

Summary: Analysis & Evidence

Policy Option 1

Description: Streamlined energy and carbon reporting framework for all large UK registered, unquoted companies and their corporate groups, and all UK quoted companies. Companies will disclose gas, electricity and transport energy use and associated emissions in annual reports, as well as any energy efficiency actions taken during the previous year.

FULL ECONOMIC ASSESSMENT

Price Base Year 2017	PV Base Year 2019	Time Period Years 17	Net Benefit (Present Value (PV)) (£m)		
			Low: 698	High: 9,719	Best Estimate: 1,549

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	12	-47	-465
High	12	184	3,251
Best Estimate	12	105	2,013

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

The changes announced at Budget 2016 (closing the CRC, increasing CCL rates, rebalancing CCL to gas) plus the introduction of a SECR framework result in a total cost of £2,013m. This package comprises a net reduction in business administrative costs, estimated at PV £20m, and public sector administrative costs, estimated at PV £75m, accruing mainly to organisations currently in the CRC. These changes also cause a net increase in capital, hassle and operational costs, estimated at PV £2,108m, resulting from the increased uptake of energy efficiency measures. Costs are measured against the counterfactual of all current and planned policies before the Budget 2016 changes.

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

There is potentially a rebound effect, whereby organisations improve their energy efficiency and spend some of the financial savings on other energy using activities. This effect has not been monetised as there is insufficient evidence available to assess the scale and likelihood of its effect.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	25	233
High	0	1,022	12,970
Best Estimate	0	287	3,562

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

The changes announced at Budget 2016 (closing the CRC, increasing CCL rates, rebalancing CCL to gas) plus the introduction of a SECR framework result in a total benefit of £3,562m. This comprises a net increase in energy savings, estimated at PV £2,856m, resulting from the increased uptake in energy efficiency measures. These energy savings result in a PV £103m improvement in air quality; PV £597m carbon savings; and a PV £7m reduction in noise pollution. An additional £262m of annual bill savings are also expected as an indirect result of reporting. The main groups affected by these benefits will be wider society and organisations implementing energy efficiency measures. Benefits are measured against the counterfactual of all current and planned policies before Budget 2016 changes.

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

The productivity impact of energy efficiency improvements, as organisations produce goods and services at a lower cost and reinvest these savings into productive activities. Increased productivity has numerous positive impacts on the UK economy: it can increase wages; increase competitiveness; boost exports; and increase economic growth. This impact has not been monetised as there is insufficient evidence available to quantify this impact.

Key assumptions/sensitivities/risks

Discount rate

3.5

The impact of a SECR framework on organisational behaviour and the responsiveness of organisations to changes in energy costs are key assumptions in the analysis. Another key assumption is the cost of energy efficiency measures that are taken up by organisations. The sensitivity analysis tests the materiality of these assumptions, and several others, on the NPV estimate.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 15.6 (regulatory only)	Benefits: 0	Net: 15.6	
			To be confirmed

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Glossary of Terms

BIT – Business Impact Target

CCA – Climate Change Agreement

CCL – Climate Change Levy

CRC – CRC Energy Efficiency Scheme

DA – Devolved Administration

EA – Environmental Agency

EANDCB – Estimated Annual Net Direct Cost to Business

EEP – Energy and Emissions Projections

ESOS – Energy Savings Opportunity Scheme

EU ETS – EU Emissions Trading Scheme

GHG – Greenhouse Gas

IDBR – Inter-Departmental Business Register

MACC – Marginal Abatement Cost Curve

ND-NEED – Non-Domestic - National Energy Efficiency Data-framework

NPV – Net Present Value

ONS – Office of National Statistics

RPC – Regulatory Policy Committee

SaMBA – Small and Micro Business Assessment

SECR – Streamlined Energy and Carbon Reporting

Summary

1. This Impact Assessment (IA) follows on from a consultation on the introduction of a Streamlined Energy and Carbon Reporting (SECR) framework. The preferred SECR framework has been refined from the Consultation Stage IA options to reflect feedback from the consultation and other stakeholder engagement. This IA presents the separate and combined policy package impacts of:
 - The closure of the CRC Energy Efficiency Scheme (CRC), from the end of the 2018-19 compliance year.
 - The increase in Climate Change Levy (CCL) rates from April 2019 and rebalancing CCL rates for gas and electricity.
 - The introduction of a SECR Framework.
2. The counterfactual scenario in this IA is based on Energy and Emissions Projections (EEP) 2017 and reflects all current and planned policies in place as of July 2017. This scenario is adjusted to assume that the CRC and Mandatory Greenhouse Gas (MGHG) reporting remain; CCL rates increase annually from 2015 with RPI inflation; and no SECR framework is introduced. The impacts of policy changes are measured against this counterfactual in an incremental manner.
3. The preferred SECR framework requires (i) UK registered, unquoted large companies (Table 9 defines 'large' company based on Companies Act 2006 definition) to report their energy use and emissions relating to gas, electricity and transport, and an intensity metric, through their company's annual reports and (ii) for quoted companies to continue to report their global GHG emissions and an intensity metric, and additionally start to report their global total energy use. Additionally, companies will report on their energy efficiency actions taken.
4. Consultation feedback has led to the three following key policy refinements, to the options presented in the Consultation Stage IA:
 - A statutory de minimis has been added, where it is not cost-effective to audit and report. Companies using lower 'domestic levels' of energy are not required to disclose their SECR information, if they confirm they used 40,000kWh or less in the 12 month period.
 - Unquoted companies are now able to benefit from an exemption where it is not practical to obtain information.
 - Reporting requirement now based on Companies Act definition of "large" companies, rather than the ESOS 'large' definition for simplicity, as companies are more familiar with this definition and currently provide information for their annual accounts using this definition.
5. The preferred SECR framework leads to an increase in energy savings, which in turn leads to an increase in carbon savings, improvements to air quality and a reduction in noise pollution relative to the counterfactual. There is also an increase in the cost of capital investment in energy efficiency, and associated hassle costs and operational costs.¹ Overall administrative burdens are reduced due to the CRC removal.

¹ Hassle costs refer to the administrative costs incurred when making energy efficiency investments whilst operational costs are the running costs associated with these investments (e.g. costs of retraining staff or hiring maintenance personnel).

6. Table 1 gives a high level overview of the key impacts of preferred SECR framework and the combined policy package.

Table 1 – Overview of key impacts of the preferred SECR framework and the combined policy package

	NPV, 2017 £m	EANDCB, 2014 £m	Annual Energy Savings, TWh	Annual Carbon Savings, MtCO ₂ e
SECR Framework	818	15.6	2.4	0.47
Combined Policy Package	1,549	-1.3	4.0	0.75

7. The combined impact of the changes announced at Budget 2016 (closing the CRC, increasing CCL rates, and rebalancing CCL onto gas) and introducing the preferred SECR framework, measured against the counterfactual, are estimated to generate benefits of £3,562m and costs of £2,013m, resulting in an NPV of £1,549m over 2019 to 2035. The Equivalent Annual Net Direct Cost to Business (EANDCB) under the combined policy package is -£1.3m.²

²This EANDCB figure reflects the overall admin burden to business of the total package and is different to the regulatory only EANDCB, which does not consider the impact of CRC closure due the status of CRC as an environmental tax (see paragraph 87 for details on what is covered in EANDCB estimates)

Section A: Introduction, Consultation Feedback and New Analysis

Introduction

8. The current business energy policy framework is complex, as organisations can be in scope of multiple policies relating to energy use and emissions: e.g. those creating a price signal (the CCL); those requiring measurement or reporting (the Energy Saving Opportunity Scheme (ESOS) and MGHG Reporting); and those requiring both (EU Emissions Trading System (EU ETS); Climate Change Agreements (CCAs); and the CRC). Following the 2015 Summer Budget³ the Government consulted on a review of the business energy efficiency tax landscape to simplify and improve the effectiveness of the regime.
9. The Government response⁴ to the consultation, published alongside the 2016 Budget⁵, announced a simplification of the business energy efficiency landscape that will involve the closure of the CRC Energy Efficiency Scheme (CRC), from the end of the 2018-19 compliance year and a fiscally neutral increase in Climate Change Levy (CCL) rates from April 2019. This involves the ratio of the electricity CCL rate to the gas CCL rate changing from 2.9:1 to 2.5:1 from April 2019. In the longer term, the government announced its intention to rebalance CCL rates to reach a ratio of 1:1 (electricity:gas) by 2025. The government also acknowledged the support for maintaining mandatory energy and carbon reporting and announced a further consultation on a SECR framework, for introduction from April 2019.
10. Following on from the SECR consultation, which closed in January 2018, the estimated impacts of these proposals have been revised to reflect updates to data sources and changes in the scope and design of the preferred SECR framework.

Rationale for intervention

11. The market for energy efficiency can be characterised by two market failures and the associated barriers that these create towards energy efficiency investment.

Information failures:

- lead to a lack of awareness of organisational energy use, energy efficiency opportunities and bill savings potential. This prevents decision makers from identifying and acting on potential energy savings (potentially leading to energy expenditure being viewed as a fixed cost);
- contribute to and are sustained by **embryonic markets**⁶ which limit the availability of expertise necessary to invest in energy efficiency.

³ HMT, 2015, *Summer Budget 2015*.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443232/50325_Summer_Budget_15_Web_Accessible.pdf

⁴ HMT, 2016, *Reforming the business energy efficiency tax landscape: response to the consultation*.

<https://www.gov.uk/government/consultations/consultation-reforming-the-business-energy-efficiency-tax-landscape>

⁵ HMT, 2016, *Budget 2016*. p.52

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508193/HMT_Budget_2016_Web_Accessible.pdf

⁶ Embryonic markets refer to industries still in the development stage usually dealing with products or technologies for which limited demand has been established

Externalities:

- lead to the prices paid for energy not reflecting the wider costs on society from energy use, this also **causes energy efficiency to be undervalued**, as a result even projects with short payback periods are ignored in favour of investments which are considered “core” to the organisation;
 - create **misaligned financial incentives**, meaning that decision makers (e.g. an organisation with a short tenancy agreement) would not benefit from their investment decisions (while a subsequent tenant would).
12. Taxing energy use only addresses the barrier of undervaluing energy efficiency by increasing the private cost of energy use, therefore increasing the incentive to invest in energy efficiency measures. The available evidence on reporting, for example the assessment on energy use reporting by Eunomia in 2014⁷, suggests that mandatory reporting can address the barriers associated with information asymmetry and help alleviate externalities (which result in undervaluing energy efficiency) by providing organisations with information on their energy use and helping them to identify energy savings opportunities. The evidence also suggests that reporting schemes requiring board-level sign-off and public disclosure can help to address misaligned incentives by creating reputational drivers and encouraging behavioural change. Increasing the demand for energy efficiency measures also attracts profit-seeking entrepreneurs and innovators to enter the market for energy efficiency, helping to overcome the ‘embryonic markets’ barrier. The package of policies assessed here will therefore serve to tackle all the barriers identified. The introduction of SECR acts to correct information failures and to complement changes in CCL rates by increasing awareness of energy costs. Undervaluing of energy efficiency is addressed through CCL rate changes which, through increasing business energy costs to capture societal costs, will incentivise businesses to take up further energy efficiency measure.
13. The stakeholder workshops reviewed the rationale for the need to regulate to achieve the planned SECR objectives. There was widespread stakeholder support for a reformed and simplified reporting framework at the stakeholder workshops and in the consultation feedback. The majority of consultation respondents agreed that mandatory reporting is an important element of the policy landscape; and that board or senior level sign-off delivered greater benefits.

Objectives of policy package

14. The objectives of the policy package are to:
- Reduce the administrative burdens of complying with business reporting policies;
 - Simplify the policy landscape to increase coherence of policy levers for organisations;
 - Increase the effectiveness of the policy framework in addressing the barriers to energy efficiency;
 - Contribute to the Government’s carbon budgets by reducing emissions from energy use, and developing markets for energy efficiency products.

Structure of this IA

15. This IA assesses the impact of policy changes announced at Budget 2016, as well as the introduction of the preferred SECR framework. Reflecting this context, the analysis in this IA has been structured as below:

⁷ DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*. [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323114/ESOS - Research on Impact of Reporting Energy Use FINAL .pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323114/ESOS_-_Research_on_Impact_of_Reporting_Energy_Use_FINAL_.pdf)

- Part 1 assesses the impact of the Budget 2016 announcements:
 - Part 1a assesses the impact of closing the CRC;
 - Part 1b assesses the impact of the announced changes to CCL rates.
- Part 2 assesses the impact of the preferred SECR framework;
- Part 3 assesses the combined impact of the changes captured in Parts 1 and 2. It demonstrates the overall impact of the simplification package under the preferred SECR framework.

The impacts of each change are assessed in an incremental manner.

Appraisal period and counterfactual

16. Analysis is based on an appraisal period from 2019 to 2035. This period covers the lifetime of the measures being assessed to capture the full stream of costs and benefits where data is available - principally Energy and Emissions Projections (EEP) (this data is required to inform the counterfactual scenario). These measures include lighting, industrial boilers or building fabric measures such as insulation, all of which have lifetimes of 20 years or more.
17. All monetised values are in 2017 prices. Where estimates have been stated in present value (PV) terms, 2019 has been used as the discounting base year as this is the year in which these policies come in to effect.
18. In order to examine the impact of these changes, the counterfactual scenario in this IA includes all implemented, adopted and agreed policies in place as of July 2017, reflected in BEIS' latest 2017 EEP⁸, adjusted for the following policy assumptions:
 - The CRC is assumed to remain beyond 2019;
 - CCL rates are assumed to increase with RPI inflation, in line with the historic trend;
 - Reduced CCL rates available under CCAs are assumed to increase with RPI inflation to 2035, beyond the point at which CCAs expires in 2023; and
 - MGHG reporting is assumed to remain in place.
19. Table 2 presents the counterfactual for energy consumption, emissions and administrative costs⁹. Emissions and energy demand projections are sourced from EEP¹⁰, and refer to organisations in scope from the industrial; commercial services; public services; transport; and agriculture sectors. Counterfactual business administrative burdens capture the administrative costs of the CRC (taken from an externally commissioned study on the costs of compliance for CRC participants¹¹) and MGHG Reporting (taken from a previous IA on MGHG Reporting¹²).

⁸ BEIS, *Updated energy and emissions projections*, <https://www.gov.uk/government/collections/energy-and-emissions-projections>

⁹ The counterfactual has not been presented for other impacts such as capital costs and air quality, due to the limited data available on the counterfactual for these impacts

¹⁰ Annexes D and E, BEIS, *Updated energy and emissions projections*.

¹¹ BEIS 2016, Assessment of costs to UK participants of compliance with Phase 2 of the CRC Scheme

<https://www.gov.uk/government/publications/assessment-of-costs-to-uk-participants-of-compliance-with-phase-2-of-the-crc-energy-efficiency-scheme>

¹² Defra, 2012, *Impact Assessment of Options for Company GHG Reporting*.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82354/20120620-ghg-consult-final-ia.pdf

Note that this estimate does not include the cost of reporting international emissions.

Table 2 – Estimated annual energy use, emission and business admin burdens under the counterfactual, 2019-2035

Average annual, 2019 to 2035	Counterfactual scenario
Energy consumption, TWh	1,080.6
Emissions, MtCO ₂ e	232.0
Business participants' administrative costs, 2017 £m	23.2

Source: EEP, CRC Cost of Compliance study.

Consultation Feedback and Rationale for preferred SECR framework

Consultation feedback

20. Table 3 gives an overview of the options presented at the consultation stage and the preferred SECR framework assessed in this IA.

