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MARK THROWER MANAGING EDITOR



SERIES 18 | MODULE 01 | ENERGY EFFICIENCY LEGISLATION

Keep up to date with legislation

By Owen Jones, senior consultant at JRP Solutions

Perhaps the most significant piece of legislation enacted in the UK in recent times has been the UK Climate Change Act (2008), later amended in 2019. Under the act the Government signed up to a legally binding target to be net zero by 2050 based on 1990 levels, becoming the first G7 economy to do so.

Additionally, the EU Energy efficiency Directives (2012) also set a target to reduce energy consumption by 20 per cent through efficiency measures by 2020.

Another very significant piece of legislation is the UK Energy Act (2013) which is concerned with decarbonisation and reforming the electricity markets particularly seeking security of supply as coal-fired power stations are taken offline - an action that has driven decarbonisation of the grid.

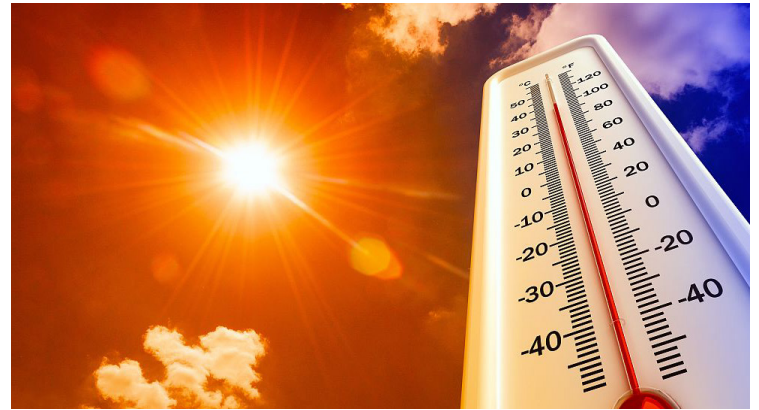
Along with other EU member states the UK signed the United Nations Committee on Climate Change's Paris Agreement committing to carbon reduction targets. This has also driven policy and the development of climate change adaptation plans.

From these pieces of primary legislation, a number of schemes have been developed in the UK to drive the following:

- greenhouse gas (GHG) emissions removal (all six listed in the Kyoto Protocol);
- increased renewable energy;
- increased energy efficiency;
- energy supply security; and
- innovation and economic competitiveness in energy.

These five dimensions underpin the myriad of schemes and programmes. This article will look at some of the significant schemes focusing on energy efficiency measures relevant to public, commercial, manufacturing and industrial property sectors that are the responsibility of the Business Energy and Industrial Strategy (BEIS) department.

The additional complication of



Brexit and the UK's exit from the EU will also be addressed.

The Climate Change Act 2008

led to the setting up of the Climate Change Committee who are responsible for national strategy and reporting and measuring GHGs. The aim of this act was to introduce a package of policies and measures to transition to a low-carbon economy and achieve targets. Measures are delivered through either regulation and/or economic impact. Positive action towards decarbonising and efficiency either saves or generates money, while negative action or poor performance in either goal incurs additional cost.

Some notable measures that have now ended but may be relevant are:

The Feed in Tariff scheme was a government programme designed to promote the uptake of renewable and low-carbon electricity generation technologies by giving a guaranteed quarterly cash payment for kWh generated. Although the scheme has now closed to new projects existing participants will continue to receive payments which vary depending on date of joining and renewable technology.

Renewable Obligation

Certificates (ROC) are certificates issued to operators of larger accredited renewable generating stations for the eligible renewable electricity generated. Operators could then trade ROCs with other

parties. ROCs are ultimately used by electricity suppliers to demonstrate that they have met their obligations on renewable electricity. The scheme closed to new projects on 31 March 2017.

The Enhance Capital Allowance (ECA) scheme encouraged investment by allowing companies to write down investment in equipment on the approved Energy Technology List in the first year of operation. This scheme ceased on the 1st April 2020.

The revenue saved by closing the scheme will fund the Industrial Energy Transformation Fund.

The Carbon Reduction Commitment (CRC) scheme came to an end on the 1st April 2019 and is no longer part of the UK energy efficiency legislation landscape. CCL rates were increased significantly to compensate for the loss in tax revenue.

