

Fiscal Benefits & Latest Developments

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Fiscal Benefits for Good Quality CHP

- CCL Exemption - recent developments
- Business Rates Exemption
- Hydrocarbon Oil Duty Relief
- CRC—emissions credit on exported electricity and no emissions attributed to heat from CHP (**Zero Carbon Heat**)
- Carbon Allocation under EU-ETS Phase II
- Enhanced Capital Allowance
- **1 ROC/MWh of electricity from EfW, 2 ROCs/MWh for dedicated biomass (April 2009)**
- **EU-ETS Ph III (Allocation to Heat)**
- **RHI Phase I??**

Talk Coverage

- EU-ETS
- CRC – Proposed simplified arrangements
- ECA - Clarification only
- ROCs – Banding Review
- CCL – LECs (Latest developments)
- CHP Focus - Latest additions

- **EU-ETS** ←
- CRC
- ECA
- ROCs
- LECs

CHP & EU-ETS

- Covers energy intensive users (>20MW thermal input). Only Combustion Plants...
- Catches large stand alone CHP Schemes
- Also catches smaller CHP schemes embedded within an energy intensive users site (such as Hospitals & Universities)
- Phase II started in 2008,
- Ph III will start 2013, allocation methodology is well-established

CHP & EU-ETS Phase II

- Runs 1/1/2008 to 31/12/2012
- Separates sectors for GQCHP (Existing and New Schemes)
- Separates New Entrant Reserve (NER) pot for GQCHP
- Who can claim allocation from GQCHP NER?
 - new GQCHP;
 - Existing CHP schemes increasing their GQCHP capacity by $\geq 5\%$ or 10MWe;
 - converted schemes from non- to GQCHP

EU-ETS Carbon allocation to GQCHP?

- GQCHP can claim allocation from CHP NER for QPC, until Dec 2012.
- For partial Schemes allocation for non-GQCHP capacity ...from the main NER pot.
- Allocation for top-up, back-up and supplementary burnersfrom the main NER pot.

EU-ETS Phase III

- Broadening of the “Combustion” definition to include:
 - All types of boilers, burners, heaters, furnaces, incinerators, dryers,
- The 20MW thermal threshold continues to apply.
- Catches large stand alone CHP Schemes
- Also catches smaller CHP schemes embedded within an energy intensive users site
- No allocation to Electricity Generators
- Allocation to heat decreasing over time
- Product or Heat benchmark allocation?

➤ **EU-ETS**

➤ **CRC**



➤ **ECA**

➤ **ROCs**

➤ **LECs**

CRC Energy Efficiency Scheme (CRC)

- Capture emissions not covered by existing measures such as EU ETS and CCAs
- A mandatory CO₂ emissions trading scheme affecting large non-energy intensive businesses and public sector organisations

When does 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 1.0 – 2.0 MWe electricity demand.