Table 3 – Comparison of options for the introduction of a SECR framework

	Consultation Option 1	Consultation Option 2	Consultation Option 3 (Central)	Consultation Option 4	Preferred SECR framework
Scope of SECR framework	No SECR	CRC (4,000 large companies)	ESOS (11,900 large companies)	ESOS (11,900 large companies)	Companies Act 2006 (11,300 large companies)
Onsite energy used (UK only)		Electricity and gas	Electricity and gas	Electricity and gas	Electricity and gas
Transport energy use (UK only)		✓	✓	✓	✓
Emissions from UK energy use		✓	✓	✓	✓
Intensity metric	Via MGHG reporting	✓	✓	✓	✓
Global GHG emissions (quoted companies only)	Via MGHG reporting	✓	✓	✓	✓
Global total energy use (quoted companies only)		✓	✓	✓	✓
Requirement to publish energy and emissions data		✓	✓	✓	✓
Requirement to report on energy efficiency actions taken		×	×	✓	✓
Requirement to report on energy efficiency opportunities		×	×	✓	×
Inclusion of an exemption, where it is not practical to obtain information		×	×	×	✓
Inclusion of a formal 40MWh de minimis exemption		×	×	×	✓

21. The consultation asked a variety of questions such as, who should be in scope, what they should report, where those in scope should report and when the obligation should commence¹³. The Department used the consultation to obtain feedback on the options and to test and strengthen the assumptions supporting the range of options provided.
22. There were 155 responses from the consultation. This feedback, along with that received at workshops and from the RPC review of the Consultation Stage IA, were used to inform the preferred SECR framework, along with a consideration of objectives of the policy and the implicit trade-offs between private and social benefits.

Rationale for preferred SECR framework

23. Option 1 in the Consultation Stage IA (no streamlined energy and carbon reporting framework) was rejected as a way forward, as it only addresses the undervaluing of energy efficiency through the increase in CCL rates; it did not address information failures or misaligned financial incentives. Stakeholders supported the role of mandatory reporting in driving energy savings and the role for increased transparency to make investors and others more able to hold companies to account.
24. The **preferred SECR framework** links most closely to options 3 and 4 in the Consultation Stage IA. The preferred SECR framework requires (i) UK registered, unquoted large companies (based on the Companies Act 2006 definition) to report their energy use and emissions relating to gas, electricity and transport, and an intensity metric, through their company's annual reports and (ii) for quoted¹⁴ companies to continue to report their global GHG emissions and an intensity metric, and additionally start to report their global total energy use. Additionally, companies will report on their energy efficiency actions taken (but are not required to disclose ESOS opportunity recommendations).
25. Consultation feedback led to the three following key policy refinements, from the consultation options presented:
 - A statutory de minimis has been added, where it is not cost-effective to audit and report. Companies using lower 'domestic levels' of energy are not required to disclose their SECR information, if they confirm they used 40,000kWh or less in the 12 month period.
 - Unquoted companies are now able to benefit from an exemption, where it is not practical to obtain information.
 - Reporting requirement now based on Companies Act definition of "large" companies, rather than the ESOS 'large' definition for simplicity, as companies are more familiar with this definition and currently provide information for their annual accounts using this definition.
26. A comparison of total NPV and EANDCB figures between the options set out in the Consultation Stage IA and the preferred SECR framework considered in this IA can be seen in Table 4. Here we have presented what NPV and EANDCB figures would be for the Consultation Stage IA options in light of updates to data sources and methodology (including population updates). This has been done so that impacts are directly comparable to the figures presented for the package under the preferred framework. Table 17 gives an

¹³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/652410/SECR_Consultation_-_Final_with_IA_v2.pdf

¹⁴ from section 385 of the Companies Act 2006, a quoted company is a UK registered company whose equity share capital is officially listed on the Main Market of the London Stock Exchange or in an EEA State, or admitted to dealing on either the New York Stock Exchange or Nasdaq

idea of the components underlying these changes, with further discussion of methodological updates provided in Annex B.

Table 4 – Comparison of total NPV and EANDCB pre and post consultation

	Consultation Option 1	Consultation Option 2	Consultation Option 3	Consultation Option 4	Preferred SECR framework
Total NPV, 2017 £m (Consultation Stage IA)	666	1,034	1,057	1,081	N/A
Total NPV, 2017 £m (Final stage IA)	731	1,322	1,535	1,594	1,549
Total EANDCB, 2014 £m (Consultation Stage IA)	-17.0	-8.6	-6.8	-4.7	N/A
Total EANDCB, 2014 £m (Final stage IA)	-16.9	-8.5	-0.2	2.8	-1.3

27. Table 4 shows that under the preferred framework the policy package delivers the second highest NPV. Whilst the total NPV is higher under the scope set out in Option 4 of the Consultation Stage IA, this policy package also delivers an increase in costs to business estimated at £2.8m annually. The preferred framework reduces business burdens through the inclusion of a statutory de minimis and provisions to exempt reporting of up to 10% of energy that has not been practical to report and ensures the package delivers a net reduction in total admin burdens.

New Analysis

Overview

28. This IA contains new and updated analysis conducted to reflect developments in policy design informed by the consultation and work undertaken to strengthen the assumptions and underlying evidence base. It also includes an update of existing sources of evidence, where new data was published post consultation. The key areas of change with respect to the analysis presented in the Consultation Stage IA are:

- Following best practice, underlying data sources have been updated to utilise latest available releases. This includes an updated counterfactual scenario¹⁵, and updated evidence about the scope and overlaps of this policy with other policies such as CCAs¹⁶. Finally prices and appraisal values have been updated.
- Large companies are now defined using the Companies Act definition of 'large'. This analysis assumes negligible difference between this and the ESOS definition of large considered in the consultation IA due to the similarities in these definitions.
- Headline estimates of the number of businesses in scope and overlaps have been revised following efforts to strengthen the evidence behind previous estimates. A discussion of the analysis undertaken can be found in Annex B.
- Admin burden assumptions for companies not previously covered by CRC have been revised following feedback from stakeholders that the methodology employed in the Consultation Stage IA underestimated these costs.
- The preferred framework now incorporates the addition of a statutory 40,000KWh de minimis threshold and introduces a 'comply or explain' provision for unquoted companies allowing these companies to exempt a portion of their energy use and emissions from reporting provided they can explain why it would place a disproportional burden on them to report this data.
- The methodology behind estimates of capital, hassle and operational costs has been revised to better reflect the actions likely to be taken up as a result the policy. Principally, the new methodology incorporates stricter payback requirements for the abatement measures used to inform these costs, meaning that only measures with private payback of less than 7 years have been considered.

Quantified impact of new analysis

29. The changes and updates discussed in the above section have meant that the high level figures presented in this impact assessment differ from those presented in the Consultation Stage IA. Table 5 provides a comparison of these figures between the central option in the Consultation Stage IA and the preferred framework presented in this IA.

¹⁵ Energy and Emissions Projections 2017 <https://www.gov.uk/government/collections/energy-and-emissions-projections>

¹⁶ Non-Domestic – National Energy Efficiency Data-framework (ND-NEED) data which is used to determine the amount of energy already in the scope of other policies such as CCAs and EU-ETS

Table 5 – Comparison of headline impacts in the 2017 Consultation Stage IA and the Final Stage IA

	Total NPV, 2017 £m	EANDCB of policy package, 2014 £m	SECR Annual Energy Savings (TWh)	SECR Annual Carbon Savings (MtCO ₂ e)
2017 Consultation Stage IA	1,057	-6.8	2.4	0.48
2018 Final Stage IA	1,549	-1.3	2.4	0.47

30. The greatest impact has been on the estimated NPV of the policy package and the estimated costs to business, with associated savings being broadly similar between the two IAs. A more detailed breakdown of the impact of the various changes is given in Part 3 of the Analysis and Impacts section.

Section B: Analysis and Impacts

Part 1 – Impact of Budget 2016 Announcements

Part 1a – The Impact of Closing the CRC Energy Efficiency Scheme

31. In its response to the consultation on reforming the business energy efficiency tax landscape, the Government announced its decision to close the CRC following the 2018-19 compliance year, with no purchase of allowances required to cover emissions for energy supplied from April 2019.¹⁷ Organisations will report under the CRC for the last time by the end of July 2019, with a surrender of allowances for emissions from energy supplied in the 2018-19 compliance year by the end of October 2019.
32. To assess the impact on energy savings from closing the CRC it is necessary to consider its legacy savings, i.e. energy savings which will continue to occur after its closure. Legacy savings have been captured by assuming that all energy efficiency measures implemented before 2019 remain in place when the CRC is closed. Table 6 presents the change in energy savings from closing the CRC, which is calculated by taking the difference between its estimated energy savings and legacy savings.

Table 6 – Annual energy savings and legacy energy savings of the CRC, 2019-2035

	Average annual savings, TWh 2019 to 2035
CRC energy savings	5.6
CRC legacy energy savings	2.4
Change in savings from closing the CRC	-3.2

Source: EEP

33. Table 7 presents the impacts of closing the CRC, as compared against the counterfactual of all current and planned policies in place before Budget 2016.

Table 7 – Estimated costs and benefits of closing the CRC, 2019-2035

		Average annual impact
Costs	Change in energy savings, TWh	-3.2
	Change in traded carbon savings, MtCO ₂ e	-0.1
	Change in non-traded carbon savings, MtCO ₂ e	-0.5
	Fall in air quality, 2017 £m	-2.1
Benefits	Change in business participants' administrative costs, 2017 £m	-20.4
	Change in public sector participants' administrative costs, 2017 £m	-5.7
	Change in capital, hassle and operational costs, 2017 £m	-122.2

34. The closure of the CRC leads to a reduction in average annual energy savings of 3.2TWh, along with associated decreases in traded and non-traded carbon savings of 0.1MtCO₂e and 0.5MtCO₂e respectively. Benefits of its closure include the reduction of average annual business participants' administrative costs of £20.4 million, a decrease in average annual public sector participants' administrative costs of £5.7 million and a £122.2 million average annual decrease in capital, hassle and operational costs.

¹⁷ Page 5, HMT, 2016, *Reforming the business energy efficiency tax landscape: response to the consultation*.

Key risks and uncertainties

35. The largest uncertainty in this analysis relates to the projected energy savings of the CRC and the legacy savings which persist after the scheme is closed. This is due to the difficulty of projecting the future take-up of energy efficiency measures by organisations, and in projecting the persistence of energy savings after the CRC is closed. The sensitivity analysis in Part 3 tests this uncertainty.

Part 1b – Impacts of Increasing and Rebalancing CCL Rates

36. At Budget 2016 the Government announced that the main rates of the CCL will increase from April 2019 to offset the loss of revenue from closing the CRC. Also, the ratio of the electricity CCL rate to the gas CCL rate will be rebalanced from 2.9:1 to 2.5:1 from April 2019, and will reach 1:1 by 2025. This rebalancing will mean an increase in the gas rate to reach that parity with the electricity rate (which will also be increasing over this period). The increase in the gas CCL rate relative to electricity is likely to drive organisations to substitute gas energy for electricity, thereby reducing associated emissions. The specific CCL rates after 2019 have not yet been announced, so the analysis in this IA illustratively assumes that CCL ratios are changed in a linear path from 2019 to 2025, and rates increase with RPI inflation as in previous years.¹⁸ The 2016 Budget stated that the CCL discount available to Climate Change Agreement (CCA) participants will also increase from April 2019 to ensure they pay no more than an RPI increase.¹⁹ Although the current CCA scheme ends in 2023, this analysis illustratively assumes that the reduced rate of CCL for CCA participants increases with RPI inflation from 2019 to 2035.
37. The impacts of rate changes are estimated using a price elasticity of demand (PeD) approach which measures the demand response by businesses to changes in the price of fuels. This IA uses a central PeD estimate of -0.3 based on a literature review conducted on behalf of the department.
38. Table 8 illustrates the incremental impact of increasing and rebalancing CCL rates after closing the CRC: thus the impacts below are additional to those presented in Part 1a. Impacts are monetised and discounted in Part 3.

Table 8 – Estimated costs and benefits of increasing CCL rates, 2019-2035

		Average annual impact, 2019 to 2035
Costs	Change in business participants' administrative costs, 2017 £m	0
	Change in public sector participants' administrative costs, 2017 £m	0
	Change in capital, hassle and operational costs, 2017 £m	168
Benefits	Change in energy savings, TWh	4.8
	Change in traded carbon savings, MtCO ₂ e	0.3
	Change in non-traded carbon savings, MtCO ₂ e	0.6
	Improvement in air quality, 2017 £m	5.1

39. Capital, hassle and operational costs increase by an average annual £168 million, as a result of greater uptake of energy efficiency measures being incentivised by the CCL rate increases. As a result of the changes, companies will use less energy overall, with approximate average annual energy savings of

¹⁸ HMRC, 2016, *Climate Change Levy: main and reduced rates*.

<https://www.gov.uk/government/publications/climate-change-levy-main-and-reduced-rates/climate-change-levy-main-and-reduced-rates>

¹⁹ Page 53, HMT, 2016, *Budget 2016*.

4.8TWh, along with associated decreases in traded and non-traded carbon savings of 0.3MtCO₂e and 0.6MtCO₂e respectively.

Key risks and uncertainties

40. The greatest uncertainty in the analysis is the assumption for the price elasticity of demand for energy. This assumption reflects the average historic response to previous changes in energy costs, which may not hold in the future as business and policy conditions change. The impact of this assumption on the results is tested in the sensitivity analysis in Part 3.
41. The analysis uses the latest published energy price projections from the Green Book supplementary guidance on valuing energy use and greenhouse gas emissions²⁰. Energy prices are difficult to predict and have fluctuated significantly over time, so these projections are likely to have considerable uncertainty. The impact of different energy cost scenarios is tested in the sensitivity analysis in Part 3.

²⁰ <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

Part 2 – Impacts of SECR Framework

42. **Part 2 assesses the preferred SECR framework.** The analysis in this section examines the incremental impact of introducing an SECR framework after closing the CRC (Part 1a) and increasing and rebalancing CCL rates (Part 1b). Impacts in Part 2 are additional to these changes: they do not include impacts discussed in Part 1. Part 3 presents the combined impact of the simplification package.

Information to be reported / exemptions

43. The **preferred SECR framework** requires (i) UK registered, unquoted large companies (Table 9 defines 'large') to report their energy use and emissions relating to gas, electricity and transport, and an intensity metric, through their company's annual reports and (ii) for quoted²¹ companies to continue to report their global GHG emissions and an intensity metric, and additionally start to report their global total energy use. Additionally companies will report on their energy efficiency actions taken.
44. A statutory de minimis has been added post consultation, where it is not cost-effective to audit and report. Companies using lower "domestic levels" of energy are not required to disclose their SECR information, if they confirm, on an annual basis, they used 40,000kWh or less in the 12 month period.
45. A 'comply or explain' exemption has also been added allowing unquoted companies to exempt a proportion of their energy use and emissions from reporting, provided they can explain why it would place a disproportional burden on them to report this data.

Organisations in scope

46. The preferred SECR framework will apply to companies registered under the Companies Act 2006. This means that organisations which are not registered as companies, for example public sector organisations, some charities and some private sector organisations, may not be in scope of the SECR framework.
47. This IA makes various references to 'large' organisations. **Unless otherwise stated, all references to 'large' should be taken to refer to 'large' as defined by Companies Act 2006 – see Table 9.** This is a change to the proposals in the Consultation Stage IA, which were based on ESOS 'large' definition. The change was made for simplicity purposes, as companies will be more familiar with the Companies Act definition and are currently providing information for their annual accounts using this definition.

