



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government



The Scottish  
Government

## Consultation

# Implementing the new EU Fluorinated Greenhouse Gases Regulation

November 2014



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# 1 Background

## 1.1 Purpose of the consultation

Fluorinated gases (F-Gases) are used in refrigeration, air-conditioning, insulation foams, electrical switchgear equipment, aerosol sprays, medical inhalers, solvents, fire extinguishers and a few other specialist sectors. They include various chemicals that fall into 3 groups: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>). They were largely introduced as replacements to chlorofluorocarbons (CFCs) and other chemicals which damage the ozone layer. However, while they do not damage the ozone layer, they are powerful greenhouse gases (GHGs) – with global warming potentials<sup>1</sup> (GWPs) that are many thousands of times higher than carbon dioxide (CO<sub>2</sub>). Emissions, therefore, have the potential to make a significant contribution to climate change.

The EU introduced legislation in 2006<sup>2</sup> aimed at preventing growth in F-Gas emissions. That Regulation focused on leak repairs, F-gas recovery and technician training. Although it stabilised emissions it has not led to a significant reduction. Since 2006 there have also been significant technical developments with respect to cost-effective alternatives to F-gases. The 2006 Regulation has, therefore, been revoked and replaced by a new [EU F-gas Regulation](#)<sup>3</sup> which applies from January 2015 and which will lead to an 80% reduction in F-gas emissions by 2035.

It will achieve that by:

- phasing down the amount of F-gases that can be placed on the market through gradually reducing quotas on F-gas producers and importers;
- bans on certain F-gases in certain applications;
- and strengthening of obligations on leak checks, repairs, recovery and training of those who install or service equipment containing F-gases.

The new EU legislation will already be directly applicable in UK law. However, new domestic legislation is needed to enforce the requirements as well as continuing to specify those organisations which provide training and certification in the UK and continue to

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<sup>1</sup> Global Warming Potential (GWP) is a relative measure that compares heat trapped in the atmosphere by a certain gas in relation to heat trapped by the same mass of carbon dioxide over the same period of time. The GWP of CO<sub>2</sub> is defined as 1.

<sup>2</sup> EU F-Gas Regulation (842/2006)

<sup>3</sup> The new EU F-Gas Regulation (517/2014) was agreed by the European Parliament and European Council in April 2014, came into force in June and applies from 1 January 2015.

implement the requirements of Commission Regulations concerning labelling, leakage checks, training and certification.

The new domestic legislation is similar in nature to the Fluorinated Greenhouse Gases Regulations 2009 (2009 No 261) which it will revoke. It will apply to England, Scotland and Wales, but only to Northern Ireland in relation to imports into and exports out of the customs territory of the EU.

This consultation focuses only on the new domestic legislation to enforce the EU Regulation and on the associated impact assessment. We are not consulting on the content of the EU Regulation itself which was the subject of consultation in 2013 and will already directly apply in UK law.

## 1.2 Previous stakeholder engagement

Industry and other stakeholders were closely involved in the negotiations for the new F-Gas Regulation and there was general support for the majority of features. Some recognised that without more regulation the market would only slowly move towards best practice low GWP alternatives. Many stakeholders also agreed that the new Regulation would stimulate much faster change and would create greater clarity for chemical manufacturers, product manufacturers and purchasers of affected equipment.

## 2 Changes in the EU Regulation

Key features of the new EU Regulation include:

- a. A phase down in the quantities of HFCs that can be placed on the EU market. The phase down is applied to the aggregate GWP (measured in equivalent tonnes of CO<sub>2</sub>) and takes place in a series of steps, starting with a cap in 2015, followed by a 7% cut in 2016 and reaching a 79% cut in 2030.

The phase down is accompanied by a quota system that will specify the amounts of HFCs that individual companies can place on the market, based on sales reported under the existing F-Gas Regulation plus an allowance for new entrants.

- b. A number of bans on the use of certain F-Gases in some new equipment.
- c. A ban on the use of very high GWP HFCs for the servicing of certain types of refrigeration equipment (this ban applies to existing equipment).
- d. Some strengthening of existing obligations related to leak checking and repairs, F-Gas recovery and technician training.

## 3 Proposed domestic legislation

The EU Regulation will be directly applicable in the UK so no domestic legislation is needed to implement its main provisions. However, it does require Member States to implement their own enforcement and penalty provisions. We propose to achieve that by means of domestic Regulations similar in nature to the 2009 Regulations which enforced the 2006 EU Regulation. The new domestic Regulations will replace the 2009 version and include:

- powers for customs officers to impound unlawfully imported material;
- appointment of enforcement bodies such as the Environment Agency, devolved equivalents and local authorities with powers of entry to examine records, take samples and seize equipment;
- powers for the enforcement bodies to issue compliance notices for failure to comply with requirements of the EU Regulation;
- appointment of the bodies which certify companies and train individuals to handle F-gases;
- an obligation on employers to ensure employees are properly certified; and
- offences and penalties for breaching certain provisions;

The main differences between the new domestic Regulations and the 2009 version are set out below.

### 3.1 Certification, evaluation and attestation

The proposed domestic Regulations continue to provide for the appointment of certification, evaluation and attestation bodies. These provisions, together with the duties those bodies are placed under, are now set out together in Part [3] of the draft Regulations. The list of certification and evaluation bodies for high voltage switchgear, set out in Schedule 3 to the proposed Regulations, has been updated.