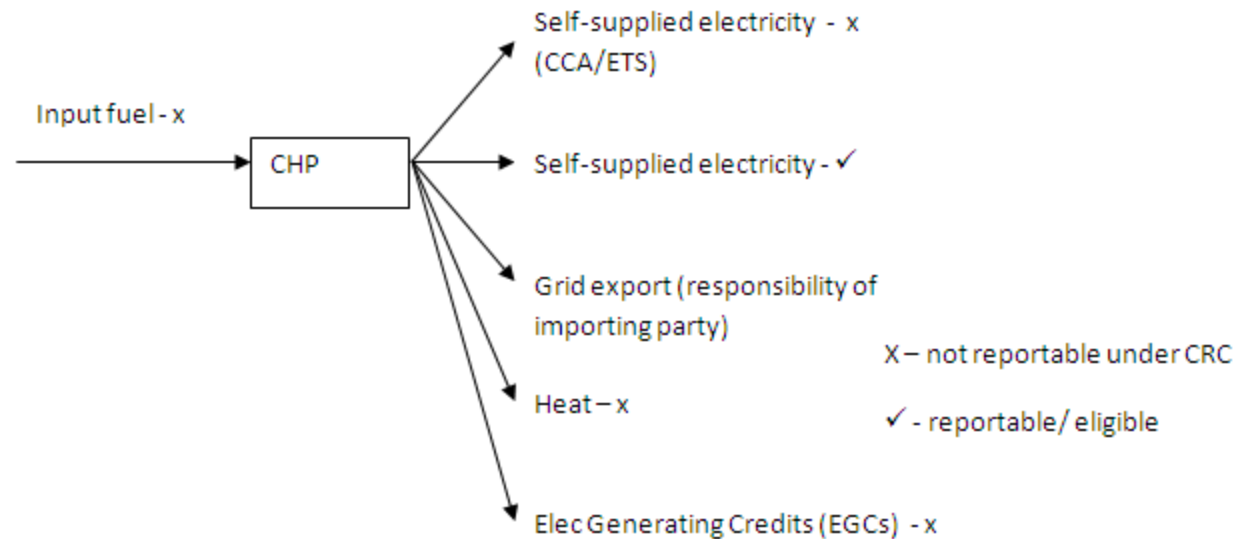
CHP & CRC- Current arrangement

- CRC sites will have to buy CRC allowances for all imported electricity and fuel (if not in EU-ETS or CCA).
- All electricity will have the same carbon emission factor as that from power stations
- Exported Electricity from GQCHP will receive carbon credits (using the same carbon factor)
- Exported heat from GQCHP is ZERO Carbon rated..... Creating opportunities for heat export!!!
- For Renewable generation.. If ROCs are claimed then electricity must be reported as an import at the grid electricity factor

DECC is considering simplified arrangements – Due to publish Consultation documents early next year

proposed position with regards to CCA/EU ETS installations

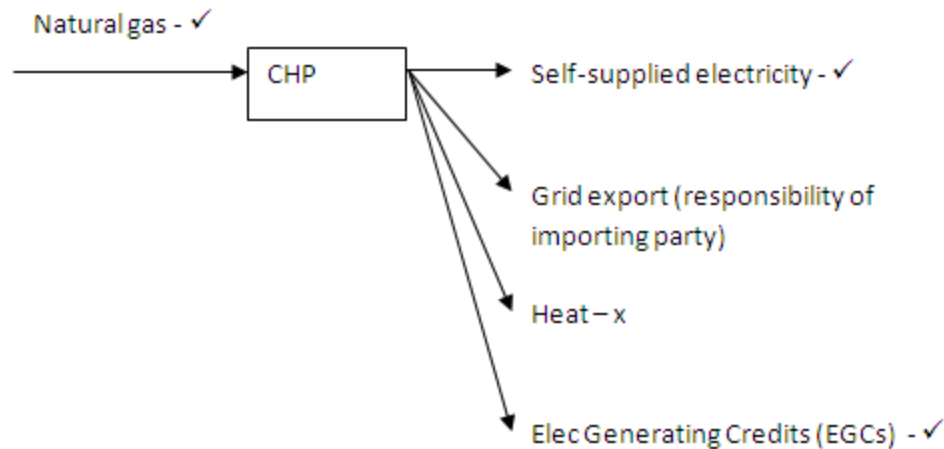
CHP explanation – CCA facilities/EU ETS installations



Net CRC liability – any self-supplied electricity to non CCA facilities/EU ETS installations

proposed situation with non CCA/EU ETS installations

CHP explanation – non CCA facilities/EU ETS installations



Net CRC liability – natural gas input fuel.

EGCs nets off against electricity generated

Proposed Further Simplification

- CHP at EU-ETS or CCA installations.... 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.

The interaction of CHPQA and:

➤ EU-ETS

➤ CRC

➤ **ECA**



➤ ROCs

➤ LECs

CHP ECA Eligibility

➤ Available

..... where main business will be to provide heat and power for users on site or known third parties.

➤ Not Available

..... if the main business is generating power for sale to or via unspecified third parties.

➤ Thus not available for companies whose core business is electricity production.

➤ GQCHP schemes that intend to sell the majority of their electricity production to the grid do not qualify for CHP associated ECAs

- *This is likely to apply to renewable schemes sized for exporting electricity*

Calculation of ECA value to a CHP Scheme

- Must meet Power Efficiency Threshold (20% for Conventional fuels, 10% for biomass)
- If don't meet QI Threshold- qualifying expenditure is scaled back (QPC/TPC)
- Scheme specific no type approval/product certification route- must identify heat load
- Need to request EE Certificate from CHPQA as well as a CHPQA Certificate
- E E Cert may be withdrawn and ECA repaid if Scheme is not built to the design certificated

Non compliant schemes ?