Table 9 – Definitions of 'large' under Companies Act 2006 and ESOS

Framework	Definition of 'large'
Companies Act 2006	<p>Where two or more of the following criteria apply to a company within a financial year:</p> <ul style="list-style-type: none">• More than 250 employees• Annual turnover greater than £36m• Annual balance sheet total greater than £18m <p>There are 'smoothing provisions' which apply where a company crosses over the size threshold, a change must persist for two years to have an effect on the company's classification.</p> <p><i>These thresholds are set out in sections 465 and 466 of the Companies Act 2006 and are updated from time to time. At group level the financial thresholds are on an aggregate basis.</i></p>

²¹ from section 385 of the Companies Act 2006, a quoted company is a UK registered company whose equity share capital is officially listed on the Main Market of the London Stock Exchange or in an EEA State, or admitted to dealing on either the New York Stock Exchange or Nasdaq²² DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*.

ESOS	<p>Undertakings:</p> <p>i) which employ an average of 250 or more people in a certain 12 month period, or an annual turnover in excess of €50m and an annual balance sheet total in excess of €43m, and</p> <p>ii) where undertakings do not satisfy the specified employee or financial thresholds, but are either the UK parent of a 'large' undertaking, or a UK subsidiary of a 'large' UK undertaking, or a UK subsidiary of a parent who has a 'large' subsidiary.</p> <p><i>Derived from the requirements of Article 8 of the Energy Efficiency Directive. 'Smoothing provisions' also apply.</i></p>
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Number of organisations in scope

48. Table 10 shows the number of large companies in scope of the SECR framework. The methodology behind these estimates is presented in Annex B.

Table 10 – Estimated number of large companies in scope of the preferred SECR framework

Population	Large organisation	After exemptions	Source
SECR	11,900	11,300	<i>Estimate from the EA, ND-NEED</i>
of which previously in CRC	3,800	3,800	<i>ESOS IA, Mint</i>

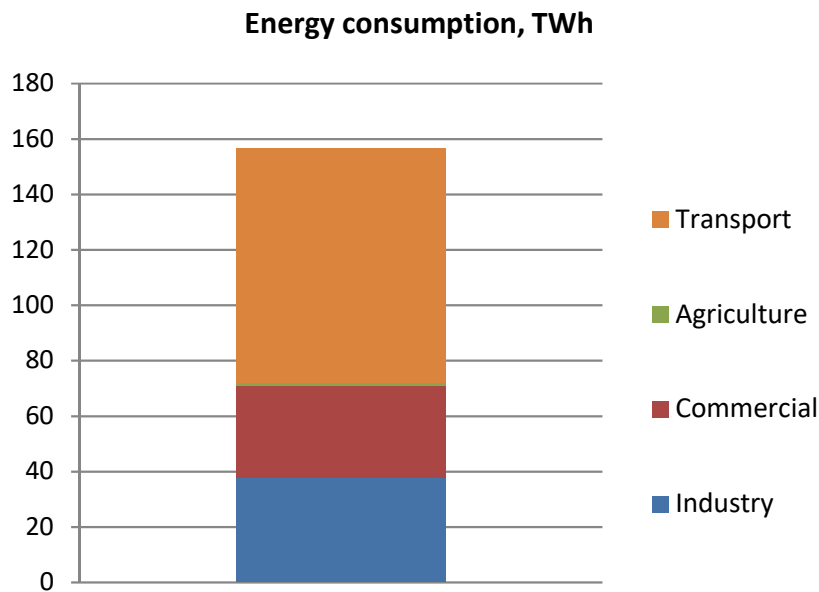
Figures have been rounded. 'EA' is the Environment Agency. 'Mint' is a proprietary business reporting tool.

Energy use in scope

49. The average annual energy use **within which new energy and carbon savings can be realised** under the requirements of the preferred SECR framework (and once CRC is removed) is estimated at **157TWh**. This reflects energy use which is not already reported outside the CRC, for example in CCAs or EU ETS, across the transport, industrial, commercial and agricultural sectors, as shown in Figure 1. This energy forms the basis against which potential savings are calculated. Companies will however be required to report total energy consumption (including that covered by CCAs and EU ETS).

50. Annex B gives further detail of how energy savings are calculated based on energy in scope.

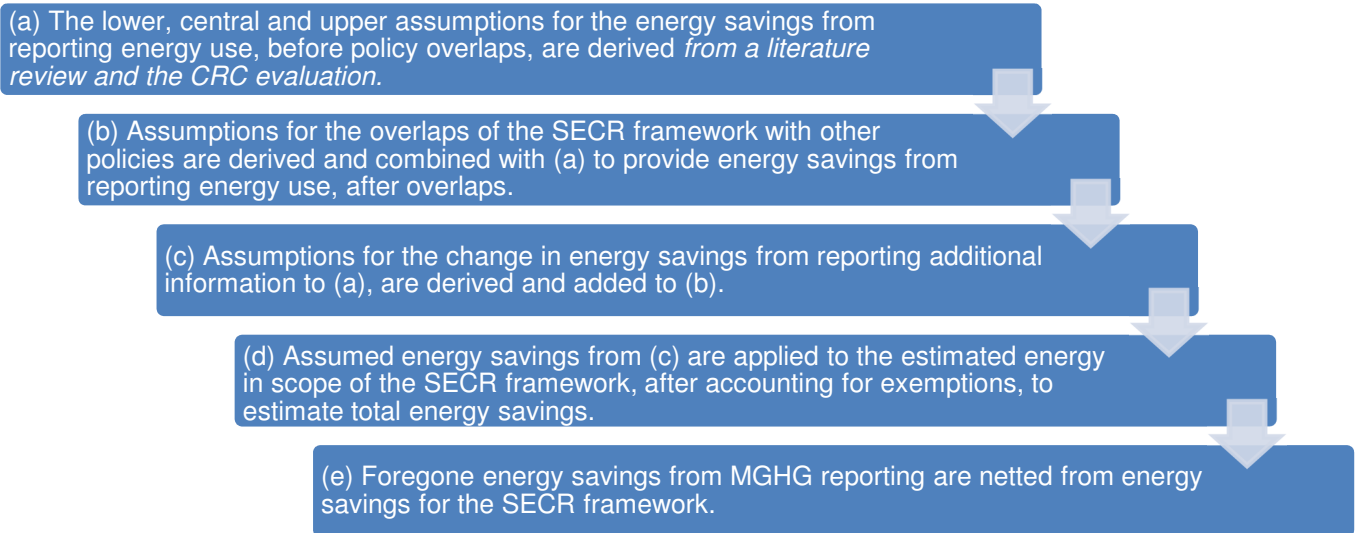
Figure 1 - Annual energy use proposed to be subject to new reporting requirements under the preferred SECR framework once CRC is removed, by sector, 2019 - 2035



Benefits associated with a SECR Framework

51. **Energy savings.** Mandatory reporting schemes can drive organisations to implement energy efficiency measures and therefore generate energy savings and reduce their energy bills. Existing evidence on reporting, including the Eunomia report²² and CRC evaluation²³, indicated that reporting energy use delivers energy savings of 4% based on the following key drivers of reporting mechanisms which are likely to drive energy savings:
- Mandatory rather than voluntary reporting;
 - Reports which require board or senior management sign-off;
 - Reporting the magnitude/costs of energy to increase their salience;
 - Structured and standardised reporting formats; and
 - Reputational drivers, for example the publication of data on emissions
52. This IA estimates participant energy savings using a staged approach outlined in Figure 2 and explained further in Annex B. The estimated average annual energy savings from introducing SECR are **2.4TWh**, based on the above evidence that reporting drives an additional 4% of energy savings. These savings are then used to calculate the carbon, air and noise benefits associated with SECR.

Figure 2 - Methodology for estimating the energy savings of the SECR framework



53. **Carbon savings and air quality improvements.** Higher energy savings lead to a fall in greenhouse gas emissions and improvements in air quality. On an average annual basis over 2019-2035, the estimated reduction in traded and non-traded carbon emissions are **0.23 and 0.24MtCO₂e respectively**

²² DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*. [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323114/ESOS - Research on Impact of Reporting Energy Use FINAL .pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323114/ESOS_-_Research_on_Impact_of_Reporting_Energy_Use_FINAL_.pdf)

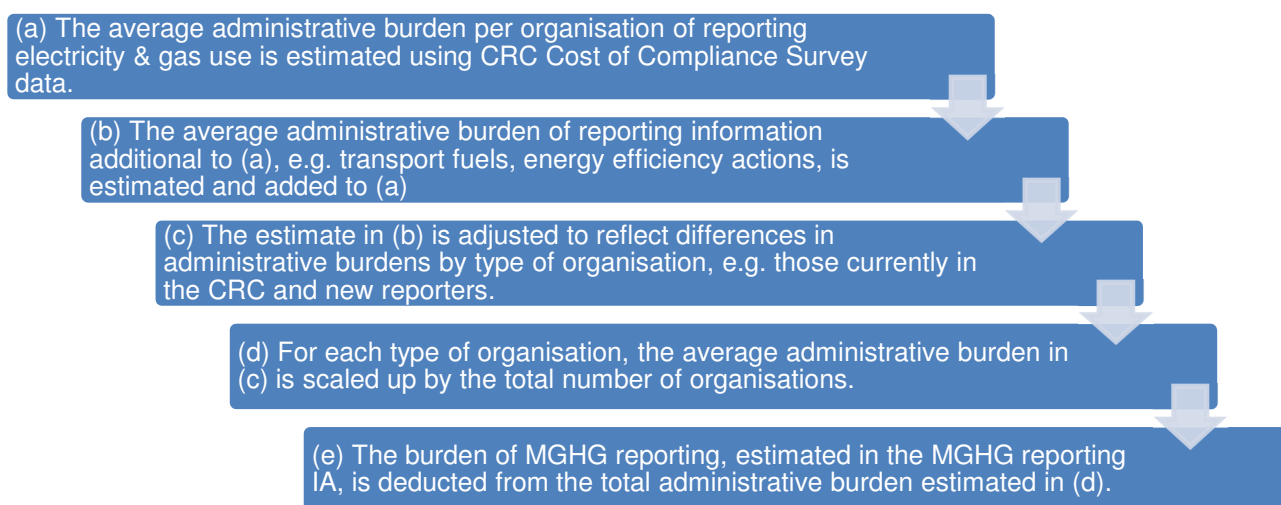
²³ DECC, 2015, *CRC Energy Efficiency Scheme Evaluation*. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/445719/CRC_evaluation_synthesis_report_FINAL_150709.pdf

54. **Noise pollution benefits.** Energy efficiency savings in the transport sector lead to reductions in noise pollution (e.g. through less reliance on private transport). The annual average reduction in noise pollution is estimated to be **£0.5m** over 2019-2035.

Costs associated with a SECR Framework

55. **Administrative burdens to participants (including familiarisation and up-front costs).** A new mandatory reporting scheme imposes an administrative burden on organisations as they need to use staff time or pay external contractors in order to understand the rules and to collect, analyse and disclose the required data. These costs are estimated using data from the CRC Cost of Compliance Study²⁴, which outlines the costs (as reported by scheme participants) of undertaking activities common to reporting schemes. The full list of activities considered in the CRC study is given in Annex D of this IA (this includes items such as understanding the scheme and identifying exclusions). From this list the activities relevant to SECR are taken to give an indication of SECR admin costs. Costs are broken down into up-front (or familiarisation) and ongoing costs, allowing these items to be estimated separately. Finally, these costs are adjusted to account for differences between CRC and SECR and the underlying business populations (e.g. costs are scaled up to account for the inclusion of transport energy in SECR).
56. The estimated average annual administrative burden of the preferred SECR framework is **£18.5m**. The full staged approach for calculating participant admin costs is outlined in Figure 3 and explained further in Annex B.

Figure 3 - Methodology for estimating the administrative burdens of the SECR framework



57. **Increased capital, hassle and operational costs.** Capital, hassle and operational costs are assessed in line with standard GHG appraisal guidance. They are calculated by taking the average costs of measures likely to be taken up as a result of the policy (weighted by energy savings) and scaling these to account for the level of adoption required to achieve estimated energy savings. Measures and their associated costs and savings are taken from Marginal Abatement Cost Curves (MACC) developed for the Fifth Carbon Budget. A 7 year payback requirement is included to ensure only measures likely to be considered by business are included. This approach is also used for estimates of hassle and operational costs. Average

²⁴ BEIS, Assessment of costs to UK participants of compliance with Phase 2 of the CRC Energy Efficiency Scheme https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/651109/Research_-_Assessment_of_costs_to_UK_participants_of_compliance_with_Phase_2_of_the_CRC_Scheme.pdf

annual energy savings of 2.4TWh are estimated to increase annual average capital, hassle and operational costs by **£68m**.

58. Table 11 illustrates the impact of introducing the preferred SECR framework once the CRC has been closed (Part 1a) and CCL rates increased and rebalanced (Part 1b). As such, the impacts presented below are additional to those presented in Part 1b.

Table 11 – Estimated costs and benefits under the preferred SECR framework, 2019-2035

Average Annual impacts, 2019 to 2035		Preferred SECR framework
Benefits	Change in energy savings, TWh	2.35
	Improvement in noise pollution, 2017 £m	0.5
	Change in traded carbon savings, MtCO ₂ e	0.23
	Change in non-traded carbon savings, MtCO ₂ e	0.24
	Improvement in air quality, 2017 £m	5.14
Costs	Change in business participants' administrative costs, 2017 £m	18.5
	Change in capital, hassle and operational costs, 2017 £m	68

Key risks and uncertainties

59. The largest uncertainty in the analysis is around the assumed energy savings from the SECR framework. There is limited evidence to quantify the impact of the specific reporting schemes. As such, a combination of illustrative assumptions and evidence from related schemes have been used, with key assumptions discussed at stakeholder workshops and views from the consultation reviewed.
60. Likewise, there is also considerable uncertainty over policy interactions, particularly with ESOS and illustrative assumptions have been made in the absence of quantitative information. Again, assumptions were discussed at stakeholder workshops and views from the consultation reviewed. Feedback from stakeholder workshops and consultees are that these seem broadly appropriate.
61. We have attempted to quantify uncertainty for key assumptions, see sensitivity analysis set out in Part 3.

Part 3 – Impact of the Combined Package

62. Part 3 of this IA presents the combined impact of the simplification package, aggregating the impacts of:
- Closure of the CRC (Part 1a);
 - Increasing and rebalancing CCL rates (Part 1b); and
 - Introducing a SECR framework (Part 2).
63. It also provides a detailed comparison of changes in the NPV and admin burdens of the overall package under the Consultation Stage IA central option and the preferred option set out in this IA.

Costs and benefits associated with the combined package

Overall impacts

64. Table 12 shows the combined annual average impact of the simplification package as compared to the counterfactual. Total impacts over the appraisal period are monetised and discounted in Table 15.