Mandatory GHG Reporting was a requirement of the Climate Change Act 2008. All 'listed' companies are required to report on their GHG emissions in the company's directors' report section of the annual report. Mandatory GHG reporting was introduced in 2013 to enact this requirement. The aims were to provide information for investors and improve disclosure of environmental performance.

This has now been superseded in most cases by the more comprehensive Streamlined Energy

Carbon Reporting (SECR) legislation. Some public bodies are not covered by SECR and are required to reporting GHG emissions under other legislation or commitments. Current schemes include:

The European Union Emissions Trading Scheme (EU ETS) scheme is mandatory if your business has more than 20MW thermal capacity of combustion plant installed at a site. Sites in the scheme are given a free allocation of carbon allowances with the total number of allowances capped. If the site emits more than its allowance further allowances can be purchased from the market. Unused allowances can either be sold or kept for future years. Emissions need to be reported annually. Hospitals and small emitters can enter a simplified opt out scheme where they are given an emissions target and must pay a penalty if they exceed this target.

Due to Brexit the UK will exit the EU ETS and the Government is setting up a new UK ETS from January 2021. The allowances allocated will be 5 per cent below the UK's proposed phase IV EU ETS allowances to give a more ambitious target. The proposed UK ETS cost for carbon will be based on a similar cap and trade system with a transitional Auction Reserve Price (ARP) of £15/tonne CO₂. There will also be a Cost Containment Mechanism (CCM) to manage spikes in the carbon price. It is the Government's intention to link the new UK ETS to the EU ETS and trade emissions between the two schemes, but this will depend on Brexit negotiations.

The Climate Change Levy (CCL) is an energy tax that is levied on all non-domestic energy users on electricity, natural gas, LPG/propane, other qualifying liquid and solid fuels if their monthly consumption is higher than a de minimis figure (1,000kWh for electricity or 4,397kWh for natural gas). The rates of CCL are charged as pence per kWh used, via supplier invoicing. The rate of CCL charged depends on the type of utility and changes annually as shown in Table 1.

The Government's Energy Saving Opportunity Scheme (ESOS) was developed as a response to article 8 of the EU Energy Efficiency Directive and obligates all large organisations which either employ 250 or more people, or have an annual turnover in excess of €50m and an annual balance sheet total in excess of €43m. An ESOS Assessment is required which calculates the total

Table 1: CCL Main Rates

Taxable commodity	Rate from 1 April 2018	Rate from 1 April 2019	Rate from 1 April 2020	Rate from 1 April 2021
Electricity (£ per kilowatt hour (KWh))	0.00583	0.00847	0.00811	0.00775
Gas (£ per KWh)	0.00203	0.00339	0.00406	0.00465
LPG (£ per kilogram (kg))	0.01304	0.02175	0.02175	0.02175
Any other taxable commodity (£ per kg)	0.01591	0.02653	0.03174	0.03640

energy use for an organisation for a chosen 12-month qualification period, identifies significant uses of energy, identifies energy saving opportunities, appoints an approved Lead Assessor and submits compliance to the Environment Agency. Records of the exercise must be kept and signed off at Director level. Compliance may also be demonstrated to the EA by having ISO 50001 accreditation that covers the whole organisation. A representative sample of at least 90 per cent of the organisation's UK energy use must either be covered by ISO 50001, EPCs, Green Deal Assessments or compliant site energy audits. There is currently no requirement to implement any of the opportunities identified, however this may change in future years. Phase 2 of ESOS concluded on 5th Dec 2019 and the compliance cycle is repeated every four years. Site energy audits can be undertaken any time within the four years before the next compliance date.

Climate Change Agreements (CCA) were introduced in tandem with the CCL to assist high-energy-using companies in the UK maintain international competitiveness by offering reductions in CCL charges to firms that achieve emission reduction targets. CCA is a voluntary UK scheme which applies if a site or part of a site has an Integrated Pollution Prevention and Control (IPPC) permit or conducts one of the processes identified by the particular sector association. The benefit of being part of CCA is the reduction in CCL, which is applied to both electricity and gas

invoices, provided energy reduction targets specified in the agreement are met. For intensive energy users, having a CCA can reduce the CCL tax burden by hundreds of thousands of pounds a year.

