



Department for
Business, Energy
& Industrial Strategy

Energy Intensive Industries

Review of the schemes to compensate energy intensive industries for indirect emission costs in electricity prices

Closing date: 9 August 2021



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Any enquiries regarding this publication should be sent to us at: energyintensiveindustries@beis.gov.uk

Contents

Executive Summary	4
General information	6
Why we are consulting	6
Consultation details	6
How to respond	7
Confidentiality and data protection	7
Quality assurance	8
Introduction	9
Rationale for the schemes	9
Policy context	10
Purpose of the Review	11
Scope of the Review	12
Purpose of the Consultation	12
Analytical Approach to Carbon Leakage	13
Eligible Sectors	19
Business Level Test	25
Design of the Compensation Scheme	26
Subsidy Intensity	27
CO2 Emission Factor	27
Carbon Price	29
Efficiency Benchmarks	29
Conditionality	30
Scheme Monitoring and Evaluation	31
Subsidy Control	32
Consultation questions	34
Next steps	36
Annex A: Proposed list of eligible sectors and products based on latest assessments:	37
Annex B: Breakdown of Criteria parameters	40

Executive Summary

The Department for Business Energy and Industrial Strategy has run a compensation scheme for the indirect emission costs due to the EU Emissions Trading System (EU ETS) and carbon price support mechanism (CPS) for certain energy intensive industries since 2013 and 2014 respectively. Indirect emission costs arise from the obligation on power stations to buy emission allowances under the ETS and pay a tax on the carbon content of the fossil fuels they use to generate electricity. This increases their costs which are passed on in their offer on the wholesale electricity market. This translates into an increase in retail electricity prices for energy intensive industries.

Last year, a one-year extension of the compensation schemes was agreed alongside a review of the schemes to re-assess their justification and improve value for money as well as alignment with other departmental policies.

The review will provide an assessment of the risk of carbon leakage due to the indirect emission cost from the UK Emissions Trading Scheme (UK ETS) and the CPS. It will also examine whether mitigating this risk provides wider benefits, such as levelling up and supporting jobs, ensuring business viability until the point at which industrial decarbonisation technologies can be deployed and increasing productivity.

A key part of this review is an external consultation to seek feedback and evidence on the risk of carbon leakage (especially as a result of indirect emissions costs) as well as informing design features of the compensation schemes.

Carbon leakage is the displacement of production, and associated greenhouse gas emissions, in ways that would not have happened if climate rules and policies across jurisdictions was implemented in an equivalent way.

Climate rules and policies designed to reduce emissions in a given country can increase the costs of production of its businesses (including indirectly because of the impact on the price of inputs, such as energy) relative to international competitors if those competitors are subject to weaker climate change mitigation policies. If such rules and policies (such as carbon pricing, or other emissions reduction policies), are not implemented in an equivalent way across jurisdictions, this can result in production and the associated greenhouse gas emissions being displaced, undermining the original environmental objective of climate mitigation policies.

In general, carbon leakage can be said to occur if all of the following conditions are satisfied:

- Climate mitigation policies differ across jurisdictions;
- Emissions shift to a region with lower climate mitigation obligations; and
- Shifts in production to a firm in a different jurisdiction lead to a sustained increase in emissions intensity, higher than it would have been had production not moved.

A separate call for evidence is running on the UK's use of free allocation as part of the UK Emissions Trading Scheme (UK ETS) to better incentivise emissions reduction. Information from the review and the UK ETS call for evidence will be used to inform future policy.

We are seeking views from a wide range of audiences, including energy intensive industries (whether currently benefitting or not benefitting from the exemption schemes), other electricity consumers, trade bodies, consumer associations, the devolved administrations and other interested parties.

All responses to the Consultation Questions can be submitted via the online survey.

General information

Why we are consulting

This consultation seeks views and evidence on the risk of carbon leakage due to the indirect emission cost from the UK ETS and CPS, which sectors are most at risk and the design of the potential scheme if there continues to be a rationale for compensation. It seeks feedback and evidence to inform whether there continues to be a rationale for measures to mitigate the risk of carbon leakage and inform design features of the schemes to increase value-for-money and ensure they support wider Government objectives such as delivering net zero.

Consultation details

Issued: 14 June 2021

Respond by: 9 August 2021

Enquiries to:

Ether Sham
Energy Intensive Industries
Department for Business, Energy and Industrial Strategy
Orchard 1, 4th Floor
1 Victoria Street
London, SW1H 0ET

Tel: 0300 068 6071

Email: energyintensiveindustries@beis.gov.uk

Consultation reference:

Review of the schemes to compensate energy intensive industries for indirect emission costs in electricity prices

Audiences:

We are seeking views from a wide range of audiences, including energy intensive industries (whether currently benefitting or not benefitting from the compensation schemes), other electricity consumers, trade bodies, consumer associations, the devolved administrations and other interested parties.

Territorial extent:

In respect of designing any post 2021 compensation schemes for the indirect emission cost due to the UK ETS and CPS, this consultation covers England, Wales, and Scotland.

Energy Intensive Industries in Northern Ireland (NI) will not be eligible for the UK ETS compensation scheme at this stage. In practice there have previously been no Energy Intensive Industries who used the EU ETS compensation scheme in NI. Compensation for the Carbon Price Support (CPS) also does not apply to NI (because CPS does not extend to NI). Any compensation scheme in Northern Ireland, should it be introduced, will be designed in accordance with Article 10 of the Northern Ireland Protocol.

How to respond

Please respond to the Consultation Questions via the online survey available through the link below or alternatively please email us your responses. Please see details below.

Respond online at: <https://beisgovuk.citizenspace.com/energy-security/eii-compensation-scheme>

or

Email to: energyintensiveindustries@beis.gov.uk

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please tell us but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our [privacy policy](#).

We will summarise all responses and publish this summary on [GOV.UK](#). The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's [consultation principles](#).

If you have any complaints about the way this consultation has been conducted, please email: beis.bru@beis.gov.uk.

Introduction

Rationale for the schemes

The Department has run a compensation scheme for the indirect emission costs due to the EU Emissions Trading System (EU ETS) and carbon price support mechanism (CPS) for certain energy intensive industries since 2013 and 2014 respectively. Indirect emission cost arise from the obligation on power stations to buy emission allowances under the ETS and pay a tax on the carbon content of the fossil fuels they use to generate electricity. This increases their costs which are passed on in their offer on the wholesale electricity market. This translates to an increase in retail electricity prices for energy intensive industries.

This subsequently leads to an electricity price differential as not all countries apply the same carbon price as the UK does. However, these indirect emissions costs risk putting certain energy intensive industries at a competitive disadvantage compared to international competitors – creating a risk of carbon leakage.

Carbon leakage is the displacement of production, and associated greenhouse gas emissions, in ways that would not have happened if climate rules and policies across jurisdictions was implemented in an equivalent way.

Climate rules and policies designed to reduce emissions in a given country can increase the costs of production of its businesses (including indirectly because of the impact on the price of inputs, such as energy) relative to international competitors if those competitors are subject to weaker climate change mitigation policies. If such rules and policies (such as carbon pricing, or other emissions reduction policies), are not implemented in an equivalent way across jurisdictions, this can result in production and the associated greenhouse gas emissions being displaced, undermining the original environmental objective of climate mitigation policies.

In general, carbon leakage can be said to occur if all of the following conditions are satisfied:

- Climate mitigation policies differ across jurisdictions;
- Emissions shift to a region with lower climate mitigation obligations; and
- Shifts in production to a firm in a different jurisdiction lead to a sustained increase in emissions intensity, higher than it would have been had production not moved.

The Government recognises that UK industrial electricity costs are higher than those of other countries and agreed that it will act to address this by taking steps to reduce costs.

Consequently, the Government has taken steps to protect the manufacturing sectors which are most exposed to the impact of the UK's relatively higher electricity prices. In 2019, we provided around £442 million to support qualifying energy intensive industries, including reductions in the policy costs of the transition to renewable electricity and compensation to partly offset the indirect impacts on electricity prices from the European Union Emissions Trading System (EU ETS) and the Carbon Price Support (CPS).

The compensation schemes reduce the cost of electricity, which reduces the risk of carbon leakage and supports the competitiveness of key manufacturing industries and helps to keep production and investment in the UK rather than moving overseas to countries with less ambitious climate policies.

Policy context

There are significant positive changes taking place in the global efforts to mitigate climate change, which will support industry's net zero transition.

