Draft

Transitional National Plan for Ireland

Submitted to the European Commission under
Article 32 of the Industrial Emissions Directive

(EU Directive 2010/75/EC)

TABLE OF CONTENTS

APPENDICES

Appendix A **Table A.1 List of Combustion Plants included in the TNP**

Appendix B **Table B.1 Calculation of 2016 Emissions Ceilings**

Table B.2 Calculation of 2019 Emissions Ceilings

Table B.3 Overview of Emissions Ceilings

Appendix C **Directive 2010/75/EC on industrial emissions (integrated pollution prevention and control)**

Appendix D **Commission Implementing Decision of 10 February 2012 laying down rules concerning the transitional national plans referred to in Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions**

Appendix E **SEA Screening Report prepared in accordance with Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (Strategic Environmental Assessment Directive)**

Appendix F **Appropriate Assessment Screening Report prepared in accordance with Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora** (**Habitats Directive**).

Appendix G **TNP Calculation Spreadsheets for each plant and associated Guidance Document**

1 INTRODUCTION

This document presents the draft Transitional National Plan (TNP) for Ireland under Article 32 of the Industrial Emissions Directive (EU Directive 2010/75/EC[(1)] – as presented in **Appendix C** of this document). This TNP document will be issued to the Commission by 1 January 2013 for approval.

A summary description of the Industrial Emissions Directive (IED) and the Transitional National Plan (TNP) is provided in **Section 2** of this document.

The requirements for the detail to be provided in the TNP are listed in the Commission's Implementing Decision of 10 Feb 2012 (2012/115/EU[(2)] – as presented in **Appendix D** of this document) which was established under Article 41(b) of the IED. Article 2 of the Implementing Decision requires that the TNP should include the following information:

a. *a list of all the combustion plants that fall under the plan, including all relevant information on their operational characteristics;* **(Section 3.2 and Appendix A of this document)**

b. *the calculated contribution of each individual combustion plant to the emission ceilings for 2016 and 2019;* **(Section 3.3 and Appendix B of this document)**

c. *a table setting out the emission ceilings for each of the pollutants the plan covers for the years 2016, 2017, 2018, 2019 and for the first semester of the year 2020;* **(Section 3.4 and Appendix B of this document)**

d. *the details of the calculation of those emission ceilings.* **(Section 3.1 of this document)**

In addition, the transitional national plan shall contain the following information:

a. *a description of how the implementation of the plan shall be monitored and reported to the Commission;* **(Section 4 of this document)**

b. *a list of the measures that shall be applied to ensure that all combustion plants that are included in the plan comply on 1 July 2020 at the latest with the applicable emission limit values set out in Annex V to Directive 2010/75/EU.* **(Section 5 of this document)**

This TNP document has been prepared in accordance with the above requirements and follows the template requirements presented in the Commission's Implementing Decision.

In addition to the mandatory TNP requirements, **Section 6** of this document provides summary information on the environmental assessment of the TNP in line with the requirements of the following EU Directives:

- Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (**Strategic Environmental Assessment Directive**[3])

- Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (**Habitats Directive**[4])

This TNP should be read in conjunction with the reports prepared under the above legislative regimes on the wider environmental impacts of the TNP.

2 BACKGROUND

Article 32 of the IED contains provisions for a Transitional National Plan (TNP) which provides an option for Member States to draw up a plan to allow 'existing' large combustion plants additional time to derogate from the IED's Emission Limit Values (ELVs) set out in Annex V to the IED. This TNP is solely for existing plants and is time-limited to the period 1 January 2016 to 30 June 2020. The TNP provides for a linear reduction or 'ramping down' in emissions to IED levels over this timeframe (four and a half years) as opposed to meeting these levels with immediate effect when the IED ELV provisions come into force in 2016.

The TNP provides a compliance route in relation to existing plant whereby a Member State (MS) can, for a limited period (until June 2020), disapply the IED Annex V ELV requirements provided a collective national annual mass emission cap is complied with and that the Emission Limit Values (ELVs) in force prior to the TNP are at least maintained. Where the Member State opts to provide for a TNP, individual 'existing' plant can decide to opt in and decide which pollutants to opt into the TNP (NO_x, SO_2 and Dust) with the exception of gas turbines where only NO_x can opt in.

