

# 2 NON-TECHNICAL SUMMARY

- 2.1 A future shortfall in power generation in Ireland has been recognised as the economy continues to grow and develop. The Government proposes to deregulate the power generation industry in line with European Commission directives, and this will open up the market to private sector initiatives.
- 2.2 CRH plc is the largest commercial consumer of electricity in Ireland, and is also a major consumer of natural gas. As part of its on-going business development strategy, CRH plc is proposing to invest in a power generation project for export of electricity to the National Grid, for onward transmission to large electricity users. The project will be undertaken in partnership with an experienced power producer.
- 2.3 To this end, CRH plc is applying for planning permission for a Combined Cycle Gas Turbine (CCGT) plant. The plant will have an output of up to 600 MW, and is likely to be developed in two phases of circa 300 MW each. The actual plant rating eventually chosen will depend on technical factors (such as the particular turbine ratings offered by the suppliers), and commercial factors (such as the numbers of large customers wishing to take supply). The proposed combined cycle power plant comprises gas turbine generators, fuelled by natural gas (with light distillate oil as backup), combined with steam turbine generators, which operate on steam generated from the waste heat from the gas turbines.
- 2.4 The choice of gas-fired CCGT plant was made for a variety of reasons, including the higher efficiency and much lower environmental impact of such a station as compared to a coal or distillate-fired station, especially in terms of air emissions. Most of the operating plant will be enclosed within acoustically insulated clad buildings. As closed-cycle air-cooled condenser technology will be used, there will be no unsightly cooling towers nor stack plumes of any significance. As natural gas will be the main fuel, there will be no fuel stockpiles. Distillate tanks will provide standby supplies.
- 2.5 In addition to planning permission, the proposal will require an Integrated Pollution Control licence from the Environmental Protection Agency (EPA). The plant will be designed and operated to BATNEEC principles and technology.
- 2.6 The location selected for the proposed power generation project is at Huntstown, near Finglas in north Dublin. CRH plc has extensive properties there, which are currently used for the extraction of aggregates and the production of construction materials. The quarry at Huntstown currently employs 75 people directly and 45 people indirectly.
- 2.7 The population of the area is relatively low and dispersed in a linear pattern along the National Primary Route N2 (Dublin Derry Road) east of the site, and the Kilshane Road to the west.
- 2.8 A primary factor in the selection of the location is its close proximity to an ESB switching station on the National Grid and to a suitable natural gas pipeline. The industrialised nature of the surrounding land (quarry and associated processing plant) is also a consideration. Within the quarry property, the site for the development was selected as the most suitable, with the least impact on the surrounding area.

## The Project

- 2.9 As stated above, the plant will have an output of up to 600 MW, and is likely to be developed in two phases of circa 300 MW comprising of a circa 200 MW gas turbine driven electrical generator operating in combined cycle with a circa 100 MW steam turbine generator. Nominal ground level at the Huntstown site is 78.5m above mean sea level at Malin Head. Each phase will have a main stack and a by-pass stack, 33.5 m high.
- 2.10 Construction of the first phase of the project is anticipated to start in 1999 for construction in 2001. The second phase is anticipated to follow thereafter.

## Scoping

- 2.11 Scoping for the Environmental Impact Study identified the principal matters of likely concern as:
- Air quality;
  - Environmental noise;
  - Landscape and visual amenity;
  - Water quality;
  - Flora and fauna; and
  - Archaeological heritage.

## Impacts

- 2.12 The positive and negative impacts of the proposal on human beings, flora and fauna, soil, water, air, noise, climate, the landscape, material assets and the cultural heritage are examined in the EIS with reference to:
- The receiving environment;
  - The nature and scale of the impact;
  - Assessment of the impact; and
  - Mitigation measures (where appropriate).
- 2.13 A summary of the impacts, and the proposed mitigation measures where these are appropriate, is given in Table 2.1, and expanded on below.

### **Human Beings**

- 2.14 The proposed development is located adjacent to an existing quarry property. The population of the area is relatively low being principally dwellings along the N2 and Kilshane Roads. Agriculture remains a dominant land-use, but the area, as part of the urban fringe, is coming under increasing pressure for development.
- 2.15 The proposal will benefit the surrounding population by creating additional employment. The development is estimated to employ 30 people directly and approximately 200 during the construction of the power generation station.
- 2.16 The proposal will assist in meeting increases in electricity demand and will thereby help secure supply of competitive electricity.

