock” has no effect on overall emissions. However, in the high scenario where estimated emissions are above the cap. “Stop the Clock” has the effect of increasing overall emissions by the difference between emissions and the cap. The best estimate for this effect is **0.6 MtCO₂** (the mid-point of the ‘high’ and ‘low’ scenario for departing flights only).
35. These emissions have been valued using an approach based on the social damage costs of carbon to provide an illustrative estimate of the value of additional emissions resulting from “Stop the Clock”.¹⁸

Table 6: Estimated value of change in UK emissions as compared to a scenario without “Stop the Clock” (PV in 2013£)

		2012	2013-2020	
Estimated value of change in emissions as compared to counterfactual scenario without 'stop the clock' (PV in 2013 £)	Based on departing flights only	Low	0.0	0
		High	-39.5	0
	Based on arriving and departing flights	Low	0.0	0
		High	-79.1	0

Note: The increase in emissions represents a cost to society and thus carries a negative sign.

36. The increase in environmental costs owing to an increase in emissions as a result of “Stop the Clock” has been estimated to be between **£0 and £79.1 million** (in 2013 present value terms). The best estimate for the increase in environmental costs (based on ‘departing flights’, mid-point of ‘high’ and ‘low’ scenarios) is **£19.8 million** (in 2013 PV terms).
37. However, it should be noted that the analysis of the ‘Costs/Benefits for the Environment’ does not take account of the potential for “Stop the Clock” to contribute towards a positive outcome at ICAO discussions. This is because the extent to which “Stop the Clock” might contribute towards a positive outcome at ICAO discussions is uncertain and not quantifiable.
38. **Note that a change in auction volumes and/or the estimated carbon price resulting from the “Stop the Clock” Decision will have an impact on UK government revenues. This impact has not been included in the analysis presented here.**

¹⁸ Using the 550ppm Shadow Price of Carbon from Defra, 2007, *The Social Cost of Carbon and the Shadow Price of Carbon: What they are and how to use them in economic appraisal in the UK*. Note that this does not prejudge a view on the apportioning of emissions to the UK or their valuation in the event of an international deal.

Summary of monetised costs/benefits

39. The monetised costs and benefits described in the paragraphs above have been summarised below.

Table 7: Summary of monetised impacts of the “Stop the Clock” Decision

All figures in real 2013 £m		Total over 2012-2020	Average annual over 2012-2020	Total PV
Costs relative to scenario without "Stop the Clock"	Increase in UK stationary operators' EU ETS compliance costs	30.6	3.4	27.8
	Increase in environmental costs	19.8	2.2	19.8
	<i>Total costs</i>	<i>50.4</i>	<i>5.6</i>	<i>47.6</i>
Benefits relative to scenario without "Stop the Clock"	Reduction in UK aviation operators' EU ETS compliance costs	19.4	2.2	20.6
	<i>Total benefits</i>	<i>19.4</i>	<i>2.2</i>	<i>20.6</i>
Net impact (Total benefits less total costs)		-30.9	-3.4	-27.0

Note: Figures may not add up due to rounding.

40. The analysis in this Annex indicates that the total Net Present Value of the impact of the “Stop the Clock” Decision on the UK (excluding impacts on government revenues) is an increase in net costs of around **£27.0 million** (in 2013 present value terms).

Assumptions and limitations

41. When interpreting the estimates of the costs and benefits of the “Stop the Clock” proposal to the UK (compared to a counterfactual scenario without “Stop the Clock”), it is important to recognise that there are uncertainties regarding the costs and benefits of the “Stop the Clock” proposal that can be attributed to the UK itself. The key limitations that these uncertainties give rise to are summarised below:

- The extent to which the costs and benefits of the “Stop the Clock” proposal (compared to a counterfactual scenario without “Stop the Clock”) should be attributed to the UK is uncertain.

For example, the “Stop the Clock” proposal would impact on aircraft operators regulated by the UK. However, the list of aircraft operators regulated by the UK includes both UK and non-UK businesses, and flights performed by aircraft operators regulated by the UK include flights that are neither to nor from the UK (as well as those to or from the UK). So, the extent to which impacts in relation to flights performed by aircraft operators regulated by the UK would represent costs and benefits to the UK is uncertain.

Given the limitations of the available evidence, the estimates of the ‘Costs/Benefits for Aircraft Operators’ and the ‘Costs/Benefits for the Environment’ presented below treat the impacts of the “Stop the Clock” proposal on “UK aviation” as a proxy for the impacts of the “Stop the Clock” proposal on the UK.