### 3.2 Enforcement

The powers of entry given to enforcement authorities are more limited than in the 2009 Regulation. Authorised persons would only be able to enter premises between the hours of 8am and 6pm on working days and be limited to bringing up to four other persons with them. However, the time restriction would not apply to Department of Energy and Climate Change (DECC) offshore inspectors when visiting offshore installations engaged in hydrocarbon-related activities due to logistical and other factors.

A warrant obtained from a justice of the peace (or stipendiary magistrate or sheriff in Scotland) will be needed before the powers of entry can be used. However, with respect to DECC's offshore inspectors who are authorised by the Secretary of State to visit offshore installations (engaged in hydrocarbon activities) to check operator compliance with the obligations of various legislation, these inspectors are used with 'authorisation cards' (which list all the legislation that they are entitled to inspect against) as opposed to warrants. These 'authorisation cards' (which have no time limits) will therefore need to be updated accordingly once the F-Gas Regulations 2015 have entered into force.

**Q1: Are you content with the proposals for limiting powers of entry?**

The new Regulations will be within scope of the "Primary Authority" process. Primary Authority helps businesses get consistent regulatory treatment from different local authorities by forming a partnership with one authority (the 'primary authority') to get assured advice about how to comply, which must then be taken into account by other local authorities dealing with that business. In order to implement that, changes will be needed to the Co-ordination of Regulatory Enforcement (Enforcement Action) Order 2009 (No. 2009/665) to update references to the enforcement provisions in the draft Regulations. These will be made in a separate order.

### **3.3 Offences and penalties**

We have made enforcement notices the focus of actions against those breaching the EU requirements in order to limit the number of actions which directly result in criminal liability. This means that the breach of a requirement under the EU Regulation or the associated Commission Regulations, would not, in most cases, itself be a criminal offence. Instead, the enforcing authority is able to issue an enforcement notice (e.g. for not providing information within the requested time). Breach of a requirement under an enforcement notice would then be a criminal offence.

Failure to comply with an information notice – a requirement to provide specified information to the enforcing authority – is also a ground for serving an enforcement notice.

The proposed Regulations no longer include a separate category of prohibition notices because enforcement notices are considered sufficient for the purpose of enforcing the EU Regulation and Commission Regulations.

Direct criminal liability does still apply to a few breaches of the EU requirements, although the options of using an enforcement notice in those cases is still available. This includes:

- the placing on the market of prohibited products which might be undertaken as a "one off" offence and so is unlikely to be deterred by an enforcement notice;

- breaches which relate to the effectiveness of the quota system, which is fundamental to the success of the EU Regulation;
- obstructing those carrying out enforcement;
- providing information that is false or misleading;
- failing to provide information or assistance without reasonable cause to those carrying out enforcement;
- failing to produce a document or record to an enforcement authority when required to do so.

A full list of breaches that may be treated as a criminal offence are listed in Annex A.

**Q2: Do you think the proposed balance between direct criminal offences and enforcement notices is appropriate to ensure effective compliance with the EU Regulation? If not, please explain why.**

The defence provided in Regulation 16(2) of the 2009 Regulations has not been included in the draft Regulations. This provided that the prohibition on placing prohibited products or equipment on the market did not apply where the product or equipment was manufactured before the date specified in Annex II to the 2006 EU F-Gas Regulation. The new EU Regulation does not include scope for such a derogation and so this has not been included.

**Q3: Do you have any other comments on the draft Regulations?**

## 4 Impact assessment

A draft assessment of the impact of the new domestic Regulations on business is at Annex B.

This assessment only considers the costs and benefits associated with the new enforcement and certification aspects of the proposed Regulations. The costs are assessed relatively to continuation of the existing 2009 Regulations and, therefore, quantify the “net” difference between the two. The costs of complying with the provisions in the EU Regulation itself are not assessed here as it was the subject of impact assessments and consultation during the course of its negotiation.

The relevant measures in the domestic Regulations which might impose a burden include:

- the power for customs officers to request proof that import is lawful;
- the requirement that employers ensure employees are properly certified (this is just the cost of any check by employers, not the cost of getting certified in the first place which is a direct requirement of the EU Regulation itself);



- site visits by enforcement officers and the powers of entry, which can include inspections, taking samples, seizing and/or dismantling equipment, questioning staff or examining records;
- requiring companies to provide specified information (by issuing notices);
- the requirement on certification and attestation bodies that they provide, upon request by the Secretary of State, details of the certificates or attestations which they have issued.

The new EU Regulation extends to more companies and activities than the one it replaces. The inclusion of refrigerated trucks and trailers adds a significant number of companies that could be checked for compliance.

Most companies subject to the EU Regulation will not be subject to any action under the domestic Regulations in any given year. It would only tend to be applied if they recruited new employees, imported F-gases themselves or were one of the companies receiving information requests or site visits by the regulator to check on compliance. We expect around 200 businesses to be subject to action under the domestic Regulations each year on an ongoing basis. However, this could be between 500 and 1,000 in the first year due, for example, to a surge in one off actions for newly affected businesses.

We calculate a total cost to all UK businesses in aggregate of £10,053 per annum. We have also calculated a high cost scenario which assumes more time is required for each activity. This leads to a high aggregated estimate of £61,515 per annum. The costs are low, principally because we do not anticipate a step change in the rate of enforcement from that which currently takes place under the 2009 Regulations. For example, the Environment Agency is not planning to expand its enforcement team.