Entry to the TNP is limited to combustion plants which were granted the first permit before 27 November 2002 or the operators of which had submitted a complete application for a permit before that date, provided that the plant was put into operation no later than 27 November 2003. (Article 32(1) IED). In addition, the following rules apply to entry to the TNP:

- A TNP shall only include entire combustion plants and not parts of a combustion plant. (Article 1 Implementing Decision)

- A plant engaged in the incineration or co-incineration of waste may not enter the TNP. If a plant commences the incineration or co-incineration of waste during the TNP timeframe the Commission must be notified. (Annex 1.1)

- The TNP cannot include combustion plants within refineries firing low calorific gases from the gasification of refinery residues or the distillation and conversion residues from the refining of crude oil for own consumption, alone or with other fuels. (Article 32(1) IED)

For the plants entering the TNP, a series of emissions ceilings are calculated for the period 2016 to 2020 for each pollutant covered. These emission calculations are based on Section 3 of the Annex to the Commission's Implementing Decision of 10 Feb 2012 and further details of the methodology are presented in **Section 3.1** of this document. The calculation methodology is based on the plants thermal rated input on the 31 December 2010, the actual operating hours and fuel use over the ten year baseline period (2001 to 2010 inclusive).

The determination of mass emission caps is achieved by summing the calculated contributions from the participating plants. The contribution of each plant is determined by multiplying a stack gas volume by an ELV. The ELVs are based on the Large Combustion Plant Directive (LCPD[5]) for 2016 and the IED for 2019. A linear decrease is then applied between 2016 and 2019 to determine the caps in the intermediate years. The 2020 cap (Jan to Jun) is then half of the 2019 cap.

The TNP is required to present a list of the measures that shall be applied to ensure that all combustion plants in the TNP comply on 1 July 2020 at the latest with the applicable emission limit values set out in Annex V to Directive 2010/75/EU. These measures are presented in Section 5 of this document.

Article 32 (4) of the IED requires the competent authority to monitor the emissions of nitrogen oxides, sulphur dioxide and dust of each combustion plant falling under the TNP, by verifying the monitoring or calculation data of the operators of the combustion plants. This monitoring is described in Section 4 of this document and is carried out to ensure compliance with the mass emission caps presented in Section 3 of this document.

3 EMISSIONS CEILINGS

3.1 CALCULATION METHODOLOGY

3.1.1 Basic Calculation

The methodology for calculating the plant specific TNP annual emissions ceilings is defined in Section 3 of the Annex to the Commission's Implementing Decision of 10 Feb 2012. The contribution of each combustion plant expressed in tonnes per year (tpa) is calculated using the following equation:

$$\textit{Contribution to ceiling (tpa)} = \textit{Waste gas flow rate (Nm}^3\textit{ pa)} \times \textit{ELV (mg/Nm}^3\textit{)} \times 1{,}0 \times 10^{-9}$$

where:

'Waste gas flow rate' is the volumetric flow rate of waste gases expressed in cubic metres per year (Nm^3 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.

'ELV' is the relevant emission limit value for the pollutant concerned expressed in mg/Nm^3, assuming an oxygen content by volume in the waste gas of 6% in the case of solid fuels, 3% in the case of liquid and gaseous fuels (for combustion plants other than gas turbines or gas engines) and 15% in the case of gas turbines and gas engines.

To demonstrate consistent application of the TNP calculation methodology, an Excel workbook[(6)] has been developed and for each specific participant plant a workbook has been compiled. The guidance manual for the Excel workbook is provided in **Appendix G**.

3.1.2 Waste Gas Flow Rate

The waste gas flow rate (Nm^3 pa) may be calculated based on application of a standard flow factor to the recorded fuel use or may be based on measured emission flow rates at source. Both calculation methodologies have been employed in this TNP.

For the six installations that operate on gas, oil and coal, the recorded fuel use over the baseline period is used to determine flows using the standard flow factors. For the installations that is peat fired there is no standard flow factor and hence the validated measured emissions have been referenced.