However, it should be noted that this approach has a number of limitations. For instance, the methodologies used are for illustration only – they do not prejudge a view on the apportioning of emissions to the UK in the event of an international deal.

- The impacts of the “Stop the Clock” proposal on “UK aviation” would differ from the impacts of the proposed Regulations on “UK aviation”.

For example, some extra-EEA flights to or from the UK are performed by aircraft operators not regulated by the UK. Therefore, whether or not the aircraft operators

performing these flights would take advantage of the derogation would not be affected by the introduction of the proposed Regulations even if an aircraft operator would not be able to rely on the direct effect of the Decision in order to take advantage of the derogation.

- The derogation is optional for aircraft operators. It is therefore uncertain what proportion of aircraft operators performing extra-EEA flights would decide to take advantage of the derogation.

At the current time, it is difficult to forecast whether aircraft operators will choose to take advantage of the optional derogation, as it will depend on which option will economically or administratively benefit each individual aircraft operator. The Environment Agency has written to all UK-administered aircraft operators asking them to state their intention, and, as at 25th February 159 UK-registered aircraft operators have responded stating their intention to take advantage of the derogation.

The analysis presented in this Annex estimates the impacts of “Stop the Clock” proposal in a situation where all operators performing extra-EEA flights take advantage of the derogation available to them.

- The estimates of the ‘Costs/Benefits for Aircraft Operators’ are sensitive to the assumption that aircraft operators will surrender allowances to meet their compliance requirements, and do not therefore take into account the impact that aircraft operators’ access to project credits will have on the estimated change in aircraft operators’ compliance costs due to “Stop the Clock”.
- The analysis of the ‘Costs/Benefits for the Environment’ presented in this Annex is based on the shadow price of carbon estimated using a damage costs approach. However, there are uncertainties around the value placed on the damage avoided by reducing CO₂ emissions. Consequently, the value that should be placed on a change in the net emissions from “UK aviation” as a result of the “Stop the Clock” proposal is uncertain.
- The estimates of ‘Costs/Benefits for Aircraft Operators’ and the ‘Costs/Benefits for the Environment’ are also sensitive to a number of other assumptions, including the assumptions that have been made regarding the share of the overall Aviation EU ETS emissions cap that is attributable to “UK aviation”, and the underpinning estimates that have been used, such as the estimates of Business As Usual (BAU) emissions from “UK aviation” that have been used.

42. Some other key risks and assumptions associated with this analysis include:

- It has been assumed that that aircraft operators will take advantage of the derogation but any costs associated with doing so have not been quantified.
- The effect of “Stop the Clock” on market expectations about the future of aviation in the EU ETS, which may affect carbon prices has not been considered and it has been assumed that prices of EUAs and EUAs are equal given the available analytical modelling tools.
- Given the difficulties in accurately determining the costs and benefits that should be attributed to the UK, estimates based on both a ‘departing flights only’ and ‘departing and arriving flights’ basis have been included in the analysis.
- The volume of allowances that stationary operators will need to purchase in order to comply with the EU ETS has been assumed to be unchanged after “Stop the Clock”.

Wider impacts

Small Firms Impact Test

43. The “Stop the Clock” Decision would not change the status of the current de minimis exemptions of the EU Aviation ETS. Commercial aircraft operators¹⁹ operating either fewer than 243 flights per period for three consecutive four-month periods or flights with total annual emissions lower

¹⁹ Directive 2008/101/EC defines “commercial air transport operator” as an operator that, for remuneration, provides scheduled or non-scheduled air transport services to the public for the carriage of passengers, freight or mail.

than 10,000 tonnes CO₂ per year are not performing an aviation activity as defined in Annex I of the Aviation Directive and are therefore exempt from the Decision.