**Q4: The impact assessment makes assumptions about the time required to complete each enforcement activity (see Annex B). Based on your experience, do you agree with these assumptions? If not, can you provide any additional evidence to inform our assumptions of the time required to complete each activity?**

**Q5: The impact assessment makes an assumption that the employee that will action these activities is likely to be a Corporate Manager or a Director. Do you agree with this assumption? If not, can you provide an indication of the job title of the employee that is likely to be involved?**

**Q6: Do you anticipate there to be any additional financial or other burden associated with the proposed domestic Regulations that we have not considered or monetised in the Impact Assessment? Can you provide an estimate of the cost impact of this?**

**Q7: Do you have any other comments on the Impact Assessment?**

## 5 Tell us what you think

### 5.1 Who will be interested in responding?

This is a public consultation and it is open to anyone with an interest to provide comments. It should be of particular interest to those operating in the sectors of refrigeration, air-conditioning, insulation foams, electrical switchgear equipment, aerosol sprays, medical inhalers, solvents and fire extinguishers. It may also be of interest to environmental groups. The proposed domestic Regulations will apply to England, Scotland and Wales, as well as to Northern Ireland in relation to imports into and exports out of the customs territory of the EU.

### 5.2 Having your say

If you wish to respond, please submit your comments by 20th January 2015.

You can respond in one of three ways:

- a. Online by completing a questionnaire at:

<https://consult.defra.gov.uk/atmosphere-local-environment-team/implementing-the-new-eu-flourinated-greenhouse-gas>

- b. E-mail to: [fgas@defra.gsi.gov.uk](mailto:fgas@defra.gsi.gov.uk)

- c. Post to:

DEFRA F-gas team

Area 2C, Nobel House

17 Smith Square

London SW1P 3JR

Our preferred method is online because it is the fastest and most cost-effective way for us to collate and analyse responses.

Unless you specifically request your response to be treated confidentially, your response may be made publically available.

## 5.3 Consultation questions

### 5.3.1 General information

- We are interested in collecting the following information from those responding to the consultation:
  - Your name
  - Whether you are responding on behalf of an organisation or a business
    - If so, what organisation or business do you represent?
    - Which sector/sectors do you represent?
      - Stationary refrigeration, air conditioning and heat pumps
      - Mobile refrigeration, air conditioning and heat pumps
      - Aerosols
      - Foams
      - High voltage switchgear
      - Other (please specify)
    - If you are representing a business, how many employees work in the company?
      - Up to 10
      - Between 11 and 50
      - Between 51 and 250
      - More than 250

### 5.3.2 Domestic Regulations

1. Are you content with the proposals for limiting powers of entry?
2. Do you think the proposed balance between direct criminal offences and enforcement notices is appropriate to ensure effective compliance with the EU Regulation? If not, please explain why.
3. Do you have any other comments on the draft Regulations?

### 5.3.3 Impact Assessment on Business

4. The impact assessment makes assumptions about the time required to complete each enforcement activity Annex B. Based on your experience, do you agree with these assumptions? If not, can you provide any additional evidence to inform our assumptions of the time required to complete each activity?
5. The impact assessment makes an assumption that the employee that will action these activities is likely to be a Corporate Manager or a Director. Do you agree with this assumption? If not, can you provide an indication of the job title of the employee that is likely to be involved?
6. Do you anticipate there to be any additional financial or other burden associated with the proposed domestic Regulations that we have not considered or monetised in the Impact Assessment? Can you provide an estimate of the cost impact of this?
7. Q7: Do you have any other comments on the Impact Assessment?

### 5.4 Next steps

- We will publish the summary of consultation responses within 12 weeks.
- We plan to lay the legislation in Parliament by March 2015 or as soon as practicable thereafter.

## Annex A – List of direct offences

Annex A briefly reviews direct offences listed in the domestic legislation. For a full list of offences and exceptions, please see the draft Regulations.

Offences for persons:

1. Intentionally releasing fluorinated greenhouse gases into the atmosphere (where the release is not technically necessary)
2. Placing products and equipment listed in Annex III to the EU Regulation on the market
3. From January 2017, placing equipment charged with HFCs on the market (unless it is within quota limits)
4. Manufacturers or importers failing to conform with requirements for documenting pre-charged equipment when placing on the market
5. From January 2018, for importers to fail to ensure that accuracy of documentation is verified by an independent auditor by 31 March each year
6. Manufacturers and importers of refrigeration, air conditioning and heat pump equipment charged with HFCs failing to keep the documentation and declaration of conformity for at least five years
7. For producers or importers to exceed their allocated quota
8. Failing to comply with a requirement to dispose, render harmless or remove a product or equipment containing, or whose functioning relies on F-gases
9. Failing to comply with an enforcement notice
10. Obstructing those carrying out enforcement;
11. Failing to provide information or assistance without reasonable cause to those carrying out enforcement;
12. Providing information that is false or misleading;
13. Failing to produce a document or record to an enforcement authority when required to do so.