Table 12 – The estimated change in annual energy use, emission and business administrative burdens from the simplification package, 2019-2035

Average annual impacts, 2019 to 2035		Preferred SECR framework (combined package)
Energy use, TWh	Counterfactual energy use	1,080.6
	<i>[Part 1a] Impact of CRC closure</i>	3.2
	<i>[Part 1b] Impact of CCL rate changes</i>	-4.8
	<i>[Part 2] Impact of SECR framework</i>	-2.4
	[Part 3] Impact of total package	-4.0
	After all policy changes	1,076.6
Emissions, MtCO ₂ e	Counterfactual emissions	232.0
	<i>[Part 1a] Impact of CRC closure</i>	0.6
	<i>[Part 1b] Impact of CCL rate changes</i>	-0.9
	<i>[Part 2] Impact of SECR framework</i>	-0.5
	[Part 3] Impact of total package	-0.8
	After all policy changes	231.3
Business administrative burdens, 2017 £m	Counterfactual administrative costs	23.2
	<i>[Part 1a] Impact of CRC closure</i>	-20.4
	<i>[Part 1b] Impact of CCL rate changes</i>	0.0
	<i>[Part 2] Impact of SECR framework</i>	18.5
	[Part 3] Impact of total package	-1.9
	After all policy changes	21.3

Source: EEP, CRC Cost of Compliance study. Figures may not sum due to rounding.

65. The overall package under the preferred SECR framework leads to average annual energy savings of 4.0TWh, along with an associated increase in carbon savings of 0.8MtCO₂e. Average annual administrative costs across all organisations are estimated to fall by around £1.9m a year due to the admin cost reduction from closing CRC offsetting the additional admin burdens from SECR.

66. Table 13 presents the breakdown of carbon impacts for each change considered in this IA over the appraisal period, 2019 to 2035.

Table 13 – Estimated lifetime carbon savings by policy change, 2019-2035

MtCO ₂ e	Total impact, 2019 to 2035			Combined package (Sum of Parts 1 & 2)
	Closure of the CRC (Part 1a)	Increase & rebalance CCL rates (Part 1b)	Introducing a SECR framework (Part 2)	
Traded carbon savings	-1.7	5.7	3.9	7.9
Non-traded carbon savings	-8.5	9.5	4.0	5.0
Total carbon savings	-10.2	15.1	7.9	12.8

Figures may not sum due to rounding.

67. Closing the CRC decreases total carbon savings by 10.2 MtCO₂e over 2019-2035, mostly in the non-traded sector, and increasing and rebalancing CCL rates after closing the CRC saves 15.1 MtCO₂e. Introducing SECR under the preferred framework saves an estimated additional 7.9MtCO₂e, meaning that the whole package saves approximately 12.8MtCO₂e over 2019-2035. Breaking this down further, the combined package is estimated to achieve 2.5MtCO₂e of savings over Carbon Budget 4 (2023-2027) and 3.2MtCO₂e of savings over Carbon Budget 5 (2028-2032).
68. Table 14 presents the average annual and transition impacts of the combined package under the preferred SECR framework. Transition costs are defined as the initial one-off costs associated with the SECR framework (Annex D lists the ‘one-off’ and ‘on-going’ activities required under the SECR framework)²⁵. There are no transitional benefits associated with policy package. Note these figures are undiscounted and thus differ from Table 15. Table 20 and Table 21 in the Sensitivity Analysis section give high and low estimates of transition costs and benefits.

Table 14 – Estimated lifetime transition costs and benefits of the combined package, 2019-2035

	2017 £m, undiscounted	
Benefits	Total benefits	4,886
	<i>Of which transition benefits</i>	0
	Average annual benefits (excl. transition benefits)	287
Costs	Total Costs	1,801
	<i>Of which transition costs</i>	12
	Average annual costs (excl. transition costs)	105

69. Table 15 shows the incremental impact of each element of the policy package analysed in this IA. From left to right, the first column (‘Closure of the CRC’) is compared to the counterfactual of all current and planned policies in place before Budget 2016, as set out in the introduction. The second column (‘Increase & rebalance CCL rates’) illustrates the incremental impact of increasing CCL rates following the closure of the CRC. The third column (‘introducing a SECR framework’) presents the impact of introducing a SECR

²⁵ The one-off costs to participants last one year.

framework. The cumulative impact of the simplification package can be seen from the final column ('combined package'), which is the sum of the previous three columns.

Table 15 – Estimated costs and benefits of the combined package, 2019-2035

2017 PV £m	Total impact, 2019 to 2035			Combined package (Sum of Parts 1 & 2)
	Closure of the CRC (Part 1a)	Increase & rebalance CCL rates (Part 1b)	Introducing a SECR framework (Part 2)	
Energy savings	-1,110	2,210	1,756	2,856
Traded carbon savings	-54	208	130	283
Non-traded carbon savings	-505	574	245	314
Air quality improvements	-29	65	67	103
Noise pollution impacts	0	0	7	7
Total benefits	-1,698	3,056	2,204	3,562
Admin. burden to business	-266	0	245	-20
Admin. burden to public sector	-75	0	0	-75
Capital costs	-1,536	2,333	935	1,733
Hassle costs	-306	462	186	341
Operational costs	-36	50	20	34
Total costs	-2,218	2,845	1,386	2,013
Net impact	520	211	818	1,549

Figures may not sum due to rounding. Positive figures indicate an increase in costs/benefits, while negative figures represent a decrease.

70. The policy package delivers substantial societal benefits with energy savings representing the largest contribution to total PV benefits of £3,562m. The increased energy savings also contribute to increased costs over the counterfactual with associated capital costs contributing the majority of total PV costs of £2,013m. Capital costs are relatively lower for the introduction of SECR due associated energy savings being lower than for CRC and CCL. SECR delivers higher monetised PV energy savings than are lost from closure of CRC however. This is due to a greater proportion of energy savings under SECR arising from electricity abatement which has significantly higher long-run supply costs than gas and therefore delivers relatively larger societal benefits. The total package represents a net benefit to society, as benefits from the package outweigh the costs, delivering an overall NPV of £1,549m over the 2019-2035 appraisal period.

Indirect impacts

71. In addition to the benefits estimated above the analysis also provides estimates of participant bill savings as a result of increased energy efficiency. Bill savings are an indirect benefit and not included in NPV estimates since it would risk double counting, they have therefore been provided separately in Table 16. Bill savings are calculated by multiplying estimated energy savings by retail fuel prices.

Table 16 – Participant bill savings

	2017 £m, undiscounted
Total bill savings of policy package	403
Of which from SECR	262

Comparison of impacts of the Combined Package with the central option at Consultation Stage

72. Table 17 breaks down the impact of the key changes outlined in the New Analysis section, focusing on how they impact on NPV, and PV costs and benefits, as well as on business admin burdens.

Table 17 – Comparison of key changes from the 2017 Consultation Stage IA central option to the Final Stage IA preferred option

Update	Total NPV, 2017 £m	PV Costs change, 2017 £m	PV Benefits change, 2017 £m	Total EANDCB, 2014 £m
2017 Consultation Stage IA Option 3 (Central option)	1,057	N/A	N/A	-6.8
Updates to existing data sources and price discounting	1,479	-128	+293	-6.0
Revision of methodology for calculating non-CRC admin burdens	1,433	+45	0	-3.0
Revision of methodology behind estimates of capital, hassle and operational costs	1,579	-146	0	-3.0
Update to business population estimates	1,530	+50	0	0.1
Updated population overlap assumption	1,535	-6	0	-0.2
Introduction of a 'comply or explain' provision	1,489	-64	-110	-0.7
Introduction of a formal 40MWh de minimis threshold	1,499	-10	-(0)	-1.3
Added in requirement to report on energy efficiency actions taken (final figures)	1,549	+54	+104	-1.3
2018 Final Stage IA	1,549	N/A	N/A	-1.3
2018 Final Stage IA vs 2017 Consultation Stage IA	+493	-205	+287	+5.5

Figures may not sum due to rounding. Total NPV gives the cumulative NPV for each change made since the Consultation Stage IA.

73. Compared to the central option (Option 3) in the Consultation Stage IA, the preferred SECR framework set out in this impact assessment has lower estimated present value costs of £205m and higher estimated benefits of £287m totalling a £493m increase in NPV. The total burden to business has also gone up by £5.5m (EANDCB), due to updates to population estimates and admin burden calculations; however the policy package still delivers a net reduction in business admin costs (EANDCB) of approximately £1.3m annually.
74. Updates to underlying data sources and discounting of prices led to a significant increase in NPV driven primarily by three specific updates:
- the utilisation of more recent BEIS guidance on valuing emissions identified greater benefits associated with energy savings increasing the benefits of the policy package;
 - the use of more recent EEP and updated ND-NEED data to inform the counterfactual scenario. This data found a greater proportion of energy in scope attributed to the industrial sector which has relatively lower capital costs, this led to a drop in present value costs across the package;

- the discounting base year of all present value estimates was changed from 2016 to 2019 to reflect the start year of the policy, this increased NPV as nominal benefits rose more than nominal costs by approximately 11%, due to a decrease in discounting (3.5% over three years).

75. The methodology for calculating admin burdens for non-CRC companies was revised following feedback from stakeholders. As a result we have looked in more detail at the CRC Cost of Compliance study evidence to refine our estimates of costs for smaller organisations, leading to an increase in admin burdens imposed by SECR on non-CRC firms relative to those previously in the CRC (see Annex B for details). This amounts to a £45m increase in the present value costs of the policy package (equivalent to approximately £3m in EANDCB).
76. The methodology for the estimation of capital, hassle and operational costs was revised to ensure that the assumptions behind these estimates more closely reflected the ambitions of the policy. Given the type of policy being deployed in this framework, we anticipate that businesses will choose to carry out low cost measures to achieve the energy savings, possibly comprising of behavioural or further control measures. We anticipate that these will have relatively low costs and businesses will not invest in them unless they produce a return on investment within an average of 3-4 years. These changes in methodology contributed to a reduction in the present value costs of the policy package of £146m.
77. Estimates of the number of businesses in scope of a SECR framework aligned to all 'large' companies were revised following efforts to strengthen the evidence base behind these estimates and ensure they were fit for purpose. Alongside updated estimates from the Environment Agency additional analytical work was undertaken using Mint²⁶ (a proprietary business information tool) to provide further estimates of the number of large organisations in scope as well as to provide analytical evidence to inform the assumed overlap between CRC participants and the preferred scope of SECR. This work identified an increase in the number of large companies in the scope of SECR leading to a significant increase in total admin burdens and increasing present value cost by £50m. Furthermore, the overlap between CRC and SECR previously assumed at 100% was revised to 94%, reducing the portion of CRC firms believed to be in the SECR population of 11,900 large companies and lowering estimated admin burdens for the 6% previously assumed to be ex-CRC. An explanation of the methodology used is given in Annex B.
78. The introduction of a 'comply or explain' provision means that a proportion of the total energy in scope of SECR may be exempt in practice due it not being practical for companies to report this data. To estimate the impact of this provision an analytical assumption has been made that this will lead to a 5% reduction in the total energy and emissions being reported therefore reducing associated savings (for simplicity it has been assumed this will be proportionally distributed across sectors and fuel types). This assumption has been chosen to align with findings from a similar 'comply or explain' approach adopted under ESOS. The impact of this provision is to reduce present value benefits with a smaller relative drop in associated costs, thereby leading to a lower total NPV. Business admin burdens also fall as a consequence.
79. To gauge the potential of introducing a statutory de minimis internal analysis was conducted using ND-NEED data to assess the impact of a de minimis threshold aligned to the ESOS threshold of 40,000KWh. The analysis found that companies with energy use under this threshold presented very low potential savings, likely to be outweighed by the admin burdens of reporting. The analysis estimated that

²⁶ <https://mintuk.bvdinfo.com>

approximately 600 companies would fall under this threshold and therefore not be required to report under SECR. The removal of these companies brings the final population in scope to 11,300 resulting in increased NPV and reduced EANDCB as the associated costs of reporting are removed for those companies falling below the threshold. The impact on energy savings and present value benefits was negligible.

80. The addition of a requirement to report on energy efficiency actions taken during the 12 months of the reporting period is assumed to increase energy savings by 5% with no associated additional costs. Given this is a backwards looking requirement, in that companies will not need to conduct any additional audits to provide this information; we have therefore assumed no additional costs to including it. The associated increase in energy savings from this requirement have been assumed to be 5% (half that assumed under the more burdensome requirement previously set out in option 4 of the Consultation Stage IA). This leads to a net increase in the benefits of the SECR framework with no additional increase in admin burdens.

Impacts in Devolved Administrations

81. Decisions by the Devolved Administrations on their approach on CRC closure will be informed by a range of issues including the 2017 consultation. We have sought views from the Devolved Administrations before making final decisions on SECR reforms. 93% of all consultation responses agreed that an SECR framework should be UK wide. The analysis in this IA presents all results at the UK level, and assumes that the package of policy changes applies to all of the UK. This section presents a high level approach that could be used to disaggregate UK level impacts by each Devolved Administration (DA).
82. This approach involves apportioning UK impacts to each devolved area using the proportion of CRC and ESOS participants headquartered in each geography, as shown in Table 18. This approach assumes that the average costs and benefits of the policy changes per organisation are of a similar magnitude across each respective geography.

Table 18 – Potential disaggregation of impacts by DA

Data used for disaggregation	England	Scotland	Wales	Northern Ireland	UK total
Percentage of ESOS participants ²⁷	90%	6%	2%	2%	100%
Percentage of CRC participants ²⁸	88%	7%	3%	3%	100%

Figures may not sum due to rounding.

Qualitative analysis of non-monetised impacts

83. The pertinent non-monetised impacts relevant to the preferred framework are as follows:
- **The rebound effect.** Bill savings resulting from energy efficiency investments may be spent on other energy-using goods and services. This reduces the estimated overall energy savings resulting from energy efficiency policies.
 - **ESOS vs. Companies Act 2006 definitions of large company.** The analysis assumes negligible difference between these two definitions. A comparison of the criteria indicates that each definition has the potential to bring some companies in scope whilst excluding some others that may meet the criteria of the other definition (e.g. the Companies Act requires the fulfilment of two or more criteria however has comparatively lower financial thresholds). Given the similarity of these definitions however and the difficulty of estimating population numbers (particularly at the threshold) they are treated as equivalent for the purposes of the analysis in this IA.
 - **Government resource costs.** The current proposal is for electronic reporting (which would potentially involve the Government gathering and processing data) to be voluntary. This will be kept under review and be re-visited if the wider Company Accounts regime moves to mandatory electronic reporting. If Government were to process reporting data this would be at an additional cost.
 - **Benefits from publishing data.** Improving publically available information on energy efficiency opportunities, by publishing reporting data could: (i) attract entrepreneurs and innovators to enter the market for energy efficiency, helping to overcome the ‘embryonic markets’ barrier; (ii) improve the evidence base available for policy development.

²⁷ Environment Agency data

²⁸ Environment Agency data

- **Reputational impacts on businesses from publishing emissions.** Publicising an organisation's emissions could affect revenue for the business from environmentally conscious customers, e.g. the improved image of products and services attracting customers away from rivals. Both mechanisms create an incentive to invest in energy efficiency.
- **Productivity, competitiveness and economic growth impacts.** Energy efficiency has the potential to boost growth and lead to productivity gains for firms. Evidence suggests that small and positive impacts exist at both economy wide and firm level.²⁹ Energy efficiency investments reduce business costs, meaning they can deliver more for less. Capital spending creates jobs for installers and manufacturers of energy efficient equipment. Investment in energy efficiency can also increase innovation.
- **Opportunity cost.** Businesses will incur an opportunity cost on capital allocated towards adoption of energy efficiency measures. The opportunity cost would be equivalent to the return businesses could have earned by allocating capital to alternative uses (e.g. investing it elsewhere). This cost is an indirect impact of the policy package however, since businesses are still ultimately responsible for deciding which measures to adopt given alternative potential uses of their capital.
- **Security of supply.** Reducing energy demand through energy efficiency also improves security of supply. It reduces the UK's exposure to volatile international energy markets and means less energy infrastructure is required, lowering the overall costs of the energy system.
- **Legacy of the CRC.** The analysis estimates legacy energy savings from actions attributed to the CRC (see paragraph 32). However the analysis assumes that no new energy efficiency actions attributable to the CRC will occur once the scheme finishes.

