

Think Energy, Let's Save it Together.

Climate Change Levy (CCL)

A multi-sector analysis of the cost difference of CCL rates 2018 – 2022

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Foreword

Being in the Climate Change Taxation and CHP sector for over 25 years, I have seen the landscape slowly change. We see plenty of schemes come and go, but the one that stays is Climate Change Levy.

Both climate change taxation and CHP will be around for the foreseeable future. As future increases of CCL will bring significant revenues into the Treasury, the viability of CHP increases.

Since 2005, CCL has increased based on average RPI and from April will be standing at the 2019 rates of £0.00339 per kWh for gas and £0.00847 for electricity. This equates to about 20% of the average organisational energy cost - a very significant figure when looking at a balance sheet, and it's only set to increase.



Andrew Gardner, Managing Director, 2EA®



Though this country is taking the right steps regarding developing renewables and promoting self-generation, energy costs will continue to rise for the foreseeable future, even without CCL. But with CCL, the effects on a businesses' P&Ls will have an even more critical impact.

That is why it is important now, more than ever, to sit down with your financial departments and categorise your energy costs within your budgets, then identify and take steps towards reducing these costs.

By tackling energy costs, we will move beyond the short-termism that we see today and be able to invest in a more sustainable future.

Sebastian Gray, Director, 2EA®

Executive Summary

Climate Change Levy (CCL) has been around since 2001. The Carbon Reduction Commitment (CRC) has been around, on a mandatory level, since 2007. However, the government announced in 2016 that it was abolishing the CRC.

With this loss of revenue, the government decided to increase the rates of CCL every year up to 2019. Compared to previous years, 2019 will see the largest increase in CCL to date, affecting every business that does not have an exemption, CHP scheme or self-generation.

This, in effect, is an increase of around 51% for most sectors on the cost of their CCL from 2018/2019 to 2019/2020. In short, the cost of commercial energy bills will increase significantly.

The CCL rates for 2020, 2021 and 2022 were announced in the Chancellors autumn budget 2018.

Within this paper we have looked at seven (7) key sectors, in both private and public that play a crucial economic role within the UK. These include hotels, supermarket, leisure centres, hospitals, offices, schools and GP practices.

Using actual energy consumption figures from these seven areas, we have analysed and outlined the cost difference between paying CCL for the next 4 years. This includes 2018/2019, 2019/2020, 2020/2021, 2021/2022.

The overall trend across these sectors is that there is an average increase in CCL costs, per site, for 2019/2020 of 51%. This means that commercial energy bills will increase by 4% purely on CCL costs.

This does not consider the potential likelihood of energy prices increasing and or changes in energy demand. Although we have assumed for this paper that energy use will remain roughly the same as it was in 2018/2019.

Chapter One: Overview of Climate Change Levy

What is Climate Change Levy?

Climate Change Levy (CCL) was introduced in 2001 under the Finance Act 2000 for non-domestic organisations. It was initially offset by a reduction in National Insurance contributions for businesses and was launched to encourage them to operate in a more environmentally friendly way.

CCL is applied to electricity, gas, liquid petroleum gas (LPG) and solid fuels. However, exemptions for supplies from certain renewable sources and Combined Heat and Power (CHP) may be applicable.

How Does Climate Change Levy work?

CCL appears on non-domestic electricity and gas bills as CCL. It is applied at the time of supply and is charged on the energy used.

CCL is calculated based on the amount of energy being supplied and is charged by the supplier of the taxable commodity. Suppliers then pay the collected tax to HM Revenue and Customs.

CCL is often shown as a separate line item on energy bills (usually above the VAT line) and is also VAT chargeable. It is charged at a flat rate on every kilowatt-hour (kWh) of energy used.

Who Does Climate Change Levy Apply to?

CCL applies to all businesses or non-domestic consumers of energy from fossil fuels.

CCL applies to businesses in the following sectors:

- Industry
- Commercial
- Agricultural
- Public Services.

Businesses with very low energy consumption are considered to be exempt from the levy. The majority of charities and non-profit organisations also qualify for automatic exemption.

What Exemptions or Reliefs Apply to CCL?

Some exemptions or reliefs apply to CCL, including:

- CHP Schemes
- Climate Change Agreements (CCA)

CHP Schemes:

By installing and operating a CHP unit, a business can apply for CCL relief on the gas used by the CHP unit by being registered with the Department of Business, Energy & Industrial Strategy (BEIS) CHP Quality Assurance (CHPQA) Programme.