Certificate will be revoked;

1. If the original design has changed after certificationthen new certificate will be required
2. If no heat customers at time of commissioning, this means NOT CHP.

Applicants will have to contact HMRC to repay any claimed benefits.

The interaction of CHPQA and:

- EU-ETS
- CRC
- ECA
- **ROCs**
- LECs



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 differential)
- 1.0 ROC/MWh for waste-fuelled Good Quality CHP
- 2 ROCs/MWh for AD CHP schemes

Only for Schemes Certified as GQ CHP

CHP & ROCs – Recent Review

Proposed Changes:

- The 0.5 ROC CHP uplift has been retained until 2015
- The uplift is retained to 2017 for plant not eligible for RHI
- The uplift will be grandfathered
- **Support for EfW CHP is being reduced from 1 to 0.5 ROC**
- Between April 2013 and March 2015, there will be a one-off choice between claiming the RO CHP uplift and the RHI
- There will be a reduction in the total support ceiling from 2 ROCs, to 1.9 ROCs for new accreditations in 2015/16 and 1.8 ROCs in 2016/17

Proposed Changes to the RO banding

Technology	Current Support [ROCs/MWh]	Proposed Support [ROCs/MWh]	Other Proposed Changes
Dedicated Biomass	1.5	Up to April 2016 – 1.5 From April 2016 – 1.4	<ul style="list-style-type: none"> Exclude biomass conversions Add fossil-derived bio-liquids
Dedicated Biomass with CHP	2	2 in 2013/14 and 2014/15	<ul style="list-style-type: none"> Exclude biomass conversions Add fossil-derived bio-liquids Close band to new accreditations from April 2015
Dedicated energy crops with CHP	2	2 in 2013/14 and 2014/15 (Call for Evidence)	<ul style="list-style-type: none"> Amend “Energy Crops” definition Exclude biomass conversions Close band to new accreditations from April 2015
Co-firing of biomass with CHP	1	1	<ul style="list-style-type: none"> Add fossil-derived bio-liquids Exclude enhanced co-firing Close band to new accreditations from April 2015
Co-firing of energy crops	1	1	<ul style="list-style-type: none"> Amend “Energy Crops” definition Exclude enhanced co-firing
Co-firing of energy crops with CHP	1.5	1.5 (Call for Evidence)	<ul style="list-style-type: none"> Amend “Energy Crops” definition Exclude enhanced co-firing Close band to new accreditations from April 2015
Dedicated energy crops	2	2013/14 and 2014/15 – 2 2015/16 – 1.9 2016/17 – 1.8	<ul style="list-style-type: none"> Amend “Energy Crops” definition Exclude biomass conversion
Energy from Waste with CHP	1	0.5 - (Call for Evidence)	
Sewage gas	0.5	0.5 - (Call for Evidence)	

The interaction of CHPQA and:

- EU-ETS
- CRC
- ECA
- ROCs
- **LECs**



CHP LECs – Post 2013

- LECs benefit is subject to “State Aid”, which will expire at the end of March 2013
- Schemes that are likely to be effected:
 - About 20 schemes with capacity greater than 50MWe
 - and about 75 schemes with capacity between 5-50 MWe
 - In addition there are a number of smaller schemes currently exporting electricity and receiving LECs
- Total export from these schemes is in the order of 18,000 GWh/year
- But total traded is about 10,000 GWh/year (2010 data)
- In addition the new Carbon Price Floor mechanism will be introduced

LECs and CPF

- The Carbon Price floor (CPF) will be applied to fuel for electricity generation
- DECC's team aware of the issues that affect large exporting industrial plants following the withdrawal of CCL exemption on CHP electricity exports (indirect export only)
- They are considering the most appropriate long-term support framework for CHP.
- This includes establishing a relief for GQCHP from CPF
- Officials continue to work with HMT and industry to ensure CHP retains an appropriate level of support overall
- HMT to make final announcement on proposals for CPF in the Budget

To summarise...

