

## Form CHPGO – Provision of Data for the Assessment of High Efficiency CHP Power Generation for the purpose of Guarantee of Origin

### NOTES:

- This Form will enable you to provide the information to permit determination of the proportion of your CHP Scheme, described in Form F2, is High Efficient CHP for Guarantee of Origin (CHPGO) as defined in the EU Cogeneration Directive 2004/8/EC, based on operational data for a period of between three and twelve consecutive months
- You need to resubmit this Form for each period for which CHPGO is claimed
- CHPQA Forms F1 and Form F2 need to be kept up-to-date and must relate to the CHP Scheme applying for Certification in this Form
- The CHPQA Guidance Notes are relevant to the requirements for CHPGO of CHP power generation. The most up to date version of the CHPQA Standard and Guidance Notes (GN) can be found on [www.chpqa.com](http://www.chpqa.com).
- The additional Guidance Note **GN CHPGO** has been written to help you complete this Form
- Information provided on this Form will be stored electronically and treated in the strictest commercial confidence. Only the Government or its agents will use it, for the sole purpose of certification of the CHPGO of CHP power generation
- This Form should be completed and returned to *The Administrator, CHPQA programme, The Gemini Building, Fermi Avenue, Didcot OX11 0QR*

### Content of Form CHPGO:

- Part 1** Scheme Identification and Declaration & Attachments  
**Part 2** Scheme Energy Inputs and Outputs  
**Part 3** Enabling Information  
**Part 4** Data for Determination of Non-CHP Heat and Associated Fuel  
**Part 5** Data for Determination of “Full-CHP” Power to Heat Ratio  
**Part 6** Addendum

### Abbreviations:

Within this Form the following abbreviations are used:

ST	=	steam turbine
GT	=	gas turbine
RE	=	reciprocating engine
FB	=	fired boiler
HRB	=	heat recovery boiler
PO/CO	=	pass-out/condensing (ST)
CO	=	fully condensing (ST)
TEG	=	turbine exhaust gas

**GN4** etc = Refers to CHPQA Guidance Note 4, for example

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## Part 1 - Scheme Identification and Declaration & Attachments

### 1. SCHEME IDENTIFICATION

➤ See GN4 & GN CHPGO-6.2

Site Name	Site ref.
Company Name	Scheme ref.*

\*The Programme Administrator will provide you with this Scheme ref. once Form F2 is processed

### 2. DECLARATION & ATTACHMENTS

➤ See GN4 & GN CHPGO-6.2

- I confirm that I am the nominated Responsible Person (RP) for the operation of the Scheme described in Form F2
- I confirm that I have supplied all necessary information, as required for CHPGO of power generation, based on the CHP Scheme described in CHPQA Form F2 and that all information provided in this form is correct and conforms to the requirements set out in the CHPQA Standard
- I undertake to inform the CHPQA programme Administrator should any of the above details change

**Signature**

**Date**

\_\_\_\_\_

\_\_\_\_\_

**Name**

**(block capitals)**

\_\_\_\_\_

**Position**

**(block capitals)**

\_\_\_\_\_

#### List of attachments

Number	Title	Attached enter Yes or No
1.	Derivation of internal steam use	
2.	Derivation of boiler mean thermal efficiency	
3.	Derivation of proportion of FB steam not contributing to power generation in STs	
4.	Derivation of proportion of HRB steam not contributing to power generation in STs	
5.	Exhaust gases by-passing HRB	
6.	Derivation of dryer useful heat from TEG alone	
7.	Data and report on test with no heat rejection	
8.	Test data and derivation of power loss coefficient	
9.		
10.		

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**Part 2 - Scheme Energy Inputs and Outputs** ➤ See GN CHPGO-6.3

**3. PERIOD OF OPERATION FOR GUARANTEE OF ORIGIN**

The energy inputs and outputs declared in Sections 4, 5 and 6 are based on [ ] hours of operation of the CHP Scheme over a period from [ ] to [ ] (show month and year) .

**4. ENERGY INPUTS**

Record below the fuel inputs to the CHP Scheme for the required period (minimum 3 months). Each meter reading should be identified by meter tag number given on Form F2 or, by calculation number. ➤ See GN12.3

All fuel energy inputs should be based on gross calorific value (higher calorific value) and WITHOUT adjustment for excessive uncertainty.