### **Flora and Fauna**

- 2.17 The site is not designated for nature conservation. The site, as existing, is disused and/or agricultural land adjacent to a quarry. In terms of significant flora or fauna, the site offers little of importance. The plant community on the site is not of any particular or

special interest to the area and is typical of that found on the surrounding land. The layout of the proposed development is designed to keep removal of hedgerows to a minimum. There will be no significant impact on flora and fauna.

#### **Soil**

- 2.18 The proposed site is situated on Argillaceous Limestone. The overlying soils are clayey and of low permeability. They are typical of the area. Other than removal of soil to facilitate construction, no significant impact on the soil is expected.

#### **Water**

- 2.19 Surface water runoff will flow into the quarry area. From here the water will be pumped into the existing network of drains which cross the site. Since the volume of effluent from the power plant will be small, no significant impact is expected.
- 2.20 Since no foul sewers exist at the Huntstown site, domestic waste will be treated on site.
- 2.21 Boiler blowdown, water discarded from the boiler, will be treated to maintain a low level of salts in the effluent, and discharged with the surface water. The elimination of this water is necessary for the maintenance of steam quality. There will be no significant adverse impact from discharge of the treated water.

#### **Atmosphere**

- 2.22 Combustion of fossil fuels for power generation inevitably results in emissions to the atmosphere. The main emissions to be considered are nitrogen oxides (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>). Air quality and emission levels are guided by the limits set by the Environmental Protection Agency in the draft BATNEEC Guidance Note for the Production of Energy.
- 2.23 The operation of the proposed power generation station will not produce any significant odours.

#### **Noise**

- 2.24 The existing noise environment of the site is dominated by aircraft noise and road noise. However, during the period 01.30 to 04.30 hours, existing noise levels can be similar to those in quiet suburban areas.
- 2.25 The technology proposed will include the latest advances in noise attenuation measures. Plant configuration has been designed with noise attenuation in mind, keeping the noisier elements of the site furthest from the residential properties, and incorporating noise control measures as an integral part of the proposal. Noise design criteria of LA<sub>90</sub> of under 45dBA will be set for the project at the nearest noise sensitive locations. This criterion will apply under moderate downwind conditions, where noise propagation is at its maximum. The expected noise impact will not be significant on local dwellings.

#### **Electromagnetic Radiation**

- 2.26 The proposed power station will require connection to the national transmission network by overhead lines. The construction of an overhead line to the nearby ESB sub-station will be the subject of a separate planning application by the ESB, but the line is not anticipated to give rise to any significant adverse impacts in terms of electromagnetic radiation. The site was chosen to minimise overhead lines and ESB system reinforcement.

- Dust**
- 2.27 Dust generated during the operation of the power station will be negligible. Dust generated from the development during construction will not be dissimilar to that associated with any other construction project. General dust reduction and avoidance measures will be employed.

- Climate**
- 2.28 The proposed power generation project will have a high thermal efficiency, and combined with the benefits of burning gas which has a low carbon to hydrogen ratio, will result in a significantly reduced emission of carbon dioxide per unit of electricity produced, in comparison with existing power plants. The contribution of the proposal to global warming will, therefore, be lower than for alternative types of thermal power station.

- Landscape and Visual Amenity**
- 2.29 The area is not designated as of high amenity value, nor are there any designated views or prospects in the area. The proposal will contribute to the changing landscape character of the area, but this is already undergoing significant change. The photomontages demonstrate low visual impact even for the nearest adjacent properties.
- 2.30 Visual impacts will also be further mitigated through careful landscaping and planting of the site.

- Material Assets**
- 2.31 Additional traffic arising from the proposal will have no significant impact on the flow of traffic on the road network in the vicinity of the proposed development and no mitigation measures will be required for traffic generated by the proposed development.
- 2.32 The proposal has been carefully designed to conform to the requirements of the Irish Aviation Authority for the safety of air traffic using Dublin Airport. In particular, the height of the stacks has been maintained within the required maximum allowed.

- Cultural Heritage**
- 2.33 A number of archaeological features are recorded in the general Huntstown area, but none are located on the site proposed for the power station.

