| | |
|---|---|
| **Title:** Moving from compensation to exemption from the costs of the Renewables Obligation and Feed In Tariff for energy intensive industries<br><br>**IA No:** DECC0214<br>**Lead department or agency:**<br>DECC<br>**Other departments or agencies:**<br>BIS | **Impact Assessment (IA)**<br>**Date:** 01/04/2016<br>**Stage:** Options<br>**Source of intervention:** Domestic<br>**Type of measure:** Secondary Legislation<br>**Contact for enquiries:**<br>christian.milhan@decc.gsi.gov.uk |

## Summary: Intervention and Options

**RPC Opinion:** Not applicable

| Cost of Preferred (or more likely) Option | | | | |
|---|---|---|---|---|
| **Total Net Present Value** | **Business Net Present Value** | **Net cost to business per year** (EANCB on 2009 prices) | **In scope of One-In, Two-Out?** | **Measure qualifies as** |
| -£14m | -£14m | £1.6m | NO | N/A |

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

The Renewables Obligation (RO) and Feed In Tariff (FIT) are two of the policies that Government has put in place to incentivise the investment in low-carbon electricity generation. The costs of these schemes are borne by electricity bill payers. For energy intensive industries (EIIs), this can undermine competitiveness as businesses in other countries may not be subject to similar energy and climate change policy costs. The Government is seeking to lessen the cost disadvantage faced by EIIs as a result of energy and climate change policy costs relative to their EU and international competitors.

**What are the policy objectives and the intended effects?**

The objective of the policy is twofold. Firstly, to continue supporting energy intensive industries in order to maintain competitiveness for these industries by reducing the costs of the RO and FITs schemes. Secondly, to increase the effectiveness of this support. Making the proposed amendments to legislation to deliver an exemption from a proportion of the costs of the RO and FITs schemes provides increased certainty and real time support which in turn lowers production costs and maintains competitiveness of EIIs. It is intended that the compensation scheme for 2016/17 will move to an exemption scheme in 2017/18.

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

The policy seeks to ensure that the competitiveness of energy intensive industries is not undermined by higher electricity costs, compared with European and international competitors. Non-regulatory or non-spending options would not address this distortion sufficiently. The policy options considered are as follows:

- Do nothing: Continue with supporting energy intensive industries with a compensation scheme.
- Option 1: Move from compensation to implementing an exemption scheme through amendments to legislation. This provides an exemption from indirect costs of RO and FIT schemes, against up to 85% of electricity used by (1) businesses which pass a sector level and business level test, and (2) businesses which are direct competitors of the first group of businesses.

**Will the policy be reviewed?** It will be reviewed. **If applicable, set review date:** 04/2022

| | | | | | |
|---|---|---|---|---|---|
| Does implementation go beyond minimum EU requirements? | | | N/A | | |
| Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base. | **Micro**<br>No | **< 20**<br>No | **Small**<br>Yes | **Medium**<br>Yes | **Large**<br>Yes |
| What is the $CO_2$ equivalent change in greenhouse gas emissions? (Million tonnes $CO_2$ equivalent) | | | **Traded:**<br>N/A | **Non-traded:**<br>N/A | |

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

Signed by the responsible SELECT SIGNATORY: ..... Date: 01/04/2016

# Summary: Analysis & Evidence

Policy Option 1

**Description: T**his option provides an exemption from the indirect costs of the RO and FIT for 85% of eligible electricity to sectors in Great Britain which pass eligibility criteria set out in Guidance (February 2016) from 2017/18 to 2026/27.

**FULL ECONOMIC ASSESSMENT**

| **Price Base Year** 2016 | **PV Base Year** 2017 | **Time Period Years** 10 | **Net Benefit (Present Value (PV)) (£m)** | | |
|---|---|---|---|---|---|
| | | | **Low:** -11.0 | **High:** -29.0 | **Best Estimate:** -14.0 |

| **COSTS (£m)** | **Total Transition** (Constant Price) Years | **Average Annual** (excl. Transition) (Constant Price) | **Total Cost** (Present Value) |
|---|---|---|---|
| **Low** | 2.6 | 2.1 | **11.0** |
| **High** | 10.3 | 2.2 | **29.0** |
| **Best Estimate** | 5.2 | 1.4 | **14.0** |

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

An exemption provided to industry will narrow the base of consumption from which total RO and FIT support costs are recovered, and therefore increase electricity costs for non-exempt households and businesses. The average total value of the exemption is £390m per annum for EIIs. Our estimate of the average annual impact on electricity bills to households and non-exempt businesses is set out in chapter 9. There will also be one-off and ongoing administrative costs for Ofgem and energy suppliers.

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

Our analysis suggests that there will be a very small increase in the number of fuel poor households. For non-exempt businesses, which will experience an increase in their electricity costs, there may be an impact on their decisions on employment, output and investment. For some energy suppliers, there may also be an impact on their competitiveness.

| **BENEFITS (£m)** | **Total Transition** (Constant Price) Years | **Average Annual** (excl. Transition) (Constant Price) | **Total Benefit** (Present Value) |
|---|---|---|---|
| **Low** | 0 | 0 | **0** |
| **High** | 0 | 0 | **0** |
| **Best Estimate** | 0 | 0 | **0** |

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

The proposal is to make use of the CfD application process and eligibility criteria. The administration arrangements will not change, although businesses will only need to submit one application for EII eligibility to cover the CfD, RO and FIT exemptions. EII's must supply information about their business, including overall electricity usage over a baseline period, quarterly declarations and end of year reports to determine and maintain their eligibility.

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

The exemption provides increased certainty and real time support, compared with compensation where eligible EIIs are being compensated for historical consumption levels. There are also potential macroeconomic benefits for EIIs given that the switch from compensation to exemption will increase certainty for EIIs and may have further beneficial impacts on employment and output. Moreover, society may be avoiding investment leakage as well as freeing up Government spending of around £390m per

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

As the exemption is based on the volume of electricity supplied there may be reduced imperative for investment into energy efficiency measures and therefore elevated carbon emissions. Secondly, there may also be a 'rebound effect'. As the per unit electricity cost decreases as a result of the exemption, this may incentivise EIIs to expand output and thereby increase carbon emissions.