A consultation was opened by the Government on the 16th April 2020 on the future of the CCA scheme. The primary aims of the consultation are to gain opinions on extending the current CCA scheme by two years, through the addition of a new Target Period 5, from 1 January 2021 to 31 December 2022 and extending certification for reduced rates of CCL for participants meeting obligations under the scheme to 31 March 2025 from 31 March 2023.

The consultation will also look to re-open the scheme to new entrants and applications are now being accepted with a deadline of 30th September 2020. However no final decision has yet been made. It is proposed for the new TP5 that the baseline for targets will be changed to 2018 from 2008, no banked surplus allowances will be carried over from TP4 and the buyout price will increase from £14/tCO₂ to £18/tCO₂ for over target emission.

The Government is looking at the possibility of a further phase of CCAs but is likely to significantly alter the qualification criteria, scheme operation and incentive levels.

Carbon Price Support (CPS) is a measure introduced to support the EU ETS price for carbon emissions and encourage investment in low emission power generation in the UK by increasing the cost of electricity generation from fossil fuels. The CPS

rates of CCL applies to electricity generation from fossil fuels where the installation has a generating capacity of 2.0MWe or more and is not good-quality CHP or standby generation. For export electricity generation, only the CPS rate is paid by the generating company on the fuel input and the main CCL rate for electricity is charged to the end user. For non-export generation both the CPS and main rates must be paid by the generating site.

Combined Heat and Power Quality Assurance (CHPQA) is a scheme relevant only to sites that have a combined heat and power engine installed. This is a voluntary scheme which rewards efficient, good-quality CHP by allowing participants to claim CCL exemption and allowed ECA claims when still available. Annual submissions are made to the CHPQA on the quantities of fuel used, electricity generated and heat used. From this data two parameters are calculated, the power efficiency and the quality index (QI). If the power efficiency is above a target, typically 20 per cent, and if the QI is above its target, typically above 100, then the CHP is deemed to be good quality and the CHP is exempt from all CCL payments on incoming fuel and electricity generated. If the power efficiency is below target, then a proportion of the CCL on the incoming fuel must be paid. If the QI is less than the target, then CCL must be paid on a proportion of the electricity generated and if over 2.0MWe some CPS will also need to be paid on the fuel input. To maintain accuracy

Table 2: CCL Discount for CCA Holders

Taxable commodity	Rate from 1 April 2018	Rate from 1 April 2019	Rate from 1 April 2020	Rate from 1 April 2021
Electricity	90%	93%	92%	92%
Gas	65%	78%	81%	83%
LPG	65%	78%	77%	77%
Any other taxable commodity	65%	78%	81%	83%

levels the associated metering must be regularly calibrated otherwise accuracy correction factors are applied to the meter outputs. The CHPQA will issue a certificate at the end of June each year confirming the performance of the installation in the previous year. Once the certificate is issued operators should reconcile the CCL payments for the previous year and reclaim/pay any over or under payments.

The Renewable Heat Incentive (RHI) encourages private households, communities, and businesses to install renewable energy technologies for heating purposes, through financial support.

There are two types of RHI schemes: domestic and non-domestic. The types of renewable heating systems are eligible for the non-domestic RHI scheme are solid biomass, heat pumps (air, ground and water sourced), geothermal, solar thermal and biogas.

Eligible installations receive quarterly payments over 20 years based on the amount of heat generated. Rates depend on the type, capacity and commissioning date of the installation.

However, the Government recently announced that it is set to replace the Renewable Heat Incentive with the Clean Heat Grant.

Last month it confirmed that the non-domestic RHI is to close to new applicants on 31 March 2021. However, the RHI for households is not going to close to new applicants until 31 March 2022.

The Clean Heat Grant replaces the RHI's tariff-based support in favour of a £4,000 grant, set at a flat rate over scaling with system size or changing across technology types.

Funding for the Clean Heat Grant has been committed for two years to March 2024, after which the scheme will close to new applications. Energy Performance Certificates (EPC) are intended to inform potential buyers or tenants about the energy performance of a building, so they can consider energy efficiency as part of their investment or business decision. Only buildings with a floor area greater than 50m² that is being sold or rented out or for a new construction qualify.

The certificate provides an energy rating of the building from A (Good) to G (Poor). The better the rating, the more energy efficient the building.