In 2019 the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target will require the UK to bring all greenhouse gas emissions to Net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.

In November 2020 the Government published the Ten Point Plan for a Green Industrial Revolution, setting out how the UK can make the most of the opportunities presented by the shift to net zero. This announced £12 billion of UK Government investment, and the ambition to leverage three times that amount of private investment by 2030 across key technologies such as hydrogen, offshore wind, nuclear, electric vehicles, heat and buildings.

In 12 December 2020, the UK communicated its new Nationally Determined Contribution (NDC) under the Paris Agreement to the United Nations Framework Convention on Climate Change. The NDC commits the UK to reducing economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.

In November 2021, the UK will host the 26th UN Climate Change Conference of Parties (COP26), through which we are committed to reaching a constructive, negotiated outcome that drives forward collective climate action globally in line with the temperature goal of the Paris Agreement.

Ahead of this, we recently published our Industrial Decarbonisation Strategy. The strategy makes clear that reaching net zero will require extensive, systematic change across all sectors, including industry – and sets out how we expect decarbonisation will happen and the role government will take in supporting and enabling this transition. This is a huge challenge. To meet net zero, our modelling shows industrial emissions will need to fall by at least 90% by 2050 equivalent to taking all the cars off the roads today.

To decarbonise industry and meet our carbon budgets and NDC under the Paris Agreement, we expect that emissions need to fall by around two thirds by 2035.

Similarly, with the launch of the UK ETS earlier this year, we are taking the opportunity to develop a scheme with greater ambition; for example, by reducing the cap on emissions allowances by 5% from the UK's expected share of the EU ETS cap. We will also be consulting later in 2021 on setting a net zero consistent cap trajectory later in 2021.

Whilst it is vital that the compensation schemes fit within that framework, it is important to note that they can also contribute to the delivery of Build Back Better: Our Plan for Growth¹ which aims to boost the productivity and earning power of people throughout the UK. The Government is committed to minimising energy costs for businesses, to ensure our economy remains strong and competitive and recognises the need to manage the impact of cumulative climate change policies on industrial electricity prices.

Additionally, the compensation for the indirect cost of carbon pricing aligns with the government's intention to level up the UK economy. The manufacturing sector is a crucial part of local economies across England, Scotland, Wales and Northern Ireland, often providing well-paid jobs in areas where salaries fall below the UK average. So while the region in which a firm is based is not a factor in determining compensation payments, the schemes nonetheless play a key role in maintaining output and employment in these sectors. Supporting these sectors to reach net zero carbon emissions by 2050 will provide new opportunities to level up the economy across all nations and regions of the country

So as a nation, we aim to lead the world in climate ambition – and decarbonising UK industry is a core part of that mission. However, the government also recognises the importance both of protecting the competitiveness of UK industries and by addressing risks of carbon leakage – so that firms can decarbonise in the UK.

We therefore seek to create a thriving industrial sector aligned with the net zero target, without pushing emissions and business abroad.

Purpose of the Review

In 2020, BEIS extended the existing compensation scheme by one year.

A review of the compensation schemes has not been conducted since the inception of the schemes in 2013.

Such a review therefore represents an opportunity to assess the scheme in the light of the changed policy context and determine whether there continues to be a rationale for compensation, and if so, the conditions and timeframe under which that need might fall away. It also provides an opportunity to ensure that the compensation schemes are aligned with wider Government goals of energy efficiency and decarbonisation.

Within this context, the review will provide an assessment of the risk of carbon leakage due to the indirect emission cost from the UK ETS and CPS. It will also examine whether mitigating this risk provides wider benefits, such as levelling up and supporting jobs, ensuring business viability until the point at which industrial decarbonisation technologies can be deployed and increase productivity.

¹ <https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth>

Following the conclusion of the review, Ministers will take a decision on whether there is a case for the scheme to continue. As part of this, Ministers will also consider how long any new scheme should last – as well as its design. Stakeholders will be informed of this decision, and if a decision is made to continue, updated guidance for applicants will be issued.

Scope of the Review

The scope of the review is limited to the UK ETS and CPS compensation schemes.

The current scheme budget for compensation payments is set at £126.9m per annum. As emissions from the grid trend downward in the next decade we expect the marginal emission factor to decrease as coal drops off and renewable generation increases. However, the carbon price is expected to increase up to 2030. Any expansion to scheme eligibility because of this review would require additional budget.

The review will not address other energy and climate change policies that impact directly or indirectly on industrial electricity prices, such as the climate change agreements or the scheme which awards exemptions to eligible energy intensive businesses for up to 85% of the costs in their electricity bills due to the Contracts for Difference, Renewables Obligation and small-scale Feed-in Tariffs. However, BEIS will shortly be publishing a separate call for evidence which will begin a strategic dialogue between consumers, government and industry on energy bill costs and fairness issues.

The administration of the schemes is also outside the scope of the review. Eligible businesses in England, Scotland and Wales will be able to apply to participate in the compensation schemes. Energy Intensive Industries in NI will not be eligible for the UK ETS compensation scheme at this stage. In practice there have previously been no energy intensive industries who used the EU ETS compensation scheme in NI. Compensation for the CPS also does not apply to NI. Any compensation scheme in Northern Ireland, should it be introduced, will be designed in accordance with to Article 10 of the NI Protocol.

Purpose of the Consultation

This consultation is a key component of the review.

Through it, we are seeking views and evidence from both existing recipients and non-recipients on:

1. Evidence of carbon leakage, particularly as a result of indirect emissions costs
2. Sectors most at risk of carbon leakage due to indirect emission costs
3. The design of the scheme (for example subsidy intensity)

Further details and consultation questions on each of these are set out in the document.

Responses received will help to inform the future design of the compensation schemes.

What happens next?

The consultation will remain open for a period of 8 weeks.

Whilst the consultation is running, the Department will work with stakeholders, including the Devolved Administrations to organise a series of virtual events to aid those intending to submit a response.

The team leading the review will email stakeholders to announce the launch of the consultation exercise and its publication on gov.uk and encourage them to engage with the process. The Government response to the consultation will also be published and notified to stakeholders. The team will engage informally prior, during and after the consultation with the relevant stakeholders.

Any decisions on the future of the scheme will be taken following the conclusion of the review.

Analytical Approach to Carbon Leakage

This section provides an overview of the evidence available on the risk of carbon leakage to UK sectors, including those from indirect emissions.

There is likely to be a small positive impact on the Gross Value Added (GVA), investment, production and employment of firms receiving compensation. Due to limitations of available data, while the evaluation could not determine the magnitude of the effect, the positive impact of the scheme on beneficiaries was assessed as greater than the compensation amount received by firms.

Evidence of carbon leakage occurring in the UK

Carbon leakage is the displacement of production, and associated greenhouse gas emissions, in ways that would not have happened if climate rules and policies across jurisdictions was implemented in an equivalent way.

There is little quantitative evidence to suggest carbon leakage is currently taking place, despite very real risks being laid out by theory². In part, this is thought to be due to historic low carbon prices in most jurisdictions³, however prices have risen recently, and their impact is yet to be quantified. Furthermore, Governments have put in place measures to mitigate the risk of carbon leakage such as allocation of free ETS allowances and this compensation scheme. The literature does not rule out the possibility of carbon pricing impacting carbon leakage or competitiveness more explicitly in the future. Carbon pricing represents a portion of a firm's costs and is not always considered to be the most important factor for carbon leakage, with cost pass-through rates and abatement opportunities having a significant impact. Other factors

