



Department  
of Energy &  
Climate Change



# **CHP Benefits and Support Mechanisms**

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# Talk Coverage - Fiscal Measures & GQCHP

## Existing measures:

- CCL Exemption (on fuel input and electricity output where directly supplied)
- Carbon Reduction Commitment (CRC)
- Business Rates Exemption (embedded schemes)
- Hydrocarbon Oil Duty Relief
- Enhanced Capital Allowance
- 1ROC/MWh of electricity from EfW GQCHP,
- 2 ROCs/MWh for dedicated biomass GQCHP (April 2009)
- Carbon Price Support (CPS):
  - Exempting GQCHP (> 2 MWe) from CPS on fuel for heat
  - Complete exemption for GQCHP with installed capacity 2MW and below.

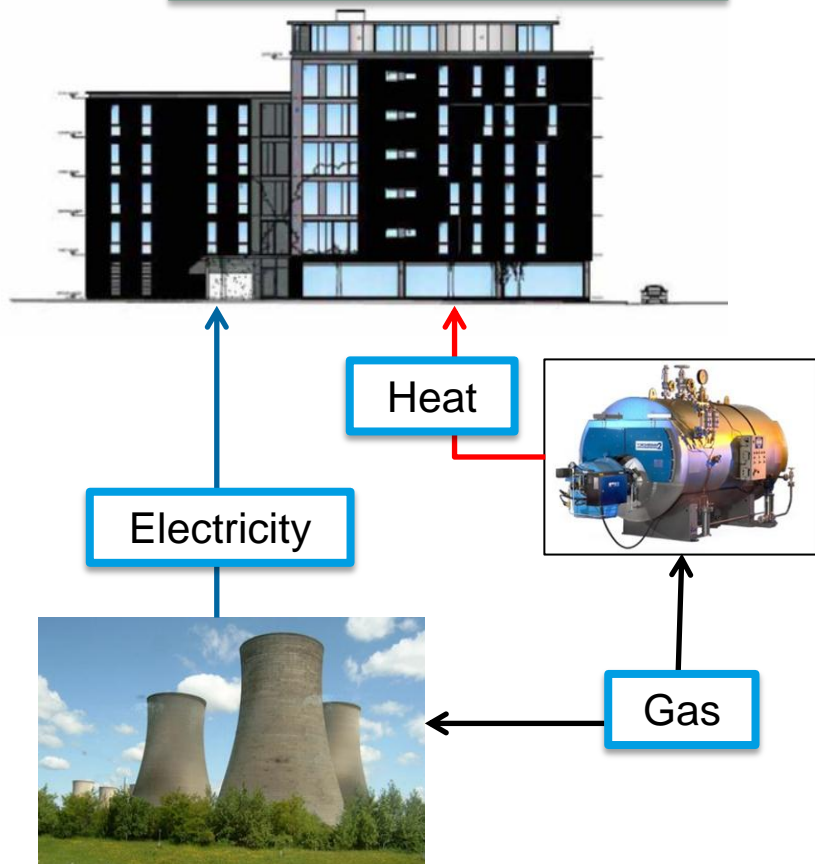
## New measures:

- Renewable Heat Incentive (RHI) ..... 4.1 p/kWh of heat for Biomass fuelled GQCHP
- Contract for Difference (CfD).... Strike price for Biomass GQCHP is set at £125/MWh + RHI tariff