# Annex B – Impact Assessment

## Rationale for intervention and intended effects

Fluorinated gases (F-gases) were largely introduced as replacements to chlorofluorocarbons (CFCs) which damage the ozone layer. F-gases include HFCs (hydrofluorocarbons), PFCs (perfluorocarbons) and SF<sub>6</sub> (sulphur hexafluoride). They are used in refrigeration, air-conditioning, insulation foams, electrical equipment, aerosol sprays, medical inhalers, solvents and fire extinguishers. Although they do not damage the ozone layer, F-gases are powerful greenhouse gases. Emissions occur through leakage during the manufacture, operation and disposal of products, contributing to climate change. The EU, therefore, introduced a Regulation in 2006 to limit the growth in emissions. That Regulation focused on leak repairs, F-gas recovery and technician training. Although it stabilised emissions it has not led to a significant reduction. That Regulation has, therefore, been revoked and replaced by a new one which applies from January 2015 and will lead to an 80% reduction in F-gas emissions by 2035. It will achieve that by:

- a) Gradually phasing down the amount of F-gases that can be placed on the EU market. The phase down operates via a quota system that will specify the amounts of HFCs that individual companies can place on the market. Quotas will be cut in a series of steps, starting with a 7% reduction in 2016 and reaching a 79% cut by 2030.
- b) Bans on the use of F-Gases in a number of specific applications, relating to new equipment.
- c) A ban on those F-gases with very high global warming potentials used for the servicing of certain types of existing refrigeration equipment.
- d) Some strengthening of existing obligations on leak checking and repairs, F-Gas recovery and technician training.

The new EU Regulation is directly applicable in the UK. It requires Member States to “take all measures necessary” to ensure the Regulation is implemented and to apply “effective, proportionate and dissuasive” penalties. We propose to achieve that by means of domestic Regulations covering enforcement and offences, similar in nature to the one from 2009 which enforced the 2006 EU Regulation. The new domestic Regulation will repeal and replace the 2009 version. This assessment focuses only on this new domestic legislation.

## Viable policy options (including alternatives to regulation)

The UK is legally bound by the EU Regulation, Article 25 of which requires Member States to lay down rules on penalties applicable to infringements which must be effective, proportionate and dissuasive.

The elements of the EU Regulation which require specific domestic implementation can be broadly categorised as:

**Enforcement** – where we propose that criminal offences and other breaches to which the enforcement provisions apply are defined by reference to what is set out in the EU Regulation.

**Certification** – where Member States are required to designate certification and evaluation bodies to make training available to people such as engineers and installers carrying out specific listed tasks such as equipment installation, leak checks, F-gas recovery, etc. Member States are required to ensure that the certification and evaluation bodies meet certain requirements which will again be described in the draft legislation by reference to the EU Regulation without any further additions or “gold plating”.

In order to meet those requirements, we propose fully repealing the 2009 domestic Regulations used to implement the 2006 EU Regulation and replacing it with new Regulations with the same powers, but adjusted to reflect the wider scope of the new EU Regulation. As with the 2009 Regulations, we propose that it applies to England, Scotland, Wales, as well as Northern Ireland in relation to imports into and exports out of the customs territory of the EU, and includes:

- a) A renewal of the existing power for customs officers to ask for proof that import is lawful under the EU Regulation, with a power to impound or dispose of the product if that proof is not provided.
- b) Re-appointment of enforcement bodies: the Environment Agency, Scottish Environment Protection Agency, Natural Resources Wales, the Department of the Environment may as regards Northern Ireland, local authorities, port health authority, Secretary of State and Scottish and Welsh Ministers, with a power for them to appoint others to carry out enforcement duties.
- c) A power for the enforcement bodies to issue enforcement notices for failure to comply with requirements of the EU Regulation.
- d) Renewal of the power for authorised persons to enter premises (except residential premises) to carry out inspections, take samples, seize and/or dismantle equipment, question staff, examine records or serve a notice requiring specified information, in order to enforce the provisions of the Regulation.
- e) Re-appointment of the certification and attestations bodies who issue the qualifications for operators and engineers required by the EU Regulation, and renewal of the power for the Secretary of State to appoint others if necessary.
- f) Renewal of the requirement that those bodies provide details of certificates/attestations issued and other information requested by the Secretary of State in order for the UK to comply with the EU Regulation requirement to notify the Commission of certification and training programmes.
- g) Renewal of the obligation on employers to ensure employees are properly certified as required by the EU Regulation.
- h) Renewal of offences and penalties for breaching certain provisions of the EU Regulation or failing to comply with a compliance notice.
- i) A requirement that the Secretary of State review the Regulations at least every 5 years to ensure they are meeting objectives.

These measures are considered the minimum needed to comply. They do not “gold plate” or extend the substance of the EU Regulation in any way. For example, they do not extend its scope to additional organisations, activities or products which are not covered by the EU Regulation nor do they bring in measures sooner than would otherwise be the case. We do not consider that there are any other viable options to ensure adequate compliance and avoid the risk of infraction. In addition, a regulatory approach creates a level playing field for UK companies. Companies we have engaged with recognise the benefits of the regulatory approach as it gives them clarity. As is now customary, the new Regulations would make greater use of compliance notices rather than directly criminalising all activities.

## Initial assessment of business impact

This Impact Assessment only considers the costs and benefits associated with the new enforcement and certification Regulations. The costs are assessed relative to continuation of the existing 2009 Regulations and, therefore, quantify the “net” difference between the two. The costs of complying with the provisions in the EU Regulation itself are not assessed here as it is directly applicable in the UK.