² BEIS, UK Business Competitiveness and the Role of Carbon Pricing, 2020

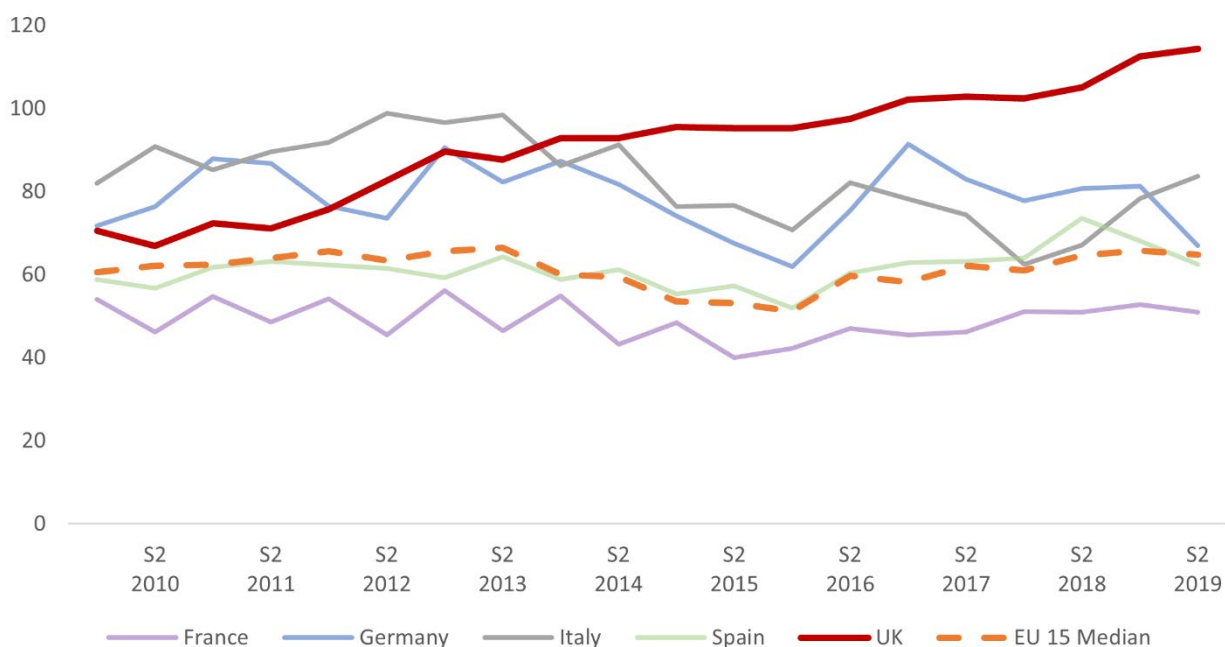
³ World Bank Group. (2019). State and Trends of Carbon Pricing 2019.

which affect carbon leakage include capital intensity, trade intensity/exposure, emissions output and other industry associated costs.

Conversely, there are complicated reasons involved in decisions to relocate production and investment from the UK. A high supply of free UK ETS allowances to industrial sectors, and other mitigations or benefits of operating in the UK have and may continue to offset carbon leakage impacts e.g., access to capital, cost pass through rates, and abatement opportunities (see Industrial Decarbonisation Strategy).

Nevertheless, Energy intensive industries (EIIs) are particularly exposed to carbon leakage due to their high proportional energy costs and trade intensity. The figure below shows the trend in electricity prices in the UK compared to selected other countries.

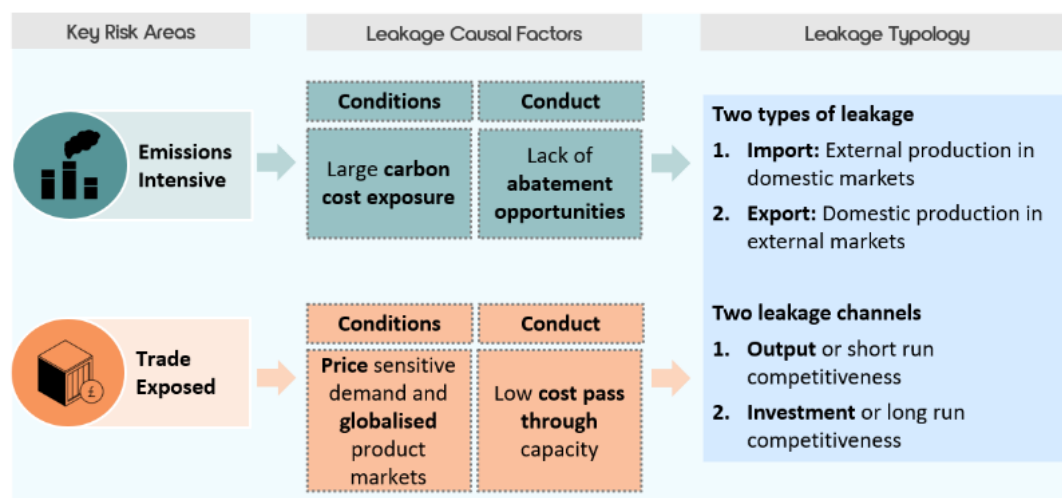
Figure A: Trends in electricity prices for extra-large industrial consumers in selected EU countries (£/MWh)



Source: BEIS Publication: QEP Electricity Prices for Industrial Customers (including environmental taxes and levies, excluding VAT). Extra-large consumers defined as consuming between 70,000 MWh to 150,000 MWh. Selected countries have five largest industrial sectors by electricity consumption in 2018, according to Eurostat. Last updated: June 2020.

There are a range of levers available to government to mitigate the risk of carbon leakage, including demand-side policies such as introducing product standards for industrial products. The UK will continue to consider the full set of policies, both in existence and in development, as part of our future carbon leakage mitigations policy. In the longer term a range of further measures could be deployed to address leakage risks for industry which seek to mitigate the competitiveness and environmental impacts of any imbalance between domestic and international policies addressing emissions reductions and improving productivity to continue boosting the competitiveness of UK sectors and make them more resilient.

Figure B: Illustration of carbon leakage risk streams



As shown in the diagram⁴ above carbon pricing affects the conditions of firms and this creates a risk of carbon leakage if they are either trade exposed or carbon intensive and lack the ability to pass through costs or seek abatement opportunities.

Factors which affect a firm's competitiveness

Other factors which affect a firm's competitiveness are: labour, resources, transport, equipment/land, and finance. Firms which face a relative advantage in other cost factors may be able to mitigate the impacts of relatively high and increasing energy costs. Evidence gaps exist for cost breakdowns of most sectors.

Evidence on current energy prices and policies

BEIS QEP⁵ indicates industrial electricity prices in the UK rank the highest amongst EU 14 + UK in 2019 and this price differential is even greater relative to non-EU competitors Turkey and the USA. All BEIS QEP figures account for the impact of tax and levy exemptions on the average industrial electricity price but not the impact of compensation.

In the first half of 2020, electricity prices excluding taxes for extra-large industrial consumers (those in the consumption range 70-150 GWh per annum) in the UK were 53% higher than the EU-14 + UK median and 91% higher when including taxes.

Average industrial electricity prices in the UK excluding taxes for large industrial consumers (those in the consumption range 20-69.99 GWh per annum) were the highest in the EU14 + UK and were 52% above the EU15 median and 71% higher when including taxes

Average industrial electricity prices in the UK excluding taxes for medium industrial consumers (those in the consumption range 2-19.99GWh per annum) were the highest in the EU14 + UK and were 39% above the EU15 median and 54% higher when including taxes.

⁴ UK Business Competitiveness and the Role of Carbon Pricing: Vivid Economics, 2020

⁵ [BEIS Quarterly Energy Prices: December 2020](#)

Figure C: Average industrial electricity prices in the UK for medium industrial consumers

Group	UK Industrial Electricity Price per MWh (exc. taxes and levies)	EU14 + UK Median Industrial Electricity Price per MWh (exc. taxes and levies)	UK Industrial Electricity Price per MWh (inc. taxes and levies)	EU14 + UK Median Industrial per MWh Electricity Price (inc. taxes and levies)
Extra-large	£71.11	£46.62	£116.51	£61.06
Large	£79.59	£52.31	£126.22	£73.91
Medium	£85.72	£61.76	£133.04	£86.42

Carbon price policies contributed around £13/MWh to electricity price in 2020. This was around 11% of electricity price including taxes and levies for extra-large consumers and 10% for large and medium consumers.⁶

Of these groups, 19% of current ETS CPS compensation scheme recipients fall into the medium category, 39% into large and 42% into extra-large.⁷

What does the long-term picture look like?

Several forecasts exist about future international energy prices, but the UK is generally more expensive. Carbon prices have generally been low up until recently so it may be too early to detect long run effects. The review into UK ETS free allocation will be assessing how free allowances can better incentivise emissions reduction. This will ensure the UK ETS is as efficient as it can be in promoting cost-effective emissions reduction and protecting energy intensive industries, particularly those where goods are traded overseas, from the risk of carbon leakage.

Sector deep dives from the Committee for Climate Change (CCC) report on competitiveness impacts of carbon policies on UK energy-intensive industrial sectors to 2030⁸

⁶ BEIS internal analysis

⁷ BEIS internal analysis

⁸ Competitiveness impacts of carbon policies on UK energy-intensive industrial sectors to 2030: Cambridge econometrics

CCC analysis for the aluminium, cement and steel sectors case studies reveals that the steel and aluminium sectors have been in long-term decline since the late-1990s, while cement production was stable over 1995-2007.