Imported heat is to be included as equivalent fuel input. ➤ See GN14.6

Tag & Calc. No.						
Fuel						
Month	Year	MWh	MWh	MWh	MWh	MWh
JAN						
FEB						
MAR						
APR						
MAY						
JUN						
JUL						
AUG						
SEP						
OCT						
NOV						
DEC						
Totals						

**TOTAL FUEL AND ENERGY INPUTS =  $CHP_{TFI}$  = \_\_\_\_\_ MWh**  
**in period covered by application**

**Note:** If additional sheets have been used, enter  $CHP_{TFI}$  on the first sheet only.

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### 5. POWER OUTPUTS

- Record the power generated by the CHP Scheme (power is gross generated i.e. measured at the generator terminals) **WITHOUT adjustment for excessive uncertainty** ➤ See GN15
- Each meter reading should be identified by meter tag number given on Form F2 or, where determined by indirect methods, by calculation number ➤ See GN12
- Mechanical power should be included and reported as equivalent electrical output identified by calculation number ➤ See GN15.4

Tag & Calc. No.						
Power plant						
Month	Year	MWh	MWh	MWh	MWh	MWh
JAN						
FEB						
MAR						
APR						
MAY						
JUN						
JUL						
AUG						
SEP						
OCT						
NOV						
DEC						
Totals						

**TOTAL POWER GENERATED =  $CHP_{TPO}$  = \_\_\_\_\_ MWh**  
**in period covered by application, of which:**  
 \_\_\_\_\_ MWh exported to grid & \_\_\_\_\_ MWh used on site

**Note:** If additional sheets have been used enter  $CHP_{TPO}$  on the first sheet only.

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## 6. USEFUL HEAT OUTPUTS

➤ See GN16

Record below the useful heat supplied by the CHP Scheme **WITHOUT adjustment for excessive uncertainties**, and identify where the heat is supplied

- Each meter reading should be identified by meter tag number given on Form F2 or, where determined by indirect methods, by calculation number

➤ See GN12.3

Tag & Calc. No.						
Heat output						
Month	Year	MWh	MWh	MWh	MWh	MWh
JAN						
FEB						
MAR						
APR						
MAY						
JUN						
JUL						
AUG						
SEP						
OCT						
NOV						
DEC						
Totals						

**TOTAL HEAT OUTPUT =  $CHP_{QHO}$  = \_\_\_\_\_ MWh**  
**in period covered by application**

**Note:** If additional sheets have been used enter  $CHP_{QHO}$  on the first sheet only.

**Now proceed to Part 3**

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## Part 3 - Enabling Information

➤ See GN CHPGO-6.4

### 7. CHP SCHEME DATA

7.1 Year of commissioning \_\_\_\_\_

7.2 Grid connection voltage \_\_\_\_\_ kV

#### 7.3 Use of heat

Indirect use (e.g. steam or hot water) \_\_\_\_\_ %

Direct use (e.g. exhaust gases) \_\_\_\_\_ %

#### 7.4 Prime movers

Scheme includes a GT or RE only (Y or N) \_\_\_\_\_

Scheme includes CO or PO/CO ST (Y or N) \_\_\_\_\_

7.5 Total power capacity (TPC) of Scheme \_\_\_\_\_ MW

### 8. FUELS DATA

Fuels used and gross/net calorific value				
	Tick Fuels used	Moisture content as fired	Claimed gross/net CV (dry)	Default gross/net CV (dry)
N Gas			1.11	1.11
Fuel Oil			1.060	1.060
Coal			1.050	1.050
Refinery Gas				1.109
Low CV gases				1.109
Wood fuels				1.077
Solid biowaste				1.077
Liquid biofuels				1.077
Liquid biowaste				1.077
Biogas				1.077
Lignite			1.050	1.050
Peat			1.050	1.050
Waste heat			1.000	1.000

➤ Proceed to Part 4

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## Part 4 – Data for Determination of non-CHP heat and associated fuel

➤ See GN CHPGO-6.5

### 9. SCHEME NON-CHP HEAT DECLARATION

Scheme has non-CHP heat outputs (Yes or No) \_\_\_\_\_

If “No” non-CHP heat outputs ➤ Proceed to Part 5

### 10. SCHEMES WITH FIRED BOILERS THAT DO NOT FULLY CONTRIBUTE TO CHP POWER OUTPUTS

Enter data in Sections 10.1 and/or 10.2 and/or 10.3 as appropriate for each FB in the Scheme.