The relevant measures in the domestic Regulations which might impose a burden include:

- the power for customs officers to request proof that import is lawful;
- the requirement that employers ensure employees are properly certified (this is just the cost of any check by employers, not the cost of getting certified in the first place which is a direct requirement of the EU Regulation);
- site visits by enforcement officers and the powers of entry, which can include inspections, taking samples, seizing and/or dismantling equipment, questioning staff or examining records;
- requiring companies to provide specified information (by issuing notices);
- the requirement on certification and attestation bodies that they provide, upon request by the Secretary of State, details of the certificates or attestations which they have issued.

We have not assessed the costs of the following which would only occur if a company acted unlawfully:

- the power of customs officers to impound or forfeit unlawfully imported products;
- the cost of disposing of products imported in contravention of the EU Regulation.

We have, however, considered the risk and impact of these powers being used inadvertently when no breach has occurred.

The new EU Regulation extends to more companies and activities than the one it replaces. The inclusion of refrigerated trucks and trailers in Article 4 adds a significant number of companies that could be checked for compliance. There are about 60,000 refrigerated trucks and trailers operating in the UK. There are around 50 medium and large logistics providers that operate significant numbers of trucks plus a large number of much smaller



companies owning a small fleet. Another additional sector is Organic Rankine Cycles<sup>4</sup> (ORCs). The number of UK installations is unknown but very small (estimated at fewer than 5 by an expert consultant).

Most companies subject to the EU Regulation will not be subject to any action under the domestic Regulations in any given year. It would only tend to be applied if they recruited new employees, imported F-gases themselves or were one of the companies receiving information requests or site visits by the regulator to check on compliance. Based on the estimates in the supporting evidence section, we expect around 200<sup>5</sup> businesses to be subject to action under the domestic Regulations each year on an ongoing basis. However, this could be between 500 and 1,000 in the first year due, for example, to a surge in one off actions for newly affected businesses.

We have calculated an estimate of the additional cost incurred under each of the activities outlined above. We calculate a gross cost to all UK businesses of £10,053 per annum. We have also calculated a high cost scenario which assumes more time is required for each activity. This leads to a high estimate for the gross costs to business of £61,515 per annum. The costs are low, principally because we do not anticipate a step change in the rate of enforcement from that which currently takes place under the 2009 Regulations. For example, the Environment Agency is not planning to expand its enforcement team. Full details of the calculations and assumptions used are in the supporting evidence section.

For this triage assessment, we have not been able to find data with which to breakdown compliance and enforcement activity by the size of business. As the grade/role of an employee involved in the enforcement activity could differ based on the size of the business, we identified a range of possible wage rates from the Annual Survey of Hours and Earnings (2012). To avoid an underestimate, we have used the highest of these wage rates: £20.17 per hour for a Corporate Manager and Director. This has been inflated to 2013 prices and uplifted by 30% to account for non-wage costs in accordance with the Standard Cost Model. The resulting wage rate used is £26.63 per hour. We have also used the corresponding wage rates for other enforcement actions that we detail in the supporting evidence section below.

Under the provisions of the Regulatory Enforcement and Sanctions Act 2008, the domestic Regulations will automatically be within scope of the Primary Authority process<sup>6</sup>. That process is deemed to reduce costs and burdens on business, though we have not attempted to quantify that saving in this assessment.

## Risks and Uncertainties

The future projections for additional enforcement activity and the number of additional companies affected contains some uncertainty for the following reasons:

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<sup>4</sup> ORCs are used for heat recovery from certain forms of combustion such as biomass, industrial waste heat and geothermal heat.

<sup>5</sup> This estimate is based on data on the instances of additional activity per annum in Table 1.

<sup>6</sup> Primary Authority helps businesses get consistent regulatory treatment from different local authorities by forming a partnership with one authority (the 'primary authority') to get assured advice about how to comply, which must then be taken into account by other local authorities dealing with that business.

We have used estimates of future enforcement activity based on the nature and volume of current activity by the Environment Agency, which is the enforcement body just for England. We have, therefore, scaled the values for England to one applicable to England, Scotland and Wales based on 2011 census population statistics rather than gathering bespoke estimates from all of the enforcement bodies in the UK.

The time required for companies to fulfil obligations may vary depending on the actual circumstance of each business. We have based our estimates on the maximum time requirement recommended by the EA. We have also calculated a high cost scenario where we have increased the time assumed necessary for each action. Even under this high cost scenario the business impact is significantly under the £1m threshold for a full impact assessment, at £61,515 per annum. We will investigate and where possible refine these estimates during consultation.

Another important uncertainty is the extent to which new enforcement activity will be additional to existing enforcement. It is possible that it may displace some existing activity. However, we have assumed all the new enforcement activity is additional in order to present a gross cost and avoid underestimating the impact. At present the EA's enforcement team is not expected to expand. Discussion with the EA suggests some additional activity is expected, although a step change in the rate of enforcement would not be possible.

It is uncertain how frequently imports of F-gases occur and thus what the impact of customs checks could be. There are currently about 15 companies that import F-gases and this could increase to 25. Again, we have tried to avoid underestimating by using a generous estimate based on the future number of F-Gas importers and the time needed for each check. The impact is not expected to be large but we will work with the Home Office and relevant stakeholders to investigate and where possible refine this estimate during consultation.