Key drivers for this are:

- For steel and aluminium, weak market conditions due to weak demand and low global prices compounded by a strong pound have diminished competitiveness of domestic production.
- For labour productivity and unit costs, UK sectors are typically middling or slightly inferior historically but have improved in comparison to German/French counterparts. However weak UK/EU demand and strong import competition have nullified any benefit in production and trade.
- Typically, higher or faster growing unit energy costs in the UK prior to 2008.
- Marked increases in import penetration for the above reasons. This has led to declining profitability and increased uncertainty which has resulted in weak or falling levels of investment which also reinforces the impact of contracting domestic production.

Steel

Includes a wide range of activities, from production of crude steel, to the manufacture of semi-finished and finished products.

The real value of production in the UK steel sector contracted by around 30% between the late 1990s and 2015. Increasingly globalised supply chains are evidenced by increasing import penetration and export shares of output. With demand having been weak in the UK and EU since the recession and falling demand in China.

Rather than climate change policies, the key factor behind the decline of the UK steel sector has been a combination of cheap imports from Turkey and weak EU demand. The sector has been buoyed by recent acquisitions of plants formerly owned by Tata. Simultaneously, a recovery in EU construction sector demand, and the future UK public sector infrastructure contracts looks set to boost the sectors outlook.

While carbon costs form a relatively modest proportion of industrial electricity prices this is projected to rise to 2030.

Aluminium

The aluminium sector covers a range of economic activities, though economic statistics often aggregate these activities together.

The real value of production of the UK aluminium sector contracted by nearly 50% over 1996-2015. Global demand for aluminium has more than tripled since 1990 but was significantly weakened in Europe by the 2008 recession. Declining domestic demand in the UK sector, including falling demand from the downstream production industry compounded with falling demand in the EU led the overall contraction of the sector.

In particular, the UK transport equipment and construction sectors contracting post-recession were very significant. The UK aluminium sector faced significantly higher energy costs compared to competitors, growing rapidly over 2001-08. This is due to the high prices of gas, which UK processes rely on more than their competitors. Climate change policies have increased costs for the sector, this has been mitigated somewhat by compensation, exemptions, and allowances. Recent investments have been made in UK downstream production driven by strong demand from the UK transport equipment sector, however there is stiff competition from China.

Cement

Global cement production grew from 1.1 to 4.1bn metric tonnes (1990-2014). In the UK, production was stable over 1995-2007, in line with domestic demand. However, demand has declined markedly since the 2008-09 recession. Contraction in UK construction activity has led to a fall in domestic demand of nearly 40%. Investment levels have dropped considerably after 2007 and have not yet recovered. Investment in competitors in France and Germany have contracted less than in the UK.

Around 60% of the sectors energy needs are met by coal with the rest met largely from electricity. These have both seen recent prices surges. Electricity prices rising was greater than for competitors. Since 2008 labour cost has fallen below that of direct rivals (France and Germany) whilst productivity levels have increased and surpassed those in France. However, import penetration has risen to 27% in recent years which is far higher than in Germany and France.

Consultation questions

1. To what extent do you agree with the risks and evidence of carbon leakage for UK EITs?
2. Is there any evidence of carbon leakage through indirect carbon emissions that you think has been missed in this section?

Eligible Sectors

Previous sector eligibility was specified by the European Commission's guidelines on certain State aid measures in the context of the greenhouse gas emission allowance trading scheme post-2012⁹. To be eligible for compensation for indirect emission cost due to the EU ETS and carbon price support mechanism a sector¹⁰ had to meet the following criteria:

- Trade intensity > 10%; and
- Indirect emission intensity > 5%

There was a possibility that sectors not meeting those criteria could become eligible after a qualitative assessment if they met one of the following conditions:

- Borderline sectors with indirect emissions intensity between 3% and 5% and trade intensity > 10%; or
- Sectors with information missing; or
- Sectors insufficiently represented.

The application of the above criteria led to 13 sectors and 7 subsectors being eligible for compensation for Phase 3 of the EU ETS. These are listed in Table 1 of Annex A.

A new methodology will now be applied for sector eligibility. The proposed methodology we are seeking views on is explained below. We will apply the methodology to an initial list of proposed sectors based on the latest available evidence. The proposed assessment list is based on previously eligible sectors, newly eligible sectors under Phase 4 of the EU ETS and marginally ineligible sectors. The proposed assessment list can be found in Annex A.

The proposed assessment list covers sectors that are most likely to be considered energy intensive and at potential risk of carbon leakage. The proposed assessment of new EU ETS Phase 4 sectors also ensures we assess sectors that may have become more exposed to carbon leakage since 2012. The assessment will be driven by UK specific data and there will be opportunities to include further sectors if clear evidence suggests they should be assessed, this is reflected in consultation question 5.

Proposed methodology:

The methodology will use a quantitative assessment and qualitative assessment which will be combined to determine which sectors are eligible for compensation. Please see the top of the next page for a flow chart illustrating the proposed methodology with details set out in this section.

⁹ EU Commission state aid guidelines, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52012XC0605%2801%29>

¹⁰ A sector is an economic activity as defined by four digit NACE code or SIC code 2007 equivalent.

Review of the schemes to compensate energy intensive industries for indirect emission costs in electricity prices



The quantitative assessment will be based on an indirect carbon leakage measure (ICLM). The calculation for this measure is set out below:

ICLM¹¹ = trade intensity x indirect emissions intensity, where:

$$\text{Trade Intensity} = \frac{\text{Imports} + \text{Exports}}{\text{Turnover} + \text{Imports}}$$

$$\text{Indirect Emission Intensity} = \frac{\text{Electricity} \times \text{Emissions factor}}{\text{GVA (Indirect)}}$$

$$\text{ICLM} = \left(\frac{\text{Imports} + \text{Exports}}{\text{Turnover} + \text{Imports}} \right) \times \left(\frac{\text{Electricity} \times \text{Emissions factor}}{\text{GVA (Indirect emissions)}} \right)$$

Units

Imports	£	Electricity consumption	kwh
Exports	£	Emissions factor	tCO2/MWh
Turnover	£	GVA	£

Under this proposal a sector would pass the quantitative assessment if any of the following conditions hold:

- The ICLM is above 0.22

¹¹ ICLM = ((Imports + Exports)/(Turnover + Imports)) x ((Electricity consumption x Emissions factor)/GVA from indirect emissions)

- Has a trade intensity above 20%
- An indirect emission intensity greater than 1.1

Subsectors that have an indirect carbon leakage indicator above 0.22 and high exposure to fuel and electricity substitutability will pass. The assessment of fuel and substitutability is described later in this section on p.24.

The proposed qualitative assessment will see each sector assessed for risk of indirect carbon leakage using a Red Amber Green (RAG) assessment. The methodology for translating a RAG rating to the 1-3 scale is set out on p.23.

The assessment will look across four criteria for each sector. A sector will have each criterion characterised as either low, medium or high risk of carbon leakage due to indirect ETS and CPS costs and this in turn determines a RAG rating to illustrate carbon leakage risk for the sector.