**BUSINESS ASSESSMENT (Option 1)**

| **Direct impact on business (Equivalent Annual) £m:** | | | | **In scope of OITO?** | **Measure qualifies as** |
|---|---|---|---|---|---|
| **Costs:** 1.8 | **Benefits:** 5.3 | **Net:** 3.5 | | No | N/A |

# Table of contents

## 1. Background

1. The Government is committed to moving to a low-carbon economy and meeting its carbon reduction and renewable energy targets. Alongside other measures, the renewable obligation (RO) and the feed-in tariff (FIT) schemes have been part of the progress against these objectives. The costs of both schemes are passed on by suppliers to consumers (households and businesses alike) on a 'per-unit of electricity' basis. The way the costs are thus distributed has made it difficult for energy intensive industries (EIIs) to maintain their competitiveness as competing businesses from overseas are provided relief from comparable green policies.
2. As set out in the Budget 2014 [1], the Government is committed to introduce a new compensation scheme, to help energy intensive industries with higher electricity costs resulting from the renewables obligation and small-scale feed in tariffs for renewable generation from 2016-17.
3. After the compensation scheme had been announced, the spending review 2015 then set out that "the government will provide an exemption for Energy Intensive Industries, including the steel industry, from the policy costs of the renewables obligation and feed-in tariff, to ensure that they have long-term certainty and remain competitive." The aim is to have the exemption in place from the start of the 2017/18 financial year.
4. This IA provides an assessment of the impact of the proposal to shift from compensation for EIIs from the indirect costs of the RO and FIT to implementing an exemption. The FIT Scheme is a UK based scheme and therefore households and businesses in Northern Ireland will not be affected. The RO is a GB based scheme, however, the Northern Ireland Government have decided that they will not adopt the exemption from 2017/18 but will issue a call for evidence to consider whether there are any eligible EIIs in NI. Depending on the outcome of this NI may wish to consult on introducing an exemption at some point in the future, but in the meantime there will be no impact on households and businesses in Northern Ireland.

## 2. Problem under consideration

5. The RO and FIT schemes encourage investment into the UK's renewable energy infrastructure. This costs of both schemes are passed on by suppliers to consumers (households and businesses alike) on a per-unit of electricity basis.
6. Industries which are highly energy intensive may see their electricity and thus production costs increase. EIIs are likely to face higher electricity costs compared with competitors in other countries which may in turn have a detrimental impact on output, employment and investment decisions. Any resulting loss from these industries to other countries would negatively impact on the UK economy. These industries are significant employers and play an important role in the economy through the products they manufacture.
7. There is currently a compensation scheme in place to support eligible energy intensive industries from a proportion of cost of the RO and FITs schemes. However, it may not provide EIIs with sufficient certainty over the longer term as compensation is contingent upon departmental budgets which can fluctuate, whereas an exemption provides consistency and greater certainty.

## 3. Rationale for intervention

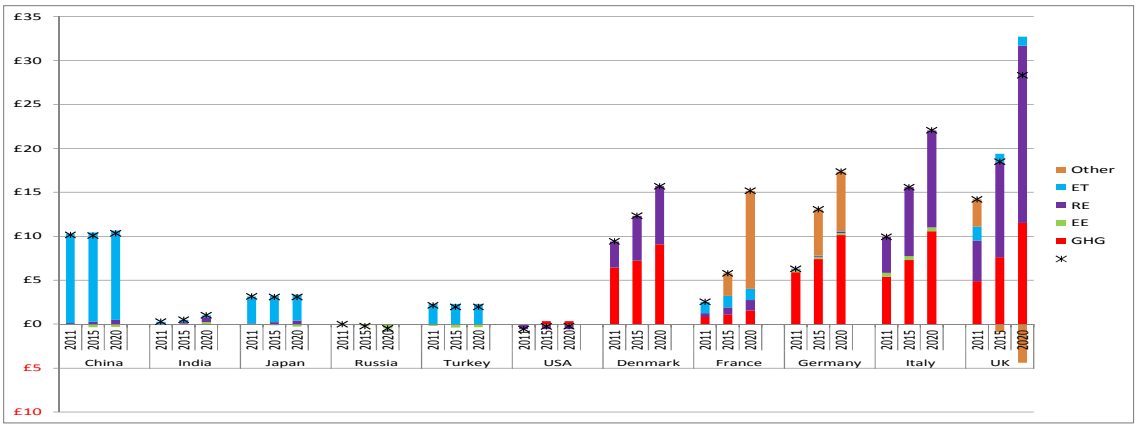
8. Where EIIs operate in global markets they may be less likely to be able to pass through increases in these costs to the price of their products. To do so would make their products relatively more expensive compared to European and international competitors not facing similar policy costs, thus placing them at a competitive disadvantage. Therefore, electricity price increases may pose a risk to the competitiveness of UK based EIIs. As a result, EIIs may move their current production abroad and undertake future investment overseas in countries with lower policy costs than the UK.
9. Please also see paragraphs 181 and 182 of the European Energy and Environmental Guidelines (EEAG) [2], which sets out that "(…) to avoid that undertakings particularly affected by the financing costs of renewable energy support are put at a significant competitive disadvantage,

Member States may wish to grant partial compensation for these additional costs." According to a study by the 'Fraunhofer ISI' and 'Ecofys' from July 2015 [3], a number of countries have designed various rules regarding exemptions and rebates to limit the burden on especially energy intensive industries.

10. Moving from compensation to implementing an exemption from a proportion of the costs of the RO and FIT schemes, through amendments to legislation, provides increased certainty and real time support which in turn lowers production costs and improves competitiveness. A study by Vivid Economics (2014) [4] on the impact of exempting energy intensive industries from the Contracts for Difference support costs concluded that "[…] the costs to the economy will be negligible and the benefits from preserving competitiveness are potentially significant."