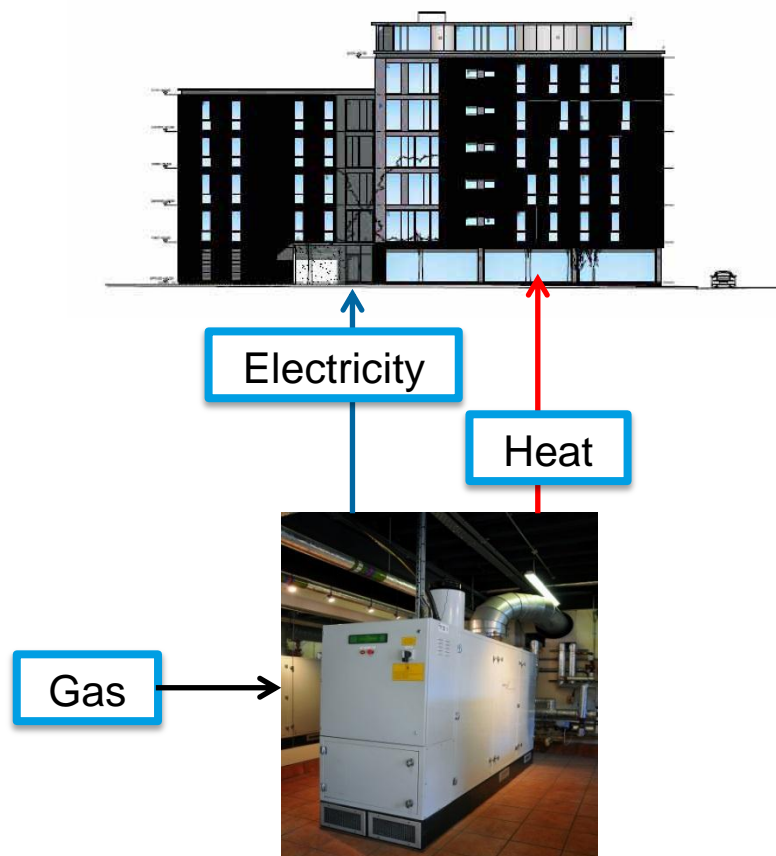
# CCL benefit for GQCHP

## Conventional Methods



- CCL on Electricity Consumed
- CCL on fuel to Boiler

## CHP



- NO CCL on Electricity Consumed
- NO CCL on fuel to CHP



# Climate Change Levy Rates

Commodity	Rate from 1 April 2013	Rate from 1 April 2014
Electricity	0.524 pence per KWh	0.541 pence per KWh
Gas	0.182 pence per KWh	0.188 pence per KWh

- For GQCHP no CCL on fuel used and electricity generated and consumed on site
- In addition reduces the VAT liability



# CRC Energy Efficiency Scheme (CRC)

- Captures emissions not covered by existing measures such as EU ETS and CCAs
- A mandatory CO<sub>2</sub> emissions trading scheme affecting large non-energy intensive businesses and public sector **organisations**