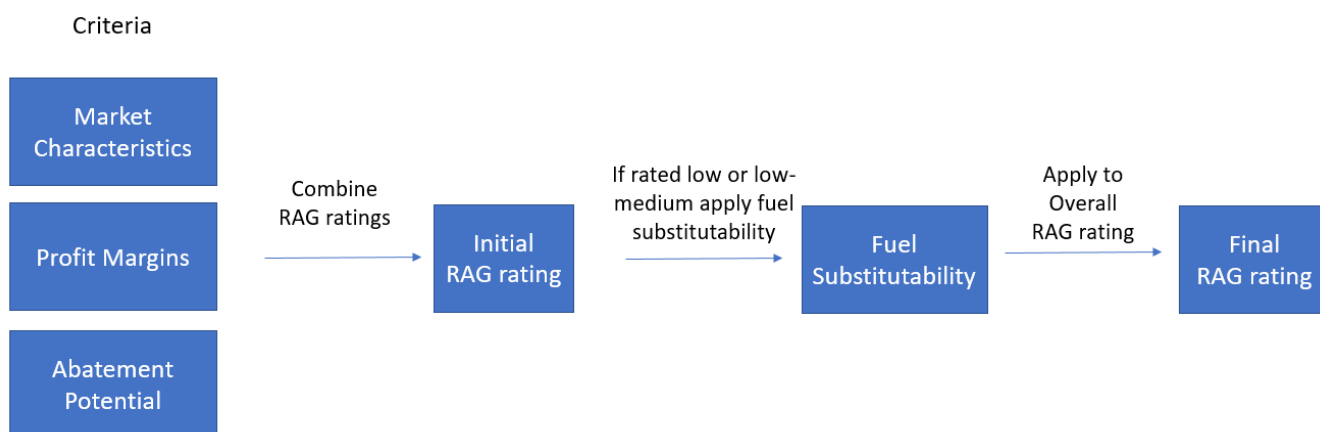
The criteria are:

- Market characteristics: assesses ability of a sector to pass through indirect emissions costs based on parameters such as bargaining position, price taker position, market concentration and trading patterns.
- Profit margins: assesses parameters such as the current and future demand, output price, costs, investment, business demography of the sector, substitutability with other products and the feasibility of relocation for the sector.
- Abatement potential: assesses the scope for energy efficiency investments in order to reduce electricity consumption and therefore indirect emission costs in the sector. – Parameters will include current electricity consumption, international benchmarks, and the current and future adoption of future Best Available Technologies.
- Fuel substitutability: assesses the ability of the sector to shift from fossil fuel energies to electricity and whether there is a risk that difference in treatment between direct and indirect cost compensation hinders the energy-efficient electrification of the sector. This difference in treatment could lead to the unintended consequence of disincentivising electrification or energy efficiency measures more generally.

Each criterion is RAG rated for a sector. The first three criteria (market characteristics, profit margins, abatement potential) are collated to produce an initial RAG rating for a sector. This initial rating determines the risk of indirect carbon leakage. Fuel substitutability is applied later in the assessment. Each criteria's RAG rating will be formed through analysing underlying parameters. Please see Annex B for the full breakdown of these parameters.

For the initial rating, a higher weight is given to market characteristics which include the cost pass-through ability for a sector. Market characteristics=2, profit margins=1, abatement potential=1. The risk of carbon leakage is deemed manageable if costs can be passed on and is reflected in market characteristics representing a higher weighting.

The flow chart below illustrates the stages of the qualitative assessment's RAG rating process.



Each of the criteria will be assessed by analysing underlying parameters. Parameters will be included based on UK-specific data availability and strategic importance for ensuring the robustness of the qualitative assessment. In the event of a significant data gap, we may contact companies to provide data. Please do engage with us or any consultants acting on our behalf should we seek further data.

Market characteristics

This category assesses the extent to which producers can pass on cost increases to customers, and in particular the ability to pass on higher electricity costs to customers. The RAG rating for this category will reflect the current and future market characteristics for a sector. The parameters for market characteristics will involve existing and future trade patterns, link between cost and output prices, and market structure and bargaining position. These areas provide a basis on which to assess sectors in a consistent way and are key factors when looking at a sector's ability to pass on costs.

A highly traded, price taking sector that is unable to pass on higher costs attributable to a stricter carbon pricing structure relative to international competitors could be at higher risk of carbon leakage.

Existing and future trade patterns will look at current and future domestic demand for the sector. It will also look at current and future trends in import penetration and import prices. Link between cost and output prices will compare output price against production costs over time. It will also compare trends in domestic sector output prices with non-domestic sector output prices and see whether the prices are UK-specific or set at a global level. Market structure and bargaining position will look at the firm size concentration for a sector in comparison to downstream sectors. It will also look at the interdependence between downstream customers and the sector and the pricing power a sector has over customers.

Each of these parameters will be RAG rated and combined on average to give a criteria RAG rating for market characteristics. This approach will be the same for each criterion.

Profit margins

If profit margins are positive and sustained in the domestic market, then the incentive to relocate is considered low. Whereas if profit margins are low or margins are higher in countries outside the UK, and the indirect costs related to the UK ETS are a significant share of the profit margins, then the incentive to relocate is high.

The relocation decision outside the UK has both economic and environmental impacts. At the economic level, if UK firms relocate production or future investments outside the UK then it impacts employment and creates adverse distributional effects as well as impairing economic growth. At the environmental level, if UK firms relocate production or future investments to areas with less constrained climate policies then this would potentially lead to higher global greenhouse gas emissions and will undermine the UK ETS objective of contributing to a global reduction of CO₂ emissions.

We will consider assessing parameters looking at the current investments and profit margins in a particular sector as well as the projections of future margins and demand growth in the UK. Comparing the projections for demand growth and profit margins in the UK with overseas competitors provides a view of the incentives to invest in UK.

We will also consider parameters assessing the feasibility of relocation for a sector independent of the incentives to invest in the UK assessed above. Those parameters look at the physical aspects that contribute to a relocation decision based on the current trade routes. We may also look at the net trade balance to give an indication of the feasibility of relocating to serve the UK market through imports.

For each category, a RAG rating is calculated based on available parameters. The overall RAG rating for the profit margin category is estimated as the simple average of the RAG ratings of the parameters considered above.

Abatement potential

The abatement potential of a sector relates to a sector's ability to mitigate the risk of carbon leakage due to indirect emissions when incorporating new technologies. For sectors where there is little scope for further reduction in indirect carbon costs, the risk of carbon leakage will be higher than for sectors that can still adopt the best existing technologies in their sector to reduce their electricity consumption.

The first sub-category we will consider assesses the current electricity consumption and scope of reduction. If the parameters indicate some leeway for sectors to reduce their indirect emissions through the adoption of best technologies, then the risk of carbon leakage is deemed low. A second sub-category under consideration assesses the ability of the sector to implement best available technologies (BAT) regarding electricity consumption out to 2030.

The overall RAG rating for abatement section will be based on the simple average of the RAG ratings of the two sub-categories presented above subject to data availability.

Initial RAG Rating

For the initial RAG assessment performed below, the key assumption made is the higher weight given to the market characteristics criteria which includes the ability of the sector to pass on higher costs to customers. The risk of carbon leakage is deemed manageable by a sector if it can pass through higher electricity costs to its customers.

Rule applied for the initial RAG score for eligibility:

- Green=1; Green Amber=1.5; Amber= 2; Amber-Red=2.5; and Red=3.
- Weight of market characteristics=2, profit margins=1 and abatement potential=1.

The scores for each of the three criteria are then multiplied by their weightings and combined to give an overall RAG score using the following equation:

$$RAG_{sector} = \sum_i^{Criteria} RAG_i \cdot Weight_i$$

- Initial RAG score: Green=4-5; Green-Amber=6-7; Amber= 7.5-8; Amber-Red=8.5-9.5; and Red>=10.
- For parameters without conclusion, we consider a RAG rating of 1.

Fuel and electricity substitutability

Some production processes may be able to shift from fossil fuel to electricity however the compensation firms receive for direct emissions such as free allowances through the UK ETS means certain sectors may not shift as they prefer maintaining their direct emission compensation. Therefore, there may be a case to compensate for indirect emissions for these sectors to avoid preferential treatment of fuel and not disincentivise energy efficiency investment.

If there is a high degree of variability on fuel used within the sector with both fuel and electricity used, coupled with unequal compensation between direct and indirect emission costs, then fuel substitutability risk exists. The carbon leakage risk is limited but sectors at risk are those that have no ability to reduce electricity consumption, pass on costs, or face increasing competition from cheaper imports. If the RAG rating for this is red, then the initial RAG rating is upgraded to a higher score.

Summary of eligibility criteria

The quantitative and qualitative assessments conducted for each sector will show whether that sector is at risk of carbon leakage and is therefore eligible to receive compensation for its indirect carbon costs based on the sector's ICLM and overall RAG rating received.

In the RAG assessment, Red and Amber-Red indicate a high risk of indirect carbon leakage whilst Green indicates a low risk of indirect carbon leakage and Green-Amber represents a low-medium risk.

The initial RAG rating is a combined assessment of the carbon leakage risk based on three criteria – market characteristics, profit margins, and abatement potential – where each receive an individual RAG rating after assessment of their underlying sub-categories. This RAG rating on the risk of carbon leakage is supplemented by the RAG rating on the potential for shifting to electrification that determines if the sector should be granted a compensation to incentivise the shift.

Sectors with a high ICLM and sectors rated medium, medium-high or high risk of carbon leakage will be eligible for indirect cost compensation.