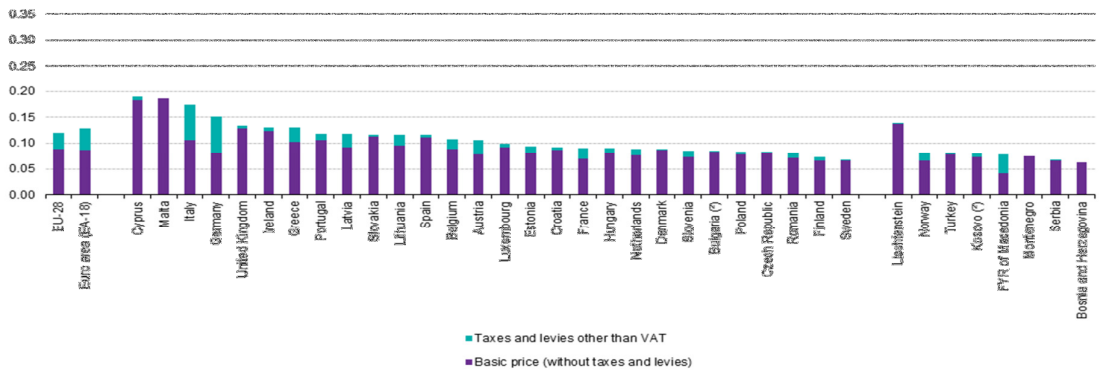
11. Furthermore, a study by ICF International (2012) [5] on international comparisons of energy and climate change policy costs, such as those shown in the chart below, suggest that policy costs faced by EIIs in the UK may be much higher than in other countries, in the absence of Government intervention. The chart below takes into account the exemptions that existed at the time of publication for industry in other countries and assumes no such exemption for UK-based EIIs. Within the EU, the governments of Belgium (Flanders), Denmark, Germany, Republic of Ireland, Norway and Sweden currently make provision in their renewable energy support schemes for supporting EIIs. There are a wide range of approaches to reducing costs.

**Chart 1: Indicative incremental impacts in 2011, 2015 and 2020 on electricity price (£/MWh, 2010 prices) of energy and climate change policies, Source: ICF International (2012) [5]**




12. The most recent energy price statistics from Eurostat [6] suggest that electricity prices for UK based industrial consumers were, with 0.134 Euro per kilowatt hour (KWh), still above the EU-28 average of 0.120 Euro / KWh. The price of electricity for this category of consumers was one of the highest in the EU-28 next to Cyprus, Malta, Italy and Germany (see chart below).

**Chart 2: Electricity Prices for industrial consumers (in €/KWh) in the second half of 2014, Source: Eurostat [6]**




(*) Annual consumption: 500 MWh < consumption < 2 000 MWh. Excluding VAT.
(²) Provisional.
Source: Eurostat (online data code: nrg_pc_205)

## 4. Policy objective

13. The Government is seeking to achieve two objectives. Firstly, to lessen the cost disadvantage faced by EIIs, as a result of energy and climate change policy costs relative to their European and international competitors. Secondly to maximise the effectiveness of this support.

14. There is currently a scheme in place to compensate eligible energy intensive industries from the indirect costs of the RO and FIT schemes for 85% of their eligible electricity. However, it may not provide EIIs with sufficient certainty over the longer term as compensation is contingent upon departmental budgets which can fluctuate, whereas an exemption provides consistency and greater certainty. This greater certainty may in turn have a beneficial impact on business level decisions with regards to output, employment and investment.

15. Making the proposed amendments to legislation to deliver an exemption addresses these two objectives. Non-regulatory or non-spending approaches are deemed not to address the two policy objectives sufficiently.

## 5. Eligible sectors

16. The tables in annex A outline sectors that are eligible for compensation for RO and FIT schemes.

17. The European Energy and Environmental Guidelines (EEAG) [2] set out which sectors can be eligible for compensation for the indirect costs of renewables (Table 1, Annex A). To ensure that support in the UK is targeted at those businesses that are most at risk, eligibility was further limited to those sectors which are electricity intensive and subject to international competitive pressures using UK specific data from the Annual Business Survey. To be eligible, sectors must also have a trade intensity of at least 4% and an electricity-intensity of at least 7% to pass this test.

18. The EEAG also allows European Member States to provide aid for the indirect costs of renewables to energy intensive businesses from typically non energy intensive sectors (Table 2, Annex A). Sector eligibility was also narrowed using Annual Business Survey data on trade intensity and electricity-intensity of the sector. Eligible sectors must have a trade intensity of at least 4% and an electricity-intensity of at least 7%.

19. A business electricity intensity test ensures that the schemes target only those undertakings where aid is most needed, i.e. those put at a significant competitive disadvantage from renewable energy support. Businesses must pass the test to demonstrate they are electricity intensive and are likely to face a significant competitive disadvantage. Businesses need to show their implied mean electricity costs amount to 20% of their mean Gross Value Added (GVA). This will be determined from an applicant's three most recent financial years, or for new businesses, using the period available if at least two financial quarters.

20. For trade intensive sectors that are not typically energy intensive but nonetheless may have some electricity intensive businesses, in line with the European Commission's guidelines, business electricity consumption will be based on energy efficiency benchmarks where available. These benchmarks are intended to represent the most efficient process for the manufacture of that specific product.

## 6. Option considered

21. The preferred policy option is to move from compensation to implementing an exemption scheme through changes to the RO and FITs legislation. This provides an exemption from indirect costs of RO and FIT schemes, against up to 85% of electricity used by (1) businesses which pass a sector level and business level test and (2) businesses which are direct competitors of the first group of businesses. This option is deemed to meet both objectives.

22. Similar to compensation, implementing an exemption from the costs of RO and FITs through changes to legislation would reduce a proportion of the cost imposed on EIIs, as a result of energy and climate change policy costs. As set out in the EEAG, aid intensity must not exceed 85% of the eligible costs, which means the maximum the Government is allowed to exempt is 85% of the indirect costs of the RO and FIT.