For the plants operating on gas, oil and coal, fuel consumption data has been provided for each year (2001-2010) and for each fuel in the event that fuel mixes are employed. The fuel consumption data and the net calorific value are then multiplied to obtain the energy consumption in GJ as follows:

Annual thermal input (GJ) = Annual fuel consumption (tonnes) x Net calorific value (GJ/tonne)

The net calorific values and the fuel consumption data are based on values that have been validated by the Competent Authority (Environmental Protection Agency) and include sources such as EU Emissions Trading Scheme (for CO_2) data and Annual Emission Reports.

The annual waste gas flow rate is then calculated as the product of the annual average thermal input and the stack gas flow factor as follows:

Waste gas flow rate (Nm^3 pa) = Annual thermal input (GJ) x Stack gas flow factor (Nm^3/GJ)

The stack flow factors are based on, and aligned with, the values agreed between the UK Electricity Supply Industry (ESI) and the Environment Agency of England and Wales in 2007 [(7).] The standard values applicable to the plants covered in this TNP are presented in Table 3.1.

Table 3.1: Stack Gas Flow Factors

Plant Type	**Boiler**	**Boiler**	**Turbine**
Primary Fuel	**Gas/Oil**	**Solid Fuel**	**Gas/Oil**
Fuel	**3% $O_{2\ dry}$ m^3/GJ**	**6% $O_{2\ dry}$ m^3/GJ**	**15% $O_{2\ dry}$ m^3/GJ**
Coal		364	
Heavy Fuel Oil	290		
Gas Oil	284		857
Gas	279		842

A number of the plants included in the TNP are fired on multiple fuel types. For each of these plants the above calculation process has been applied for each fuel type at the appropriate oxygen reference conditions, net calorific value and stack gas flow factor. The annual average waste gas flow rate for the plant is then calculated based on the cumulative flow rates for all fuel types as per the equation:

Contribution to ceiling (tpa) = Σ [Waste gas flow rate (Nm^3 pa) × ELV (mg/Nm^3) × 1,0 × 10^{-9}]

For the peat/biomass fired plant, the inherent lack of homogeneity in the fuel suggests that the above calculation methodology is not appropriate. For this plant, the actual monitored normalised emission volumes from the facility have been compiled for the baseline period to generate an average waste gas flow rate (Nm^3 pa). This baseline data is submitted annually and pre-validated by the Environmental Protection Agency for compliance with the IPPC licence.

3.1.3 Emission Limit Values

Article 32(3) of the IED and Section 3.2 of the Annex to the Commission's Implementing Decision of 10 Feb 2012 require the TNP emission ceilings for the year 2016 to be calculated on the basis of the relevant emission limit values set out in Annexes III to VII to Directive 2001/80/EC (Large Combustion Plant Directive).

Article 32(3) of the IED and Section 3.3 of the Annex to the Commission's Implementing Decision of 10 Feb 2012 require the TNP emission ceilings for the year 2019 to be calculated on the basis of the relevant emission limit values set out in Part 1 of Annex V to Directive 2010/75/EU (Industrial Emissions Directive). Thus, the calculation of the 2019 emission ceilings is based upon the relevant emission limit values which would be applicable on 1 January 2016 under Directive 2010/75/EU to the combustion plant concerned in the absence of a TNP.

The emission limit values under the Large Combustion Plant Directive and the Industrial Emissions Directive are presented in Appendix C and D respectively of the Commission's Implementing Decision of 10 Feb 2012. The appropriate emission limit values for the total rated thermal input and fuel use of each plant have been incorporated into the calculation methodology for the emission ceilings. The aggregation rules for common stacks as outlined in Article 29 of the IED has been used to determine the relevant ELVs for each plant.

3.1.4 Contribution to Ceiling

The contribution of each combustion plant is calculated using the following equation for both 2016 (using the Large Combustion Plant Directive ELVs) and 2019 (using the Industrial Emissions Directive ELVs):

$$\textit{Contribution to ceiling (tpa)} = \textit{Waste gas flow rate } (Nm^3 \textit{ pa}) \times \textit{ELV } (mg/Nm^3) \times 1{,}0 \times 10^{-9}$$

For the years 2016 and 2019, the total emission ceilings per pollutant are determined by adding up the contributions of each individual plant to the respective emission ceilings:

$$\text{Ceiling 2016 (tpa)} = \Sigma \text{ [individual plant contribution to 2016 ceiling]}$$

$$\text{Ceiling 2019 (tpa)} = \Sigma \text{ [individual plant contribution to 2019 ceiling]}$$

Once the emission caps for 2016 and 2019 are calculated, a linear decrease is then applied between 2016 and 2019 to determine the caps in the intermediate years. The 2020 cap (Jan to Jun) is then half of the 2019 cap.