The list of sectors assessed as eligible through this process will be published in the Government response.

Consultation questions

3. To what extent do you agree with the proposed methodology to determine sector eligibility?
4. To what extent do you agree with the proposed list of sectors and subsectors that will be assessed under the proposed methodology for sector eligibility?
5. Are there any sectors or subsectors that are at risk of carbon leakage and should be considered? Please provide evidence of the risk of carbon leakage.

Business Level Test

The compensation schemes also apply a business-level test to target compensation at those companies most at risk of carbon leakage due to the indirect emission cost in an eligible sector. Companies need to show that their total indirect emission costs will amount to 5% or more of their gross value added (GVA).

We recognise that the business-level test creates a risk that some companies which manufacture eligible electricity intensive products may not pass it by virtue of their structure – for example a business may manufacture other non-intensive product(s) which lowers its overall aggregate level of electricity intensity. We therefore treat a business as passing the test if it can demonstrate to the satisfaction of the Secretary of State that:

- The business only fails the 5% test because of the inclusion of business activity which does not relate to the manufacture of the eligible product(s); or

- A business operating in the market and which manufactures the same product in the UK has passed the 5% test and is eligible for compensation.

We intend to retain the business-level test and the above exemptions, but to update the reference period and carbon price to use in our guidance for the next financial year.

Consultation question

6. Do you agree with our proposal to retain the business-level test and its exemptions? Please provide an explanation or information to support your view.

Design of the Compensation Scheme

In order to calculate the level of compensation per installation, we have (since 2013) been applying the following formula:

$$A_{max_t} = A_i \times C_t \times P_{t-1} \times E \times AO_t$$

In this formula, A_i is the subsidy intensity at year t , expressed as 75%, C_t is the applicable CO₂ emission factor (tCO₂/MWh) (at year t); P_{t-1} is the UK ETS forward price at year $t-1$ (£/tCO₂); E is the applicable product-specific electricity consumption efficiency benchmark; and AO is the baseline output.

Not all products have benchmarks and the schemes have therefore been using a fall-back electricity consumption efficiency benchmark (EF):

$$A_{max_t} = A_i \times C_t \times P_{t-1} \times EF \times AEC_t$$

This benchmark is a percentage of actual electricity consumption corresponding to the average reduction effort imposed by the application of the electricity consumption efficiency benchmarks.

For the one-year extension of the schemes, we decided to retain the subsidy intensity at 75% and keep the baselines and efficiency benchmarks set in 2012 but update the reducing the CO₂ emission factor from 0.58tCO₂/MWh to 0.446tCO₂/MWh, as per the latest DUKES statistics, and update the carbon price [in line with the UK ETS forecasts].

In any future scheme, we propose to update the variables in the formula in the following ways.

Subsidy Intensity

Subsidy intensity is the term which denotes the ratio (as a %) between the amount of subsidy and the eligible costs. It is a criterion designed to avoid the situation where a beneficiary from a subsidy uses any excess subsidy for other purposes which may be detrimental to competition and/or to include a minimum contribution by the beneficiary to ensure that it has an incentive to carry out the subsidised activity efficiently. The formula currently applies an aid intensity of 75%.

The subsidy intensity of 75% might not be sufficient to mitigate the risk of carbon leakage though due to indirect emission cost for some companies. We propose to increase compensation by limiting the amount of the total indirect emission costs to 1.5% of the GVA of the company concerned in a respective year. However, companies that may become eligible for this proposal will be required to apply for certain types of government support to invest in energy efficiency and decarbonisation.

Alternatives to a flat rate 75% subsidy intensity are lowering it to 65% or increasing it to 85% for example. Another alternative is to increase compensation by limiting it to 1.5% of GVA for the indirect emission cost due to the carbon price support mechanism only, as the carbon tax is on top of the emission trading system.

Consultation question

7. Do you agree with our proposals to keep the subsidy at 75%, but also limit the indirect total emission cost due to the UK ETS and CPS to 1.5% of a company's GVA in a respective year? Please provide an explanation or information to support your view.
8. What would be the impact of lowering the aid intensity to 65% rather than 75%? Please provide an explanation or information to support your view

CO2 Emission Factor

The CO2 emission factor (tCO₂/MWh) refers to the weighted average of the CO₂ intensity of electricity produced from fossil fuels in the UK. It assumes that fossil fuels will continue to be the marginal energy source those power plants use to meet marginal demand for electricity in the time period proposed. These power stations will therefore continue to determine the pass-through cost of the carbon price.

BEIS has consulted on bringing the deadline for ending unabated coal-fired electricity generation forward from 2025 to 2024. This means that from 2025, coal will no longer affect the CO₂ emission factor if Government decides to move the deadline forward and that gas will be the marginal energy source to determine the indirect emission costs. BEIS aims to publish the Government response to the consultation in due course.

The schemes used a CO₂ emission factor of 0.58tCO₂/MWh for the period 2013-2020. For the one year extension to financial year 2021/22, Ministers decided to apply the provisional estimated carbon dioxide emissions per GWh of electricity supplied of 0.446tCO₂/MWh for 2019 as per table 5E from Digest of UK Energy Statistics ([DUKES](#)) 2020.

In any future scheme, we propose to use the latest figure of the estimated carbon dioxide emissions per GWh of electricity supplied for all fossil fuels from the DUKES and update the formula with this figure annually. The annual figure in DUKES provide a more accurate estimate of the actual emission factor than a fixed forecast over the rest of the first phase of the UK ETS. Combined with the carbon price, the DUKES figures reflect closer the actual indirect emission costs.

In practice this means that we will apply the CO₂ emission factor in year t based on a statistic from year t-2 publish in DUKES t-1. For example, in the formula to calculate the level of compensation in financial year 2022/23 we would apply the CO₂ emission factor from year 2020 published in DUKES 2021.

Alternative options are to establish a market-based CO₂ emission factor for 2022-2030 or per annum. This would provide BEIS with a future estimate and provide more certainty over the level of compensation. However, a future estimate may not accurately reflect the actual emission factor and a single future estimate will not consider annual fluctuations.

We have also been applying the same CO₂ emission factor to other sources of electricity than from the grid, such as Combined Heat and Power (CHP) installations. Applying the same factor does not differentiate between carbon intensity of these different electricity supply sources but does avoid potential manipulations and is easier to administer. We therefore propose to continue applying the same CO₂ emission factor to all sources of electricity supply whether auto generation, electricity supply contracts or grid supply.

Consultation questions

9. Do you agree with our proposal to apply the latest figure of the estimated carbon dioxide emissions per GWh of electricity supplied for all fossil fuels from DUKES and update the formula with this figure annually? Please provide an explanation or information to support your view.
10. Do you agree with our proposal to continue applying the same CO₂ emission factor to all sources of electricity supply whether auto-generation, electricity supply contracts or grid supply? Please provide an explanation or information to support your view.

Carbon Price

The UK ETS went live on 1 January 2021 with the main legislation being laid in 2020. This was followed by auctioning regulations laid in February 2021 which also set out the auction reserve price at £22.

UK ETS auctions and the secondary market will launch on 19 May 2021. The eventual UK ETS price will be set by the market and what participants are willing to pay for allowances.

The CPS is a carbon tax levied on fossil fuels used to generate electricity. It was introduced in 2013 to underpin the price of carbon at a level that drives low carbon investment. The Treasury sets carbon price support rates three years ahead of the year in which they will apply, and the CPS is currently set at £18/tCO₂.

Efficiency Benchmarks

The current formula to calculate the level of compensation also includes a product-specific electricity consumption efficiency benchmark (E) where available. These benchmarks (MWh/tonne of output) are product-specific benchmarks achieved by the most electricity-efficient methods of production for the product considered. The aim of including such benchmarks as a variable in the formula is to encourage energy efficiency. The benchmarks are defined at Prodcom 8 level with Prodcoms being EU statistical definitions of production of manufactured goods¹².

Not all products have benchmarks and the schemes have therefore been using a fall-back electricity consumption efficiency benchmark (EF):

$$A_{max_t} = A_i \times C_t \times P_{t-1} \times EF \times AEC_t$$

This benchmark is a percentage of actual electricity consumption corresponding to the average reduction effort imposed by the application of the electricity consumption efficiency benchmarks. The current benchmarks stem from the 2012 EU ETS state aid guidelines and have been taken from the benchmarks to determine allocation of free EU ETS allowances. These guidelines assign an approximate value of 80% to the fall-back benchmark.