Display Energy Certificates (DEC) provide an energy rating of the

building from A (Good) to G (Poor) are based on the actual amount of metered energy used by the building over the last 12 months. A DEC and advisory report are required for buildings with a total useful floor area over 250m² that are occupied in whole or part by public authorities and frequently visited by the public and must be renewed annually for larger buildings.

DECs must be displayed in a prominent place visible to the public and have a valid advisory report. This report contains recommendations for improving the energy performance of the building.

The Streamlined Energy and Carbon Reporting (SECR) framework came into effect in April 2019 and coincides with the closure of the CRC Energy Efficiency Scheme.

The legislation affects quoted companies, large unquoted companies and large limited liability partnerships (LLP) based on turnover, balance sheet and number of employees criteria, similar to ESOS. Businesses using less than 40MWh/year are exempt from reporting.

An annual director level report has to be compiled detailing energy use, carbon emissions, performance to targets, descriptions of actions taken and planned actions to reduce carbon emissions.

Energy use that must be covered in the required annual reporting is both scope 1 (primary fuels consumed directly, such as natural gas) and scope 2 (Imported energy such as electricity of heat) to include transport. Scope 3 emissions are not a requirement. Energy data and carbon emissions must be reported alongside a performance metric e.g. production per kWh and a high-level description of energy efficiency actions needs to be included in the annual report.

The Industrial Energy Transformation Fund (IETF) is intended to help businesses with high energy use to cut their energy bills and carbon emissions through investing in energy efficiency and low-carbon technologies. The fund has been under consultation, the results of which are due to be published soon. It is hoped the scheme builds on opportunities identified through ESOS and SECR and grants will be awarded to help fund both preliminary investigation and design work as well as purchasing and installation of equipment. The aim is to launch the first phase of the £315m fund in summer 2020.

The Industrial Heat Recovery Support (IHRS) programme encourages and supports investment in heat recovery technologies. Businesses are helped to identify and invest in opportunities for recovering and reusing heat that would otherwise be wasted. The programme runs until March 2022.

Funding (from a total pot of £18m) is allocated through a competitive process. The next deadline for applying is 31 July 2020.

Industrial Strategy Clusters Mission focuses on industrial areas of high concentration of industrial activity. The six clusters with the largest carbon emissions in the UK are Humberside, south Wales, Grangemouth, Teesside, Merseyside and Southampton.

The Government's mission is to establish the world's first net-zero carbon industrial cluster by 2040 and at least one low-carbon cluster by 2030. The mission is backed by £170m public investment through the Industrial Strategy Challenge Fund.

Collaborations of organisations have been able to apply for grant funding, via Innovate UK, to help develop and implement

decarbonisation of industrial clusters in the UK via either creating roadmap plans for industrial clusters or deployment of carbon reduction strategies and technology. The current application process is now closed. However, depending on the outcome of the phase 1 planning stage, further funding opportunities may become available.

All measures past and present including amendments are listed in the UK'S draft integrated National Energy and Climate Plan (NECP) which has been published by BEIS in the wake of Brexit.

An Energy White Paper is planned for publication this summer (2020) and is intended to set out a new approach to energy policy driving forward measures to reduce costs across the system through a greater role for markets, more agile and flexible regulation, a new framework for strategic intervention and a commitment to ensure system cost are distributed in a fair way.

Further reading

- https://ec.europa.eu/energy/topics/energy-efficiency/targets-directive-and-rules/energy-efficiency-directive_en
- <http://www.legislation.gov.uk/ukpga/2008/27/contents>
- <http://www.legislation.gov.uk/ukpga/2016/20/contents/enacted>
- <https://www.gov.uk/government/collections/energy-act>
- <https://www.gov.uk/guidance/energy-savings-opportunity-scheme-esos>
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/803086/industrial-clusters-mission-infographic-2019.pdf
- <https://apply-for-innovation-funding.service.gov.uk/competition/498/overview#summary>
- <https://www.gov.uk/guidance/industrial-heat-recovery-support-programme-how-to-apply>
- <https://www.ofgem.gov.uk/environmental-programmes/fit/about-fit-scheme>
- <https://www.ofgem.gov.uk/environmental-programmes/non-domestic-rhi>
- <https://www.gov.uk/government/collections/energy-performance-certificates>
- <https://www.gov.uk/government/publications/display-energy-certificates-and-advisory-reports-for-public-buildings>
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/585344/greening-government-commitments-overview-reporting-requirements-2016-2020.pdf
- <https://www.gov.uk/guidance/industrial-energy-transformation-fund>
- https://www.ofgem.gov.uk/system/files/docs/2020/03/non-domestic_rhi_tariff_table_q1_2020-21_corrected.xlsx
- <https://www.gov.uk/guidance/participating-in-the-eu-ets>
- <https://www.gov.uk/government/publications/climate-change-agreements-operations-manual-2>
- <https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>
- <https://www.gov.uk/government/publications/uk-national-energy-and-climate-plan-necp>