The calculated emission ceilings on a plant basis are discussed in Sections 3.3 of this document and the total emissions ceilings for all plants are discussed in Sections 3.4 of this document. The detailed calculations of each plant are presented in the spreadsheets included in **Appendix G**.

3.2 LIST OF COMBUSTION PLANTS

Article 32 of the Industrial Emissions Directive provides that Member States may draw up and implement a transitional national plan (TNP) for existing plants (i.e. granted the first permit before 27 November 2002 or submitted an application for a permit before that date provided the plant was put into operation no later than 27 November 2003). The information requested under Article 2(2) of the Implementing Decision is required in the format presented in Table A.1 of Appendix A of the Implementing Decision. The information required in the TNP format is included in **Appendix A** of this document.

The plants included within the TNP for Ireland include the operators listed in **Table 3.2**. All of these plants are regulated by the Environmental Protection Agency through an Integrated Pollution Prevention Control (IPPC) licence and the numbers assigned are the reference for the licence.

Table 3.2: List of TNP Combustion Plants

Number	Plant Name	Total Rated Thermal Input (MW_{th})	Fuel
P0605-MP1/2	Moneypoint Generating Station Units 1 & 2	2 x 801MW_{th} boilers	Coal/HFO
P0605-MP3	Moneypoint Generating Station Unit 3	801MW_{th} boiler	Coal/HFO
P0561-AD1	Aghada Generating Station, Unit 1	655MW_{th} boiler	Gas
P0561-AT1	Aghada Generating Station, Unit CT11	310MW_{th} gas turbine	Gas/Gas oil
P0561-AT2	Aghada Generating Station, Unit CT12	310MW_{th} gas turbine	Gas/Gas oil
P0561-AT4	Aghada Generating Station, Unit CT14	310MW_{th} gas turbine	Gas/Gas oil
P0578-MA1	Marina Generating Station, CT Unit	310MW_{th} gas turbine	Gas/Gas oil
P0606-GR1/2	Great Island Generating Station, Units 1 & 2	2 x 159 MW_{th} boilers	HFO/Gas Oil
P0606-GR3	Great Island Generating Station, Unit 3	304 MW_{th} boiler	HFO/Gas Oil
P0607-TB1/2	Tarbert Generating Station Units 1 & 2	2 x 187 MW_{th} boilers	HFO/Gas Oil
P0607-TB3/4	Tarbert Generating Station Units 3 & 4	2 x 714 MW_{th} boilers	HFO/Gas Oil
P0035-RA1	Rusal Aughinish	300MW_{th} boiler	HFO
P0482-EP1	Edenderry Power Limited	298MW_{th} boiler	Peat/Biomass/Fuel Oil

3.3 PLANT EMISSION CEILINGS

Article 2(1)(b) of the Commissions Implementing Decision requires the TNP to present the calculated contribution of each individual combustion plant to the emission ceilings for 2016 and 2019. This information must be provided in the format presented in Table B.1 (for 2016) and Table B.2 (for 2019) in Appendix B of the Implementing Decision.

The information required in the TNP format is included in **Appendix B** of this document. The calculations for the emissions ceilings for each plant for each year in the TNP period are presented in the excel spreadsheets in **Appendix G**.

3.4 ANNUAL EMISSION CEILINGS

Article 2(1)(c) of the Commissions Implementing Decision requires the TNP to present the calculated emission ceilings for each of the pollutants for each of the years 2016 to 2020 inclusive. This information must be provided in the format presented in Table B.3 in Appendix B of the Implementing Decision. The information required in the TNP format is included in **Appendix B** of this document.

4 MONITORING AND REPORTING

Article 32 (4) of the IED and Article 6 of the Commission's Implementing Decision require the TNP to contain provisions on monitoring and reporting that comply with the implementing rules as well as the measures foreseen for each of the plants in order to ensure compliance with the emission limit values that will apply from 1 July 2020.

This section of the TNP outlines the proposed monitoring and reporting provisions to ensure full compliance with the emission caps calculated in accordance with the implementing decision.