²⁹ Vivid Economics, 2013, *Energy efficiency and economic growth*,

http://www.vivideconomics.com/wp-content/uploads/2015/03/Vivid_Economics_-_Energy_efficiency_and_economic_growth.pdf

Allan G, Hanley N, McGregor PG, Swales JK & Turner K (2007), The impact of increased efficiency in the industrial use of energy: A computable general equilibrium analysis for the United Kingdom, *Energy Economics*, 29 (4), pp. 779-798,

https://dspace.stir.ac.uk/bitstream/1893/7681/1/Allan%20et%20al_Energy%20Economics_2007_turner%20last.pdf

Cambridge Centre for Climate Change Mitigation Research, 2006, *The macro-economic rebound effect and the UK economy*,

http://ukerc.rl.ac.uk/pdf/ee01015_final_b.pdf

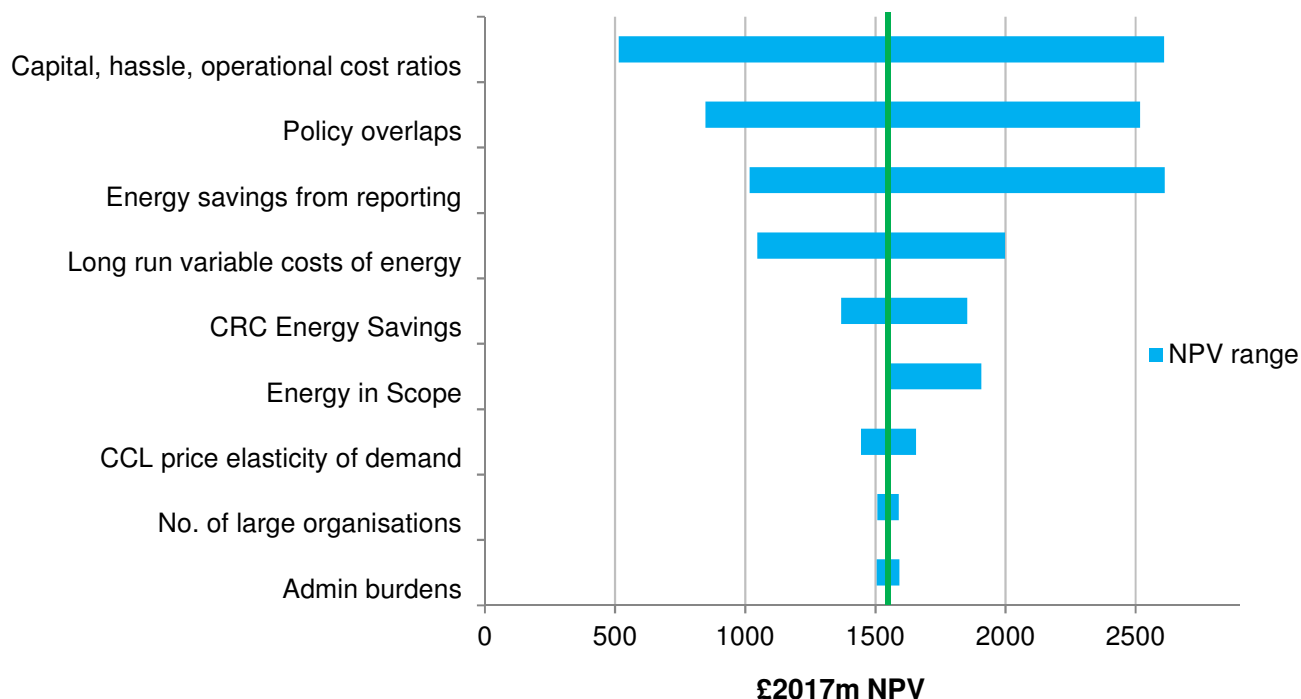
Sensitivity analysis

84. This section tests the assumptions with the greatest uncertainty to examine how materially they affect the results presented in this IA. For each assumption, lower and/or upper bounds have been informed by evidence where possible; however in some cases illustrative variations are applied.
85. Table 19 describes the specific assumptions tested. The most uncertain and material assumptions are marked with an asterisk “*” and are combined to estimate ‘low’ and ‘high’ NPV scenarios in Table 20 and Table 21. These are as follows: capital, hassle and operational costs; policy overlaps; energy savings from the SECR framework; long-run variable costs of energy supply.

Table 19 – Summary of sensitivity analysis

Assumption	Description	Policy change affected	Impact on NPV (NPV Range, 2017 £m)
Capital, hassle and operational costs*	The ratios of these costs to energy savings are increased or decreased by 50%	All	495 - 2,603
Policy overlaps*	The lower and upper bound assumptions for policy overlaps are used (see Table 30)	SECR framework	847 - 2,517
Energy Savings*	The lower and upper bound assumed energy savings of the SECR framework are used (see Table 27)	SECR framework	1,018 – 2,613
Long-run variable costs of energy supply*	Low and high cost scenarios are taken from BEIS guidance on valuation of energy supply	All	1,047 – 1,998
CRC energy Savings	For the lower bound, lost energy savings from closing the CRC assumed to be zero. For the upper bound, legacy savings of the CRC assumed to be zero	Closure of the CRC	1,369 - 1,853
CCL Price elasticity of demand*	The price elasticity of demand is increased and decreased by 50%	Change in CCL rates	1,445 - 1,657
Energy in scope	Electricity and gas use of large organisations is increased by 50%. Note that a lower value is not applied as the current analysis already uses a lower bound assumption (see Annex B for details on estimating energy in scope)	SECR framework	1,549 - 1,907
Number of large companies in scope	The number of large organisations in scope has been varied by +/-20% to align with upper and lower bound estimates found during analysis of population numbers	SECR framework	1,508 – 1,591
Administrative burdens of the SECR framework	Administrative burdens of the SECR framework varied by +/-15.5%, using the 95% confidence interval of from the Cost of Compliance study	SECR framework	1,506 - 1,593

Figure 4 – Sensitivity analysis for the NPV of the policy package



86. Table 20 and Table 21 present ‘high’ and ‘low’ scenarios, which have been constructed based on varying the assumptions with the greatest uncertainty, and which the results are most sensitive to (marked with an asterisk ‘*’ in Table 19).

Table 20 – Sensitivity analysis: results of low NPV scenario

Low NPV Scenario, 2017 £m	Preferred SECR framework
Total transition costs	12
Total transition benefits	0
Average annual undiscounted costs	-47
Average annual undiscounted benefits	25
Total costs (PV)	-465
Total benefit (PV)	233
NPV	698

87. The **low NPV scenario** assumes high capital, hassle and operational costs, low energy savings, high policy overlaps, and low long-run variable costs of energy supply. Even under the low NPV scenario the combined package delivers a £698m overall benefit to society. NPV is higher under this combination of assumptions than the bottom of the range when looking at just the capital, hassle and operational costs assumption, as the policy overlaps assumptions negates any transport savings (by assuming 100% overlaps) meaning that the associated costs of transport abatement are also negated.
88. Costs are negative for the policy package, because the increase in costs from changing CCL rates and introducing the preferred SECR framework are outweighed by the reduction in costs from the closure of the CRC. The assumptions in the low scenario (such as lower energy savings from reporting and high policy overlaps) cause a reduction in the energy savings from the CCL changes and the SECR framework, but they do not affect the change in energy savings from closing the CRC. The lower energy savings lead to reduction in capital, hassle and operational from CCL changes and SECR, even after accounting for the

50% increase in these costs under the low NPV scenario. The 50% increase in capital, hassle and operational costs also mean that total cost savings from closure of the CRC are higher.

89. The **high NPV scenario** assumes low capital, hassle and operational costs, high energy savings, low policy overlaps and high long-run variable costs of energy supply. Energy savings under the high scenario are significantly larger than the central scenario, which results in greater benefits and therefore greater NPV. The total costs are also larger for the high scenario, because the increase in energy savings leads to an increase in the capital, hassle and operational costs associated with energy efficiency measures.

Table 21 – Sensitivity analysis: results of high NPV scenario

High NPV Scenarios, 2017 £m	Preferred SECR framework
Total transition costs	12
Total transition benefits	0
Average annual undiscounted costs	184
Average annual undiscounted benefits	1,022
Total costs (PV)	3,251
Total benefit (PV)	12,970
NPV	9,719

Equivalent Annual Net Direct Cost to Business

90. The EANDCB and Business NPV estimates presented on the cover sheet capture the following:
- Reduced administrative burdens from removing MGHG reporting;
 - Increased administrative burdens from introducing a SECR framework.

Estimates of the total administrative burden under the preferred framework (including the closure of the CRC) can be found in Table 22 and Table 23 below.

91. As the CRC is classed as an environmental tax³⁰ for the purposes of regulatory accounting, the fall in administrative burdens from closing the CRC is not in scope. This is consistent with the treatment of the CRC in the 2013 Impact Assessment³¹, however could change with updates to the Better Regulation Framework. As a result, for the purposes of assessing the regulatory impact of this policy package the closure of CRC would not entail any direct costs or benefits for businesses. In reality, however, the closure of the CRC will result in a reduction in administrative burdens for businesses which will offset the increase in burdens resulting from introducing the SECR framework. Hence, in addition to the regulatory EANDCB (presented on the cover sheet), this IA also provides a total EANDCB. This latter value includes the reduction in direct costs from closing the CRC. While the tax review package is classed as an 'IN' for regulatory purposes, including the impact of closing the CRC results in a negative total EANDCB and a reduction in administrative burdens to business. Both EANDCBs estimates exclude impacts on the public sector.
92. Table 22 shows the business NPVs for the policy package under the preferred SECR framework. These estimates are used to calculate the EANDCB by applying annuity rates and rebasing to 2014 prices and 2015 present values.

³⁰ HMT, 2012, *Definition of environmental tax published*, <https://www.gov.uk/government/news/definition-of-environmental-tax-published>

³¹ Paragraph 5, DECC, 2013, *Simplification options for the CRC Energy Efficiency scheme to help businesses*; https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/138377/CRC_Simplification_Final_Stage_Impact_Assessment_December_2012_updated_.pdf

Table 22 – Estimated Business NPV for each option, 2019-2035

2017 prices, 2019 present value	Preferred SECR framework
Regulatory Business NPV	-£245m
<i>Total Business NPV</i>	£20m

93. Table 23 outlines the EANDCB value under the preferred SECR framework. In line with BEIS Impact Assessment guidance, the EANDCB values have been converted into 2014 prices using the GDP deflator from the Business Impact Target Calculator³², rather than the GDP deflator in the IAG appraisal guidance³³ which has been used elsewhere in the analysis presented in this IA.

Table 23 – Estimated EANDCB values for each option, 2019-2035

2014 prices, 2015 present value	Preferred SECR framework
Regulatory EANDCB	£15.6m
<i>Total EANDCB</i>	-£1.3m

94. Explanation of changes to EANDCB since the Consultation Stage IA can be found in paragraphs 73-80 and in Table 17.

Business Impact Target

95. The business impact target (BIT) for this parliament has not yet been agreed, and therefore at this stage we have been unable to produce a BIT score for this IA.

Small and micro business assessment

96. A small and micro business assessment (SaMBA) is mandatory for all new domestic regulatory proposals. Individual small and medium companies will not generally be in scope of the regulatory SECR framework which will apply to companies meeting the Companies Act 2006 definition of large as defined in Table 9 (however, quoted small and medium companies will continue to report their GHG emissions and an intensity metric): thus by definition there is no risk that it will generate disproportionate impacts for small and micro businesses. This is consistent with the SaMBA presented in the ESOS IA, which has a similar organisational scope.

Distributional impacts

97. The administrative burdens vary across organisations depending on what policies they are currently covered by. Table 24 illustrates how these impacts vary. Under the **combined package** there is a reduction in administrative burdens for the organisation currently subject to MGHG reporting and/or in the CRC, on average. For organisations not currently in the CRC or subject to MGHG reporting, the introduction of SECR results, on average, in an increase in administration burdens. Approximately 900 organisations currently in the CRC will not meet the Companies Act definition of large and therefore won't

³² BIS, 2016, *Impact assessment calculator*, <https://www.gov.uk/government/publications/impact-assessment-calculator--3>

³³ BEIS, *Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal*.

be required to report under SECR; these consist mostly of public sector organisations and companies not incorporated in the UK.

Table 24 – Estimated change in annual administrative burdens by organisation type, 2019-2035

Average change in annual administrative burden per organisation under the combined package, 2019-2035		Number of companies	Estimated change in annual admin burdens, 2017 £, undiscounted
Businesses in the scope of the SECR framework	Currently in the CRC but not in MGHG reporting	2,700	-1,300
	Currently in the CRC and in MGHG reporting	1,100	-3,800
	Not currently in the CRC or MGHG reporting	7,600	1,300
Businesses not in the scope of SECR	Currently in the CRC	900	-4,300

Figures have been rounded.

Competition Test

98. Under the existing policy landscape, businesses pay different tax rates on their energy use. Organisations in the CRC pay higher tax rates than their non-CRC, full CCL rate equivalents. Removing this asymmetry may remove competitive distortions between CRC and non-CRC firms operating in the same market. Overall, no significant impacts on competition are expected as a result of this package of policy changes.

Enforcement

99. Monitoring of non-financial reporting is undertaken by the Financial Reporting Council, and looks for false/reckless disclosures but does not check non-financial content. It is not proposed that additional monitoring or enforcement activities are added to this regime.

Evaluation plan

100. If implemented, the Government will review the impact of the SECR framework. This review plans to include an evaluation of the quantitative impact of the SECR framework and a qualitative understanding of the process through which it affects the energy efficiency of different enterprises.
101. Provisional evaluation questions may include:
- What have been the outcomes and impacts of the SECR framework?
 - Which, if any, are the most influential aspects of the SECR framework?
 - What explains any impacts seen / how have they come about (or not)?
 - How has this differed for the organisations in scope of the SECR framework?
 - What are the administrative burdens of the SECR framework, for different organisations and compared to the previous reporting systems?
102. The key metrics used to evaluate the policy may include:
- The number of organisations reporting under the SECR framework;
 - The overall change in costs to businesses reporting;
 - Any energy efficiency measure installed as a result of the SECR framework;
 - Any energy and associated emissions savings realised by the SECR framework through reporting energy use and emissions;
 - Financial savings to non-SMEs, delivered by the SECR framework.

As well as a qualitative assessment of e.g. the benefits to investors and others from increased transparency.

Key evaluation issues

103. In order to evaluate the impact of a SECR framework, it is necessary to isolate the impact directly attributed to the policy and strip out all other effects. This identifies the energy savings achieved as a result of the SECR framework *that would not have been achieved otherwise*. Additionality can be identified by comparing a ‘treatment’ group (those in the SECR framework) with a ‘counterfactual’ – organisations with identical characteristics, though not being in the policy. This can be difficult: characteristics are often related to eligibility for the policy, meaning there is no relevant population to compare to the ‘treatment’ group.

104. Approaches to establishing the counterfactual could include:

- Establishing the amount of energy efficiency potential identified in an organisation;
- Identifying action taken as a result of annually reporting this potential to decision makers;
- Identifying action taken as a result of publishing energy use and emissions;
- Accounting for organisations that would have published their energy use and emissions in the absence of mandated reporting; and
- Comparing the energy efficiency behaviours of organisations just within the eligibility threshold with those of organisations just below the threshold.