We propose to continue to use the benchmarks that apply in Phase IV (2021-2030) of the EU ETS in the form of the product-specific electricity consumption efficiency benchmark (E), where available, or the fall-back efficiency benchmark of 80%, where not available, in the formula to calculate level of compensation irrespective of whether data from UK installation is included. This will ensure that benchmarks are based on sufficiently broad sets of data. Nonetheless, we will be looking at possible future changes to these benchmarks. The review into free allocations will consider which benchmarks are best suited in the context of the UK ETS.

¹² <https://ec.europa.eu/eurostat/web/prodcom>

Alternatives to the proposal are to omit the benchmarks from the formula to calculate the level of compensation, but this would mean losing an energy efficiency incentive in the schemes and providing relative more compensation to less energy efficient installation compared to similar more efficient ones. Also, we could potentially develop UK-specific benchmarks quicker than as part of the review to allocate free ETS allowances, but this might pre-empt this review and lead to inconsistencies.

Consultation question

11. Do you agree with our proposal to continue using the benchmarks that apply in Phase IV (2021-2030) of the EU ETS in the form of the product-specific electricity consumption efficiency benchmark, where available, or the fall-back efficiency benchmark of 80%, where not available, until having potential bespoke UK benchmarks, following the review of allocation of free allowances under the UK ETS? Please provide an explanation or information to support your view.

Conditionality

There are significant positive changes taking place in the global efforts to mitigate climate change, which in turn will support industry's net zero transition.

In 2019 the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target will require the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels.

Reaching net zero, carbon budgets and the UK's NDC will require extensive, systematic change across all sectors including energy intensive industries. We must therefore consider how and where the compensation schemes can support and accelerate that transition.

Government is currently considering a range of conditions that will be attached to compensation payments to incentivise firms to decarbonise, maximise energy efficiency, and ensure that the compensation schemes are fully aligned to the Government's goal of achieving net zero. These could be positive in nature – for example an increased allocation is received by companies who take positive action on climate change or negative e.g. companies receive less funds if they actively do not invest in action to tackle climate change and increase energy efficiency. In either case, the conditions will be rigorous and measurable so that there is a clear understanding (for both Government and industry) of what is required – as well as the ability to track progress against the agreed actions. We will look to implement that these conditions would be implemented from the start of any post-2021 compensation scheme – and these may be further added to over time.

As we develop these proposals, we would be interested in views from stakeholders on how net zero might be achieved for their individual businesses. We will run workshops with stakeholders during the consultation period to capture as wide a range of views as possible on the most effective ways in which the compensation schemes could support our transition to net zero.

Consultation questions

12. Does your organisation currently have a plan to get to net zero?
13. If so, how do you use compensation you currently receive to deliver on that plan?
14. What conditions do you think would be most effective in incentivising greater energy efficiency or decarbonisation?

Scheme Monitoring and Evaluation

The current schemes require recipients to provide data on production, electricity consumption and GVA. We propose to collect additional data to strengthen the monitoring and evaluation of the scheme and thereby allow for a more effective assessment of value for money.

We have some qualitative evidence which shows that compensation generates higher UK investment by recipients relative to firms which have not received compensation. However, with the current level of data we collect, there is limited evidence which demonstrates this effect or the value the schemes provide to the wider UK economy. We therefore propose to ask recipients to provide further data to help us improve monitoring of the value of the schemes.

We propose the following annual data requirements would need to be provided by recipients in order to receive compensation:

- Total capital expenditure
- Total capital expenditure in the UK
- Total UK capital expenditure on new assets
- Total UK capital expenditure on existing assets
- Total investment into energy efficiency measures
- Annual earnings before interest, taxes, depreciation and amortization
- Average wage by role and location

Additional wage data will be collected and processed solely for the purposes of administering the compensation schemes. The personal data provided will not be shared or disclosed to any

other party outside BEIS without explicit consent. We will retain any additional data only for the period needed for administering the compensation schemes.

Furthermore, in order to improve the monitoring and transparency of the schemes, we may add additional conditions to an offer letter requiring that the business reflects compensation received in its company accounts, subject to the relevant UK accounting and reporting regulations.

Consultation questions

15. Do you agree with our proposal to expand data monitoring of the scheme? Please provide an explanation or information to support your view.

16. Do you agree with the proposed data requirements for quantifying the benefits of the scheme? Please provide an explanation or information to support your view.

17. Do you agree with our proposal to add additional conditions to the schemes requiring businesses to reflect compensation received in their company accounts and to spend the compensation on its electricity costs? Please provide an explanation or information to support your view.

Subsidy Control

Any compensation paid for the indirect emission cost due to the UK ETS and CPS will be awarded in accordance with the UK subsidy control regime.

On 3 February 2021, BEIS published a consultation on designing a new approach to subsidy control for the UK, with a deadline for responses of 31 March 2021. It sought views on the best ways to design a bespoke approach to subsidy control. In general terms, the Government defines a subsidy as a financial contribution using public resources which confers a benefit on the recipient. This could include, for example, a cash payment – such as compensation - a loan with interest below the market rate, or a loan guarantee. Subsidies are administered by all levels of government in the UK. Compensation for the indirect emission cost due to UK carbon pricing therefore falls under this definition and subsidy control therefore applies to the compensation schemes.

Since 1 January 2021 the UK has followed the commitments on subsidy control set out in its Trade and Cooperation Agreement (TCA) signed with the EU, in FTAs with other countries and in the World Trade Organisation (WTO) rules on subsidies, as well as of Article 10 of the Northern Ireland Protocol to the Withdrawal Agreement with the EU.

The TCA includes some broad principles that shape the design of both sides' subsidy control systems, which are aimed at ensuring that the granting of a subsidy does not have detrimental

effects on trade or investment between the UK and the EU. The TCA makes clear that it is for the Government to determine how these principles will be implemented in UK domestic law, as long as they are respected when subsidies are granted.

The Government wants a subsidy control system that strikes the right balance between allowing the benefits that can be derived from subsidies while limiting harmful impacts. The Government's objectives for the future subsidy control regime are:

- Facilitating interventions to deliver on the UK's strategic interests
- Maintaining a competitive and dynamic market economy
- Protecting the UK internal market
- Acting as a responsible trade partner

Under the TCA, the UK has a general duty to ensure that energy and environmental subsidies are aimed at delivering, and duly incentivise the beneficiary in delivering, a secure, affordable and sustainable energy system and a well-functioning and competitive energy market or increasing the level of environmental protection compared to the level that would be achieved in absence of the subsidy. One of the UK's specific obligations under the TCA, with respect to subsidies to energy and environmental projects, reads:

“compensation for electricity-intensive users in the event of an increase in electricity cost resulting from climate policy shall be restricted to sectors at significant risk of ‘carbon leakage’ due to the cost increase.”

The UK and the EU have agreed a reciprocal mechanism that allows either side to take rapid action where a subsidy granted by the other side is causing or is at serious risk of causing significant harm to its industries. These measures can be challenged using an accelerated arbitration procedure and there is the possibility of compensation if either party has used these measures in an unnecessary or disproportionate manner.

The Protocol on Ireland/Northern Ireland, part of the UK-EU Withdrawal Agreement, contains provisions relating to subsidy control. Article 10 of the Protocol provides that the EU State aid rules will continue to apply in the limited circumstances where subsidies affect trade in goods or electricity between Northern Ireland and the EU, and therefore, in principle, aid that is granted to service providers is not covered.