The competent authority for the licensing and enforcement of the IED in Ireland will be the Environmental Protection Agency (EPA) which currently carries out the same function under the LCP and IPPC Directive [8]. The framework for the monitoring, reporting and enforcement of the TNP will be through the well established environmental licensing regime and will comply with Article 6 of the Commission's Implementing Decision.

4.1 LICENSING

It is anticipated that the calculated emissions ceilings (tonnes per annum, as presented in Appendix B) will be included as annual limits in the environmental licence for each of the plant covered the TNP.

In addition to the new annual emission caps, the emission limit values for NO_x, SO_2 and Dust currently in place for the TNP participants will be reassessed to ensure their appropriateness and that, at least, the ELVs in place on the 31 December 2015, are maintained through the TNP period (up to 30 June 2020) as stated in Article 32(2) of the IED.

4.2 MONITORING AND REPORTING BY TNP PARTICIPANTS

All of the TNP participants will have Automated Monitoring Systems (AMS) consistent with Part 3 of Annex V of the IED. Data recorded and reported from these AMS will be issued to the EPA under the terms of the environmental licensing and enforcement process in a manner similar to current licensing arrangements.

For the duration of the TNP participants will report specified AMS emissions at intervals to be agreed with the EPA. The plant reporting will also provide details of any relevant operational information as requested by the EPA.

The achievement of the individual plant annual emission caps will be met through a series of compliance measures as outlined in Section 5 of this document and progress will be reported to the EPA as part of the ongoing reporting requirements.

To mitigate against the risk that emission ceilings might be exceeded, the TNP participants will provide reports on the cumulative emissions at the request of the EPA. The frequency of this reporting will be set by the EPA, as the competent authority, for all plants. The reporting will allow the EPA to track progress in complying with the annual emissions ceilings for each plant and hence, the national emission cap.

These reports will also include detailed emissions projections to year end based on projected external variables such as weather conditions and energy demand as well as internal factors such as compliance measures, demand management, improvements in efficiency, etc.

In addition, any planned or unplanned change to a plant participation in the TNP will be notified, by the licensee, to the EPA in writing.

4.3 MONITORING AND REPORTING BY THE COMPETENT AUTHORITY

Article 6(2) of the Implementing Decision requires the Member States to ensure that emissions from the TNP plants are limited to a degree which allows compliance with the emission ceilings.

The EPA will monitor emissions of each combustion plant falling under the TNP, by verifying the monitoring or calculation data of the operators of the combustion plants. All data reported by participants and employed in determining annual emissions will be subject to validation by the EPA at any time. Where data cannot be validated the EPA will direct the participant to review the data and amend the report accordingly. The revised report will be subject to further EPA validation.

For all TNP plants, the licence conditions relating to the annual emission ceilings shall provide for inter-plant statistical transfers which will be sanctioned by the EPA. Such transfers may be permitted provided that the aggregated tonnage values emitted are in compliance with the aggregated ceiling limits for the plants in question. It is envisaged that all inter-company statistical transfers shall be managed by the EPA. Any operator that exceeds its allocation, calculated as per section 3.1, and which has not acquired a corresponding transfer from anther TNP operator will be in breach of the terms of the TNP generally, and specifically the terms of its IED permit conditions.

A report will be submitted to the Commission every year within 12 months setting out the plant-by-plant emission inventory data for all combustion plants included in the TNP. This report will also include details of any inter-plant statistical transfers approved by the EPA to facilitate balancing of the national emissions cap.

4.4 SUBSEQUENT CHANGES TO THE TNP

For the purposes of Article 32(6) of the IED, any subsequent changes to the plan affecting the applicable emission ceilings on a plant basis or the national emissions cap will be notified to the Commission. Section 4 of the Annex to the Commission's Implementing Decision identifies the

minimum reporting requirements for the MS to notify the Commission on changes to the TNP. The minimum reporting requirements include the following changes:

- Where plants opt for the limited lifetime derogation (Article 33 of the IED).
- Where plants are closed or the total rated input is less than 50MW.
- Where plants commence the co-incineration of waste.
- Where plants opt to exit the TNP prior to, or during, the TNP period of 1st January 2016 to the 30th June 2020 and opt for an alternative IED compliance route including compliance with the emission limit value options prescribed in Annex V of the IED.