If a suitable counterfactual can be identified, an evaluation will also have to ensure that there is data which can estimate robustly the different impacts for the SECR framework and comparison groups.

105. The Government is committed to reviewing the SECR framework, if implemented. The planned publication date is 29th February 2024, within five years of the policy implementation date.

Annexes

Annex A – Summary of literature review on the quantitative impact of reporting

The 2014 Eunomia reviewed the evidence on the impact of reporting of energy use³⁴. A selection of its conclusions is as follows:

- Qualitative evidence suggests reporting schemes drive energy efficiency behaviour; quantitative evidence on the causal relationship is limited;
- Mandatory reporting schemes appear to be more effective than voluntary reporting;
- Mandatory board-level sign off on reporting can drive investment in energy efficiency;
- Public disclosure of emissions (less evidence for energy use) is likely to incentivise behavioural change through reputational drivers; and
- Comparability is important when data are published: information that can be directly compared is more effective than information disseminated by individual organisations.

The 2014 CRC evaluation gathered evidence on the impact of the CRC between 2010 and 2012.³⁵ The evaluation found the main mechanisms driving the energy and emissions savings of the CRC were:

- The cost of allowances (both in raising awareness of, and in slightly improving the business case for, energy efficiency investments);
- Improved data and internal reporting on energy use;
- High-level sign-off of CRC allowances, which raised awareness at board level within some organisations;
- The reputational aspects of complying with the CRC; and
- Reputational aspects of CRC publications.

The lower bound assumption of the energy savings from the SECR framework has been informed by a literature review on the impact of energy reporting schemes. The evidence from this review is presented in Table 25 and clusters around an estimated annual energy savings of approximately 2%.

Table 25 – Summary of the quantitative evidence on the impact of reporting

Policy	Estimated energy savings	Source
National Australian Built Environment Rating System (Australia)	8%	<i>2013/14 NABERS annual report</i> ³⁶
Energy Star (US)	2%	<i>Energy Star Data Trends report</i> ³⁷

³⁴ DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*.

³⁵ DECC, 2015, *CRC Energy Efficiency Scheme Evaluation*.

³⁶ IPD, 2013, *IPD Australia Green Investment Property Index*, <https://www.nabers.gov.au/AnnualReport/life-of-program-statistics.html>

³⁷ Energy Star, 2012, *Benchmarking and Energy Savings*,

http://www.energystar.gov/ia/business/downloads/datatrends/DataTrends_Savings_20121002.pdf?3d9b-91a5

Display Energy Certificates (UK)	2%	<i>Page 31, 2014 ESOS IA³⁸</i>
Energy Efficiency Opportunities (Australia)	2%	<i>Page 83, 2014 Eunomia report³⁹</i>

The quantitative impact of reporting was discussed at a series of consultation workshops, with broad support for the estimated lower bound energy savings (which were based on this literature review). This was also the consensus from the consultation feedback. It was however pointed out that savings in some sectors (such as energy intensive industries) may be lower than this.

³⁸ DECC, 2014, *Energy Saving Opportunity Scheme IA*.

³⁹ DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*.

Annex B – Detailed methodology for estimating number of organisations in scope, policy overlaps, energy savings and administrative burdens

Number of organisations in scope

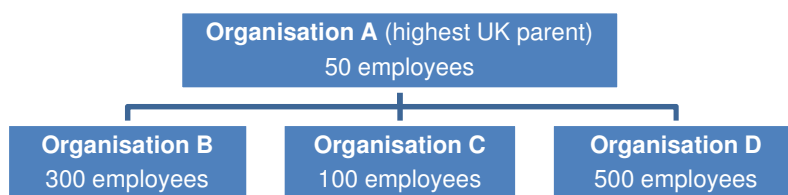
Headline estimate

All UK quoted companies currently in scope of MGHG reporting will be in scope of SECR. It is assumed that these around 1,200 companies are a subset of the large company populations set out below.

Under the preferred SECR framework, all 'large' UK companies formed and registered under the Companies Act 2006 and their corporate groups will be required to report, with the highest UK-based parent of each corporate group responsible for ensuring compliance. It follows from this definition that many of the groups in the SECR framework will therefore consist of several individual organisations.⁴⁰

The distinction between groups and individual organisations is illustrated in Figure 5. Figure 5 shows a corporate group with at least one organisation within the group meets one of the Companies Act 2006 criteria of 'large'. The energy use and emission of all four organisations A, B, C & D in the group would be in scope of SECR under the preferred framework, and the entity(s) responsible for reporting would need to include the proposed energy and carbon information, either individually or for all organisations in the group, in annual reports to comply.

Figure 5 – An illustrative example of a group in the SECR framework



The analysis in this IA uses administrative burden estimates from the CRC Cost of Compliance study⁴¹ to estimate the burden of the SECR framework. This requires the number of organisations in the CRC to be compared to the number of organisations in scope of the SECR framework. While data on total number of individual organisations under the preferred SECR framework and the CRC is unavailable, the total number of individual 'large' organisations can be estimated.

The number of individual large private and third sector organisations in scope of SECR (so under the Companies Act 2006 definition, Table 9, which includes organisations like A and C above who may not individually meet the definition of 'large') is estimated at 11,900, based on the latest estimate from the EA. This definition excludes public sector organisations (for whom we are looking to put in place a voluntary reporting framework), certain types of charity, and a number of private sector organisations, particularly

⁴⁰ This IA focuses on the number of organisations in scope of the SECR framework, rather than the number of groups. This is because data gathering is likely to occur at the organisation rather than group level: thus administrative burdens are likely to be more closely related to the number of organisations, rather than the number of groups.

⁴¹ BEIS, Assessment of costs to UK participants of compliance with Phase 2 of the CRC Scheme

<https://www.gov.uk/government/publications/assessment-of-costs-to-uk-participants-of-compliance-with-phase-2-of-the-crc-energy-efficiency-scheme>

companies operating in the UK who are not UK-registered. While the EA estimate is based on the ESOS definition of large we assume negligible difference in population numbers between this and the Companies Act definition employed in this IA.

The estimated number of large private and third sector organisations in scope of the CRC is approximately 4,700. This figure was originally estimated in the ESOS IA⁴² for Phase 1 of the CRC, and has been scaled down to reflect the lower number of participants in Phase 2. Using data from the ONS labour market statistics portal⁴³ this number is scaled down to 85% to reflect the proportion of organisations which are UK registered, unquoted companies, which produces an estimated scope of 4,000 CRC companies prior to any analysis of how many are meeting the Companies Act large definition thresholds.

Additional analysis – post Consultation Stage IA

The Consultation Stage IA quoted 9,100 large companies in the scope of ESOS based on previous analysis conducted by the Environmental Agency (EA). For the final impact assessment the EA updated their estimate and additional analysis was carried out internally to further strengthen the evidence base. The latest estimate from the EA identified approximately 11,900 large companies under the preferred scope of SECR (before any de minimis exemptions). This estimate is supported by other sources such as the Interdepartmental Business Register (IDBR), which confirm an increase in the number of large companies in the timeframe between the current and previous estimates. Furthermore, analysis using Mint⁴⁴ (a proprietary business information tool) also indicated a greater number of companies than identified at the consultation stage. The Mint analysis was also used to improve estimates of the number of CRC companies that would fall under the scope of SECR and is discussed in detail below.

While the stated populations represent the best estimates provided by the data available, in practice company population numbers are subject to change over the appraisal period and as such no single static estimate will be fully representative of the true population in scope in any given year. Given this uncertainty over population numbers this IA has included additional analysis on the sensitivity of key impacts to varying the estimate of businesses in scope by 20% either way (broadly aligning with upper and lower bound population estimates) – this can be found under the Sensitivity Analysis heading in Part 3 of this IA.

Policy overlaps

To strengthen estimates of population numbers presented in the consultation IA additional analytical work was undertaken using Mint to provide further estimates of the number of large organisations in scope as well as to provide analytical evidence to inform the assumed overlap between CRC participants and the Companies Act definition of large (the analysis in the consultation IA assumed 100% of CRC companies would continue to report under SECR given that they are large energy users and would therefore likely meet the ESOS or Companies Act definitions of large).

Using ESOS and CRC participant lists provided by the EA identified participants were run through Mint to aggregate each organisation to its highest level UK parent. This list of domestic ultimate owners was then run through Mint again to pick up all UK registered subsidiaries of the parent organisations. This process

⁴² Annex D, DECC, 2014, *Energy Saving Opportunity Scheme IA*,

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/323116/ESOS_Impact_Assessment_FINAL.pdf

⁴³ <http://www.nomisweb.co.uk/>

⁴⁴ <https://mintuk.bvdinfo.com>

of aggregation and disaggregation was carried out to ensure all relevant organisations were picked up for those corporate groups identified by the EA as in the scope of each policy. The disaggregated lists were then cross-referenced to identify the overlap between companies appearing in CRC and those appearing in ESOS.

This analysis provided an indicative overlap of 88% between CRC and ESOS. This estimate was taken as a lower bound since the true populations are not known with certainty. A review of CRC participants also identified a number who are not UK incorporated and would therefore not be in scope of SECR under the Companies Act 2006 criteria, meaning any upper bound estimate of overlaps between CRC and ESOS would be under 100%. Using these two numbers an illustrative assumption was employed taking the 94% mid-point as the overlap between CRC and ESOS. This means that the number of CRC companies in SECR was reduced by 6% to 3,800 companies, to reflect the true proportion of the large company population currently reporting under CRC.

Exemptions

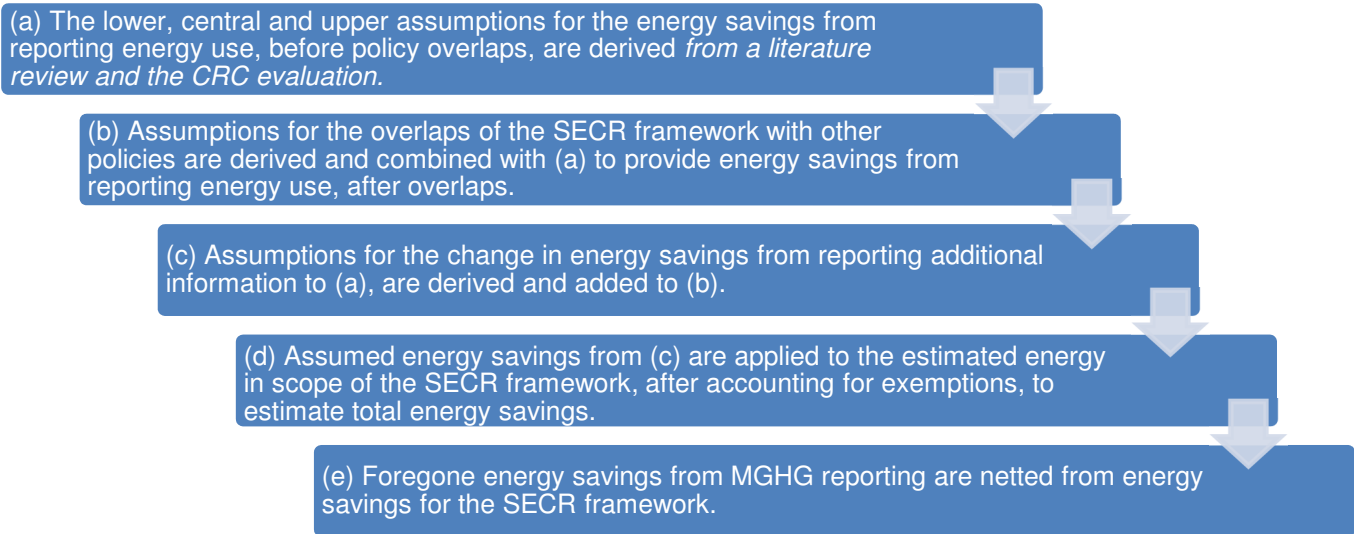
Under the preferred SECR framework a de minimis threshold has been included allowing companies using domestic levels of energy (under 40,000kWh annually) to be exempt from reporting. Analysis of ND-NEED data identified that approximately 600 companies would fall below this threshold. These companies and the associated energy use and admin burdens from reporting have therefore been removed from the analysis. Given these companies are by definition low energy users they would fall under the non-CRC population. Table 26 gives final estimates of the number of individual large companies in the CRC and SECR before and after exemptions.

Table 26 – Estimated number of large organisations in the CRC and ESOS by sector

Population	Large organisations	After exemptions	Source
SECR	11,900	11,300	<i>Estimate from the EA, ND-NEED</i>
of which previously in CRC	3,800	3,800	<i>ESOS IA, Mint</i>

Energy savings

Figure 6 - Methodology for estimating the energy savings of the SECR framework



(a) Energy savings for new reporters

Table 27 presents the lower, central and upper bound assumptions for annual energy savings from reporting energy use. These assumptions are informed by evidence on ‘new reporters’, i.e. those not required to measure or report on energy use for other policies.

Table 27 - Annual energy savings assumptions (before overlaps) for reporting energy use

	Lower bound	Central	Upper bound
Estimated impact	2%	4%	8%
Informed by:	Literature review	Various	Analysis of CRC evaluation

This 2% estimate is used as a lower bound as the policies examined in the literature review lack one or more of the key drivers of behaviour change, as identified from the Eunomia report and CRC evaluation (see Annex A). There is uncertainty around this estimate as the evidence relates to various policies across different countries and policy contexts.

The 8% upper bound assumption is derived from the CRC evaluation. The CRC evaluation compared CRC participants’ energy use to the control group of ‘information declarers’ (organisations which fell just below the CRC electricity use threshold). The total savings estimated in the CRC was split into the ‘price’ element (from the purchase of CRC allowances), and the ‘reporting’ element (assumed to be the residual). The price element was estimated using the price elasticity of demand approach previously used to estimate the impact of the CCL on energy savings in Part 1b. Removing the ‘price’ element of these savings produces an estimate of annual energy savings from the reporting elements of the CRC of approximately 8%. However since the CRC evaluation relates to the early years of the scheme, these large energy savings may be short-term effects. The econometric analysis in the evaluation shows some evidence that energy savings began to fall towards the end of the period. Thus the estimate of 8% is used as an upper bound assumption.

The central assumption of 4% has been informed by a number of factors:

- 4% is a conservative midpoint between the lower and upper bound estimates of 2% and 8%.

- Using the energy savings of the CRC employed in EEP to estimate the reporting elements of the CRC yields an estimate of approximately 4%. This data is considered more appropriate than the evaluation for estimating the long term impact of the scheme.
- Evidence from the Energy Efficiency Opportunities Program in Australia found long term impacts of reporting to be approximately half the short-term impact (2-3 years)⁴⁵. Applying this ratio to the 8% estimate from the CRC evaluation, which captures the first three years of the scheme, yields approximately 4%.

There is limited evidence quantifying the impact of reporting transport energy use. The analysis in this IA therefore applies the same energy savings assumptions to both onsite and transport energy use.

(b) Energy savings after policy overlaps

Some organisations in scope of the SECR framework are already required to measure or report some of their energy use through other policies. The estimates in Table 27 do not account for policy overlaps, and therefore need to be scaled down to avoid double-counting.

The main overlap is with ESOS, which requires all large private and third sector undertakings to conduct an energy audit once every four years (or to take an alternative route to compliance such as being ISO50001 compliant). There is uncertainty over which energy efficiency measures will be taken up as a result of these audits: this results in uncertainty over the size of the overlap. As a result, illustrative lower, central and upper overlap assumptions are used.