23. This option is assessed in the following chapters against the reference case, which is to continue supporting energy intensive businesses with a compensation scheme.

## 7. Estimated energy supplied to energy intensive industries

24. This section sets out the estimated total amount of exempt electricity the preferred option outlined above. Table 1 outlines low, central and high estimates on electricity supplied to EIIs.

**Table 1: Estimated electricity supplied to EIIs by option; Source: Department of Business, Innovation and Skills**

| Electricity supplied to EIIs (TWh) | Option 1<br><br>(20% threshold) |
|---|---|
| Low estimate | 12 |
| Best estimate | 19 |
| High estimate | 26 |

25. The low estimate is approximately 12 terrawatt hours (TWh). This is based on data obtained from an existing scheme for EU Emission Trading System (ETS) and carbon price support (CPS) compensation. Approximately 12 TWh of electricity is likely to be eligible for RO FIT compensation from businesses currently receiving compensation in the existing scheme. This is considered to be a lower bound as the eligibility criteria for the RO and FIT schemes is wider encompassing significantly more sectors because EU state aid guidelines significantly curtail eligibility for EU ETS and CPS compensation.

26. The central estimate is taken from the Annual Business Survey [7] on electricity consumption for sectors in scope. Using this data we first establish electricity intensity at a sector level to determine which sectors are eligible for exemption. As a next step, we have used a cumulative distribution function to estimate the proportion of businesses for each sector that would pass the various exemption options outlined in table 1 given the average electricity intensity for the sector. This expected proportion for each sector is then multiplied by the total sector consumption to get our final estimates. The high scenario is created for reference only by adding the difference between the central and low scenario to the central scenario.

27. Once all applications have been received on 31 March 2016 and assessed thereafter we will have more precise estimates of the electricity supplied to EIIs.

## 8. Estimated costs of the Renewable Obligation and Feed in Tariff and value of exemption

28. According to the latest central projections by the Office for Budget Responsibility (OBR) [8] the total costs of the RO and FITs schemes are estimated to be £7.1bn in 2017/18 rising to £8.2bn in 2020/21 (nominal prices). The costs are estimated to remain at this level until 2026/27; in that year the first accredited stations will start to end their term of support under the RO, as set out in in the RO Order.

**Table 2: Projected central RO and FITs costs by year (nominal prices, £bn); Source: Office of Budget Responsibility (OBR) [8]**

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | Average over 2017/18 to 2026/27 |
|---|---|---|---|---|---|
| **FITs** | 1.6 | 1.7 | 1.7 | 1.8 | 1.8 |
| **RO** | 5.5 | 6.0 | 6.2 | 6.4 | 6.2 |
| **Total** | 7.1 | 7.7 | 7.9 | 8.2 | 8.0 |

29. Please note that from this section onwards, we present the projected bill impacts and additional costs associated with implementing an exemption through changes to the RO and FITs legislation in 2016 prices, as we believe this will be more relevant to the reader.

30. Prior to the exemption, the average costs to households of the RO and FITs schemes are estimated to add around £78 per annum (over 2017/18 to 2026/27). For small business energy users it is around £5,800 per annum, for medium business energy users around £243,300 per annum and for large sized energy users it is around £2.27m per annum. All estimates are best estimates in 2016 prices.

**Table 3: Projected bill impacts (£, 2016 prices) for non-exempt households and businesses in Great Britain, pre exemption**

| | Average impact across all households | Small business energy user | Medium-sized energy user | Large sized energy user |
|---|---|---|---|---|
| **Low estimate** | 76 | 5,700 | 237,600 | 2,218,800 |
| **Best estimate** | 78 | 5,800 | 243,300 | 2,272,400 |
| **High estimate** | 88 | 6,500 | 273,000 | 2,550,200 |

31. The average increase to non-exempt households and businesses against this reference case is set out chapter 9.3.2.

## 9. Moving from compensation to exemption and the associated costs and benefits

32. This section outlines the impact of switching from compensation to implementing an exemption through changes to RO and FIT legislation.

### 9.1. Redistribution effect of moving from compensation to implementing an exemption

33. Moving from compensation to implementing an exemption changes the way in which support to EIIs is paid and who pays for it.

34. Under both schemes the electricity demand is the same (in this case we are assuming around 280TWh on average over 2017/18 to 2026/27, see Table 4). This implies that the same amount of electricity is in scope for being compensated, or exempted. Therefore, under both schemes the level of support to EIIs is the same, which we estimate around £390m per annum (2016 prices) over 2017/18 to 2026/27, see Table 7. The key difference is how support is provided. Please note that as the projected amount of electricity supplied each year varies, the additional average bill impacts for non-exempt businesses and households will by year.

**Table 4: Projected electricity sales (TWh) prior to exemption, Source: DECC (2015), Energy and Emissions Projections [9]**

| Year | Electricity Sales (TWh) in GB |
|---|---|
| 2017/18 | 288 |
| 2018/19 | 284 |
| 2019/20 | 279 |
| 2020/21 | 275 |
| 2021/22 | 276 |
| 2022/23 | 277 |
| 2023/24 | 279 |
| 2024/25 | 282 |
| 2025/26 | 283 |
| 2026/27 | 288 |
| **Average** | **281** |

35. Under compensation, EIIs are compensated for the costs of the RO and FITs schemes and this is paid for by government through tax revenue, which would be saved if an exemption scheme is introduced.

36. Implementing an exemption through changes to legislation supports eligible EIIs directly by excluding a proportion of the electricity they consume (in this case 85%) from RO and FiT costs, which should result in lower electricity prices to EIIs. Any exemption provided to industry will narrow the base of consumption from which total RO and FIT support costs are recovered, and therefore increases electricity prices for non-exempt households and businesses. As such, moving from compensation to exemption redistributes the cost of supporting EIIs from tax payers to non-exempt electricity bill payers.

