NON-TECHNICAL SUMMARY

Introduction

This document and associated appendices form the application for an Environmental Permit (EP) to operate a gas fired generating facility (GFGF) under the Environmental Permitting Regulations 2016 (as amended). The application is made by Saltholme North Power Limited (SNPL) which is the legal entity that will be responsible for operating the GFGF. The GFGF operation will provide less than 49.99 MW of electricity for export to the grid, enough to power the equivalent of 50,000 homes.

The proposed facility will consist of 4 x 12.6 MWe spark ignition reciprocating gas engines and will operate to provide additional energy security during periods of peak electricity consumption within the UK. The combined net thermal input of the GFGF is approximately 105 MW (at Lower Heating Value). Operation would not be continuous but would run as a flexible back up supply for up to 3,500 hours in any one year.

The site is adjacent to an identical facility operated by Saltholme South Power Limited (SSPL). Both SNPL and SSPL (the operating companies) are ultimately controlled by Statera Energy Limited. The operating companies are separate corporate entities. The two facilities will be operationally independent. An application for the facility at Saltholme South is being made simultaneously to this application as it is anticipated that these facilities will be permitted as a multi operator installation.

Site Location

The site is located to the east of Cowpen Bewley Rd, Saltholme, Stockton-on-Tees, Middlesbrough. The approximate post code is TS23 4HS and the site is centred at National Grid Reference NZ 48981 23873.

The site covers approximately 0.7 hectares of arable farmland and includes access from the A1185 and installation of a new access track to a gas connection kiosk.

Operations

Natural gas will be delivered to the GFGF via a dedicated gas supply connected to the National Grid National Transmission System (NTS). The 4 x 12.6 MWe reciprocating spark-ignition gas engines will be housed within an engine hall incorporating a range of noise reduction features. The electrical output from the plant will be exported to the 132kV distribution network via a step up transformer.

The plant would be able to reach full load in less than five minutes from cold.

Cooling for the gas engines will be provided by fin-fan coolers which will operate in a closed circuit cooling water system.

Management Activities

An environmental management system (EMS) will be in place and will be designed to follow the EMS standard ISO 14001. The EMS will be underpinned by an environmental policy. All staff and external contractors will be made aware of the environmental policy as part of the induction training and a copy will be made available on site.

The operator will also implement a record keeping system on site as part of its management system.

Energy Efficiency

Due to the nature of GFGF operation which requires fast, flexible operation; combined cycle operation is not a feasible option and is considered unavailable on this basis. The plant selected to provide peaking power are high efficiency gas engines achieving an electrical efficiency of approximately 50% as measured by ISO3046. This level of efficiency compares favourably with the efficiency levels for new gas engines as stated in the large combustion plant reference document on best available techniques.

Raw Materials, Water and Waste

The main materials used within the GFGF will include natural gas for fuel, ethylene glycol for the cooling circuits, ammonia or urea for the Selective Catalytic Reduction (SCR) system and lubrication oil.

No routine water use is required for the facility, although a mains water connection will be in place to allow washing of the plant and topping up of water circuits.

Waste generation from the GFGF is anticipated to be low and will result primarily from maintenance activities.

Emissions to Air

Emissions to air will result from the combustion of natural gas within the gas engines and from the use of Selective Catalytic Reduction (SCR) abatement, which will be released into the atmosphere via dedicated exhaust stacks. There will be no significant sources of odour resulting from the operation of the GFGF.

A stack height assessment has been carried out to determine the height for the stacks, which has been determined to be 15 m and the effects on air quality from the GFGF have been assessed on this basis.

Detailed dispersion modelling has been carried out. The predicted emissions at sensitive receptors surrounding the plant are below the required air quality standards. The assessment of air quality effects at nearby ecological sites concluded that the impact of maximum process contribution at the Teesmouth & Cleveland sites is potentially significant. Further assessment concluded that they are either located far enough away to be affected, are not susceptible to the effects of increased nutrient delivery or the contributions from the proposed facility would be infinitesimal compared to the natural inputs which the associated habitats currently receive from the surrounding environment.

Emissions to Water

There will be no process water discharges to sewer or surface water. Discharges to water will be restricted to surface water run-off from the roof, hardstanding and paved areas etc. and water will flow through the site surface water drainage system and attenuation pond before release into the Belasis Beck. There will be no point source emission to land or groundwater.

Noise

The gas engines and other ancillary plant on site are sources of noise. However noise levels from the GFGF development will be mitigated to ensure that the impact to health, the environment and general amenity is minimised, through use of mitigation measures including acoustic cladding, ceilings and louvres in the engine hall and stack exhaust silencers, acoustic lagging on all external exhaust ductwork, low noise transformer.

The noise effects from the facility have been modelled. The effects at noise sensitive receptors with mitigation will not result in significant adverse impacts at nearby noise sensitive receptors.

Best Available Techniques

The application has set out the proposed techniques to be operated and these have been considered against BAT and alternatives. The proposed techniques are considered to meet BAT and the operation of the proposed facility is not expected to give rise to significant effects to the environment or human health.