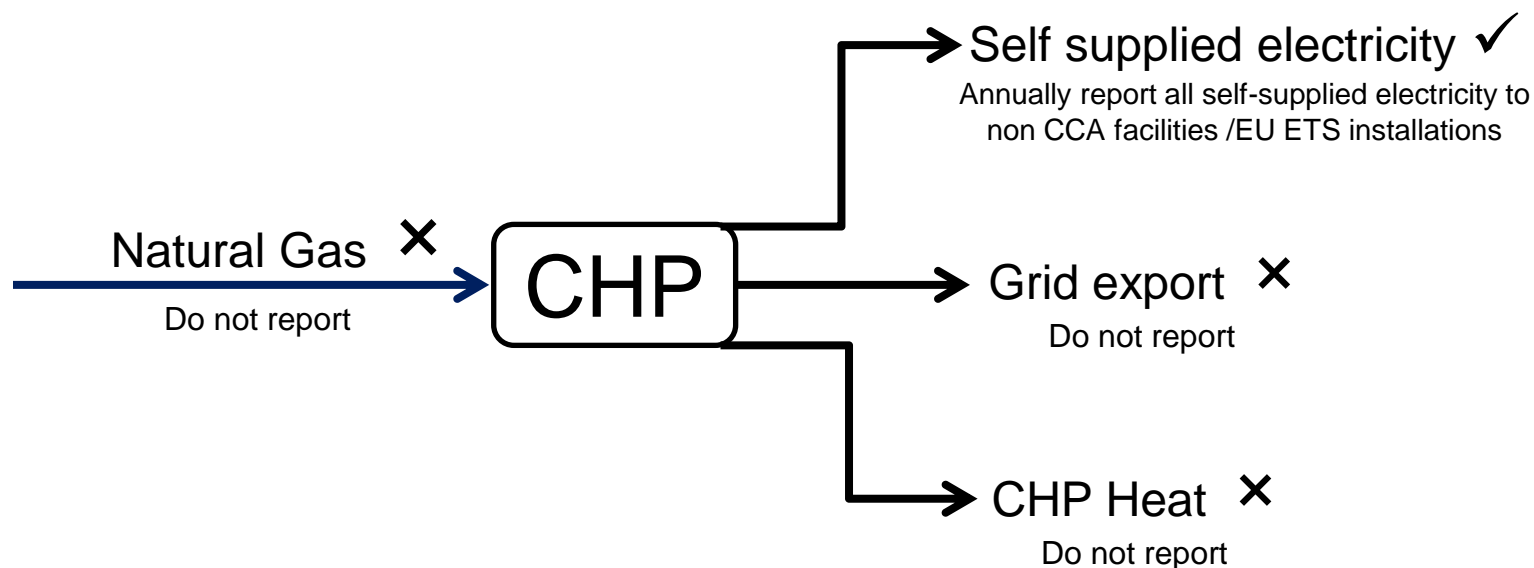


# When did CRC begin & who is included?

- Began in April 2010
- Applicable to **organisations** with total electricity consumption > 6,000 MWh/y (based on half hourly meters). Averaging at about 1 – 2 MW<sub>e</sub> electricity demand
- Simplified arrangements from 2012-2013 onwards.



# Current simplified arrangements



- **CHP at EU-ETS or CCA installations.... Is out of CRC**
  - *(electricity supplied to on-site activities outside of the CCA/EU-ETS boundaries will have to be reported)*
- **CHP at non-ETS/CCA ... Only electricity used on site to be reported**
- **Makes it very simple but still fair**
- **Incentivising higher electrical efficiency and heat recovery**