Climate Change Agreements (CCA):

A CCA is a voluntary contractual agreement between an organisation and the Environment Agency (EA). The organisation, usually an industrial company, agrees to report energy use against a target to the EA.

CCAs are a UK Government initiative having the objective of reducing industrial energy use and CO2 emissions. For those organisations involved at the time, the first reporting period was in 2002. In its current form, CCAs are to continue operating until 31st March 2023.

Legislation within the Finance Act 2000 made provision for a reduced rate of the levy for energy-intensive industries that have entered into a negotiated energy efficiency Climate Change Agreement (CCA).

The current reduced rates are:

• Electricity: 10%

• Natural Gas: 35%

• **LPG**: 35%

These rates will change from the 1st April 2019.

Summary

To put it simply, if a business reduces its energy consumption then it will pay less CCL. Businesses with climate change agreements or those operating CHP units are mostly exempt. Generated electricity from good quality CHP is also exempt, and this can lead to other incentives such as Feed in Tariffs (FIT) and Renewable Heat Incentive (RHI).

What are the Climate Change Levy Rates?

The rates for CCL change every year. These changes are normally announced during the budget(s).

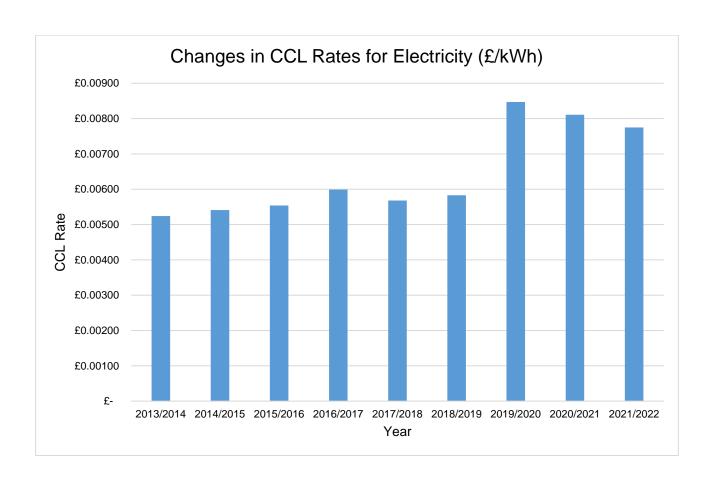
Taxable Commodity	Rate from 1st April 2017	Rate from 1st April 2018	Rate from 1 st April 2019
Electricity (£/kWh)	£0.00568	£0.00583	£0.00847
Gas (£/kWh)	£0.00198	£0.00203	£0.00339
LPG (£/kg)	£0.01272	£0.01304	£0.02175

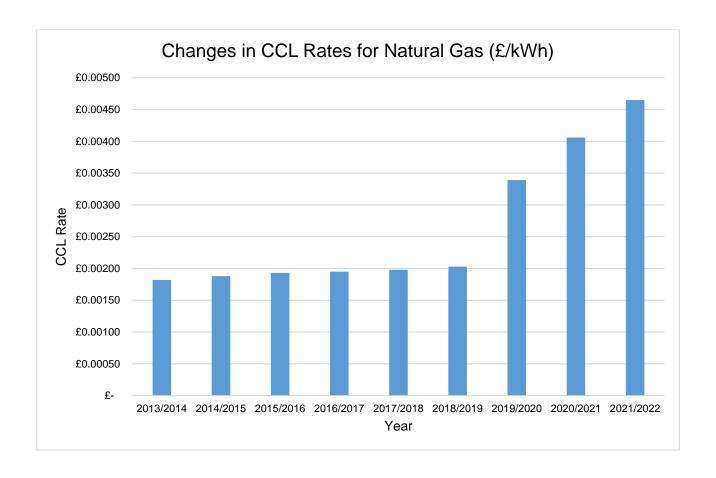
Taxable Commodity	Rate from 1st April 2020	Rate from 1st April 2021
Electricity (£/kWh)	£0.00811	£0.00775
Gas (£/kWh)	£0.00406	£0.00465
LPG (£/kg)	£0.01275	£0.01275