Minor changes such as reduced thermal input, changes to operating hours or changes to the fuel type or volume do not need to be reported to the Commission other than in the annual emissions inventory submitted to the Commission by the Member State.

Article 32(3) of the IED states that where a plant included in the TNP is closed or no longer falls within the scope of Chapter III, this shall not result in an increase in total annual emissions from the remaining plants covered by the plan.

5 COMPLIANCE MEASURES

Article 2(1) of the Commission's Implementing Decision requires a list of the measures that shall be applied to ensure that all TNP plants comply on 1 July 2020 with the applicable emission limit values set out in Annex V of the IED.

In order to achieve this target (i.e. compliance with the IED Annex V ELVs on 1 July 2020), the TNP plant operators have identified various compliance measures that may be implemented for each plant. These measures vary from plant to plant but may include operational measures or infrastructural changes.

It should be noted that the measures proposed are viable emissions reduction strategies at the date of lodgement to the Commission for approval (1 January 2013). However, the list of proposed measures may be modified, substituted or eliminated as required by the TNP plant operators depending on variables which are outside the control of the TNP operators such as:

- The outcome of the current LCP BREF review, which will set BAT for all Large Combustion Plants (LCPs) and the subsequent timing of the application of the associated BAT conclusions.
- The outcome of the reviews of the Gothenburg Protocol and National Emissions Ceilings Directive and the ensuing implications for LCPs.
- Changes to the design of the Single Electricity Market of Ireland and Northern Ireland in 2016 as required by the EU's Target Model, the Agency for the Cooperation of Energy Regulators' (ACER) Framework Guidelines and the European Network of Transmission System Operators (ENTSO-E's) Network Codes.
- The outcome of the UK Electricity Market Reform currently in progress and its impact on the Single Electricity Market on the island of Ireland.
- The development and sufficiency of gas infrastructure on the island of Ireland, e.g. development of Corrib, Shannon LNG and storage facilities,
- The effect of increasing levels of intermittent renewable generation on national generation capacity requirements.
- Fuel and carbon prices in future years.
- Unplanned maintenance events.

Table 5.1 presents the proposed list of compliance measures for each participant in the TNP.

Table 5.1: List of TNP Plant Compliance Measures

Number	Plant Name	TNP Mass Emission Allowance - Compliance Measures	Post TNP IED Compliance Measures
P0605-MP1/2	Units 1 and 2, Moneypoint Generating Station	• Load Factor Management • Optimisation of existing emissions abatement equipment (FGD, SCR) • Moneypoint units may also exit the TNP and operate to IED ELVs earlier than June 2020.	• Compliance with IED Annex V ELVs through optimization of existing FGD, SCR and fabric filters.
P0605-MP3	Unit 3, Moneypoint Generating Station		
P0561-AD1	Unit 1, Aghada Generating Station	• Load Factor Management • Investigate the installation of pre and post combustion NO_x abatement equipment modifications (including SNCR, Over-Fire Air and Lo-NOx Burners)	• Selection of LLTD option before 31/12/2013 • The closure of the plant. • Compliance with IED Annex V ELVs
P0561-AT1	Turbine CT11, Aghada Generating Station	For each of these units the following will be considered • Load Factor Management • Investigate installation of NOx abatement equipment modifications (DLN and Water Injection systems)	For each of these units the following will be considered • Selection of LLTD option before 31/12/2013 • Compliance with IED Annex V ELV 500hr emergency generation option – No upgrade required based on current ELVs • Compliance with IED Annex V ELV 1500hr – 5 year rolling average option – requiring Water Injection upgrade of units. • Compliance with IED Annex V ELV - requiring DLN upgrade of units. • The closure of the plant.
P0561-AT2	Turbine CT12, Aghada Generating Station		
P0561-AT4	Turbine CT 14, Aghada Generating Station		
P0578-MRT	CT Unit, Marina Generating Station		
P0607-TB1/2	Units 1 and 2, Tarbert Generating Station	• Load factor Management to ensure the steady progression towards equivalent IED emission standards, as facilitated via the TNP will be achieved.	• The operator may select LLTD option before 31/12/2013. • Compliance with the Emission Limit Values that apply under the 1500 operating hours derogation specified in Annex V, through the application of the necessary pollution abatement techniques. • Compliance with the Emission Limit Values that apply under Annex V, through the application of the necessary pollution abatement techniques. • The closure of the plant.
P0607-TB3/4	Units 3 and 3, Tarbert Generating Station		
P0606-GR1/2	Units 1 and 2, Great Island Generating Station	• Load factor Management to ensure the steady progression towards equivalent IED emission standards, as facilitated via the TNP will be achieved.	• The operator may select LLTD option before 31/12/2013. • Compliance with the Emission Limit Values that apply under the 1500 operating hours derogation specified in Annex V, through the application of the necessary pollution abatement techniques. • Compliance with the Emission Limit Values that apply under Annex V, through the application of the necessary pollution abatement techniques. • The closure of the plant.
P0606-GR3	Unit 3, Great Island Generating Station		