- To obtain any of the fiscal benefits available for GQCHP the Scheme must be certified by CHPQA and must have a valid Certificate
- A number of existing fiscal measures are being reviewed (LECs, RO, RHI and CPF), so need to keep an eye on CHPQA and CHP Focus websites, and make sure you check DECC's website
- Submission any time from 1 Jan 2012 based on table 2 of QI formulas (use CHPQA Standard Issue 3 on the website)

Fuel Inputs

Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat
- Liquid Biofuels
- Liquid Waste
- Biomass or Solid Waste
- Wood Fuels



Fuel Inputs

Alternative Fuels

- **By-Product Gases**

products from industrial processes (blast furnace gas, coke oven gas and refinery fuel gas), which may include constituents such as hydrogen, ethane, propane etc

Fuel Inputs

Alternative Fuels

- By-Product Gases
- **Biogas**



gas produced by the anaerobic digestion (AD) of biological materials (such as sewage gas, landfill gas, food processing waste, pharmaceutical waste and municipal waste)

Fuel Inputs

Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat

- waste gases (such as carbon monoxide or volatile organic compounds), or
- waste heat (such as the exhaust gas from high temperature processes, or as a product of exothermic chemical reactions)

Fuel Inputs

Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat
- **Liquid Biofuels**

Manufactured liquid biofuels as defined in the EU Biofuels Directive (such as **biodiesel, bioethanol rapeseed oil, etc**)



Fuel Inputs

Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat
- Liquid Biofuels
- **Liquid Waste**

Material of biological or non-biological origin from domestic and industrial activity (such as Tallow, Fats and biological oils, solvents, recycled used vegetable oil)

Fuel Inputs

Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat
- Liquid Biofuels
- Liquid Waste
- **Biomass or Solid Waste**

Such as

- energy crops,
- waste wood,
- municipal solid waste,
- industrial solid waste,
 - hospital waste,
- agricultural residues,
 - straw,
- and sewage treatment residues



Fuel Inputs



Alternative Fuels

- By-Product Gases
- Biogas
- Waste Gas or Heat
- Liquid Biofuels
- Liquid Waste
- Biomass or Solid Waste
- **Wood Fuels**

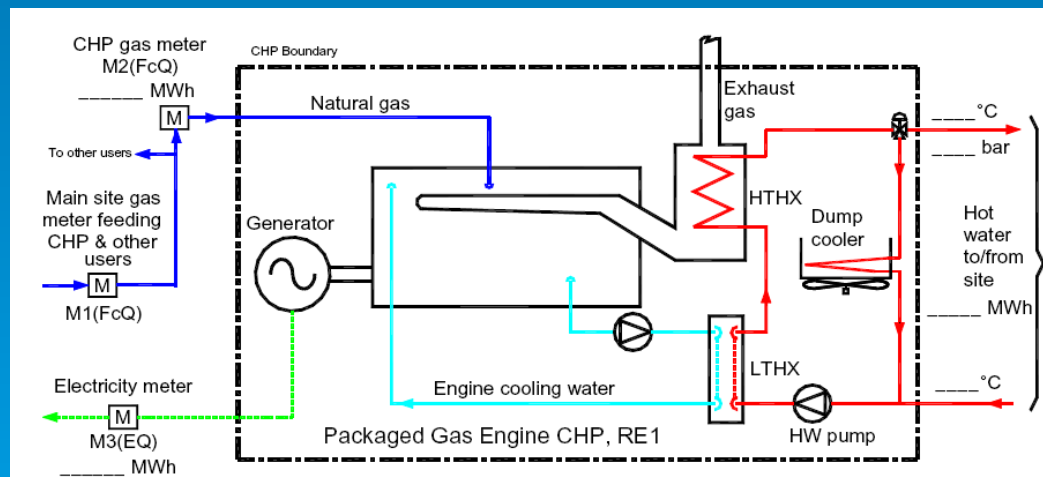
Commercial-grade wood fuels (such as

- clean woodchips,
- logs and wood pellets,

but **specifically excluding energy crops and waste wood, which are classed as biomass**)