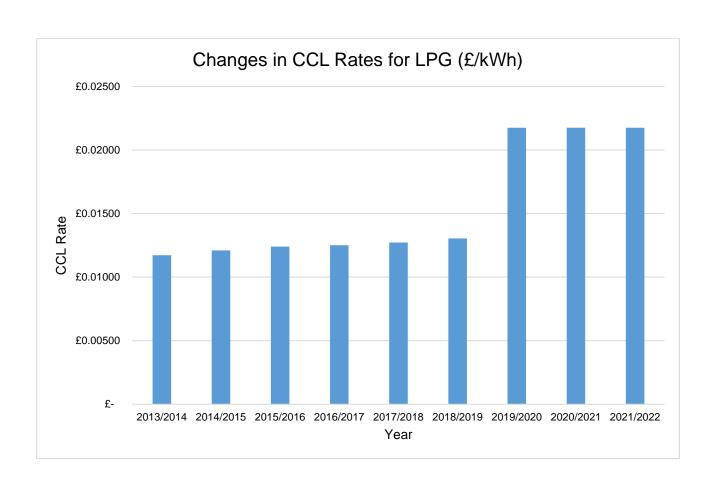
How have rates changed in the past five (5) years?

The rates for CCL increased each year by RPI:

Commodity	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Electricity	£0.00554	£0.00559	£0.00568	£0.00583	£0.00847	£0.00811	£0.00775
Gas	£0.00193	£0.00195	£0.00198	£0.00203	£0.00339	£0.00406	£0.00465
LPG	£0.01240	£0.01251	£0.01272	£0.01304	£0.02175	£0.01275	£0.01275







Chapter Two: Cost Analysis

Introduction

As CCL applies to an array of businesses across many sectors, we have provided calculations for seven key sectors within the United Kingdom. Each calculation covers the periods 2018/2019, 2019/2020, 2020/2021 & 2021/2022.

These calculations are based on actual energy consumptions from those sectors, with each calculation using the same consumption data.

- Hotels
- Supermarkets
- Leisure Centres
- Hospitals
- Office Blocks
- Schools
- GP Practices

It should be noted some schools, GP practices and some other businesses may not pay CCL due to low energy use. It must also be noted that energy prices and energy consumption of buildings may increase or decrease in the period and the calculations may not represent the sectors chosen.

CCL Charges

The chosen sectors have the following annual electricity and gas consumption; using the rates of CCL for 2018/2019 the CCL charges would be as follows:

	Annual Consu	mption (kWh)	CCL Rates -	2018/2019	CCL Payable - 2018/2019	
Sector	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas
Hotels	2,704,105	8,662,142	£0.00583	£0.00203	£15,764.93	£17,584.15
Supermarkets	3,791,180	947,795	£0.00583	£0.00203	£22,102.58	£1,924.02
Leisure Centres	919,970	1,683,655	£0.00583	£0.00203	£5,363.43	£3,417.82
Hospitals	11,595,555	7,020,269	£0.00583	£0.00203	£67,602.09	£14,251.15
Office Blocks	396,715	476,537	£0.00583	£0.00203	£2,312.85	£967.37
Schools	222,129	542,604	£0.00583	£0.00203	£1,295.01	£1,101.49
GP Practices	55,969	53,751	£0.00583	£0.00203	£326.30	£109.11

From the 1st April 2019 the rates of CCL are due to increase significantly; the effect on each sector (assuming that energy consumption remains the same) would be:

C. alam	Annual Consu	mption (kWh)	CCL Rates - 20	019/2020	CCL Payable - 2019/2020		
Sector	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas	
Hotels	2,704,105	8,662,142	£0.00847	£0.00339	£22,903.77	£29,364.66	
Supermarkets	3,791,180	947,795	£0.00847	£0.00339	£32,111.29	£3,213.03	
Leisure Centres	919,970	1,683,655	£0.00847	£0.00339	£7,792.15	£5,707.59	
Hospitals	11,595,555	7,020,269	£0.00847	£0.00339	£98,214.35	£23,798.71	
Office Blocks	396,715	476,537	£0.00847	£0.00339	£3,360.18	£1,615.46	
Schools	222,129	542,604	£0.00847	£0.00339	£1,881.43	£1,839.43	
GP Practices	55,969	53,751	£0.00847	£0.00339	£474.06	£182.22	