37. In summary, the aggregate increase to electricity bills equals the total amount of compensation the government currently pays. Therefore moving from compensation to implementing an exemption through changes to legislation is a redistributive change that does not impose any additional costs in terms of the level of support provided, as it simply changes how support is paid.

38. There are, however, some additional resource costs and benefits associated with introducing an exemption (see table 5 for further detail):

    - Benefits: increased certainty and real time support provided to EIIs by being exempt from the costs of RO and FITs, which lowers the costs of production, improves their competitiveness and which may in turn have beneficial impacts output and employment.
    - Costs: An increase in electricity bills for non-exempt households and businesses and one-off and on-going administrative costs to Ofgem and energy suppliers associated with the introduction of an exemption.
    - Wider impacts on employment, output, investment of non-exempt businesses, fuel poor households and incentives for EIIs to improve energy efficiency and reduce carbon emissions.

## 9.2. Valuing the impacts of moving from compensation to implementing an exemption

39. A cost benefit analysis (CBA) assesses the relative size of the costs and benefits across different policy options to provide insight into which policy options provide the best overall value for money. This IA considers the economic impact of the shift from compensation to implementing an exemption of RO and FITs costs through changes to legislation.

40. The costs and benefits considered are summarised in the following table. To quantify these costs and benefits, where possible, and evaluate the overall impact of the preferred option from the March 2016 consultation, we compared implementing an exemption against a counterfactual case where compensation is granted.

**Table 5: Description of costs and benefits through moving from compensation to exemption**

| | **Costs** | | **Benefits** | |
|---|---|---|---|---|
| | ***One-off*** | ***On-going*** | ***One-off*** | ***On-going*** |
| **EIIs** | Independent accountants report required for validation (as for compensation). | Audit compliance costs.<br><br>Quarterly and annual declarations required (as for compensation). | | Increased certainty from being exempt from RO and FITs cost leads to improved competitiveness of exempt sectors due to lower production costs, which benefits producers and consumers of energy intensive goods. |
| **Non-exempt businesses** | | Increase in share of RO / FITs costs.<br><br>Decreased output / demand for goods due to higher | | Saving in tax revenue may be redistributed |

| | | | | |
|---|---|---|---|---|
| | | production costs, which may disadvantage producers. | | |
| **Households** | | Increase in share of RO / FITs costs.<br><br>Risk of increase in fuel poverty. | | Saving in tax revenue may be redistributed |
| **Energy Suppliers** | Amending IT systems.<br><br>Amending tariffs.<br><br>Familiarisation costs of new rules / lack of visibility. | Audit compliance costs.<br><br>Competition impact (e.g. absorbing costs in the short term due to lack of visibility). | | Potential advantage for some suppliers that can implement and begin to pass on savings quickly |
| **Government** | Developing, consulting and implementing changes in secondary legislation. | Continued resource required to assess applications for EII certificates and monitor. Additional financial resource required to fund Ofgem ongoing activities. | | No longer have to pay compensation. Can redirect tax revenue to other areas or redistribute savings to tax payers.<br><br>Avoid investment leakage through companies relocating.<br><br>No longer have to administer the compensation scheme |
| **Ofgem** | Amending IT systems.<br><br>Amending guidance. | Validation of suppliers' electricity volumes<br><br>Processing Obligation for EIIs and non-EIIs. | | |

## 9.3. Quantitative and qualitative assessment of moving from compensation to implementing an exemption

41. As set out in the previous chapter, moving from compensation to implementing an exemption through changes to the RO and FITs legislation is a redistributive change that does not impose any additional costs in terms of the level of support provided, as it simply changes how support is paid.

42. There are, however, some additional resource costs and benefits associated with introducing an exemption through changes to legislation.

### 9.3.1. Benefits

43. This section sets out the direct benefits of moving from a compensation scheme to an exemption through changes to legislation, which are on the tax revenue, increased certainty and effectiveness of delivery of support.

#### 9.3.1.1. Use of tax revenue

44. Table 4 sets out the value of the exemption to EIIs. For example under option 1 the best estimate of the average value of exemption to EIIs per annum is £390m. This is the estimated aggregate amount support provided to EIIs that would be recovered from non-exempt businesses and household through higher electricity prices. The level of support under compensation and exemption should be the same across all options. Therefore, under a compensation scheme, with the same criteria as exemption option 1, our best estimate is that the average annual costs to the Government would also be around £390m (see Table 7).

45. Therefore, moving from compensation to implementing an exemption saves the Government money since they are no longer paying EIIs compensation; instead support would be provided indirectly by non-exempt businesses and households. Furthermore, the amount of money the Government saves from no longer paying compensation should equal the aggregate increase in the electricity bills of non-exempt businesses and households under an exemption. Therefore the direct benefit of no longer paying compensation should offset the aggregate cost.

46. Hence, in monetary terms, moving to compensation to implementing an exemption is a zero net cost. Implementing an exemption only redistributes who pays the support and not the cost support is provided.

#### 9.3.1.2. Certainty and effectiveness of delivery of support

47. The main benefit to exempt EIIs by moving from compensation to implementing an exemption through changes to legislation is the (i) increased certainty from being exempt from a proportion of the costs of the RO and FIT schemes and (ii) the way that support is provided which is more accurate and faster than compensation, therefore improving the cash flow.

48. With regards to (i) the exemption will be enshrined in law thus will provide greater certainty, compared with compensation. For example, changing the exemption from RO costs would require Parliamentary approval.

49. Turning to (ii), the exemption also provides real time support thereby improving the cash flow in the short term, compared with compensation where eligible EIIs are being compensated for historical consumption levels after a longer reconciliation process. This means that the level of support provided to eligible businesses may not accurately reflect the indirect costs they face. Also there is a delay supporting businesses since compensation is awarded annually after the indirect RO and FiT costs have been paid. An exemption supports eligible businesses by lowering the price they pay for electricity. Therefore, support is delivered in real time which feeds through to lower electricity prices and thereby lowers production costs. It is also more accurate than compensation because the support provided depends on the actual, and not historic, electricity consumption, and therefore, better reflects the indirect costs imposed by RO and FiTs.