Both ESOS and the preferred SECR framework require the measurement of energy consumption; once every four years under ESOS, and annually for the SECR framework. Assuming measurements of energy use from ESOS can be re-used for the SECR framework (as SECR electricity, gas and transport is a subset of ESOS total energy use scope), in any given year, an average of 25% of organisations in the SECR framework are assumed to already be measuring their energy use. Thus the overlap of SECR with ESOS is assumed to be at least 25%. (As noted below, there is no change in scope of emissions reported proposed for UK quoted companies, and underlying energy is already measured to calculated total global emissions).

Further, an ESOS assessment produces a list of energy efficiency recommendations for organisations undertaking audits: this may lead to additional overlaps. In the absence of quantitative evidence, an illustrative assumption that this overlap is the same size as the overlap from measuring energy use is made. Further, given the uncertainty, lower and upper bounds of ± 25% are used, the impact of which is tested in the senesitivity analysis.

Table 28 summarises the overlap assumptions made for the SECR framework and ESOS. A higher percentage means that a greater overlap has been assumed, and fewer energy savings are therefore attributed to the SECR framework.

Table 28 - Overlap assumptions between ESOS and the SECR framework

	Lower bound	Central	Upper bound
Overlap due to measuring energy use in ESOS	25%	25%	25%

⁴⁵ Page 83, DECC, 2014, *Evidence Review of the Impact of Central and Public Disclosure Methods for Reporting Energy Use and Energy Efficiency*.

Overlap due to identification of energy efficiency recommendations in ESOS	50%	25%	0%
Total overlap between ESOS and the SECR framework	75%	50%	25%

Transport intensive organisations – e.g. those in the rail, bus and haulage sectors – are likely to spend a larger proportion of their total costs on energy than organisations that are not transport-intensive⁴⁶. The ESOS IA accounts for this through illustrative assumptions to scale down the impact of ESOS⁴⁷. The same overlap assumptions, presented in Table 29, have been used here to scale down the impact of the SECR framework.

Table 29 - Overlap assumptions for transport energy use

Transport	Lower bound	Central	Upper bound
Aviation, rail & shipping	100%	100%	100%
LGVs & HGVs	100%	50%	0%
Buses & coaches	100%	50%	0%
Company cars	100%	0%	0%

Source: ESOS IA

Table 30 presents the assumed energy savings from reporting energy use after all policy overlaps from Table 28 and Table 29 have been applied to the assumptions in Table 27.

Table 30 - Assumed energy savings (after overlaps) from reporting energy use

	Lower	Central	Upper
Onsite energy use	0.5%	2.0%	6.0%
Transport energy use			
Aviation, rail & shipping	0.0%	0.0%	0.0%
LGVs & HGVs	0.0%	1.0%	6.0%
Buses & coaches	0.0%	1.0%	6.0%
Company cars	0.0%	2.0%	6.0%

(c) Additional energy savings assumptions

As illustrated in Table 3, the preferred SECR framework requires organisations report on energy efficiency actions taken during the reporting period. Annually reporting on energy efficiency actions may enhance the impact of reporting by providing more frequent board and investor level awareness of the extent to which organisations are investing towards a low carbon future.

As only an interim process evaluation has been carried out on ESOS, the analysis here relies upon qualitative feedback gathered from stakeholders. Stakeholders were asked to compare expected energy savings from various reporting requirements during workshops (e.g. reporting energy efficiency opportunities; transport energy use; global emissions), and validated the assumptions used here. An illustrative assumption was made at the consultation stage that reporting on the scale and progress of energy efficiency opportunities increases the impact of the SECR framework by 10%. The preferred SECR framework only requires companies to report on energy efficiency actions taken rather than also

⁴⁶ The ESOS IA estimates that for transport-intensive organisations, energy costs are 10% of total expenditure, compared to 2% for services sectors.

⁴⁷ Section 6.4.7, DECC, 2014, *Energy Saving Opportunity Scheme IA*.

mandating them to report on identified energy efficiency opportunities (previously required under option 4 of the Consultation Stage IA). It is therefore anticipated that additional savings from this requirement will be half of those previously assumed under the more burdensome requirement (i.e. 5%). As a result of this requirement, the assumed energy savings for onsite and transport (shown in Table 30) would increase by 5% (e.g. from 2% to 2.1%) under the preferred SECR framework.

It is also proposed that organisations report an intensity metric based on information that has already been gathered, for example energy use per £m of turnover. The rationale for this requirement is that it will allow more meaningful comparisons of data across companies in the SECR framework. This analysis has not assumed any additional energy savings from the requirement to report an intensity metric, due to the uncertainty around what information would be reported and therefore its likely impact.

Table 31 illustrates the central energy savings assumption under the preferred SECR framework. Applying these assumptions to the energy use in scope, described below, provides the estimate of energy savings from the SECR framework.

Table 31 - Central energy savings assumptions (after overlaps) under the preferred SECR framework

	Preferred SECR framework
Onsite energy use	2.1%
Transport energy use	
Aviation, rail & shipping	0%
LGVs & HGVs	1.05%
Buses & coaches	1.05%
Company cars	2.1%

(d) Energy use in scope

The energy use in scope of the SECR framework is estimated using different data sources for each sector. The Non-Domestic National Energy Efficiency Data (ND-NEED) framework splits energy use into SMEs and large organisations (using the Business Populations Estimates definition of large as having 250 or more employees, and we assume again that one 'large' definition is a good proxy for another); and Department for Transport (DfT) datasets are used for transport. For more detail on the approaches used, see Annex C.

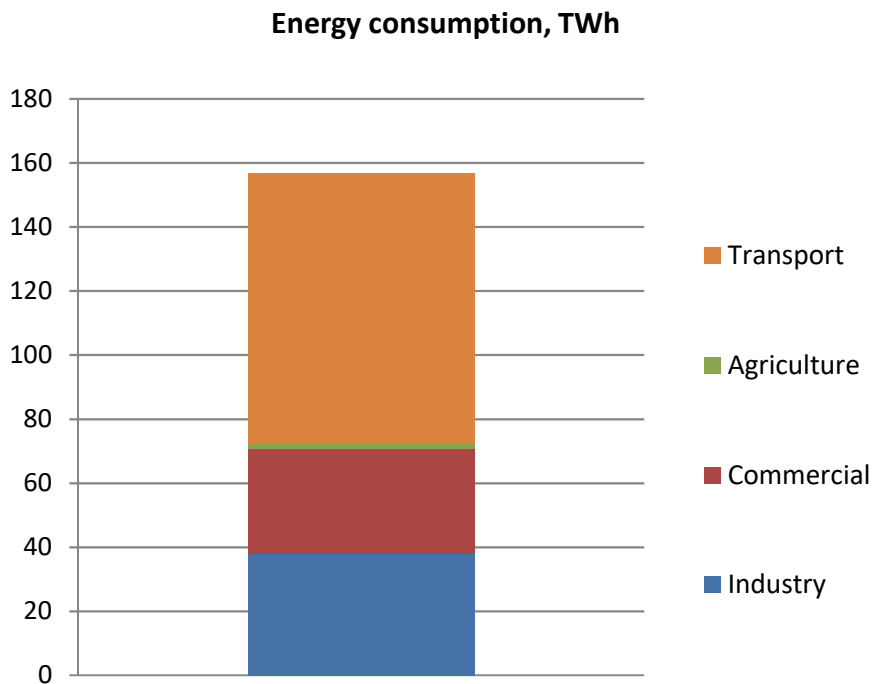
106. The average annual energy consumption **within which new energy and carbon savings can be realised** under the requirements of the preferred SECR framework (and once CRC is removed) is estimated at **157TWh**. This reflects energy use which is not already reported outside the CRC, for example in CCAs or EU ETS, across the transport, industrial, commercial and agricultural sectors, as shown in Figure 1. This energy forms the basis against which potential savings are calculated. Companies will however be required to report total energy consumption (including that covered by CCAs and EU ETS).

This figure also accounts for the energy which will be exempt from reporting due to the formal de minimis exemption and 'comply or explain' provision included under the preferred SECR framework, estimated at approximately 8TWh annually. The implementation of these provisions is explained below.

For the 'comply or explain' provision companies can exempt a proportion of total energy use from reporting provided they can explain why it would impose disproportional burdens on them to report this data – an analytical assumption has been made that this will reduce the total energy in scope of SECR by 5% (informed by findings from a similar 'comply or explain' approach adopted in ESOS).

For the de minimis exemption additional analysis was conducted using ND-NEED data to assess the impact of including a 40,000kWh de minimis threshold on companies and energy savings. The analysis found the impact of introducing a threshold of this size to be negligible in term of energy savings, reducing the energy in scope by less than 0.1%.

Figure 7 - Annual energy use proposed to be subject to new reporting requirements under the preferred SECR framework once CRC is removed, by sector, 2019 - 2035



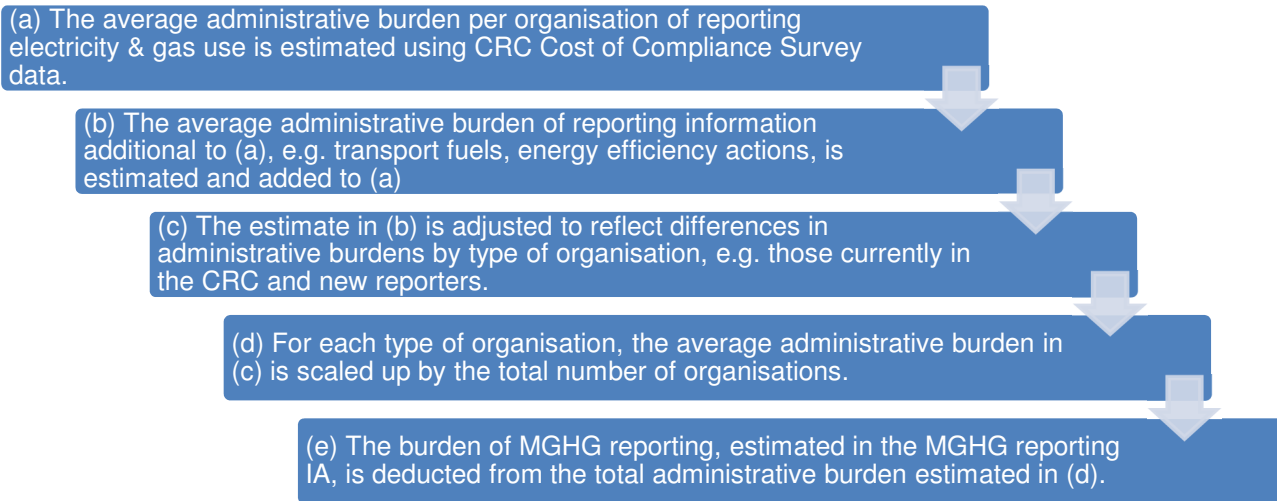
Source: ND-NEED, BEIS, DfT

(e) Forgone energy savings from moving from separate MGHG reporting

It is assumed that there is no impact on energy savings from moving from separate MGHG reporting. This is because it is proposed that quoted companies continue to report on domestic and international GHG emissions for which they are responsible, and an intensity metric, in the SECR framework (as well as starting to report underlying total global energy use).

Administrative burdens

Figure 8 - Methodology for estimating the administrative burdens of the preferred SECR framework



(a) Reporting electricity and gas use

The CRC Cost of Compliance survey estimates the administrative burdens of the CRC, and is used as a starting point for estimating the administrative burdens of the SECR framework. The activities required for the CRC that are not relevant to the SECR framework are identified and excluded. Examples include purchasing/trading CRC allowances and determining eligibility for the scheme, as organisations in scope have already been determined as they are companies required to provide the proposed energy and carbon reports (e.g. in Directors’ reports or Strategic reports, or another report), and will know they are ‘large’ within the according to the Companies Act definition (see Table 9) – Annex D gives a detailed list of activities considered. After this process, only activities relating to the measurement/ reporting of electricity and gas use remain. Under the preferred SECR framework, participants would be required to convert energy use into emissions (while in the CRC this is calculated automatically), but it is assumed that the additional burden of doing this would be negligible if there are published factors available for use.

The average administrative burden per large organisation is then calculated. Table 32 presents estimated first year burdens, before and after the activities not relevant to the SECR framework are stripped out. First year costs presented below include a single year of one-off costs and on-going costs.

Table 32 - Average administrative burdens per large organisation in the Cost of Compliance study by sector, 2017 prices

	First year administrative burden per large organisation
All activities in the CRC	£6,900
Reporting electricity and gas use only	£3,800

Source: CRC Cost of Compliance study.

(b) Reporting additional information and exemptions

The preferred SECR framework requires some additional information to be measured and reported which is not currently required under the CRC. These include:

- Transport energy use;
- Energy efficiency actions taken during the reporting period; and

- An intensity metric

Transport energy use – It is proposed that transport energy is in scope of the preferred SECR framework. The ESOS IA used illustrative assumptions, tested with stakeholders, to estimate the burden for transport energy use as approximately 26% of the burdens for onsite energy use. The analysis in this IA uses the same assumption.

Energy efficiency actions taken – Under the preferred SECR framework companies would be required to report on energy efficiency actions taken during the period covered by reporting. Since this is a backward looking requirement (in that companies will not need to conduct any additional audit activities) no additional administrative burdens have been assumed as a result of its inclusion.

Intensity metric – It is proposed that organisations report an intensity metric based on information that has already been gathered, for example energy use per £m of turnover. The rationale for this requirement is that it will allow more meaningful comparisons of data across companies in the SECR framework. As the intensity metric is likely to be based on information that is already available, it is assumed that there are no additional administrative burdens from this requirement.

Additionally the preferred SECR framework includes a ‘comply or explain’ provision which is assumed to reduce the proportion of energy being reported by 5%. The methodology for discounting admin burdens due to this exemption is discussed in the next section. The impact of including this provision is to reduce average admin burdens per large organisation by approximately 2.3% (equivalent to £100).

Table 33 shows the average estimated burden of reporting information in addition to gas and electricity use, and after accounting for exemptions, under the preferred SECR framework. It builds upon the estimates in Table 32 using the approach outlined above.

Table 33 - Average administrative burdens associated with reporting additional information to CRC, 2017 prices

	First year administrative burden per large organisation
Reporting electricity and gas use only (from Table 32)	£3,800
<i>Adjustment for reporting transport energy use</i>	<i>+£1,000</i>
Total	£4,700
<i>Adjustment for ‘comply or explain’ exemptions</i>	<i>-£100</i>
Total (after exemptions)	£4,600

Source: EEP, ESOS IA. Figures may not sum due to rounding.

(c) Estimating average administrative burdens by organisation type

The Consultation Stage IA assumed a one-to-one relationship between admin burdens and energy in scope of reporting. Consultation feedback from stakeholders was that this was not appropriate and was underestimating the reduction in admin burdens for non-CRC companies from having less energy in scope. To improve on this assumption, evidence from the CRC Cost of Compliance Study (Appendix 2) was used to evaluate the relationship between energy use and compliance costs (emissions were used as a proxy for organisation energy use based on the available data). This analysis found the relationship between changes in emissions and changes in participant compliance costs to be stable at between 40-50%. Using this data an analytical assumption was made that there is on average a 0.45:1 relationship between admin burdens and energy in scope of reporting (i.e. a 10% reduction in energy in scope leads to a 4.5% reduction in admin burdens).

The above relationship is applied to all reductions in admin burdens due to lower energy in scope of reporting. This includes the 2.3% reduction in admin burdens due to 'comply or explain' detailed in (b) above (calculated by multiplying the 5% reduction in energy in scope by 0.45 to arrive at a 2.3% reduction in admin costs). The reduction in admin burdens for non-CRC companies discussed below also makes use of this relationship thereby improving on the estimates given in the Consultation Stage IA.