Comparing the differences in the CCL payable we are able to determine what the changes in the CCL rates will have on each of the sectors:

Sector	Total CCL Payable (2018/2019)	Total CCL Payable (2019/2020)	Difference	Percentage Increase
Hotels	£33,349.08	£52,268.43	£18,919.35	57%
Supermarkets	£24,026.60	£35,324.32	£11,297.72	47%
Leisure Centres	£8,781.24	£13,499.74	£4,718.50	54%
Hospitals	£81,853.23	£122,013.06	£40,159.83	49%
Office Blocks	£3,280.22	£4,975.64	£1,695.42	52%
Schools	£2,396.50	£3,720.86	£1,324.36	55%
GP Practices	£435.41	£656.28	£220.87	51%

From the cost analysis, across all sectors there is an average increase in CCL costs for the period of 2019/2020 of 51%; compared to CCL costs for 2018/2019.

We can see how significant the rate increase is on the costs of CCL to these 7 sectors. The following included are the years; 2019/2020, 2020/21 and 2021/2022.

Cantan	Annual Consumption (kWh)		CCL Rates - 2019/2020		CCL Payable - 2019/2020		
Sector	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas	Total CCL Payable
Hotels	2,704,105	8,662,142	£0.00847	£0.00339	£22,903.77	£29,364.66	£52,268.43
Supermarkets	3,791,180	947,795	£0.00847	£0.00339	£32,111.29	£3,213.03	£35,324.32
Leisure Centres	919,970	1,683,655	£0.00847	£0.00339	£7,792.15	£5,707.59	£13,499.74
Hospitals	11,595,555	7,020,269	£0.00847	£0.00339	£98,214.35	£23,798.71	£122,013.06
Office Blocks	396,715	476,537	£0.00847	£0.00339	£3,360.18	£1,615.46	£4,975.64
Schools	222,129	542,604	£0.00847	£0.00339	£1,881.43	£1,839.43	£3,720.86
GP Practices	55,969	53,751	£0.00847	£0.00339	£474.06	£182.22	£656.28

	Annual Consumption (kWh)		CCL Rates - 2020/2021		CCL Payable - 2020/2021		
Sector	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas	Total CCL Payable
Hotels	2,704,105	8,662,142	£0.00811	£0.00406	£21,930.29	£35,168.30	£57,098.59
Supermarkets	3,791,180	947,795	£0.00811	£0.00406	£30,746.47	£3,848.05	£34,594.52
Leisure Centres	919,970	1,683,655	£0.00811	£0.00406	£7,460.96	£6,835.64	£14,296.60
Hospitals	11,595,555	7,020,269	£0.00811	£0.00406	£94,039.95	£28,502.29	£122,542.24
Office Blocks	396,715	476,537	£0.00811	£0.00406	£3,217.36	£1,934.74	£5,152.10
Schools	222,129	542,604	£0.00811	£0.00406	£1,801.47	£2,202.97	£4,004.44
GP Practices	55,969	53,751	£0.00811	£0.00406	£453.91	£218.23	£672.14

Castan	Annual Con	Annual Consumption (kWh)		CCL Rates - 2021/2022		CCL Payable - 2021/2022	
Sector	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas	Total CCL Payable
Hotels	2,704,105	8,662,142	£0.00775	£0.00465	£20,956.81	£40,278.96	£61,235.77
Supermarkets	3,791,180	947,795	£0.00775	£0.00465	£29,381.65	£4,407.25	£33,788.89
Leisure Centres	919,970	1,683,655	£0.00775	£0.00465	£7,129.77	£7,829.00	£14,958.76
Hospitals	11,595,555	7,020,269	£0.00775	£0.00465	£89,865.55	£32,644.25	£122,509.80
Office Blocks	396,715	476,537	£0.00775	£0.00465	£3,074.54	£2,215.90	£5,290.44
Schools	222,129	542,604	£0.00775	£0.00465	£1,721.50	£2,523.11	£4,244.61
GP Practices	55,969	53,751	£0.00775	£0.00465	£433.76	£249.94	£683.70