#### 10.1 Boiler fuel input and steam generation metered

Fired boiler (s) ID	Tag No			
Fired boiler fuel	MWh (gross)			
Fuel 1 – type/%	- / %			
Fuel 2 – type/%	- / %			
Fuel 3 – type/%	- / %			
Fired boiler steam	tonnes			
Boiler steam pressure	bar(abs)			
Boiler steam temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Internal steam use (Note 1)	%			
Proportion of FB steam not contributing to power generation in STs (steam supplied directly to process) (Note 2)	%			

Note 1 – Supporting information to be appended as Attachment 1

Note 2 – Supporting information to be appended as Attachment 3

#### 10.2 Boiler fuel input metered but steam generation not metered

Fired boiler ID	Tag No			
Fired boiler fuel	MWh (gross)			
Fuel 1 – type/%	- / %			
Fuel 2 – type/%	- / %			
Fuel 3 – type/%	- / %			
Boiler steam pressure	bar(abs)			
Boiler steam temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Boiler feedwater temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Mean boiler thermal efficiency (gross cv) (Note 1)	%			
Internal steam use (Note 2)	%			
Proportion of FB steam not contributing to power generation in STs (steam supplied directly to process) (Note 3)	%			

Note 1 – Supporting information to be appended as Attachment 2

Note 2 – Supporting information to be appended as Attachment 1

Note 3 – Supporting information to be appended as Attachment 3

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### 10.3 Boiler steam generation metered but fuel not metered

Fired boiler ID	Tag No			
Fired boiler steam	tonnes			
Boiler steam pressure	bar(abs)			
Boiler steam temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Boiler feedwater temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Mean boiler thermal efficiency (gross cv) (Note 1)	%			
Fuel 1 – type/% (estimated)	- / %			
Fuel 2 – type/% (estimated)	- / %			
Fuel 3 – type/% (estimated)	- / %			
Internal steam use (Note 2)	%			
Proportion of FB steam not contributing to power generation in STs (Note 3)	%			

Note 1 – Supporting information to be appended as Attachment 2

Note 2 – Supporting information to be appended as Attachment 1

Note 3 – Supporting information to be appended as Attachment 3

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## 11 SCHEMES WITH SUPPLEMENTARY/AUXILIARY FIRING OF HRBS THAT DO NOT FULLY CONTRIBUTE TO CHP POWER OUTPUTS

Enter data in Sections 11.1 and/or 11.2 as appropriate for each HRB included in the Scheme.

### 11.1 HRB SF/AF fuel input metered

HRB ID	Tag No			
HRB SF/AF fuel	MWh (gross)			
Fuel 1 – type/%	- / %			
Fuel 2 – type/%	- / %			
Fuel 3 – type/%	- / %			
Boiler steam pressure	bar(abs)			
Boiler steam temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Boiler feedwater temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Supp. fuel / (supp. + aux. fuel)	%			
Internal steam use (Note 1)	%			
Proportion of HRB steam not contributing to power generation in STs (supplied directly to process) (Note 2)	%			

Note 1 – Supporting information to be included in Attachment 1

Note 2 – Supporting information to be included in Attachment 4

### 11.2 HRB SF/AF fuel input not metered

HRB ID	Tag No			
Steam generated from unfired GT or RE exhaust (Note 1)	tonnes/MWe			
Power generated by associated GT or RE	MWh			
Exhaust gases by-passing HRB (Note 1)	%			
HRB total steam generated	tonnes			
Boiler steam pressure	bar(abs)			
Boiler steam temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Boiler feedwater temperature	°C			
Boiler steam sp enthalpy (10°C datum)	kJ/kg			
Supp. fuel / (supp. + aux. fuel)	%			
Fuel 1 – type/% (estimated)	- / %			
Fuel 2 – type/% (estimated)	- / %			
Fuel 3 – type/% (estimated)	- / %			
Internal steam use (Note 2)	%			
Proportion of HRB steam not contributing to power generation in STs (supplied directly to process) (Note 3)	%			

Note 1 – Supporting information to be included in Attachment 5

Note 2 – Supporting information to be included in Attachment 1

Note 3 – Supporting information to be included in Attachment 4

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## 12. SCHEMES WITH SUPPLEMENTARY/AUXILIARY FIRING OF DIRECT-FIRED EQUIPMENT (E.G. DRYERS)

Enter data in Sections 12.1 and/or 12.2 as appropriate for each equipment item (e.g. dryer) included in the Scheme.