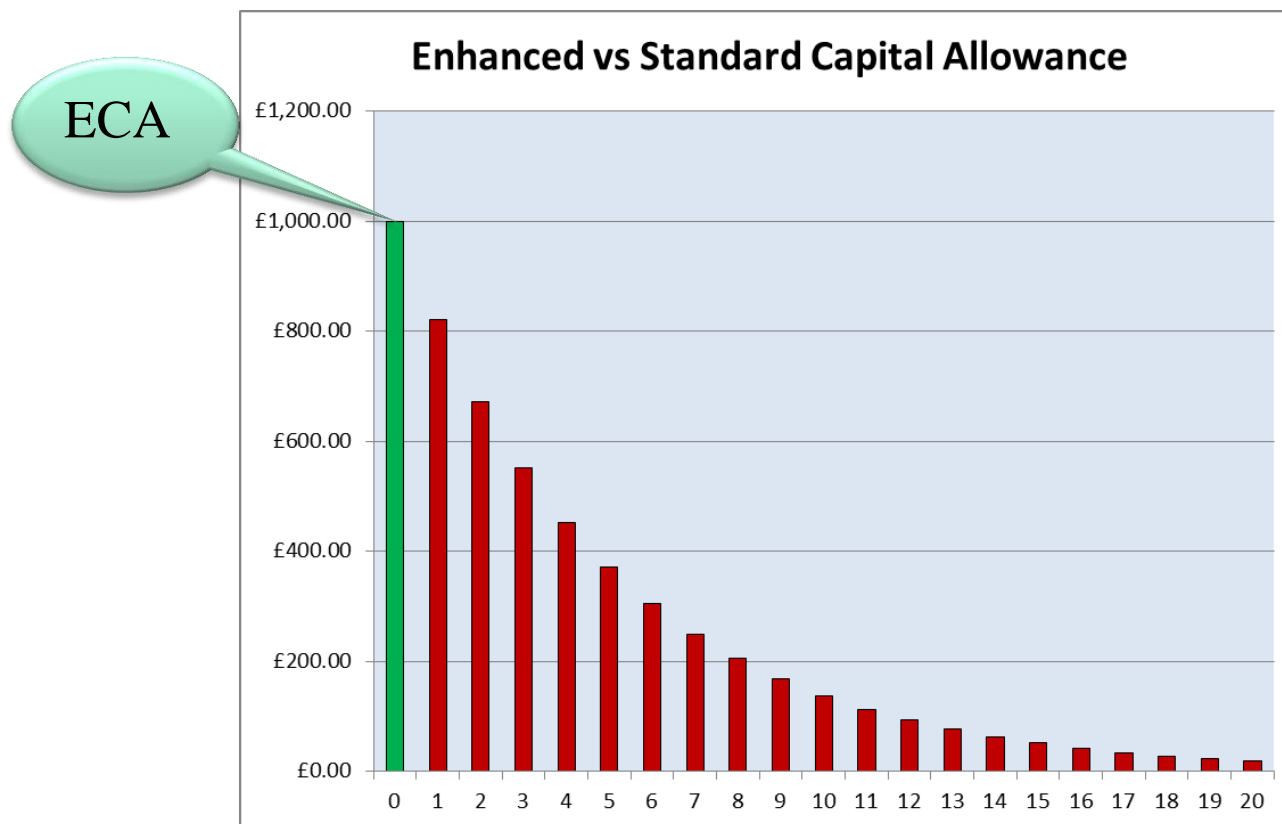
# CHP ECA Eligibility

- Not available to Public sector organisations (Hospitals, LAs, etc)
- Not available for companies where the main business is electricity production.
- If qualified as GQCHP then investors can claim ECA on all eligible expenditure.





# ECA Benefit



**In Summary ...ECA benefit is worth in the order of 10%  
of total Capital investment  
Could be worth more for private small investors**



# ECA Process

- Scheme specific: no type approval/product certification route
- Applicants must identify heat load
- This need to meet the “Useful Heat” definition (i.e economically justified heat loads)
- Need to obtain CHPQA certificate from the CHPQA programme and a Certificate of Energy Efficiency from DECC

**A CHPQA Certificate is required to obtain an EE Certificate**



## CHP & ROCs

- Current arrangement:
- Increased the level of support (ROCs/MWh) available to GQCHP fuelled by biomass from 1st April 2009 to 2.0 ROCs/MWh (0.5 ROC uplift)
- 1.0 ROC/MWh for waste-fuelled Good Quality CHP
- 1.0 ROC for Co-fired CHP

- 0.5 ROC uplift is worth about £21/MWh
- Only for schemes certified as GQ CHP



## Latest RO Review for 2013-2017

- The 0.5 ROC CHP uplift will continue to be available for plant accredited up to March 2015
- Between April 2013 and March 2015, operators will have a one-off choice between claiming the RO CHP uplift or the RHI
- **Support for EfW CHP will remain at 1 ROC until March 2017 - EfW CHP under RO cannot claim RHI**



## CCL and CPS

- Government has introduced **a floor price for carbon** to stabilise price signals to investors in low carbon technologies
- This has been implemented through the CCL system, introducing new rates levied upon supplies of taxable commodities to power generators (including CHP); these rates are known as CCL carbon price support (CPS) rates
- CPS rates came into effect from 1 April 2013
- **GQCHP certified with CHPQA are exempt from CPS rates on fuel that is attributable to the scheme's heat output**



## Background

- Government sought to introduce a floor price for carbon to stabilise price signals to investors in low carbon technologies
- This was implemented by introducing new rates levied upon supplies of the following taxable commodities to power generators (including CHP):