Sector	2018/2019	2019/2020	2020/2021	2021/2022
Hotels	£33,349.08	£52,268.43	£57,098.59	£61,235.77
Supermarkets	£24,026.60	£35,324.32	£34,594.52	£33,788.89
Leisure Centres	£8,781.24	£13,499.74	£14,296.60	£14,958.76
Hospitals	£81,853.23	£122,013.06	£122,542.24	£122,509.80
Office Blocks	£3,280.22	£4,975.64	£5,152.10	£5,290.44
Schools	£2,396.50	£3,720.86	£4,004.44	£4,244.61
GP Practices	£435.41	£656.28	£672.14	£683.70

Chapter Three: Exemption and relief through CHP & CHPQA

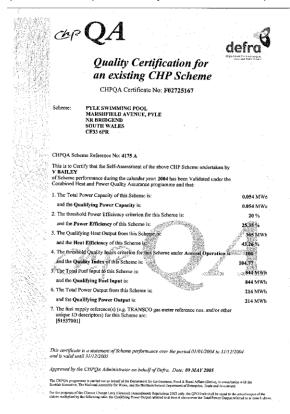
Introduction

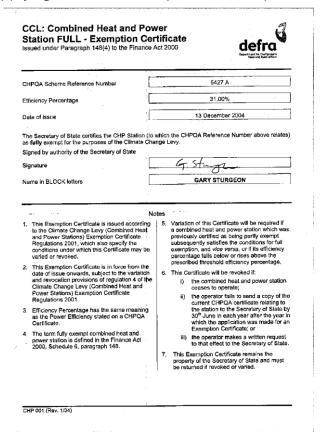
As outlined in chapter one, there are several exemption and relief schemes. The most common is through on-site self-generation which can be achieved through the installation of a CHP unit and registering it successfully with the governments' CHPQA Programme.

The CHPQA Programme was introduced at the same time as CCL in 2001 and, like most government programmes, has developed tighter rules to ensure the programme works to its best abilities.

The CHP Quality Assurance programme (CHPQA) is a government initiative that aims to provide a method for assessing all types and sizes of Combined Heat & Power (CHP) schemes throughout the UK. Participation in the scheme is voluntary, however, successful CHPQA certification grants eligibility to a range of benefits, including; Renewable Obligation Certificates, Renewable Heat Incentive, Enhanced Capital Allowances and preferential Business Rates.

Those operating CHP units could (and still can) obtain an exemption from CCL on the gas used by the CHP scheme by registering with the CHPQA programme. However, HMRC mandated the requirement that annual reconciliation should be carried out. This entails determining the CCL paid in the previous year and retrospectively applying an actual exemption based upon an





issued CHPQA certificate.

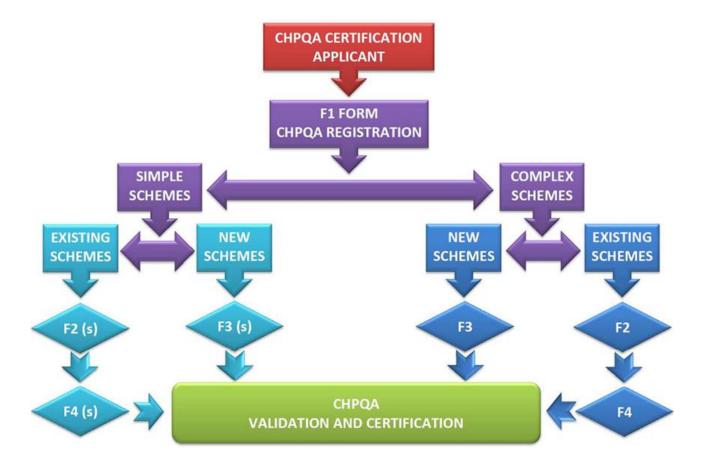
CHP Submission Process

CHP schemes that are fully or partially certified as "Good Quality CHP" under the Combined Heat and Power Quality Assurance (CHPQA) programme, and have obtained a Secretary of State (CHP) Exemption Certificate are exempt from the rates of CCL on the fuel they use.

To obtain a CHPQA certificate, a number of self-assessments steps need to be followed by the responsible person. The first step is to fill out a CHPQA registration form (Form F1). Following this, the scheme administrator will notify the responsible person of their unique registration number as well as provide them with a username and password to access the online electronic submission portal.

The responsible person can now complete the self-assessment submission forms, the route depending on whether it is a 'Simple' or 'Complex' scheme.