The cost for employers to check employees are properly certified is uncertain. Until further information becomes available from the European Commission, there is uncertainty about the extent that the Regulation will be applicable to refrigerated trucks and trailers, which is the main additional sector covered in the Regulation. We have again tried to avoid underestimating in the figures we have used.

## Supporting evidence

### The policy issue and rationale for Government intervention

F-Gases are very powerful greenhouse gases that have a Global Warming Potential (GWP)<sup>7</sup> thousands of times higher than carbon dioxide. Emissions of F-gases can therefore result in significant negative externalities as the environmental impacts are unlikely to be considered. The UK Greenhouse Gas Emissions Inventory shows 2012 UK F-Gas emissions amount to 11.2 MtCO<sub>2</sub> equivalent (about 2% of total UK greenhouse gas

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<sup>7</sup> GWP is a relative measure that compares heat trapped in the atmosphere by a certain gas in relation to heat trapped by the same mass of carbon dioxide over the same period of time.

emissions), with the refrigeration, air conditioning and heat pump sector representing 69% of that total.

The new Regulation (EU) No. 517/2014 will replace the existing F-Gas Regulation (EC) No 842/2006 from January 2015. A Commission review of the existing Regulation showed that although it has been successful in preventing growth in emissions of F-Gases, it would not stimulate the cost effective emission reduction potential that now exists, because on-going emission reductions are being off-set by projected market growth, particularly in relation to heat pumps and growing use of air-conditioning. Numerous technology advances over the last 10 years provide alternatives to F-gases for many applications. The new Regulation will stimulate the further development and commercialisation of these alternatives.

## **Policy objectives and intended effects**

The objective of the new EU Regulation is to deliver significant cuts in emissions of these gases in the period 2015 to 2035 to help meet the EU's wider commitments on tackling climate change. At the core is a phase down in the amount of F-gases that can be placed on the market in the EU, managed via a quota system for producers and importers. The process begins with a cap in 2015, followed by a series of cuts; there is a 7% cut in 2016, leading to a 79% cut in 2030 and beyond. There will also be smaller cuts in perfluorocarbons (PFC) and sulphur hexafluoride (SF6) emissions stimulated by other aspects of the Regulation.

The new EU Regulation is expected to cut EU F-Gas emissions by almost 80% by 2035. For the UK, modelling shows an emission reduction of 3 MtCO<sub>2</sub>eq by 2020 rising to nearly 8 MtCO<sub>2</sub>eq by 2035, representing a 72% reduction.

In addition to the phase-down, other important features of the new Regulation are:

- a service ban that affects the use of very high GWP refrigerants in large commercial and industrial refrigeration applications;
- 11 new bans on the use of F-Gases in certain specified applications;
- changes to existing leak checking requirements; and
- requirements for training, labelling, record keeping and reporting.

## **Policy options considered, including alternatives to regulation**

The EU Regulation is directly applicable in the UK and requires Member States to “lay down the rules on penalties applicable to infringements of this Regulation and take all measures necessary to ensure that they are implemented.”

Our preferred option for ensuring we comply is to introduce a new domestic compliance and enforcement Regulations and repeal the previous legislation which applied to the 2006 EU Regulation.

Another option would be to leave the existing compliance provisions in place, but the risk of infraction penalties would be high as the existing domestic Regulations do not cover several of the new provisions. We have not, therefore, explored this option further. Similarly we have not considered non-regulatory options, as legal advice suggests these would also not meet the UK's compliance and enforcement obligations.

## Expected level of business impact

The EU Regulation affects a number of sectors of the UK economy. The largest impacts relate to the use of F-Gases in refrigeration, air-conditioning and heat pumps. There are also impacts for F-Gases used in: (a) aerosols, (b) insulating foam (c) fire protection, (d) high-voltage switchgear, (e) magnesium casting, (f) solvent cleaning, (g) semi-conductor manufacture and (h) various minor uses. The Regulation also has a strong impact on the F-Gas fluid supply sector including chemical producers, importers, exporters and their supply chain. The new EU Regulation is expected to lead to an extra 350,000 small systems requiring mandatory leak checking, 15,000 large systems requiring automatic leak detection and 60,000 refrigerated trucks and trailers being included in the leak checking regime.

As the EU Regulation is directly applicable in the UK, this Impact Assessment focuses only on the additional measures which need to be introduced domestically to ensure compliance and enforcement. Those are listed in the summary section of this assessment. The following approach has been taken to calculate the cost incurred as a result of the domestic Regulations:

**Total Cost** = Additional activity as result of the UK Regulations x Time taken to complete activity x Wage Rate

Table 1 sets out the total cost estimates for the central scenario. Costs to the regulator and customs are included in the table for completeness, but are excluded from the estimates of business impact as these will not be incurred by business.

We have based the estimated costs of compliance and enforcement action largely on information provided by the Environment Agency (EA). As the regulators for England they have a detailed understanding of the nature and volume of current enforcement activity and how this is expected to change given the expanded scope of the new EU Regulation. For most input assumptions the EA provided us with a range based on their previous experience and we have used the average of this for our central cost scenario.

The EA employs 2 full time staff to carry out enforcement activity and this is not expected to change. The majority of their contact with companies is to check company certification and personnel qualifications. While the number of employees is not expected to change, discussion with the EA suggests they expect to spend more time on enforcement and compliance, following the widening of the scope of the EU Regulation. Consequently we have assumed the activity the EA has identified to enforce the new elements of the EU Regulation as being additional to avoid underestimating the impact. However it may be that it will displace some current activity. This would lead to a redistribution of costs from

businesses covered by the current EU Regulation to those additionally covered by the new Regulation.