### CCL

- Natural Gas
- LPG
- Coal

### Fuel Duty

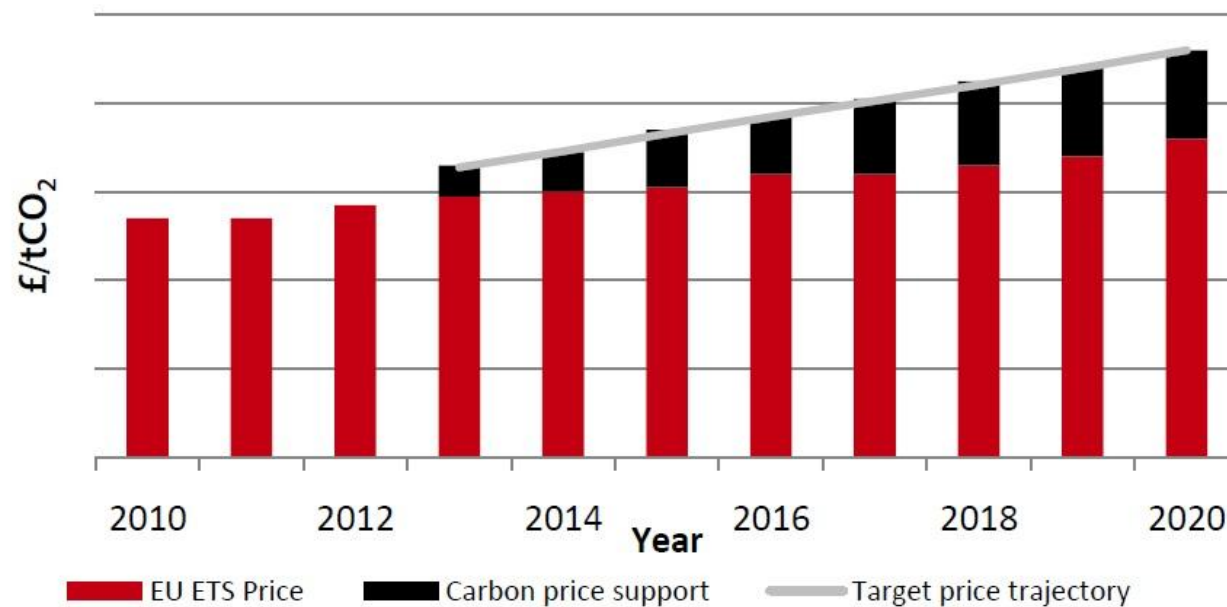
- Fuel oil
- Gas oil
- Bioblends

- These are known as carbon price support (CPS) rates
- CPS rates came into effect from 1<sup>st</sup> April 2013