50. Taken together, this may lead to improved competitiveness due to lower production costs, which benefits producers and consumers of energy intensive goods. This increased certainty may also extend to more favourable business level decisions on output and employment as well as investment, compared with compensation. This in turn may avoid investment leakage to other EU and non-UK countries from the United Kingdom. A report by Vivid Economics (2014) [5], into the impact of exempting energy intensive industries from the costs of the Contracts for Difference (CfDs) found that there is “a value for money case for exempting some, but not all, energy intensive sectors from CfD support costs. The costs to the economy will be negligible and the benefits from preserving competitiveness could be significant.” However, the study was based on a years worth of data. The final evaluation is planned to take place in 2020, see BIS Evaluation Plan (2016) [10]. Monitoring of the scheme will continue during the lifetime of the policy (estimated to run until 2019/2020).

#### 9.3.1.3. Administrative costs avoided by Government

51. The compensation scheme is administered by the Department for Business, Innovation and Skills (BIS). The on-going administration costs associated with BIS from maintaining this scheme include: assessing and processing applications for EII certificates, receiving and checking: independent accountants' validation reports; quarterly declarations which declare any changes to the business or confirm that it is unchanged; annual reports; and processing the payment of compensation to businesses.

52. These processes would remain under an exemption, although our proposal is to permit businesses that have been assessed as eligible under the CfD exemption to be automatically eligible for an exemption from the RO and FIT schemes. Thus we will be saving eligible businesses from the administrative costs of applying for, and meeting the reporting requirements of, each scheme separately.

### 9.3.2. Costs

53. This section sets out the direct impact implementing the exemption and other options on non-EIIs and household electricity bills and one-off and on-going administrative costs of implementation to Ofgem and energy suppliers.

#### 9.3.2.1. Impact on average bills for households and non-exempt businesses

54. As set out above, implementing an exemption through changes to the RO and FITs legislation provided to eligible EIIs will narrow the base of consumption, compared to compensation, from which RO and FITs support costs are recovered, and therefore increase electricity costs for non-exempt businesses and households, relative to what it would have been with compensation continuing.

55. On an aggregate level the value of the exemption to EIIs is set out in table 6 below. The low estimate, which is based on approximately 12 terrawatt hours (TWh) of electricity supplied to EIIs, is valued at around £240m per annum. Our best estimate is a value of £390m and the high estimate around £600m per annum. All are expressed in 2016 prices.

**Table 6: Estimated average value of exemption to EIIs, per annum, best estimate, £m, 2016 prices, non-discounted, over 2017/18 to 2026/27**

| £m | Exemption Option 1<br><br>(20% threshold) |
|---|---|
| **Low estimate** | 240 |
| **Best estimate** | 390 |
| **High estimate** | 600 |

56. The impact, over the 10 year tenure of the policy, on average bills by affected group is summarised in the table 7 below. It should be noted that the estimates shown below are dependent on the level of RO and FITs costs, electricity demand (see table 4) and the final design and scope of the exemption. If state aid approval by the European Commission is not granted for exempting direct competitors (see Appendix A, Table B) of business level tests, then the scope of businesses included will be lower and thus also the overall value of the exemption. Any changes to these variables will alter the impact of the exemption. The exemption has no effect on the level of the Levy Control Framework.

57. In relative terms, the impact on average annual electricity bills for non-exempt businesses and households is small. For households the £5 represent an increase of around 1% on the average annual electricity bill, for small business users the £360 increase the average annual electricity bill by around 1%, for medium-sized energy users the £15,000 increase the average annual electricity bill by around 1% and for large sized energy users the £140,000 represent an increase of around 1%. The figures refer to the best estimates set out in table 7. Please note that these

relative estimates are based on prices published as part of the Green Book Supplementary Guidance [11] and are based on electricity wholesale prices published in November 2015 [9]. We will revise these estimates for the impact assessment at the Government response stage.

**Table 7: Estimated increase on average bills by affected group in Great Britain, Option 1, £ 2016 prices, non-discounted, over 2017/18-2026/27**

| | Low estimate | Best estimate | High estimate |
|---|---|---|---|
| **Average impact across all households** | £3 | £5 | £8 |
| **Small business energy user** | £210 | £360 | £560 |
| **Medium-sized energy user** | £9,000 | £15,000 | £23,700 |
| **Large sized energy user** | £84,000 | £140,000 | £221,000 |

#### 9.3.2.2. One-of and on-going administrative costs to Ofgem and energy suppliers

58. Ofgem will need to amend its IT systems and processes to support the administration of the exemption which is estimated to be a one-off cost of around £0.2m to £0.6m, with £0.3m being the best estimate (2016 prices). Furthermore, this may require an additional 0.5 to 1.0 FTE staff at a cost of around £0.03m to £0.06m, with £0.04m being the best estimate (2016 prices).
59. Energy suppliers may experience one-off familiarisation costs as well as may need to amend their systems and need on-going costs of identifying EII customers, assessing and auditing supply volumes.
60. According to Ofgem, there are 59 live electricity supply licences in GB. Given the difficulty of not knowing – at this stage – how many EIIs may apply and will be eligible for the exemption and thus energy suppliers affected we have considered a range. In the high case it may affect all energy suppliers; our best estimate is that this may affect around half and in the low case around a quarter.
61. Furthermore, we estimate that the one-off and on-going costs could be similar to Ofgem's lower bound estimates. On aggregate, the one-off costs could range between £3m and £11m, with our best estimate being £6m. In terms of aggregate on-going costs, these could range between £2m and £0.5m per annum, with our best estimate being £1m (all in 2016 prices).