### 12.1 SF/AF fuel input metered

Equipment ID	Tag No			
SF/AF fuel fired	MWh (gross)			
Fuel 1 – type/%	- / %			
Fuel 2 – type/%	- / %			
Fuel 3 – type/%	- / %			
Supp. fuel / (supp. + aux. fuel)	%			

### 12.2 SF/AF fuel input not metered

Equipment ID	Tag No			
Fuel 1 – type/% (estimated)	- / %			
Fuel 2 – type/% (estimated)	- / %			
Fuel 3 – type/% (estimated)	- / %			
Supp. fuel / (supp. + aux. fuel)	%			
Total heat output to user (incl. SF/AF)				
Useful heat from TEG alone (repeat dryer calc based on TEG alone, i.e. dryer inlet temp = TEG temp (Note 1)	%			

Note 1 – Supporting information to be appended as Attachment 6

➤ [Proceed to Part 5](#)

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## Part 5 - Data for Determination of “Full-CHP” Power to Heat Ratio

➤ See GN CHPGO-6.6

### 13. SCHEMES WITHOUT POWER LOSS & NO HEAT REJECTION

Scheme has NO heat rejection (Yes or No)	_____
Scheme has NO power loss (no CO or PO/CO STs)	_____

If “Yes” to both the above ➤ [This Form is completed](#)

### 14. SCHEMES WITH HEAT REJECTION BUT NO POWER LOSS

Enter data based on a test carried out with no heat rejection.

Test results with no heat rejection (after deduction of non-CHP heat and associated fuel) (Note 1)		
Fuel input	MW (gross)	
Power output	MW	
Heat output	MW	

Note 1 - Test data and report, including the deduction of non-chp heat and associated fuel, to be appended as Attachment 7

### 15. SCHEMES WITH POWER LOSS

Enter data based on a test carried out with no heat rejection.

Test results with no heat rejection (after deduction of non-CHP heat and associated fuel) (Note 1)		
Fuel input	MW (gross)	
Power output	MW	
Heat output	MW	
Steam to process users	tonnes/h	
Steam condensed in ST condensers	tonnes/h	
Power loss coefficient, $\exists$ (Note 2)		

Note 1 - Test data and report, including the deduction of non-chp heat and associated fuel, to be appended as Appendix 7

Note 2 - Test data and derivation of power loss coefficient to be appended as Appendix 8

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## Part 6 ADDENDUM

### I AUTHORISED SIGNORS DETAILS

Are you the authorised person Yes/No

If not please provide below details of the authorised person

Title: Mr / Miss / Mrs First Name(s):.....

Last Name:.....

Company Name:.....

Company registered number: .....

Address (Note: For corporations or Scottish firms this is the registered or principal office):

Title/ Number .....

Address:.....

.....

.....

City:.....

State:.....

Country:.....

Contact Tel (including international code): .....

### II STATEMENT

As the person making the request for the issue of a CHPGO you state that in respect of the electricity which is the subject of the request — you are (a) entitled to the issue of a CHPGO under these Regulations; and (b) have not made and do not intend to make a request for the issue of a CHPGO to any person outside Great Britain.

Print Name: .....

Signature:..... Date:../../20.....

### III Electricity production details

Are you the Producer of the electricity subject to the CHPGO? Yes / No

If YES go to section V

If NO complete section IV

### IV ELECTRICITY PRODUCER'S DETAILS

Company Name of Electricity producer: .....

Company registered number of Electricity producer:.....

Company address (Note: For corporations or Scottish firms this is the registered or principal office):

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Title/ Number .....  
Address:.....  
.....  
.....  
City:.....  
State:.....  
Country:.....

Contact Tel (including international code): .....

The “electricity production site” is defined as the place where the electricity in respect to the CHPGO is produced.

Electricity production site name: .....

Electricity production site address

Title/ Number .....

Address:.....  
.....  
.....

City:.....

State:.....

Country:.....

Electricity production site contact Tel (including international code):

.....

**V CHPGO DETAILS**

The CHPGO is requested from

(date) ...../...../ 20..... to (date) ...../...../ 20.....

Electrical Energy produced in respect to CHPGO:.....MWh and the total electricity produced by the electricity production site during the period the CHPGO was requested.

➤ This Form is now completed