# Background

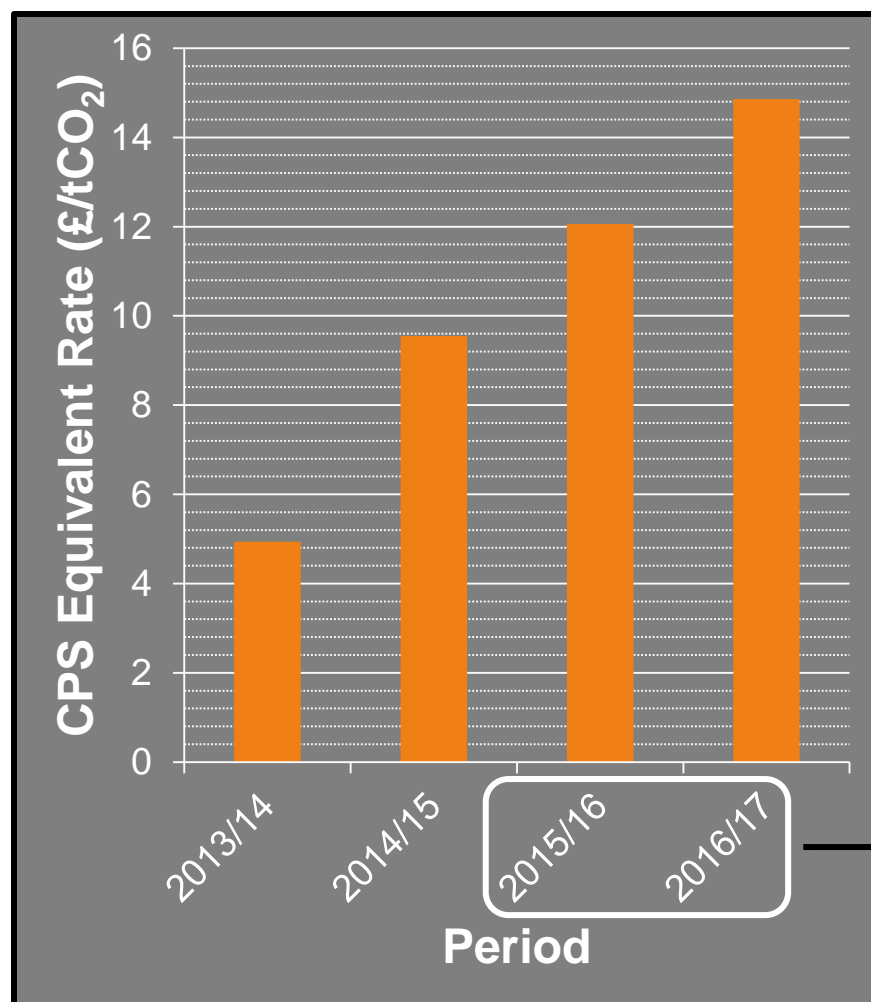
Chart 4.A: Illustration of the carbon price support mechanism



Source: HM Treasury, 2010



# CPS Rates



Commodity	Units	2013/14	2014/15	2015/16	2016/17
Natural Gas	£/kWh	0.00091	0.00175	0.00221	0.00272
LPG	£/kg	0.01460	0.02822	0.03564	0.04393
Coal	£/GJ	0.44264	0.85489	1.07962	1.33063
Fuel Oil	£/litre	0.01568	0.03011	0.03803	0.04687
Gas Oil	£/litre	0.01365	0.02642	0.03336	0.04112

Rates for 2015/16 and  
2016/17 are Indicative

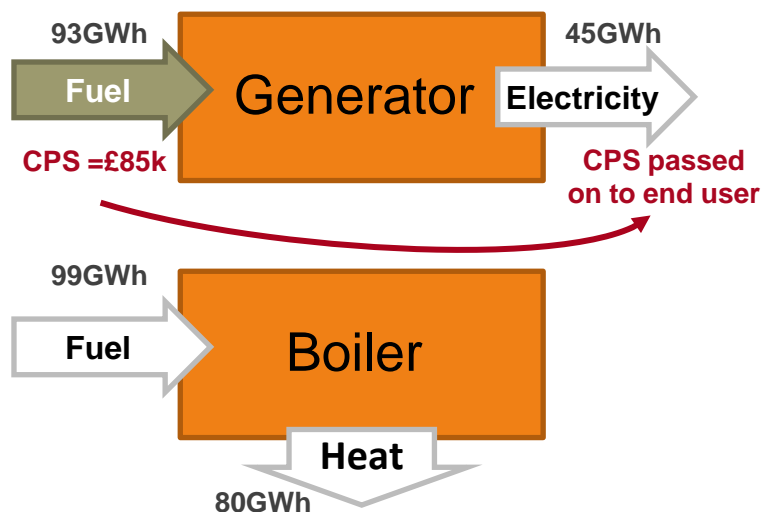




# Benefit from CPS

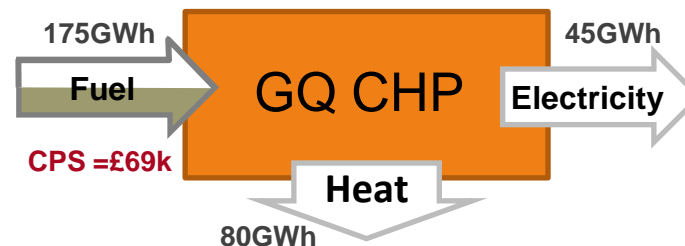
*Is the impact of CPS on GQCHP worse than that for separate generation of heat and power?*

