

HUNTSTOWN POWER STATION PHASE I
APPLICATION FOR IPPC LICENCE, REG. 779
UPDATED NON-TECHNICAL SUMMARY, JUNE 2006

This document provides supporting material for an application to the Environmental Protection Agency for review of the IPC Licence 483 for Phase I of Huntstown Power Station, at Huntstown, Finglas, near Dublin. Additional information is included in response to the letter of 11 May 2006 from the Environmental Protection Agency. The plant is already authorised for operation under IPC Licence number 483, which covers both Phases I and II. The two Phases also already have full planning permission. This new application is for a review of the IPC Licence related to issue of a separate Licence for Phase II, including full compliance with the EU Integrated Pollution Prevention and Control (IPPC) Directive and incorporating updated project-specific information. This application for Phase I recognises areas common to both Phases, including:

- combined impacts of both Phases on noise;
- combined impacts of both Phases on air quality;
- surface water drains from Phase II into existing Phase I drain systems and discharge; and
- common environmental management and accident response procedures.

Huntstown Power Company Limited is a project company wholly owned by Viridian Group plc. The Huntstown Phase I combined cycle gas turbine (CCGT) project involves the construction and operation of a 342.7 MWe gas fired combined cycle gas turbine power plant located to the west of the Dublin Airport in Ireland. This plant has been in operation since November 2002.

Phase I of the power station is located on the same site as the Phase II 401.1 MWe unit, which is under construction and scheduled to enter commercial operation in Autumn 2007. Both plants are to be operated by a subsidiary of Viridian Group, GenSys Power Limited, as the Operations and Maintenance Company formed for this project, who manage the day to day operations and maintenance of the Plant including the reporting obligations and dispatching notifications.

The site was selected owing to being located near a main transmission line of its main fuel source of gas as well as the dominant electricity demand centre of Dublin. Natural gas, dominated by St. Fergus analysis, is piped approximately 2 km to the site from a connection to the Irish National Transmission System. Electricity from Phase I is exported via a 220 kV cable to an ESB National Grid (ESBNG) air insulated switchyard within the site boundary and then by cable to the 220 kV Finglas Substation some 2 km from the site.

The project was constructed under a Turnkey engineer, procure and construct (EPC) contract by Siemens AG with completion in November 2002.

The Huntstown Phase I Project comprises a Siemens V94.3A gas turbine driving a generator. The gas turbine exhausts into a horizontal gas path heat recovery steam generator (HRSG). The HRSG delivers steam at three pressures to a separate steam turbine generator. The turbine is of a tandem compound design coupled to an electric generator.

The layout of the plant is in a single building, with the gas turbine at one end of the turbine building, and the steam turbine at the other, under a single crane. There is an exhaust bypass stack for operation without the steam turbine. The HRSG has an integral exhaust stack.

The gas turbine and steam turbine generators are connected at 15 and 20 kV respectively to a three winding step up transformer via isolated phase busducts. Each generator has its own generator circuit breaker. Unit auxiliary transformers connected to the generator busbars supply a unitised 6.6 kV switchboard. An on-site air insulated switchyard (AIS), owned by ESBNG, was built as part of the Phase I project and will be equipped with a second set of 220kV circuit breaker and export cable terminations to serve Phase II. The interface to ESB is at the cable interface to the generator transformer HV terminals.

The gas is supplied by Bord Gais by equipment in the existing on-site gas metering station.

The project uses an air cooled steam condenser which is a closed system with no plume. This enables the plant to consume minimal quantities of water giving an environmental benefit.

An auxiliary boiler is provided for gland steam supply during shutdown.

The natural gas fired CCGT design is selected as the Best Available Techniques (BAT) solution to meet the demand for electrical power in the Dublin region. It is designed to impose the least overall environmental impact in terms of land use, air quality, noise impact, water resources and waste management. The advantages of CCGT over conventional fossil fuel fired alternatives include:

- minimal environmental impact;
- higher generating efficiencies;
- compatibility with the proposed site, currently used for quarrying;
- higher plant reliability and ease of operation;
- low operating costs;
- shorter construction period; and
- well-proven technology for the plant rating proposed.

The location is fallow former agricultural land with no designated ecological status. Water consumption and discharge are minimised by use of air cooling for the rejection of unavoidable surplus heat and by the recirculation, whenever possible, of process drains. The most significant pollutant emitted to air, oxides of nitrogen (NO_x), is minimised at source by low emission burner design and computer modelling demonstrates that exhaust gases are dispersed adequately to ensure that impacts on air quality are well within standard objectives. Noise attenuation measures are applied at source with acoustic barriers to ensure that existing planning permission and IPC Licence noise limits are met.

The use of natural gas as principal fuel ensures that the process inherently incurs little waste. No landfilling is carried out on site and no waste requiring landspreading is generated.

A detailed assessment of the impact of NO_x emissions on air quality has been undertaken. Exhaust gas flowrate and pollutant concentrations under both natural gas firing and distillate oil firing are identified and their impact on air quality standards predicted using the widely

validated ISCST computer based methodology. Even under worst case scenario assumptions (continuous operation for a whole year, 10 days' distillate oil firing per year) the predicted impacts are well within short term and long term air quality objectives. Minor adjustments have been made to the air dispersion study to reflect updated data but the conclusions are unchanged.

The plant is not regulated under the Large Combustion Plant Directive but the emission control and monitoring standards are generally consistent with the Directive.

Surface water drains are routed via bypass type oil interceptors to ensure that discharges do not contain unacceptable levels of oil. Process effluents are minimised and treated before release. Sanitary drains are processed in a biodisc plant and further subjected to tertiary treatment in a percolation pit. The total discharges from Phases I and II flow into the adjoining quarry dewatering flow. A diagram is provided showing the route of the discharges to the Ward River north of the site. The impact on the assimilative properties of receiving waters of the Ward River is shown to exhibit a remote risk of exceedence of some statutory water regulation limits but only in an extreme worst case represented by 95 percentile river flow combined with the simultaneous occurrence of all maximum normal discharge flowrates and concentrations of content. Under all normal conditions the impact is insignificant.

Environmental monitoring of air quality at a local site at St. Margaret's National School is undertaken as part of the Planning Approval conditions.

The plant is operated under existing health, safety and environmental procedures, which include essential features such as staff training and awareness and an Emergency Incident Response Plan. The operator is developing its Environmental Management System and is committed to working towards accreditation to ISO 14001.

The plant is equipped to operate either continuously or two-shifting (starting and stopping daily). Procedures are well established to identify and minimise the impact of deviations from normal operating conditions.

The site qualifies for registration under the European Community (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006 on account of the stored distillate oil. The Applicant is committed to providing the Health and Safety Authority with documents and public availability of information required by these Regulations.

Following permanent cessation of the licensed activities on the site, Huntstown Power Company is committed to decommissioning and making safe of the site. The site owner will prepare and submit a report covering tests and investigations to confirm that the site presents no continuing risk to the environment.