



Principles and Procedures

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CHPQA



Talk Coverage

- Quick Review
 - Principles
 - Roles & Responsibilities
 - Certificates
- CHPQA Procedures

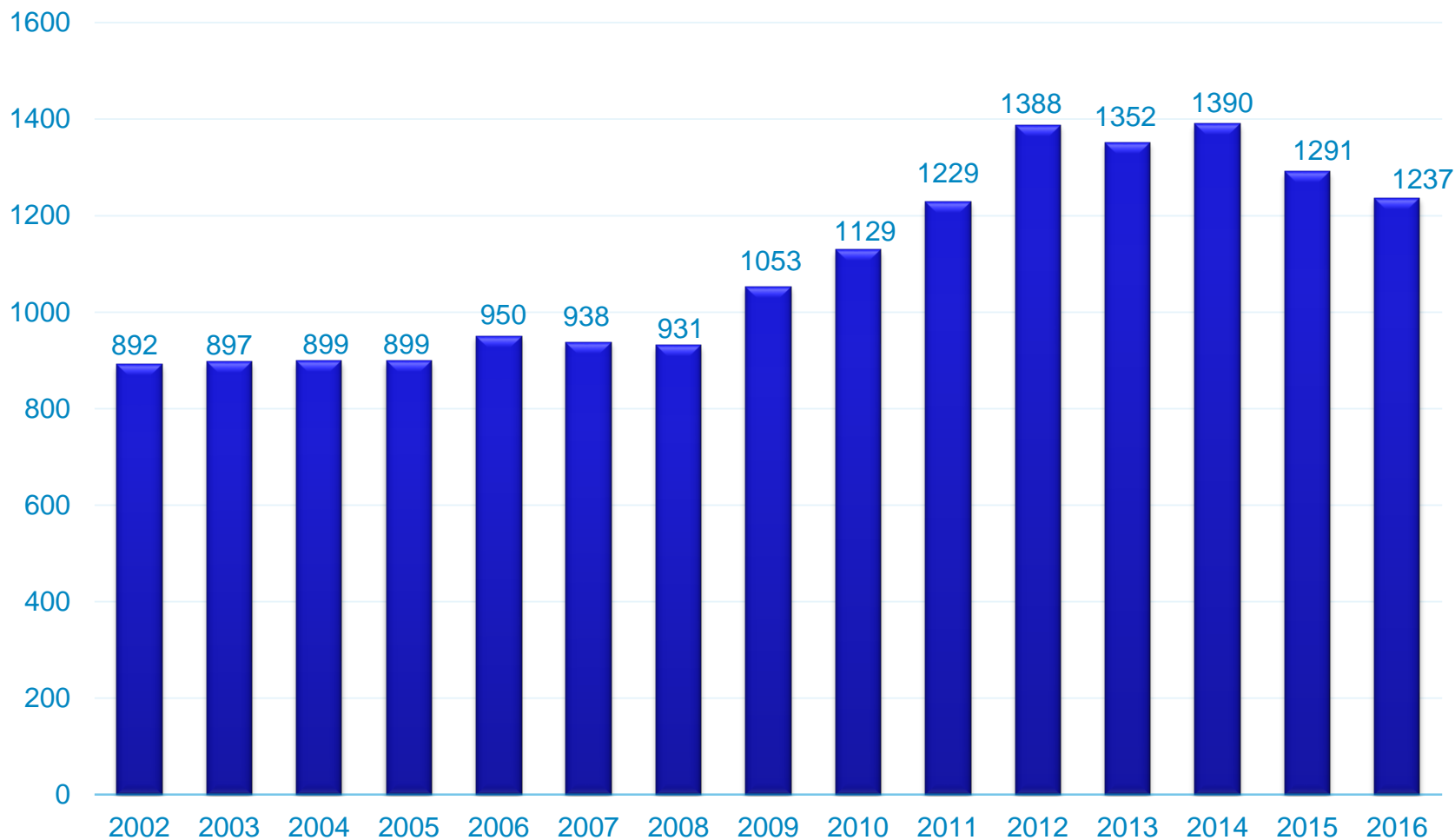


Why CHPQA?