The data on administrative burdens in (a) and (b) are based on the CRC Cost of Compliance Survey. This may not be applicable to organisations not currently in scope of the CRC, who could have a different scale and pattern of energy use. Stakeholder feedback indicated that the burden of reporting would likely differ between organisations currently in and out of the CRC. This is because the latter are likely to have i) lower or less complex energy use, and ii) a greater proportion of energy use in scope of other policies such as CCAs or EU ETS.⁴⁸ The following paragraphs deal with these two factors in turn.

Administrative burdens for non-CRC participants are estimated to be 40% lower (£1,800 per organisation) than for CRC participants, using data from Annex D of the MGHG reporting IA. These estimates are used to calculate the difference in burdens for large organisations in the CRC versus large organisations outside the CRC (under the Companies Act 2006 definition of 'large', consistent with the rest of the analysis in this IA), reflecting the lower energy consumption and less complex energy use of non-CRC participants.

The analysis then adjusts the cost of reporting to take into account the proportion of energy used by organisations in the SECR framework which is already reported under CCAs and the EU ETS, and therefore is likely to not require gathering again in the SECR framework. CRC participant data and the ND-NEED framework were used to estimate that approximately 68% of total energy use in CRC organisations is not reported under CCAs and the EU ETS, so organisations would be required to gather data on this energy use.

These data were also used to estimate that only 24% of total energy use in large organisations not currently in the CRC would be in scope of the SECR framework, with a much larger proportion of energy use already reported under CCAs and EU ETS. Thus large organisations not currently in the CRC are required to report on approximately 65% less of their energy use compared to organisations in the CRC. Following the assumed 0.45:1 relationship between administrative costs and reported energy use described above, the estimated burden of reporting is reduced by 29% for non-CRC organisations (equivalent to £800 per organisation).

The difference in the proportion of energy use covered by CCAs and EU ETS between the CRC and non-CRC populations is driven by the design of the CRC as a scheme which is intended to target large, non-energy intensive organisations. Eligibility for the CRC applies only to consumption which is not already covered by CCAs or EU ETS, ensuring most energy-intensive organisations are out of scope of the policy.

Stakeholders indicated in the 2016 workshops they expect the one-off costs of the new reporting scheme to be similar for both CRC and non-CRC organisations: both groups would have to put in place new systems to measure energy use. This finding is supported by the Cost of Compliance survey. Average Year 1 administrative burdens of Phase 2 were approximately 4% lower for new participants, compared to

⁴⁸ This assumption is supported by the Cost of Compliance Survey, which found that administrative burdens increase as energy use and the number of meters increase

those already in the scheme in Phase 1. The analysis in this IA therefore includes no additional one-off costs for organisations not currently covered by the CRC.

Table 34 adjusts the estimated administrative burdens of CRC organisations in Table 32 to reflect different organisation types using the approach outlined above.

Table 34 - Average administrative burdens under the preferred SECR framework for CRC and non-CRC organisations, 2017 prices

	First year administrative burden per large organisation
CRC organisations (from Table 33)	£4,600
Adjustment due to lower energy use of non-CRC organisations	-£1,800
Adjustment from lower proportion of energy use in scope of reporting	-£800
Non-CRC organisations	£2,000

Sources: ND-NEED, CRC participant data. Figures may not sum due to rounding.

(d) Scaling up average administrative burdens to the population

The average administrative burdens per business are then scaled up by the total number of large organisations in each of the following groups:

- Companies currently in the CRC and in the scope of the preferred SECR framework;
- Companies not currently in the CRC.

As discussed above in Annex B an appropriate metric for comparing the CRC and ESOS populations is the number of individual large organisations. Analysis of policy overlaps also discussed in this Annex informed the assumption that 96% of CRC organisations would be in scope of the preferred SECR framework.

Table 35 gives total first year administrative burdens by organisation type.

Table 35 - Estimated administrative burdens under the preferred SECR framework by organisation types, 2017 prices

	First year burdens per organisation (from Table 33)	Number of individual large organisations	Total first year burdens
Companies in CRC	£4,600	3,800	£17.4m
Companies not in CRC	£2,000	7,600	£15.2m
Total	-	11,300	£32.5m

Source: the EA, ESOS IA, BEIS. Figures may not sum due to rounding.

(e) Deducting the administrative burdens from MGHG reporting

In addition to reporting on UK emissions, MGHG reporting also requires that all UK quoted companies report on the global emissions for which they are responsible in their annual reports. Under the preferred SECR framework it is proposed that the requirement for quoted companies to report on global GHG emissions is retained within the new reporting scheme, and that there is no separate MGHG reporting.

This means that quoted companies would still have to measure and report their international GHG emissions as before. Underlying energy use is proposed to be reported, but that would have had to be calculated to derive associated emissions. Therefore it is assumed that the administrative burden of reporting international emissions does not change for all options, and there is no additional burden from reporting underlying energy use. However, it is assumed that quoted companies would already be measuring and reporting their UK emissions and energy use for the purposes of the SECR framework, so

the administrative burdens relating to this activity are removed. These administrative burdens are taken directly from the MGHG IA⁴⁹, which are then subtracted from the figures in the right-hand column of Table 35 to estimate the net administrative cost of the preferred SECR framework.

Table 36 illustrates the impact of removing MGHG reporting on administrative burdens. This approach assumes that all companies reporting under MGHG would be in scope of the SECR framework – which matches consultation proposals to retain such reporting by UK quoted companies.

Table 36 – Estimated administrative burdens of the SECR framework (Option 3) and the removal of MGHG reporting, 2017 prices

	Total first year burdens	Average annual burdens
SECR framework only (from Table 35)	£32.5m	£21.3m
Removal of MGHG reporting	-£2.8m	-£2.8m
Total	£29.8m	£18.5m

Source: MGHG IA. Figures may not sum due to rounding.

Table 36 shows that the estimated average annual burden under the preferred SECR framework and after the impact of removing MGHG reporting is **£18.5m**.

⁴⁹ Note that the administrative burdens presented in the MGHG IA do not capture the cost of reporting international emissions.

Annex C – Energy use in scope

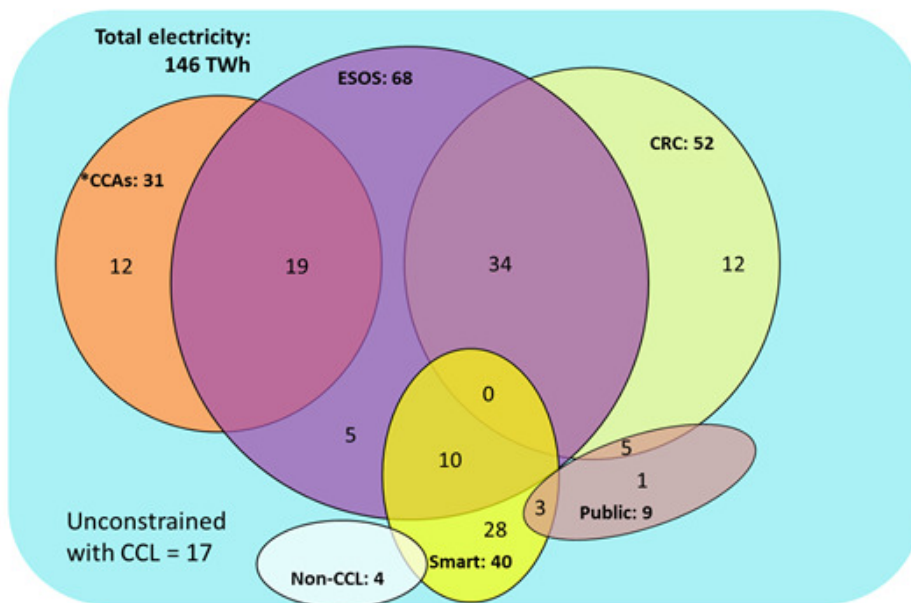
Business energy use

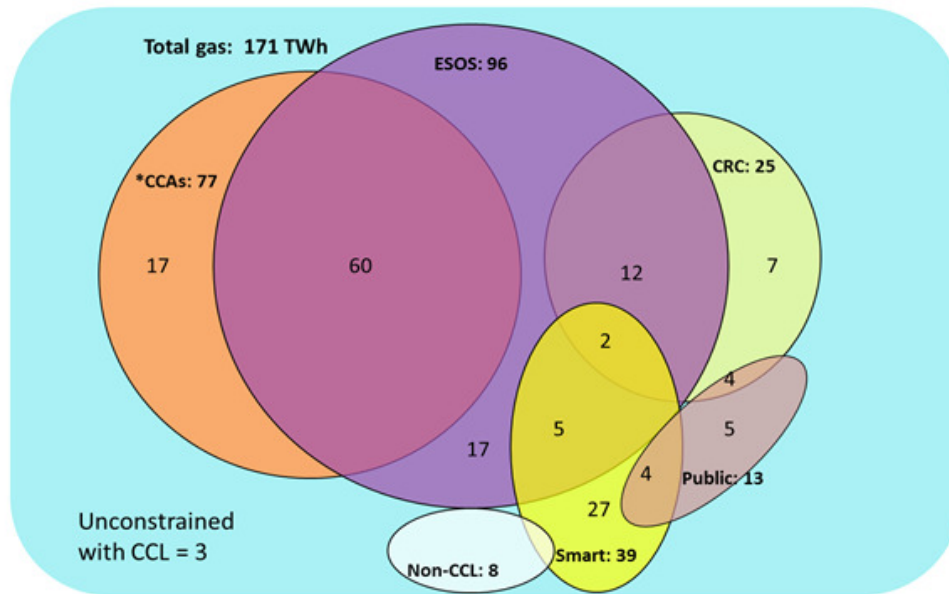
The analysis of large business energy use for the ESOS IA was based on high-level assumptions, which were partially informed by an early version of the non-domestic National Energy Efficiency Data Framework (ND-NEED). These assumptions were calibrated by comparing business estimates against data from BEIS business population statistics. To derive the split of energy use covered by different policies such as CCAs and the CRC, programme data from the various policies were used, where energy use was presented in primary energy equivalent terms.

Over the intervening period, ND-NEED has improved such that the sample data can be weighted to be representative of the population, and matched with Experian data to identify whether businesses are SMEs or non-SMEs. This means that final energy consumption data for electricity and gas from ND-NEED are now used as the main input in assessing large business energy use within this IA, and how this energy use is covered by different policies. However, it has been established that this approach underestimates large business energy use, as the Experian data do not fully aggregate some businesses, and therefore do not identify them as large. The impact of this issue on the final NPV is explored further in the sensitivity analysis.

The ND-NEED data are used in conjunction with programme data to estimate the final energy use covered by different policies. CRC registration data are used to identify meters in ND-NEED that are covered by the CRC and by CCAs, and the total energy use covered by CCAs is estimated based on CCA sector information and data on CCL receipts. Figure 9 shows the estimates of business energy use which are covered by ESOS, the CRC and CCAs. EU ETS energy use is assumed to be covered already by CCAs or in consumption by the fuel industry. The data from ND-NEED are only available for electricity and gas use in England and Wales in 2015, so they provide only a partial estimate of the energy in scope of large businesses. This analysis is therefore supplemented with data from EEP to provide projected energy use over time, and to provide coverage of energy use not captured by ND-NEED, such as use non-metered fuels, consumption from the fuel industry and UK-wide business energy use.

Figure 9 - Business electricity and gas use from ND-NEED split by ESOS, the CRC and CCAs, England & Wales 2015





*CCA energy consumption expressed here is an estimate of 'eligible facility' consumption that is eligible for the reduced rate of CCL

This is based on ND-NEED version 5 (2015).

Transport energy use

Transport energy use associated with large organisations is estimated using the same approach as taken in the ESOS final IA, and key data sources have been updated, such as total transport energy consumption. Further detail on this approach is provided in Annex E of the final ESOS IA, but it can be summarised as follows:

- Projections of transport energy consumption are taken from EEP;
- The amount of transport energy consumption attributable to business for each transport mode is then estimated, using DfT data such as the National Travel Survey⁵⁰ and Road Freight Statistics⁵¹;
- The amount of transport energy consumption attributable to large businesses for each transport mode is then estimated, using data from BEIS Business Population Estimates⁵² and illustrative assumptions (including that the Business Population Estimates 'large' population is a good proxy for the data for the ESOS 'large' population as considered in this IA, and so can also be used to estimate energy use for the CRC subset of that 'large' population).

⁵⁰ DfT, 2016, *National Travel Survey statistics*, <https://www.gov.uk/government/collections/national-travel-survey-statistics>

⁵¹ DfT, 2017, *Road freight statistics*, <https://www.gov.uk/government/collections/road-freight-domestic-and-international-statistics>

⁵² BEIS, 2017, *Business population estimates*, <https://www.gov.uk/government/collections/business-population-estimate>

Annex D – List of activities included in the SECR framework

This annex lists the activities required under the CRC and labels those in scope of the SECR framework. The costs associated with each of these activities were estimated using CRC participant data from the CRC Cost of Compliance survey. The costs of activities in scope are used to estimate the administrative burden of the SECR framework.

Two activities ('Undertaking internal quality assurance'; 'Internal auditing process') are assumed to be less burdensome in the SECR framework than under the CRC. Given that the information reported will not be used to determine the amount of allowances to be purchased, the level of validation under the SECR framework is assumed to be less rigorous than under the CRC. An illustrative assumption has been made that these costs would be half from that of the CRC under the SECR framework.

ONE-OFF COSTS	In scope of the SECR framework?
Time spent to understand the rules of CRC efficiently to understand whether within scope	No
Collect and collate energy to understand if within scope of CRC phase 2	No
Once determined in scope, time spent to understand fully rules of CRC phase 2 (including attending internal or external training, and accessing consultants)	Yes
Determining organisational boundaries and structure as at 31st March 2013: defining legal structure, parent entity and 'participant equivalent' units	No
Identify any exclusions as a result of CCA / EU ETS and non-policy factors	Yes
Identifying all the settled Half Hourly Meters for inclusion	No
Declare emissions in registration year (2013/14)	No
Any other time spent registering for Phase 2	Yes
Any costs of installing software and equipment for compliance with the CRC (this includes any meters and software)	Yes
Other one-off compliance activities not included above	Yes

ONGOING COSTS		In scope of the SECR framework?
On-going maintenance of monitoring and reporting systems		Yes
Collating energy supplies	Gather and collate energy consumption data from CRC meters	Yes
	Gather information on renewable energy supplies	Yes
	Understand and apply exclusions	Yes
Reporting	Preparing annual report according to CRC guidance	No
	Undertaking internal quality assurance	Yes (50%)
	Senior officer sign off	Yes
	Submission of report	Yes
Purchase and surrender of allowances	Deciding on overall approach in relation to forecast window (whether forecast sale and / or buy to comply sale)	No
	Order allowances from regulator.	No
	Payment for allowances	No
	Surrendering allowances	No
Record keeping and auditing	Adding record of supplies and other information in your evidence pack.	Yes
	Internal auditing process	Yes (50%)
	Engaging with external compliance auditing by the regulator	Yes
Notifying regulator of any changes	Administrative changes (e.g. new contact registration)	No
	Mergers, acquisitions, sales, termination of operation	No
	Any other notifications	No
Other annual compliance activities not included above		Yes
Voluntary activities: Costs incurred for activities that are not mandatory to fulfilling the requirement e.g. attendance at meetings		No