## Separate Generation



CPS liability = £85k

## Good Quality CHP



$$\text{Fuel subject to CPS} = \text{TFI} - \left( \frac{\text{QHO}}{81\%} \right) = 175 - \frac{80}{81\%} = 76\text{GWh}$$

CPS liability = £69k



# Renewable Heat Incentive

- Non-domestic scheme launched in November 2011
  - Provides support for variety of renewable heat technologies, including
    - Biomass (including biomass in MSW)
    - Biogas
    - Geothermal
  - Support extends to eligible heat-only and CHP installations
  - Currently at 1.0 P/kWh for schemes > 1 MW in capacity
  - CHP must have been commissioned or converted to CHP operation on/after 15th July 2009
- Current band for large biomass schemes ( $>1\text{MW}_{\text{th}}$ ) is £10/MWh
  - CHP cannot claim both RHI support and CHP uplift under the RO



# RHI Expansion

## DECC consulted on expansion of the Non-Domestic Scheme

- Proposed to extend support to additional heat technologies (e.g. Air-Air Heat Pumps, Biomass Direct Air Heating)
- **Proposed to provide specific tariffs for biomass and bioliquid-fuelled GQCHP**
  - Proposed tariff for **large biomass CHP is 4.1p/kWh** (compared to 1p/kWh for large-scale biomass boilers)
  - Bioliquid will only be supported under RHI when used in GQCHP
- Only schemes **certified by CHPQA will** benefit from CHP tariff

Implementation details are now published



# Result of RHI Consultation

Tariff/Technology	Commissioning Date (or date of commissioning as CHP if conversion)	Tariff available on heat produced up until Spring 2014 (p/kWh)	Tariff available on heat produced post Spring 2014 (p/kWh) <sup>22</sup>
Biomass CHP	Pre 21 January 2013	1.0	1.0
	Between 21 January 2013 and the date of this publication	1.0	2.0
	Post the date of this publication	1.0	4.1
AWHP	Pre 21 January 2013	-	-
	Between 21 January 2013 and the date of this publication	-	-
	Post the date of this publication	-	2.5
Deep Geothermal	Pre 21 January 2013	3.5	3.5
	Between 21 January 2013 and the date of this publication	3.5	3.5
	Post the date of this publication	3.5	5.0
Medium biogas	Pre 21 January 2013	-	-
	Between 21 January 2013 and the date of this publication	-	-
	Post the date of this publication	-	5.9
Large Biogas	Pre 21 January 2013	-	-
	Between 21 January 2013 and the date of this publication	-	-
	Post the date of this publication	-	2.2
Municipal solid waste	Pre 21 January 2013	1.0	1.0
	Between 21 January 2013 and the date of this publication	1.0	2.0
	Post the date of this publication	1.0	2.0
Commercial and industrial waste	Pre 21 January 2013	-	-
	Between 21 January 2013 and the date of this publication	-	-
	Post the date of this publication	-	2.0

See DECC's document...  
Non-Domestic Renewable Heat Incentive, issued 4 Dec 2013



# Contract for Difference (CfD)

	Strike Prices £/MWh (2012 prices)				
	2014/15	2015/16	2016/17	2017/18	2018/19
<b>Advanced Conversion Technologies (with or without CHP)</b>	155	155	150	140	140
<b>Anaerobic Digestion (with or without CHP)</b>	150	150	150	140	140
<b>Dedicated Biomass (with CHP)</b>	125	125	125	125	125
<b>Energy from Waste (with CHP)</b>	80	80	80	80	80
<b>Geothermal (with or without CHP)</b>	145	145	145	140	140



## To summarise...

*There are number of incentives available for CHP schemes  
and you should be aware of them while planning or  
developing these projects...*

# Thank You