Table 3: CCL CPS Rates

Carbon Price Support rate commodity	Gas	Petroleum gas or other gaseous hydrocarbon in a liquid state	Coal and other solid fossil fuels
Unit	£ per kilowatt hour (kWh)	£ per kilogram (kg)	£ per gigajoule (GJ) on gross calorific value (GCV)
1 April 2015 to 31 March 2016	0.00334	0.05307	1.56860
1 April 2016 to 31 March 2021	0.00331	0.05280	1.54790

ENERGY EFFICIENCY LEGISLATION

Please mark your answers below by placing a cross in the box. Don't forget that some questions might have more than one correct answer. You may find it helpful to mark the answers in pencil first before filling in the final answers in ink. Once you have completed the answer sheet, return it to the address below. Photocopies are acceptable.

QUESTIONS

- 1) In 2019 the UK Government signed up to a legally binding target to be net zero by?
 - 2030 2040 2050 2060
- 2) For ESOS, a representative sample of what percentage of the organisation's energy consumption needs to be covered by assessments or ISO 50001?
 - 70% 80% 90% 100%
- 3) How often is the ESOS reporting cycle repeated?
 - Every Year 2 years
 - 4 years 10 years
- 4) For ESOS how many of the identified opportunities must you implement?
 - None
 - All
 - 50 per cent
 - Only those with a payback less than 3 years
- 5) What type of organisation may still need to undertake GHG reporting rather than comply with SECR?
 - Retail Outlets
 - Public bodies
 - Hotels and Restaurants
 - Heavy industry
- 6) Why were CCL rates significantly increased on the 1st April 2019?
 - To offset lost revenue from closure of the CRC
 - To pay for more wind turbines
- To invest in energy efficiency in 3rd world countries
- To fund energy efficiency in industrial clusters
- 7) Which of the following schemes is still open to new applicants?
 - FIT ECA ROC RHI
- 8) What is the thermal capacity threshold for combustion plant at which a site needs to comply with EU ETS regulations?
 - 2 MW
 - 10 MW
 - 20 MW
 - 20 kW
- 9) What is the de minimis for charging of CCL on electricity invoices?
 - 500 kWh
 - 1,000 kWh
 - 4,397 kWh
 - 10 MWh
- 10) For DEC's what two things must a qualifying building operator do?
 - Display the certificate in a prominent location and have a valid advisory report
 - Renew the certificate every six months and Display the certificate in a prominent location
 - Display the certificate in a prominent location and renew the certificate every two years
 - Have a valid advisory report & Renew the certificate every two years

Please complete your details below in block capitals

Name (Mr. Mrs, Ms)

Business

Business Address

.....

..... Post Code

.....

email address

Tel No.

Completed answers should be mailed to:
The Education Department, Energy in Buildings & Industry, P.O. Box 825, GUILDFORD, GU4 8WQ. Or scan and e-mail to editor@eibi.co.uk. All modules will then be supplied to the Energy Institute for marking

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This is the first module in the eighteenth series and focuses on Energy Efficiency Legislation. It is accompanied by a set of multiple-choice questions.

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SERIES 17

MAY 2019 - APR 2020

- 1 Batteries & Storage
- 2 Energy as a Service
- 3 Water Management
- 4 Demand Side Response
- 5 Drives & Motors
- 6 Blockchain Technology
- 7 Compressed Air
- 8 Energy Purchasing
- 9 Space Heating
- 10 Data Centre Management

SERIES 18

MAY / JUNE 2020 - MAY 2021

- 1 Energy Efficiency Legislation
- 2 Building Controls*
- 3 Smart Grids*
- 4 Lighting Technology*
- 5 Heat Pumps*
- 6 Metering & Monitoring*
- 7 Air Conditioning*
- 8 Boilers & Burners*
- 9 Behaviour Change*
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