Consultation questions

Summary list of the consultation questions:

- 1. To what extent do you agree with the risks and evidence of carbon leakage for UK EIs?**
- 2. Is there any evidence of carbon leakage through indirect carbon emissions that you think has been missed in this section?**
- 3. To what extent do you agree with the proposed methodology to determine sector eligibility?**
- 4. To what extent do you agree with the proposed list of sectors and subsectors that will be assessed under the proposed methodology for sector eligibility?**
- 5. Are there any sectors or subsectors that are at risk of carbon leakage and should be considered? Please provide evidence of the risk of carbon leakage.**
- 6. Do you agree with our proposal to retain the business-level test and its exemptions? Please provide an explanation or information to support your view.**
- 7. Do you agree with our proposals to keep the subsidy at 75%, but also limit the indirect total emission cost due to the ETS and the carbon price support mechanism to 1.5% of a company's GVA in a respective year? Please provide an explanation or information to support your view**
- 8. What would be the impact of lowering the aid intensity to 65% rather than 75%? Please provide an explanation or information to support your view.**
- 9. Do you agree with our proposal to apply the latest figure of the estimated carbon dioxide emissions per GWh of electricity supplied for all fossil fuels from DUKES and update the formula with this figure annually? Please provide an explanation or information to support your view.**
- 10. Do you agree with our proposal to continue applying the same CO₂ emission factor to all sources of electricity supply whether auto-generation, electricity supply contracts or grid supply? Please provide an explanation or information to support your view.**
- 11. Do you agree with our proposal to continue using the benchmarks that apply in Phase IV (2021-2030) of the EU ETS in the form of the product-specific electricity consumption efficiency benchmark, where available, or the fall-back efficiency benchmark of 80%, where not available, until having potential bespoke UK benchmarks, following the review of allocation of free allowances under the UK ETS? Please provide an explanation or information to support your view.**

- 12. Does your organisation currently have a plan to get to net zero?**
- 13. If so, how do you use compensation you currently receive to deliver on that plan?**
- 14. What conditions do you think would be most effective in incentivising greater energy efficiency or decarbonisation?**
- 15. Do you agree with our proposal to expand data monitoring of the scheme? Please provide an explanation or information to support your view.**
- 16. Do you agree with the proposed data requirements for quantifying the benefits of the scheme? Please provide an explanation or information to support your view.**
- 17. Do you agree with our proposal to add additional conditions to the schemes requiring businesses to reflect compensation received in their company accounts and to spend the compensation on its electricity costs? Please provide an explanation or information to support your view.**

Next steps

Following the close of the consultation period, we will carefully consider the consultation responses and the evidence received.

The response to the consultation will take the form of decisions made in light of the consultation, a summary of the views expressed, and reasons given for decisions finally taken.

This document will be published on the GOV.UK website with paper copies available on request. The summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

Annex A: Proposed list of eligible sectors and products based on latest assessments:

Table 1: Current scheme eligible sectors¹³:

SIC code	Description
7.1	Mining of Iron Ore
14.11	Manufacture of leather clothes
8.91	Mining of chemical and fertiliser minerals
13.10	Preparation and spinning of cotton-type fibres
20.11	Manufacture of industrial gases
20.17	Manufacture of synthetic rubber in primary forms
17.11	Manufacture of pulp
17.12	Manufacture of paper and paperboard
20.13	Manufacture of other inorganic basic chemicals
20.14	Manufacture of other organic basic chemicals
20.15	Manufacture of fertilisers and nitrogen compounds
20.16	Only the following products within SIC 20.16 (manufacture of plastics in primary forms): 24161035 – Linear low-density polyethylene 24161039 – Low-density polyethylene 24161050 – High-density polyethylene 24163010 – Polyvinyl chloride 24164040 – Polycarbonate 24165130 – Polypropylene
20.6	Manufacture of man-made fibres
24.1	Manufacture of basic iron and steel and of ferro-alloys
24.42	Aluminium production

¹³ [Compensation for the indirect costs of the EU ETS and the CPS mechanism: guidance for applicants](#): Table 1

Review of the schemes to compensate energy intensive industries for indirect emission costs in electricity prices

SIC code	Description
24.43	Lead, zinc and tin production
24.44	Copper production

Table 2: Previously marginal sectors¹⁴:

16.21	Manufacture of veneer sheets and plywood
20.11	Manufacture of industrial gases
23.13	Manufacture of hollow glass
23.51	Manufacture of cement

Table 3: Added by EU Commission for Phase 4¹⁵:

19.20	Manufacture of refined petroleum products
24.45	Manufacture of other non-ferrous metals

Table 4: Specific products added by EU Commission for Phase 4:

Prodcom	Code Description
20.16.40.15	Polyethylene glycols and other polyether alcohols, in primary forms
20.11.11.50	Hydrogen
20.11.12.90	Inorganic oxygen compounds of non metals (excluding sulphur trioxide (sulphuric anhydride); diarsenic trioxide, nitrogen oxides, silicon dioxide, sulphur dioxide, carbon dioxide)
23.14.12.10	Glass fibre mats (including of glass wool)
23.14.12.30	Glass fibre voiles (including of glass wool)
24.51.11.10	Malleable iron castings for land vehicles, piston engines and other machinery and mechanical appliances

¹⁴ BEIS internal analysis.

¹⁵ [Impact Assessment – European Commission](#): Annex 2, Paragraph e).

Review of the schemes to compensate energy intensive industries for indirect emission costs in electricity prices

Prodcom	Code Description
24.51.11.90	Parts for other utilisation (malleable iron casting)
24.51.12.10	Parts of land vehicles (nodular iron castings)
24.51.12.20	Ductile iron castings for transmission shafts, crankshafts, camshafts, cranks, bearing housings and plain shaft bearings (excluding for bearing housings incorporating ball or roller bearings)
24.51.12.40	Other parts of piston engines and mechanical engineering (nodular iron castings)
24.51.12.50	Ductile iron castings for machinery and mechanical appliances excluding for piston engines
24.51.12.90	Ductile iron castings for locomotives/rolling stock/parts, use other than in land vehicles, bearing housings, plain shaft bearings, piston engines, gearing, pulleys, clutches, machinery
24.51.13.10	Grey iron castings for land vehicles (excluding for locomotives or rolling stock, construction industry vehicles)
24.51.13.20	Grey iron castings for transmission shafts, crankshafts, camshafts, cranks, bearing housings and plain shaft bearings (excluding bearing housings incorporating ball or roller bearings)
24.51.13.40	Other parts of piston engines and mechanical engineering (cast iron: not ductile)
24.51.13.50	Grey iron castings for machinery and mechanical appliances excluding for piston engines
24.51.13.90	Grey iron castings for locomotives/rolling stock/parts, use other than in land vehicles, bearing housings, plain shaft bearings, piston engines, gearing, pulleys, clutches, machinery
24.51.20.00	Tubes, pipes and hollow profiles of cast iron excluding tubes, pipes, hollow profiles made into identifiable parts of articles, such as sections of central heating radiators and machinery parts
24.51.30.30	Tube or pipe fittings, of non-malleable cast iron
24.51.30.50	Tube or pipe fittings of malleable cast iron

Annex B: Breakdown of Criteria parameters

Market characteristics

Link between cost and output prices/ Price taker

- Comparison between output price evolution and inputs/production costs evolution (Green if clear correlation)
- Comparison of sector trends in/outside the EU (Green if no correlation)
- Existence of a common reference price or regionalised prices (Green if strong regional price)

Market structure and bargaining position:

- Concentration of sector (Green if more concentrated than downstream [DS] sectors)
- Interdependence between downstream customers and sector:
- Pricing power of DS customers (green if sector has high value-added content)

Existing and future trade patterns:

- Trends in expected growth of demand (green if strong/growing)
- Role of imports in meeting demand and trend in penetration (green if low/falling penetration)
- Levels of import prices and trends (green if higher/rising import prices)

Profit margins

Current investment in the sector in EU ETS area:

- Current financial situation of the sector (green if high profitability/higher within EU ETS)
- Comparative investment in sector (green if higher/growing faster in EU ETS)
- Products substitutable with products with indirect cost compensation (green if none)

Long-term investment in EU ETS area:

- Projections of demand in EU ETS area (green if in line or faster than outside EU ETS)
- Projections of costs/prices/margins (green if margins to hold/widen or in line with outside EU ETS)
- Business demography (green if high birth/survival rate or low death rate)

Feasibility of relocation:

- Current trade patterns (green if no or little trade – indicates nonexistence of infrastructure)

- Net trade balance (green if high/widening)

Abatement potential

- Current electricity consumption
- Current level of electricity intensity (green if high/above sector average outside EU ETS)
- Indirect emission intensity (green if high/above sector average in outside EU ETS)
- Adoption of best available technologies
- Penetration of best available technologies (green if low)

Fuel and electricity substitutability

- Variability between undertakings in sector based on fuel/electricity consumption (green if there is no variability: either most undertakings use fuel, or if most use electricity, then the indirect compensation has been assessed in previous ETS guidelines)
- Unequal treatment of direct/indirect costs compensation within sector (green if they receive indirect costs compensation)

This consultation is available from: www.gov.uk/government/consultations/review-of-the-schemes-to-compensate-energy-intensive-industries-for-indirect-emission-costs-in-electricity-prices

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