



## Shell Exploration and Production

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8 May, 2012

Dear Mr Vincent,

### **INDUSTRIAL EMISSIONS DIRECTIVE – LARGE COMBUSTION PLANTS TRANSITIONAL NATIONAL PLAN APPLICATION**

With regard to your letter of the 28<sup>th</sup> December 2011, Shell would like to apply for two Frame 5 Sales Gas Compressor Drivers (Turbines) (1&2 KT403/404) located at our St Fergus gas terminal to join the Large Combustion Plant (LCP) Transitional National Plan.

The responses to the required questions are included in this letter, see below.

Should you have any question please contact me.

Yours sincerely  
for Shell U.K. Limited

for Shell UK Limited

## TNP Question Responses

1. Name and location of the combustion plant<sup>1</sup>;

Shell St Fergus gas plant

St Fergus Gas Plant PO Box 20, Peterhead Aberdeenshire AB42 3EP

2. Date on which the first permit for the combustion plant was granted;

TBC

3. Date on which the application for the first permit for the combustion plant was submitted alongside with the date on which the combustion plant was put into operation for the first time;

*Note:* This information is only required in case the combustion plant has been granted its first permit after 27 November 2002, but has been brought into operation no later than 27 November 2003.

Not required

4. Any extension by at least 50 MW of the total rated thermal input of the combustion plant, which took place between 27 November 2002 and 31 December 2010 (indicating the capacity added in MW)<sup>2</sup>;

No.

5. Total rated thermal input (MW) of each combustion plant on 31 December 2010;

Description	No	Design Process load	Design Fuel LHV	Design Fuel HHV	Normal Total HHV	Mass Fuel Gas/yr	Mode of Operation
		MW	MW	MW	MW	t	
Frame 5 Sales Gas Compressor Drivers (Turbines) (1&2 KT403/404)	2.00	97.00	112.25	124.38	56.00	89,072.81	Continuous
<b>Other units on site not included</b>							

<sup>1</sup> As has been reported in the emission inventories drawn up under Directive 2001/80/EC.

<sup>2</sup> This information is needed in view of determining the relevant emission limit values on 1 January 2016 as set out in Article 10 of Directive 2001/80/EC.

De-ethaniser/De-butaniser reboiler Furnace (F801)	1.00	34.40	33.36	37.00	0.90	0.15	Infrequent use
Regeneration Gas Heater (F-2601)	1.00	5.50	5.42	6.01	0.14	-	Infrequent use
Reboiler Furnace (F-2631)	1.00	1.60	-	-	-		
Goldeneye Incinerator (F7701)*	1.00	2.60	9.77	10.82	2.55	28.04	Usage ceases upon GYE COP

6. Annual number of operating hours<sup>3</sup> of each combustion plant, averaged over the period 2001-2010;

*Note:* This information is only required in case where specific emission limit values for combustion plants operating less than 1.500 hours per year are used to calculate the contribution of the combustion plant to the emission ceiling(s).

Don't think applicable to St Fergus.

7. Pollutants for which the combustion plant concerned is not covered by the transitional national plan (if any)<sup>4</sup>.

As per guidance for gas turbines

8. Annual amount of fuel used (TJ/year), averaged over the period 2001-2010, split over 6 fuel types: hard coal, lignite, biomass, other solid fuels, liquid fuels, gaseous fuels<sup>5</sup>;

Gaseous fuels:

<sup>3</sup> "operating hours" means the time, expressed in hours, during which a combustion plant, in whole or in part, is operating and discharging emissions into the air, excluding start-up and shut-down periods.

<sup>4</sup> For example, gas turbines can only be covered by the transitional national plan concerning their NO<sub>x</sub> emissions. Other plants may be covered by the transitional national plan for some pollutant(s), while being subject to the emission limit values from Annex V to Directive 2010/75/EU for other pollutants.

<sup>5</sup> For combustion plants which, at any point during the period 2001-2010, have been co-incinerating waste (other than waste which is "biomass" according to the definition under Article 3(31)(b)) of Directive 2010/75/EU and were consequently covered by Directive 2000/76/EC, the amount of waste burned during that period shall not be included under this point.

Average fuel gas (mainly methane and ethane): circa 6096.418 TJ/year

Additional fuel use on the site (excluding the Frame 5's) includes Liquid fuels:

Diesel: circa 5.6 TJ/year

9. Annual waste gas flow rate ( $\text{Nm}^3/\text{year}$ ), averaged over the period 2001-2010<sup>6</sup>;
- Waste gas flow rate is the volumetric flow rate of waste gases expressed in cubic metres per year ( $\text{Nm}^3/\text{pa}$ ), averaged over the years 2001-2010. It is expressed at standard temperature (273 K) and pressure (101,3 kPa), at the relevant reference oxygen content (i.e. the same one as used for the emission limit value (ELV)) and after correction for the water vapour content;

Overall exhaust air is 4,899,513,111  $\text{sm}^3$  per year. Calculations attached:

See spreadsheet attached to email.



CO2 calc.xls

*Note 1:* In the case of combustion plants firing multiple fuel types and/or consisting of multiple plant types, the waste gas flow rate needs to be provided for each of the fuel types and/or combustion plant types separately<sup>7</sup>.

*Note 2:* If the waste gas flow rate is calculated from the amount of fuel used (and not based on actual monitored waste gas flows), the factor (or factors in case of multiple fuels or combustion plant types) used for the calculation ( $\text{Nm}^3/\text{GJ}$ ) needs to be reported.

10. Quantity of sulphur input via indigenous solid fuels<sup>8</sup> used (tonnes S/year), averaged over the period 2001-2010;

*Note:* This information is only required in case where the combustion plant uses indigenous solid fuels and where the minimum desulphurisation rate is used to calculate the contribution

Not applicable

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<sup>6</sup> See section 3.1.1 of this Annex concerning the applicable reference conditions

<sup>7</sup> See section 3.1.2 of this Annex

<sup>8</sup> "indigenous solid fuel" means a naturally occurring solid fuel fired in a combustion plant specifically designed for that fuel and extracted locally