- It is a tool for measuring the Quality of CHP Schemes
- A rigorous system is needed to:
 - ensure that incentives are targeted fairly
 - Ensure that it only benefits schemes making significant environmental savings
- CHPQA provides the **methods** and **procedures** needed to assess and certify the quality of the full range of CHP Schemes



Number of Schemes





Definition of GQCHP

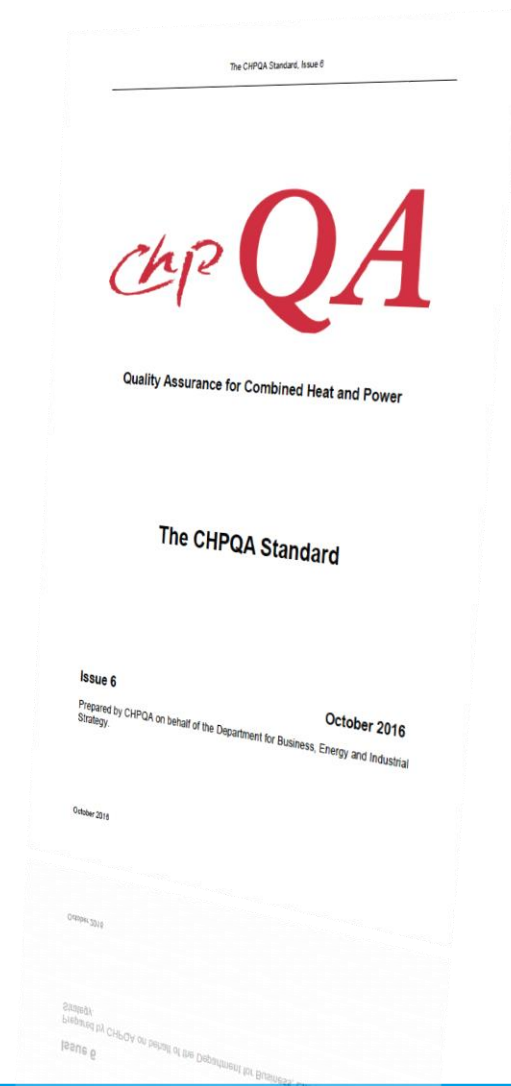
Set out in the CHPQA Standard

- For Existing Schemes:
 - Quality Index (QI) ≥ 100 and
 - Power generation efficiency of $\geq 20\%$

- For Upgraded & New Schemes:
 - Quality Index (QI) ≥ 105 and
 - Power generation efficiency of $\geq 20\%$.

See Issue 6 - Published October 2016

See also CHPQA Guidance Note 44 Issue 6 with regard to ROCs and CfD support





CHPQA QI Formulas

The general definition for QI is:

$$QI = (X \times \eta_{\text{power}}) + (Y \times \eta_{\text{heat}})$$

Where:

$$\text{Power Efficiency } (\eta_{\text{power}}) = \text{CHP}_{\text{TPO}} / \text{CHP}_{\text{TFI}}$$

and

$$\text{Heat Efficiency } (\eta_{\text{heat}}) = \text{CHP}_{\text{QHO}} / \text{CHP}_{\text{TFI}}$$

X and Y are parameters which depend on the type of fuel used and size of scheme (MW_e)