**Table 1:** Total gross cost per annum, central scenario

<b>Activity</b>	<b>Description</b>	<b>Instances of additional activity per annum</b>	<b>Time required for activity, hrs</b>	<b>Wage rate, £</b>	<b>Total cost per annum, £</b>
Information Request	An informal information request to demonstrate compliance.	90	0.5	£26.63	<b>£1,198</b>
Information Notice	A formal request for information	70	1	£26.63	<b>£1,864</b>
Enforcement Notice	Requires an action to be performed by the recipient in order to re-establish compliance. Follows an information notice response which has indicated non-compliance	10	5	£26.63	<b>£1,332</b>
Requirement that employers ensure employees are properly certified	This applies to employers of personnel responsible for leak checking, installation, servicing or recovery of equipment containing F-gases. This is the cost for employers to carry out certification checks for their employees.	400	0.25	£26.63	<b>£2,663</b>
	Costs to the business to respond to EA compliance checks for this activity to prove compliance.	60	0.25	£26.63	<b>£399</b>
Site visit	Enforcement body visits the sites if desk based enforcement is unsatisfactory.	10	2.25	£26.63	<b>£599</b>

Costs to the Regulator	Time costs borne by the regulator to enforce the EU Regulation. Including information requests, information notices, enforcement checks, site visits and the costs to businesses to provide data to the EA to demonstrate compliance with employee checks	Use assumptions from above; assume same time burden for business and regulator		£14.68	<b>£2,973</b>
Power to request proof that import is lawful	Cost to companies if they have to show documentation proving import is lawful	300	0.25	£26.63	<b>£1,997</b>
	Cost to customs for officials to check documentation	300	0.25	£53.10	<b>£3,983</b>
Certification bodies report to SoS	Certification bodies compile 4 reports a year detailing the certificates awarded	No additional activity beyond previous Regulations expected			
<b>Cost to business</b>					<b>£10,053</b>
<b>Total cost</b>					<b>£17,008</b>

The costs of proving that imports are lawful is approximated using the best available information, following consultation with the Home Office. There are currently approximately 15 companies that import F-gases. This could increase but is unlikely to exceed 25. To avoid underestimating, we use the assumption of 25 companies and that they import monthly. Based on estimates from other import checks we assume a time requirement of 15 minutes in the central scenario and 1 hour in the high scenario.

The costs for employers to check employees are properly certified has also been approximated using the best available evidence. This will only apply to those new sectors to which the EU Regulation applies, as such checks will already have taken place in sectors subject to the old EU Regulation. The main additional sector is refrigerated trucks and trailers. There are an estimated 60,000 in the UK. We assume that one employee can service/leak check 100 trucks and trailers. This leads to an estimate of around 600 employees which could require their certification to be checked. Given the uncertainty a broad range has been used and we have assumed 400 employees in the central scenario and assumed 1,000 employees in the high scenario. We have assumed each check would take 15 minutes. The estimated cost of employers to check employee certification is based on the first year of the EU Regulation coming into force. After that, costs would only

be incurred when there was staff turnover, which means the ongoing costs would be much lower than the first year. Despite the uncertainties with these estimates, we can be confident that the costs will be significantly under £1m in aggregate.

The requirement for certification and attestation bodies to provide details to the Secretary of State is not assumed to have a cost associated with it. We consulted some of those bodies who informed us that they are already required to provide statistical data four times a year as part of the existing EU Regulations. This requires them to compile data and print off a report which takes about an hour to complete - hence a total of four hours per annum. Even with the addition of sectors under the new EU Regulation, the bodies do not think that the time required to compile the data will increase.

We have assumed that the type of employee involved in compliance and enforcement activity will vary depending on the size of the business as follows:

- Sole trader: Engineer owner
- SME: Manager or Director
- Large companies: Environmental consultant

It has not been possible to provide a breakdown of enforcement activity based on the size of business and hence we have taken a maximalist approach by using the highest wage rate of £26.63 gross per hour. This is the adjusted wage rate applicable to SMEs. The employee is assumed to be in the band 'Corporate Managers and Directors' (11) from ASHE 2012. We have adjusted that figure for inflation to 2013 prices and uplifted by 30% to account for non-wage costs in accordance with the Standard Cost Model. SMEs are usually contacted by telephone or email, considered to present a lower burden than sending letters.

Although the estimates in Table 1 are based on best available evidence, there is uncertainty surrounding them. They should, therefore, be seen as a best estimate of the likely impact and provide an indication of the likely scale of impacts. Table 2 shows an estimated cost under a high cost scenario where we assume a longer time requirement is necessary to fulfil each activity. Under this scenario the annual enforcement and compliance costs are estimated to be £61,515 for businesses and £92,272 in total. We have rounded where possible to avoid spurious accuracy.