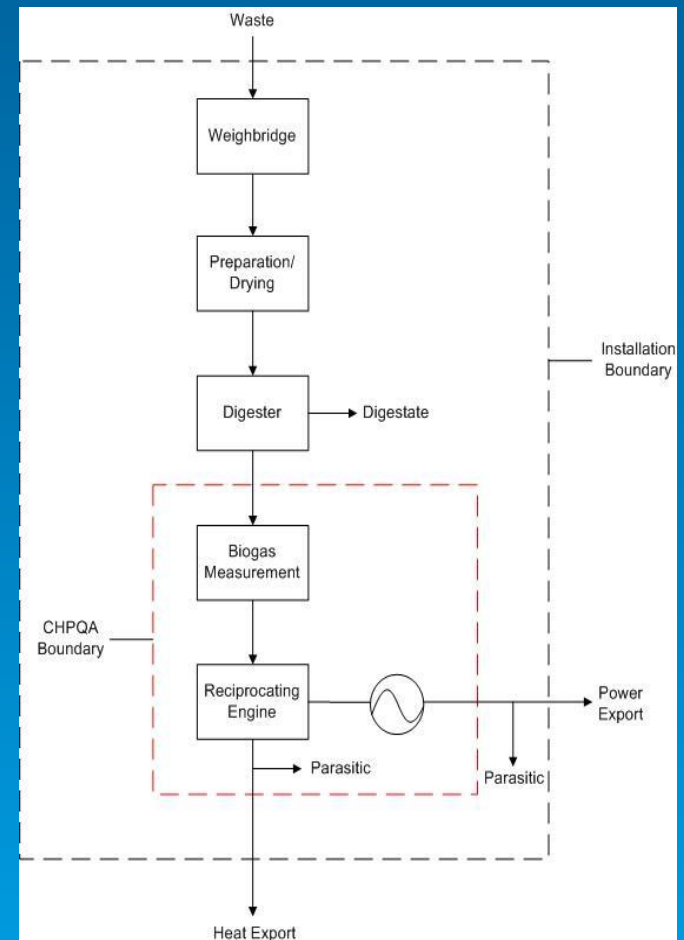
Scheme Boundaries

- CHPQA allows applicants to propose their own scheme boundaries to suit prime movers, auxiliary equipment, performance etc
- Back-up and top-up boilers are allowed to be included.

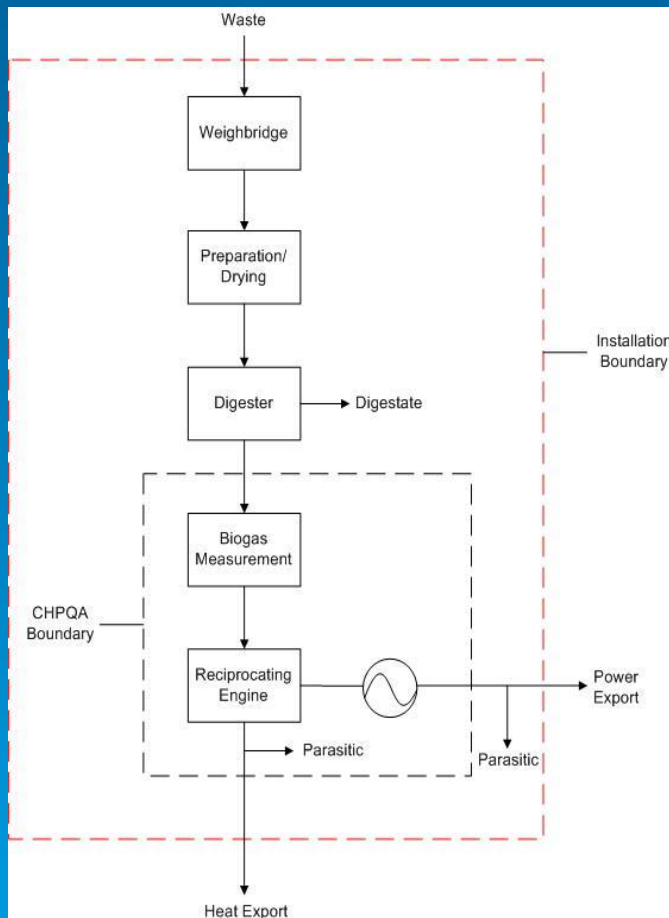


Scheme Boundaries – Fuel Input

- For biogas fired schemes, the fuel input boundary should normally be drawn at the gas inlet to RE
- Should use the Biogas QI formula



Scheme Boundaries – Fuel Input



- However, for some gasification processes, the analysis of syngas is extremely difficult and it may be better to measure solid waste at gasifier input
- In these cases can use the solid waste QI formula

Scheme Boundaries – Useful Heat

Definition of useful heat

....*The heat from a CHP Scheme delivered to satisfy an **economically justifiable demand** for heat or cooling*

...*For biomass and solid waste schemes the **heat used for drying may be classified as Useful Heat**,.....*

...*only if it can be demonstrated that such a use is an **economically justifiable option***

...*For an AD the **heat used in the digester may be classified as Useful Heat***

Defining AD Useful Heat