These schemes are outlined below:



Simple Scheme Submission

A scheme is identified as 'Simple' if it meets the following criteria:

- Generating capacity < 2MW_e
- Single reciprocating engine
- Single conventional fuel used
- No heat-only boiler present

If this is the case, and simple scheme submission applies, then the shortened versions of the CHPQA forms can be used, simplifying the application process.

New Applicants

As a new applicant for a simple scheme, form F3(s) must be completed:

Form F3(s)

This form is for assessment of schemes that are not yet operational and is used to provide technical details and anticipated performance based on design information prior to commissioning.

Existing Schemes

Once a scheme is commissioned and running, and sufficient operational data has been collected, then forms F2(s) and F4(s) must be completed:

Form F2(s)

This form is used to provide details of the CHP scheme, such as installed equipment capacity and type etc. (this form will only need resubmitting if changes have been made to the scheme).

Form F4(s)

If your scheme has at least one month of operational data, this form is used to provide details of the scheme's actual performance. You only need submit annual figures for:

- Hours run
- Electricity generated
- Fuel consumed
- Heat utilised

Complex Scheme Submission

When completing the assessment for a 'Complex' scheme, the sequence of forms is parallel to the simple scheme, only with more detail required.

A scheme is complex if it meets any of the following criteria:

- Generating capacity ≥ 2MW_e
- Prime mover not a single reciprocating engine
- Non-conventional fuel used
- Fired boiler(s) included within scheme boundary

New Applicants

If your scheme is still at the design stage, under construction or if you have insufficient operational data then you have to complete Form F3.

Form F3

This form is for the assessment of complex schemes that are not yet operational and should provide for the following information:

- Scheme Identification and Site Information
- Detailed Description of Proposed Scheme/Upgrade
- Scheme Performance for CHPQA
- Criteria for Good Quality CHP
- Calculation of CHP_{OPC}
- Calculation of CHP_{QPO} (Initial Operation)
- Exports details of Electricity and Heat
- Using CHPQA to Claim Renewables Obligation Certificates or Qualify for Contracts for Difference Support
- ROCs and CFDs CHPQPO calculation (Annual Operation)

The procedures are otherwise the same as for the simple scheme, outlined above.

Existing Schemes

If your scheme is already commissioned and running, with sufficient operational data (at least one month), then Forms F2 and F4 must be completed.

Form F2

This form is used to provide a description of the scheme. The complex scheme requires a list of all installed equipment (prime movers, boilers and their capacity, type and age etc.) and metering equipment that will be used to monitor the performance of the scheme. You will also need to provide a scheme schematic showing all the listed equipment and metering.

Form F4

This form is used to provide the details of actual performance. You need to submit the following monthly figures:

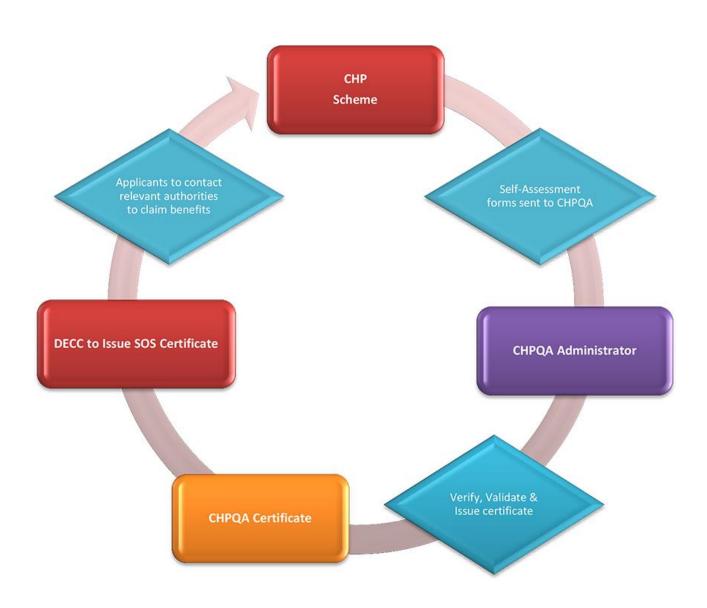
- Hours run
- Electricity generated
- Fuel consumed
- Heat utilised

You will also need to submit supporting documentation. This may include additional calculations necessary for determining the overall efficiency (the 'Quality Index') of the scheme.