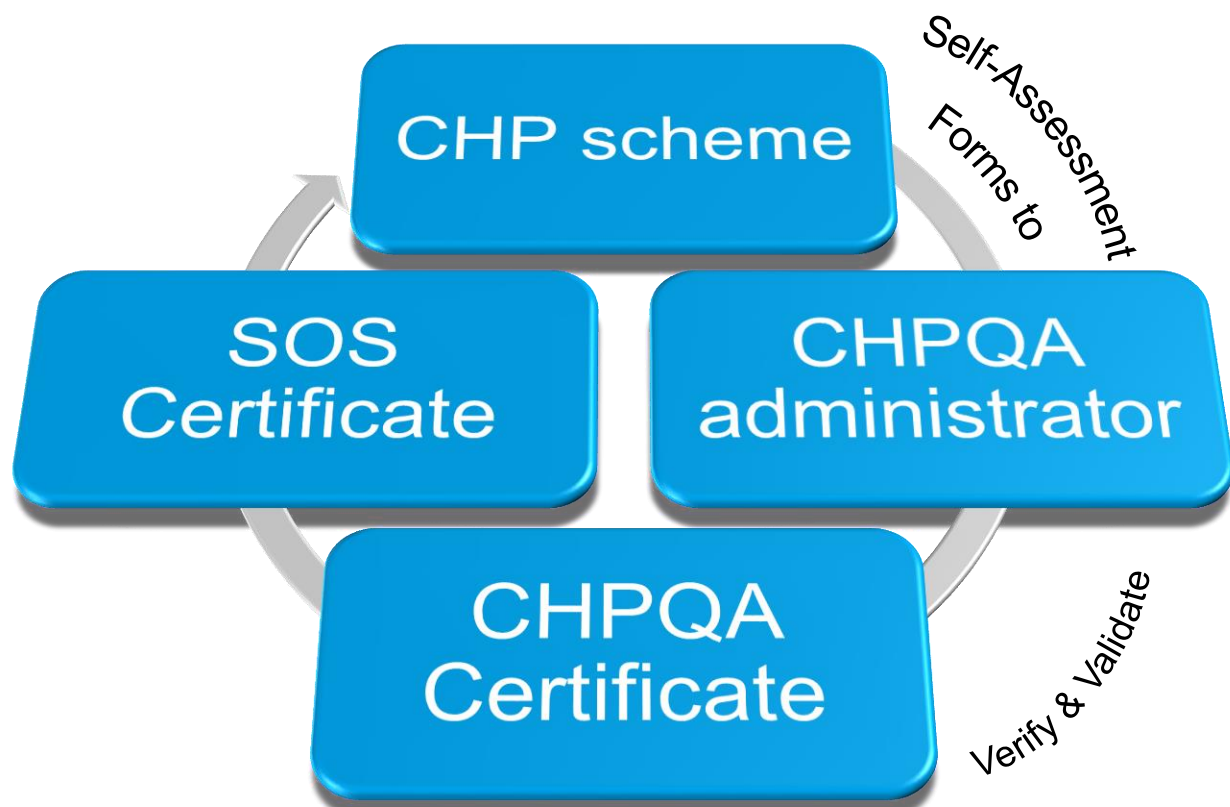


CHPQA X and Y Definitions

- Given in the CHPQA Standard
- Depend on scheme specific fuel type and power capacity
- Full details this afternoon



Self Assessment & Certification





Roles & Responsibilities

- CHPQA Administrator/Managed by Ricardo Energy & Environment
- BEIS
- Other Government Departments (HMRC, VOA)
- Ofgem - for issuing ROCs, RHI
- Low Carbon Contracts Company – CfD contracts.



CHPQA Submission

- A range of forms have been developed :
 - F1 (contact details);
 - F2 (scheme description);
 - F4 (scheme actual performance in previous calendar year) and
 - F3 (scheme predicted performance for new and upgraded schemes).
- Simplified procedure and forms for small single reciprocating engine based schemes (2MW_e).
 - Only have to provide three figures per year.



CHPQA Forms

- CHPQA Forms to be submitted:
 - **F1**...only if RP or company name has changed
 - **F2 and F2(S)**..only if Scheme boundaries or monitoring arrangement have changed
 - **F4 & F4(S)** annual submission using actual performance data
 - **F3 & F3(S)** annual submission using design data. If no change Submit the same form... Once a new or upgraded Scheme has at least 1 month of data in CHP mode, Form F4 or F4(S) must be submitted in the first January of Initial Operation.