**Table 2:** High gross cost scenario per annum

<b>Activity</b>	<b>Description</b>	<b>Instances of additional activity per annum</b>	<b>Time required for activity, hrs</b>	<b>Wage rate, £</b>	<b>Total cost per annum, £</b>
Information Request	An informal information request to demonstrate compliance.	90	5	£26.63	£11,984
Information Notice	An official request for information	70	5	£26.63	£9,321
Enforcement Notice	Requires an action to be performed by the recipient in order to re-establish compliance. Follows an information notice response which has indicated non-compliance	10	10	£26.63	£2,663
Requirement that employers ensure employees are properly certified	This applies to employers of personnel responsible for leak checking, installation, servicing or recovery of equipment containing F-gases. This is the cost for employers to carry out the checks for their employees.	1000	1	£26.63	£26,630
	Costs to the business to respond to EA compliance checks for this activity.	60	1	£26.63	£1,598
Site visit	Enforcement body visits the sites if desk based enforcement is unsatisfactory	10	5	£26.63	£1,332
Costs to regulators	Time costs borne by the regulator to enforce the EU Regulation. Including information requests,	Use assumptions from above; assume same time burden for business and		£14.68	£14,827

	information notices, enforcement checks, site visits and the costs to businesses to provide data to the EA to demonstrate compliance with employee checks	regulator			
Power to request proof that import is lawful	Cost to companies if they have to show documents proving lawful import.	300	1	£26.63	£7,989
Power to request proof that import is lawful	Cost to customs for officials to check documentation	300	1	£53.10	£15,930
Certification bodies report to SoS	Certification bodies compile 4 reports a year detailing the certificates awarded	No additional activity beyond previous Regulations expected			
<b>Cost to business</b>					<b>£61,515</b>
<b>Total Cost</b>					<b>£92,272</b>

Notes: 1. Time estimates for the high scenario are based on the expert opinion of a consultant with extensive experience and knowledge of the F-Gas industry.

2. In case of employer checks on employee certificates, the high cost scenario has been altered to account for uncertainty in the number of businesses affected.

3. Figures may not add exactly due to rounding.

This sensitivity analysis has been carried out using extreme assumptions for the time requirement. Consultation with the EA revealed that the time requirements in Table 2 are the maximum possible time businesses could take to respond to EA contact. Some businesses could take this long, for instance, if they are risk averse or do not have the information available. The high cost scenario assumes all businesses require the greater amount of time shown in Table 2. However in reality this is unlikely to be the case as it is not expected that all businesses would require this much time. Although there will be some variation in the time spent, the average is expected to be closer to the values in Table 1 rather than in Table 2, hence Table 2 provides an upper bound estimate. Even using these extreme assumptions, costs in the high scenario are significantly below the £1m threshold.

We have considered the risk of companies being subject to enforcement action unjustifiably and consider the cost to be very low. There have been no instances of erroneous use of powers by the Environment Agency under the existing EU Regulations. To date there have been no cases of F-gases having been confiscated and destroyed by customs officers. Any material temporarily held by customs is released once proper paperwork is provided. There have also been no prosecutions for breach of the existing EU F-gas Regulations. Were a prosecution to be pursued, it would only be after sufficient evidence had been gathered that the Regulation had been breached. If material is suspected of being unlawful it would be tested, which would normally entail taking a very small quantity. There is a theoretical risk that an enforcement body may confiscate a larger quantity of material it suspects to be unlawful, pending such tests. If those reveal it to be legitimate, the business may have lost money as a result of the temporary confiscation. That cost would vary depending on the use or the nature of any supply contract, but is unlikely to be more than a few hundred pounds. Given this situation has never arisen to date, we would not expect the frequency to increase to more than once every few years under the new domestic Regulations.

### **Summary of impacts on business:**

Central estimate of gross costs to business: £10,053/yr

High estimate of gross costs to business: £61,515/yr

We have also estimated the EANCB using these cost estimates, assuming costs are constant over a ten-year period. For the central scenario the EANCB is £9,117 (2009 prices, 2010 PV base year). For the high scenario the EANCB is £55,787.

We will test our assumptions at consultation. Particular questions include:

- Based on your experience do you agree with the assumptions made for the time required to complete each activity. If not can you provide any additional evidence to inform our assumptions of the time requirements required to complete each activity?
- Do you agree with the assumption that the employee that will action these activities is likely to be a Corporate Manager or a Director. If not can you provide an indication of the job title of the employee that is likely to be involved?
- Do you anticipate there to be any additional compliance or enforcement activity associated with the proposed domestic Regulations that we have not considered or monetised in the Impact Assessment? Can you provide an estimate of the cost impact of this?

**Table 3: Assumptions**

<b>Assumption</b>	<b>Value</b>	<b>Source</b>
Wage rate used for costs to business	£26.63	ONS Annual Survey of Hours and Earnings (2012) inflated to 2013 prices and uplifted by 30% to account for non-wage costs (Standard Cost Model, 2005). Employee assumed to be 'Corporate Managers and Directors' (11)
Wage rate used for costs to the regulator	£14.68	As above; assumed category is 'Conservation and environmental associate professionals' (355)
Wage rates used for costs to customs (power to request proof that import is lawful)	£53.10	Charge out rate for Border Force officers, provided by Home Office. Assumed to cover wage and non-wage costs.
Additional activity for information request, information notice, enforcement notice, requirement that employers check employees are properly certified and site visits	As in table	EA estimate for England scaled by 2011 census population data to represent England, Scotland and Wales
Time Required for information request, information notice, enforcement notice, requirement that employers check employees are properly certified and site visits	As in table	EA estimate for England scaled by 2011 census population data to represent England, Scotland and Wales