44. Exemptions for commercial aircraft operators below the de-minimis threshold mean that they will not have to face the costs of complying with the EU ETS. These exemptions reflect the recognition of the need to ensure that the EU ETS operates efficiently by minimising transaction costs and other costs associated with achieving emissions reductions through a market-based measure. In addition, they are intended to help achieve the aim of not placing undue burdens on commercial aircraft operators below the de-minimis threshold and therefore minimising the risk that the inclusion of aviation in the EU ETS would unduly limit or damage the opportunities for small businesses.
45. The de-minimis threshold does not apply to non-commercial operators (however, all flights performed by aircraft with a certified maximum take-off mass of less than 5,700kg are exempt²⁰). Therefore small operators (such as business jets, for example) which operate flights into or out of EU airports would be affected by the "Stop the Clock" Decision.
46. Aircraft operators will need to invest some resource in familiarising themselves with the Decision. It is unlikely that small aircraft operators will be regulatory specialists and therefore they may require more time to understand this than an average large aircraft operator.
47. The significance of the costs and benefits faced by each aircraft operator, relative to its size, would depend on a range of factors such as the system already in place, staff time and knowledge. Given the highly varied mix of operator sizes and business models, it is expected that the impacts will also vary.
48. The costs of complying with the requirements of the EU ETS may be relatively more significant for smaller firms than for larger firms. For example, complying with the existing UK Regulations involves some costs which are set on a flat fee basis (albeit within payment bands, depending on emissions), such as the annual subsistence charge. Such flat fees are likely to be relatively more significant for smaller firms within each band than for larger firms. This suggests that the benefits of taking advantage of the derogation in respect of extra-EEA flights prior to 2013 may be relatively more significant for smaller firms than for larger firms.

Human Rights

49. The "Stop the Clock" Decision in the UK does not raise any new human rights issues as there is an existing civil penalty regime from which it provides an optional derogation.

Competition Impact Test

50. The following markets could potentially be affected by the introduction of the "Stop the Clock" proposal:
 - Markets supplied by other EU ETS participants
 - Flights departing from or arriving at an airport situated within the EEA
51. The proposal does not affect competition in markets supplied by other EU ETS participants because it does not affect the scope of the ETS and the impact on the carbon price affects all ETS participants uniformly. The rest of this section focusses on impacts on flights departing from or arriving at an airport situated within the EEA.
52. In line with the OFT guidance²¹, the impact of the proposal has been taken into account by addressing the following questions:
 - Would the proposal directly or indirectly limit the number or range of suppliers?
 - Would the proposal limit the ability or incentives of suppliers to compete vigorously?

²⁰ A full list of exemptions can be found at Annex I (c) to the Aviation Directive, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:008:0003:0021:EN:PDF>.

²¹ "Completing competition assessments in Impact Assessments" (2007), available at http://www.of.gov.uk/shared_of/reports/comp_policy/of876.pdf.

Would the proposal directly or indirectly limit the number or range of suppliers?

53. It is considered that the “Stop the Clock” proposal will not have any impact in respect of the award of exclusive rights to supply; the procurement from a single supplier or restricted group of suppliers; the creation of a form of licensing scheme; or a fixed limit on the number of suppliers. It is therefore unlikely that the “Stop the Clock” proposal would directly limit the number or range of suppliers.
54. In respect of indirectly limiting suppliers, airlines operating solely in the EU have raised concerns that foreign or UK airlines that operate both extra-EEA and intra-EEA flights may be able to cross-subsidise tickets on intra-EEA flights, causing them a competitive disadvantage on intra-EEA flights.
55. Some published studies have assessed whether additional cross subsidisation is likely to occur as a result of the inclusion of aviation in the EU ETS. For example, the European Commission’s Impact Assessment²² on the inclusion of aviation in the EU ETS indicates that additional cross subsidisation is unlikely to occur as a result of the inclusion of aviation in the EU ETS regardless of the scope of the Aviation EU ETS. However, no published studies have been identified that have specifically assessed the potential for the “Stop the Clock” Decision to result in additional cross subsidisation.
56. Nonetheless, with regards to the potential for the proposal to indirectly limit the number or range of suppliers, the following should be noted:
- Firstly, the “Stop the Clock” Decision would only result in a one-off reduction in costs for aircraft operators taking advantage of the derogation.
 - Secondly, the available evidence suggests that, in the absence of the “Stop the Clock” Decision, costs relating to the Aviation EU ETS would only account for a small proportion of aircraft operators’ revenues in 2012 on average. For example, under the assumption of 100% cost pass through of both the financial and opportunity costs to passengers, the Department for Transport’s Aviation Forecasts 2013²³ estimate the carbon costs per passenger per flight at only around 1% of air fares on average across all flights departing from UK airports in 2012 in the absence of the “Stop the Clock” Decision.

Would the proposal limit the ability or incentives of suppliers to compete vigorously?

57. It is considered unlikely that the “Stop the Clock” proposal will have any impact on the ability of suppliers to compete. In particular, it is considered unlikely that the proposal would substantially influence the price an aircraft operator may charge on the basis of the points made above.
58. Finally, it is considered unlikely that the proposal would have any adverse effects on the incentive of suppliers to compete.

²² http://ec.europa.eu/clima/policies/transport/aviation/docs/sec_2006_1684_en.pdf

²³ <https://www.gov.uk/government/publications/uk-aviation-forecasts-2013>