Short Forms for $<2\text{MWe}$ CHP Schemes

- Schemes eligible to use short forms:
 - Reciprocating Engine Prime Mover
 - Less than 2MW_e Total Power Capacity
 - Only a single conventional fuel
 - Only include a single prime mover,
 - No heat only boilers

- F2(S) > 2 pages

- F3(S) > 4 pages

- F4(S) > 4 pages



Simplification for <500kW_e Schemes

Simple small CHP schemes can use the CHPQA Unit List to determine:

- Gas input (based on power efficiency) and
- Heat output (based on heat-to-power ratio)

Only CHP units meeting the following criteria:

- CHP Scheme with TPC <500kW_e
- Only include a single prime mover
- Using Natural Gas fired engines
- No facility to dump heat

This list is always under review, so make sure you are using the latest

Manufacturer	Model	Engine	Total Power Output kW	Max Heat Output kW	Fuel Input kW/GJ	Power Efficiency %	Max Heat to Power Ratio	Max Thermal Efficiency	Max Overall Efficiency
CCO/CO	INERBIO	INERBIO	90	135	300	30	151	48%	75%
CCO/CO	INERBIO/20	INERBIO	105	158	344	33	121	42%	74%
CCO/CO	INERBIO/10	INERBIO	112	177	373	30	149	40%	77%
CCO/CO	INERBIO/20	INERBIO	130	201	421	31	135	43%	75%
INERBIO	INERBIO/20	INERBIO	140	217	444	32	148	47%	78%
CCO/CO	INERBIO/20	INERBIO	160	241	542	31	155	43%	75%
INERBIO	INERBIO/20	INERBIO	180	270	630	33	118	39%	72%
CCO/CO	INERBIO/20	INERBIO	210	324	811	31	152	47%	75%
INERBIO	FINERBIO/20	FINERBIO	210	324	742	32	151	43%	80%
CCO/CO	FINERBIO	FINERBIO	307	455	1100	30	153	43%	75%
CCO/CO	INERBIO/20	INERBIO	312	458	930	31	142	44%	75%
INERBIO	FINERBIO/20	FINERBIO	330	510	1142	33	132	43%	77%
CCO/CO	FINERBIO/20	FINERBIO	400	599	1400	30	155	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	450	675	1575	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	500	750	1750	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	600	900	2100	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	700	1050	2450	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	800	1200	2800	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	900	1350	3150	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1000	1500	3500	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1100	1650	3850	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1200	1800	4200	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1300	1950	4550	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1400	2100	4900	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1500	2250	5250	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1600	2400	5600	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1700	2550	5950	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1800	2700	6300	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	1900	2850	6650	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2000	3000	7000	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2100	3150	7350	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2200	3300	7700	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2300	3450	8050	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2400	3600	8400	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2500	3750	8750	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2600	3900	9100	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2700	4050	9450	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2800	4200	9800	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	2900	4350	10150	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3000	4500	10500	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3100	4650	10850	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3200	4800	11200	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3300	4950	11550	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3400	5100	11900	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3500	5250	12250	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3600	5400	12600	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3700	5550	12950	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3800	5700	13300	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	3900	5850	13650	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4000	6000	14000	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4100	6150	14350	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4200	6300	14700	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4300	6450	15050	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4400	6600	15400	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4500	6750	15750	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4600	6900	16100	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4700	7050	16450	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4800	7200	16800	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	4900	7350	17150	30	154	43%	75%
CCO/CO	FINERBIO/20	FINERBIO	5000	7500	17500	30	154	43%	75%

Make sure that the **engine spec** used from Unit List matches the details on your F2



CHPQA Submission

- Electronic submission is now used for ~97% of all submissions.
- Paper forms in PDF are available to download from the website.



Certification Timetable

- CHPQA Certificates cover a **calendar year** and expire at the end of December
- SoS (CHP Exemption) certificates are **open-ended...**
- ...provided that a valid CHPQA certificate is obtained **no later than end of June every year**
- *To obtain an SoS certificate need to make sure you select the correct option*



Where do you go from here?

- All CHPQA Certificates issued in 2016 will expire on 31st of December 2016
- **New self-assessments should be submitted to the CHPQA Administrator before end of March 2017**
- **Based on 2016 actual data:**
 - Fuel used
 - Electricity generated
 - Heat utilised (actual)
- **If all is in order new certificate (based on 2016 data) will be issued before the end of June 2017**