Applying for CCL Exemption

Once a CHPQA certificate has been issued, there is the option to obtain or maintain your Secretary of State CHP Certificate (SOS certificate). A request should be made by completing the appropriate section at the end of the annual CHPQA self-assessment form.

The SOS certificate is then issued by the Department for Business, Energy & Industrial Strategy (BEIS) and gives you the legal entitlement to claim CCL exemption on good quality CHP fuel and electricity.



CCL Reconciliation

With receipt of the CHPQA certificate, you must now undertake annual CCL Reconciliation for HM Revenue & Customs (HMRC).

CCL Reconciliation Report: Example Leisure Centre							
MPR Number: 89	913714202						
Period Covered	Total Site Gas (kWh)	Billed CCL Discount (%)	CCL Payment Billed (£)	Actual CCL Discount (%)	CCL Payment Due (£)	Reconciliation Payment (£)	
January	488,687	50.00%	£471.58	65.09%	£329.26	-£142.32	
February	401,423	50.00%	£387.37	65.09%	£270.46	-£116.91	
March	466,319	50.00%	£450.00	65.09%	£314.19	-£135.81	
April	429,809	50.00%	£419.06	65.09%	£292.59	-£126.47	
May	387,563	50.00%	£377.87	65.09%	£263.83	-£114.04	
June	318,491	50.00%	£310.53	65.09%	£216.81	-£93.72	
July	272,429	50.00%	£265.62	65.09%	£185.45	-£80.17	
August	326,428	50.00%	£318.27	65.09%	£222.21	-£96.06	
September	340,530	50.00%	£332.02	65.09%	£231.81	-£100.21	
October	379,713	50.00%	£370.22	65.09%	£258.49	-£111.73	
November	435,939	50.00%	£425.04	65.09%	£296.76	-£128.28	
December	490,572	50.00%	£478.31	65.09%	£333.95	-£144.36	
Totals	4,737,903		£4,605.89		£3,215.83	-£1,390.06	
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This is a mandatory requirement and must be carried out within sixty (60) days from date of certification. Otherwise penalties can be imposed.

HMRC guidance states:

"On receipt of a new CHPQA certificate, and following its submission to DECC for Secretary of State Certificate purposes, you must review your PP11 Supplier Certificate and reconcile the amount of CCL relief claimed on taxable commodities used as fuel inputs against the actual performance of the station over the same period."

CCL Reconciliation for CHP operators falls into two categories: Gas Consumed by the CHP unit and Electricity Generated by the CHP unit.

Gas Consumed by the CHP unit

Your CCL exemption rate is based on the ratio between your Qualifying Fuel Input (QFI) against your total gas input. Your QFI is shown on your CHPQA certificate.

Your CCL exemption rate going forward is based on the previous year's CHP validated QFI and the ratio of total gas consumption. Simply put, your CCL exemption in 2016 would be based upon the ratio between the validated QFI and total gas consumption for 2015; likewise, your CCL exemption in 2018 will be based on the ratio of the validated QFI and total gas consumption for 2017.

This is where CCL reconciliation comes in; you have to review your actual performance and CCL exemption in 2017 against the predicted exemption rate (based on the 2016 figures) for the year.

So if in 2015 your PP10 calculation showed an exemption rate of say 60% for 2016, but upon receipt of your CHPQA certificate for the 2016 calendar year, your calculation showed an exemption of 50%; then there has been an underpayment of CCL. You were claiming a 60% exemption in 2016 but were only entitled to a 50% exemption and a repayment to HMRC of the difference is required.

Electricity Generated by the CHP unit

CCL reconciliation on CHP electricity is much easier to calculate, it is based on the difference (if any) between the schemes Total Power Output (TPO) and the Qualifying Power Output (QPO); both of these are shown on your CHPQA certificate.

The amount owed is calculated by subtracting the QPO from the TPO and multiplying the difference by the relevant rate of CCL for electricity. If there is no difference then there is no liability.

As there are no means to make a self-declaration for CCL reconciliation on electricity, the CHP operator would be required to register to pay CCL using HMRC form CCL1 and after that complete quarterly returns.

Summary

There has never been a more important time to look at your energy costs and the role that CCL plays within them. By reducing your energy consumption, you will reduce your CCL liability.

Businesses with climate change agreements or those operating CHP units can reduce this liability further, so although a climate change agreement may not be accessible to all, the installation of a CHP unit should be considered as soon as practicable.



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