**Table 8: Estimated one-off and on-going costs to Ofgem and energy suppliers, £m 2016 prices, non-discounted**

| £m | One-off costs to Ofgem | On-going costs to Ofgem | One-off costs to energy suppliers | On-going costs to energy suppliers |
|---|---|---|---|---|
| **Low estimate** | £0.2 | £0.03 | £3 | £0.5 |
| **Best estimate** | £0.3 | £0.04 | £6 | £1 |
| **High estimate** | £0.6 | £0.06 | £11 | £2 |

#### 9.3.2.3. Administrative costs to eligible EIIs

62. Compensation imposes an administration cost on businesses: initial application for EII certificate to assess eligibility, quarterly declarations which declare any changes to the business or confirm that it is unchanged; annual reports and independent accountants reports that validate the information provided by the business. The process has been designed to be robust and minimise the administrative burden by being proportionate to the applicant's electricity consumption. These processes would remain under an exemption, although our proposal is to permit businesses that have been assessed as eligible under the CfD exemption to be automatically eligible for an exemption from the RO and FIT schemes. Thus we will be saving eligible businesses from the

administrative costs of applying for, and meeting the reporting requirements of, each scheme separately.

## 9.4. Wider impacts on households, eligible EIIs, non-exempt businesses and energy suppliers

### 9.4.1. Households and fuel poverty

63. An analysis of the impact on fuel poverty through implementing an exemption for energy intensive industries from the cost of the renewables obligation and feed in tariff schemes through changes to legislation suggests a small increase in fuel poverty (both in the number of fuel poor households and the fuel poverty gap) under the various scenarios considered.

64. However, the impact of this exemption on electricity prices is such that the increase in fuel poverty is not large enough to be considered statistically significant and, therefore, to be reported in here.

### 9.4.2. Energy efficiency and carbon emissions

65. There are two possible risks. Firstly, implementing an exemption lowers the marginal price of electricity for electricity-intensive businesses which in turn would reduce the return of investment for energy efficiency initiatives. The impact of implementing an exemption is unclear because there are already policy mechanisms in place, such as climate change agreements, which incentivise energy efficiency investment decisions. However, it would be reasonable to assume there may be some decrease. Secondly, there may also be a 'rebound effect'. As the per unit electricity cost decreases as a result of the exemption, this may incentivise EIIs to expand output and thereby increase carbon emissions.

### 9.4.3. Non-exempt businesses and competitiveness

66. Whilst implementing an exemption reduces electricity costs to EIIs, an exemption provided to industry will narrow the base of consumption, compared to compensation, from which RO and FITs support costs are recovered, and therefore increase electricity costs for non-exempt businesses.

67. Thus implementing an exemption increases the marginal price of electricity which may affect output, employment and investment decisions of these businesses. We are not able to quantify this – at this stage – given the lack of sufficient evidence.

### 9.4.4. Energy suppliers and competitiveness

68. The underpinning mechanisms of the RO and FITs scheme will remain the same, but will apply to all of non-EII exempt electricity supplied. The proposed changes to the supplier obligation calculations and levelisation fund will result in a higher individual supplier obligation for non-EII electricity to offset the 85% exemption for EIIs. This will ensure that the availability of ROCs will continue to match demand and the ROC value will not change.

69. Individual suppliers may find that they are required to submit more or fewer ROCs than under the status quo, depending on their share of EII customers, which may in some cases mean changing their current ROC sourcing arrangements / PPAs.

70. Suppliers may, through the switch from compensation to exemption, be faced with some uncertainty in the short term on the visibility of changing costs. At present the RO is set six months in advance of the Obligation year which provides some visibility. In the domestic retail market the majority of customers are on standard variable tariffs, which means the supplier may increase the cost of the tariff at any time, though they must give a month's notice of any increase.

71. However, the fixed term tariff market is becoming increasingly attractive to customers as smaller suppliers are competing hard with large established suppliers. Some of the independent suppliers

have around 80% of their customers on fixed term tariffs. Tariffs may be fixed for 1, 2 or 3 years. In the non-domestic market retail market a greater proportion of customers are on fixed term tariffs, some of which may fixed for as long as 5 years.

72. The introduction of the exemption will increase the costs for domestic and non-domestic suppliers (which do not supply electricity intensive industries). It is likely to be more difficult for smaller suppliers with a high proportion of customers on fixed term tariffs to manage these increased costs in the short term than for the larger suppliers with a large number of customers on standard variable tariffs. In addition smaller suppliers are likely to have smaller balance sheets than the larger companies which is likely to make it more difficult for them to manage unanticipated changes in costs to supply.

## 10. Summary

73. Moving from compensation to implementing an exemption scheme through changes to legislation does not alter the overall value of the support provided to EIIs, but changes how this support is paid for. This is a shift from taxpayers to electricity bill payers, which consist of non-exempt businesses and households.

74. The benefit to EIIs of implementing the exemption by changes to the RO and FITs legislation is increased certainty and real time support from the costs of RO and FITs, which lowers the costs of production, improves their competitiveness and which may in turn have beneficial impacts output, employment and investment decisions.

75. Non-exempt households and businesses, however, will see an increase in their electricity bills. There are also some additional administrative costs to energy suppliers as well as Ofgem through introducing the exemption. There is also a small impact on fuel poverty as well as a potential short term impact on the competitiveness of non-exempt business and energy suppliers.

76. In this impact assessment we were – at this stage – able to quantify the distributional impact as well as additional administrative costs from moving from compensation to exemption. The NPV ranges set out in table 9 captures the additional administrative costs of introducing an exemption.

77. It does, however, not capture the distributional impact on households and non-exempt businesses as this is a transfer. Furthermore, it is important to note that benefits of exempting EIIs from moving from compensation to implementing an exemption could not be quantified at this stage. The reason they could not be quantified is due to a lack of evidence on linking the value of the exemption to improvements in competitiveness and thus impacts on output, employment as well as investment.

78. Thus the NPV ranges have also to be considered alongside the distributional impacts on non-exempt households and businesses, as set out in table 7, and possible side effects (i) on EIIs investing in energy efficiency, (ii) EIIs reducing carbon emissions and (iii) short term side effects on the competitiveness of energy suppliers.