- Conclusion**
- 2.34 In overall terms, the site selected for the power generation project is uniquely suitable, with good connections to a main gas pipeline and to the National Electricity Grid. The project will help secure electricity supply and provide employment. No significant adverse environmental impacts are anticipated.

**Table 2.1 Summary of Impacts and Mitigation Measures**

	Receiving Environment	Nature and Scale of Impact	Assessment of Impact	Mitigation Measures
<b>Human Beings</b>	The site is located adjacent to a quarry and associated processing plant within a rural context, and in close proximity to the M50 motorway and Dublin Airport.	Development will provide employment, but more importantly, will provide electricity needed to meet demand into the next century	Positive Impact	N/A
	Principal impacts on human beings relate to the following: Landscape; Air Quality and Noise.	Refer to impacts on landscape, air quality and noise. (see below).	See below	See below
<b>Flora &amp; Fauna</b>	The existing site comprises of a number of grassed areas separated with hedgerows. No significant flora and fauna exist on site.	Removal of existing flora (including hedgerows) and fauna to facilitate development.	Insignificant	Implementation of proposed landscape scheme. Provision of planting belts.
<b>Soil</b>	The site contains mainly clayey soil to 2 or 3 metres below ground level. Overburden is glacial till, common around County Dublin.	Excavation topsoil, which will be used in landscaping works.	Insignificant	N/A
<b>Water</b>	Drainage ditches exist around the site to drain the surface and stormwater.	Surface water will flow to quarry area and be disposed of with existing quarry water.	Insignificant Impact on water outside the site boundary.	Protective measures will be incorporated to collect any spillage.
	No foul sewers serve the site at present.	On-site treatment plant will be provided.	Insignificant	None
<b>Air</b>	Air quality typical of urban fringe environment with major roads, airport and quarry activities. Existing sulphur dioxide and smoke levels are within the relevant air quality standards.	Emission levels from the proposed power plant meet all required standards.	Insignificant	Conformance with appropriate air quality standards for air emissions

**Table 2.1 Summary of Impacts and Mitigation Measures (continued)**

	Receiving Environment	Nature and Scale of Impact	Assessment of Impact	Mitigation Measures
<b>Noise</b>	Noise levels at the site are influenced by: <ul style="list-style-type: none"> <li><input type="checkbox"/> proximity to existing working quarry,</li> <li><input type="checkbox"/> proximity to M50 and N2 and</li> <li><input type="checkbox"/> proximity to Dublin Airport</li> </ul>	Maximum impact at nearest noise sensitive location will occur at night during moderate downwind conditions.	Low	Noise abatement measures will be incorporated into the design of the proposal.
<b>Climate</b>	Concern over increasing levels of Greenhouse gases in the atmosphere. Carbon dioxide is the most important gas, responsible for about 50% of the contribution to global warming. It is produced from the burning of fossil fuels.	Proposal will increase levels of carbon dioxide, but at significantly lower rates than for alternative thermal power stations.	Minor overall negative impact	The proposed CCGT will burn natural gas, which will provide relatively high thermal efficiency, and combined with the benefits of burning gas, will result in a significantly reduced emission of carbon dioxide.
<b>Landscape</b>	The area surrounding the site has a generally flat topography  The landscape character of the area is dominated by typical urban fringe development.	The development will contribute to an already changing landscape character.  The proposed plant will impact on the visual character, but will be in synergy with the existing development on the quarry site.  Views from a limited number of residences will be affected.	Minor impact on the character of the landscape.  Low impact because of airport limitations  Moderate negative impact on views of a limited number of residences.	Implementation of proposed landscape scheme.  Implementation of proposed landscape scheme and planting belts.
<b>Material Assets</b>	Traffic levels on the N2 and the nearby M50 motorway.  Dublin Airport in close proximity - air traffic regulations must be observed	There will be no significant impact  There will be no significant impact	No significant impact  Insignificant	None  Design maintains structures, including stacks, within defined obstacle limitation surface.
<b>Cultural Heritage</b>	No known archaeological remains on the site.	No impacts that can be predicted without an archaeological field investigation	Insignificant	A reason for selecting the site is the absence of recorded archaeological features.

The above summary excludes construction impacts, which will be short term and generally insignificant.