**Table 9: NPV range for Option 1, £m, 2016 prices, rounded to nearest £m**

| £m | Exemption Option 1<br><br>(20% threshold) |
|---|---|
| **Low estimate** | -11 |
| **Best estimate** | -14 |
| **High estimate** | -29 |

## Annex A – Bibliography


- [1] **Budget (2014)**, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293759/37630_Budget_2014_Web_Accessible.pdf

- [2] **European Energy and Environmental Guidelines (EEAG)**, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0628(01)&from=EN

- [3] **Fraunhofer ISI and Ecofys (2015),** http://www.ecofys.com/files/files/ecofys-fraunhoferisi-2015-electricity-costs-of-energy-intensive-industries.pdf

- [4] **ICF International (2012),** https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31768/12-527-international-policies-impacting-energy-intensive-industries.pdf

- [5] **Vivid Economics (2014)**, http://www.vivideconomics.com/publications/the-impact-of-exempting-electro-intensive-industries-from-contracts-for-difference-support-costs

- [6] **Eurostat** (2015), http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_price_statistics

- [7] **Annual Business Survey (2015)**, http://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/annualbusinesssurvey

- [8] **Office for Budget Responsibility (2016),** http://budgetresponsibility.org.uk/docs/dlm_uploads/Fiscal_supplementary_tables_March_2016.xls

- [9] **DECC, Energy and Emissions Projections (2015),** https://www.gov.uk/government/collections/energy-and-emissions-projections

- [10] **BIS Evaluation Plan** (2016), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/495162/BIS-16-98-evaluation-plan-2016.pdf

- [11] **Green Book Supplementary Guidance** (2013), https://www.gov.uk/government/collections/the-green-book-supplementary-guidance

## Annex B – Eligible sectors

**Table A – List of eligible EIIs by NACE code, Source: Department of Business Innovation and Skills**

| NACE code (v2.0) | Description |
|---|---|
| 0510 | Mining of hard coal |
| 0811 | Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate |
| 0899 | Other mining and quarrying n.e.c. |
| 1106 | Manufacture of malt |
| 1310 | Preparation and spinning of textile fibres |
| 1320 | Weaving of textiles |
| 1395 | Manufacture of non-wovens and articles made from non-wovens, except apparel |
| 1610 | Sawmilling and planing of wood |
| 1621 | Manufacture of veneer sheets and wood-based panels |
| 1712 | Manufacture of paper and paperboard |
| 1722 | Manufacture of household and sanitary goods and of toilet requisites |
| 1920 | Manufacture of refined petroleum products |
| 2011 | Manufacture of industrial gases |
| 2013 | Manufacture of other inorganic basic chemicals |
| 2014 | Manufacture of other organic basic chemicals |
| 2015 | Manufacture of fertilisers and nitrogen compounds |
| 2016 | Manufacture of plastics in primary forms |
| 2017 | Manufacture of synthetic rubber in primary forms |
| 2060 | Manufacture of man-made fibres |
| 2221 | Manufacture of plastic plates, sheets, tubes and profiles |
| 2222 | Manufacture of plastic packing goods |
| 2311 | Manufacture of flat glass |
| 2313 | Manufacture of hollow glass |
| 2314 | Manufacture of glass fibres |
| 2319 | Manufacture and processing of other glass, including technical glassware |
| 2320 | Manufacture of refractory products |
| 2331 | Manufacture of ceramic tiles and flags |
| 2332 | Manufacture of bricks, tiles and construction products, in baked clay |
| 2349 | Manufacture of other ceramic products |
| 2351 | Manufacture of cement |
| 2352 | Manufacture of lime and plaster |
| 2399 | Manufacture of other non-metallic mineral products n.e.c. |
| 2410 | Manufacture of basic iron and steel and of ferro-alloys |
| 2420 | Manufacture of tubes, pipes, hollow profiles and related fittings, of steel |
| 2431 | Cold drawing of bars |
| 2432 | Cold rolling of narrow strip |
| 2434 | Cold drawing of wire |
| 2442 | Aluminium production |
| 2443 | Lead, zinc and tin production |
| 2444 | Copper production |
| 2445 | Other non-ferrous metal production |
| 2451 | Casting of iron |
| 2452 | Casting of steel |
| 2453 | Casting of light metals |
| 2454 | Casting of other non-ferrous metals |
| 2611 | Manufacture of electronic components |
| 2720 | Manufacture of batteries and accumulators |

**Table B – List of eligible sectors for the compensation scheme based on the European Commission list of trade intensive sectors, Source: Department of Business Innovation and Skills**

| NACE code (v2.0) | Description |
|---|---|
| 0812 | Operation of gravel and sand pits; mining of clays and kaolin |
| 1012 | Processing and preserving of poultry meat |
| 1091 | Manufacture of prepared feeds for farm animals |
| 1391 | Manufacture of knitted and crocheted fabrics |
| 1393 | Manufacture of carpets and rugs |
| 1396 | Manufacture of other technical and industrial textiles |
| 1399 | Manufacture of other textiles n.e.c. |
| 1419 | Manufacture of other wearing apparel and accessories |
| 1431 | Manufacture of knitted and crocheted hosiery |
| 1439 | Manufacture of other knitted and crocheted apparel |
| 1511 | Tanning and dressing of leather; dressing and dyeing of fur |
| 1629 | Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials |
| 1721 | Manufacture of corrugated paper and paperboard and of containers of paper and paperboard |
| 1724 | Manufacture of wallpaper |
| 2211 | Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres |
| 2219 | Manufacture of other rubber products |
| 2229 | Manufacture of other plastic products |
| 2344 | Manufacture of other technical ceramic products |
| 2362 | Manufacture of plaster products for construction purposes |
| 2365 | Manufacture of fibre cement |
| 2592 | Manufacture of light metal packaging |
| 2732 | Manufacture of other electronic and electric wires and cables |
| 2891 | Manufacture of machinery for metallurgy |