Number	Plant Name	TNP Mass Emission Allowance - Compliance Measures	Post TNP IED Compliance Measures
P0035-RA1	Rusal Aughinish	• Load factor Management to ensure the steady progression towards equivalent IED emission standards, as facilitated via the TNP will be achieved. • Feasibility of installation of a gas boiler(s) to substitute the demand from the existing heavy fuel oil boilers will be carried out.	• Selection of LLTD option before 31/12/2013. • Complete replacement of existing Fuel Oil fired units with natural gas fired boilers if feasible
P0482-EP1	Edenderry Power Limited	• Load factor Management to ensure the steady progression towards equivalent IED emission standards, as facilitated via the TNP will be achieved. • SO_x & Dust abatement – modifications to fuel feedstock and additional sorbent injection • NO_x abatement measures – may include modifications to air staging in the combustion chamber	• The operator may select LLTD option before 31/12/2013. • SO_x & Dust abatement measures - installation of a new FGD equipment with a concomitant modification to the existing ESP (installation of additional fields and possible an additional Fabric filter) may be required • NO_x abatement measures – post investigations, installation of equipment to facilitate DLN & Water Injection systems or SNCR for NOx reduction • Plant closure

6 ENVIRONMENTAL ASSESSMENT

6.1 STRATEGIC ENVIRONMENTAL ASSESSMENT

The Transitional National Plan (TNP) under the Industrial Emissions Directive (IED) has been assessed in accordance with EU Directive 2001/42/EEC on the assessment of the effects of certain plans and programmes on the environment (the Strategic Environmental Assessment (SEA) Directive). This Directive has been transposed into Irish Legislation through the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004[(9)]) as amended.

In October 2012, the Commission provided guidance on the application of the SEA Directive to the TNP process. The Commission considers that a TNP is deemed to set the framework for the future development consent of plants as the TNP will lead to changes in the permit conditions of the plants concerned. As such, the SEA process applies to the TNP implementation.

Making a determination on how the SEA process is applied to a plan is the first stage of the SEA process and is known as the Screening Phase. The Screening Phase has been applied to the TNP to determine if further assessment is required. The Screening Assessment follows the requirements of Article 3(5) of the SEA Directive which states that:

> *Member States shall determine whether plans or programmes referred to in paragraphs 3 and 4 are likely to have significant environmental effects either through case-by-case examination or by specifying types of plans and programmes or by combining both approaches. For this purpose Member States shall in all cases take into account relevant criteria set out in Annex II, in order to ensure that plans and programmes with likely significant effects on the environment are covered by this Directive.*

To this end the TNP has been assessed against the relevant criteria in Annex II of the SEA Directive to determine the potential for significant environmental effects. In summary, the SEA Screening Report concludes that the TNP is not considered to generate significant effects on the environment (as defined in the SEA Directive) and the TNP is not considered to trigger the requirement for a full SEA. Hence, it is not proposed to proceed beyond the Screening Stage of the SEA Assessment. A copy of the SEA Screening Report is presented in **Appendix E** of this document.

6.2 APPROPRIATE ASSESSMENT UNDER THE HABITATS DIRECTIVE

The TNP has also been assessed under Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). The report comprises information in support of screening for an Appropriate Assessment in line with the requirements of Article 6(3) of the Habitats

Directive and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011[9]).

Articles 3 to 9 of the Habitats Directive provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SAC) designated under the Habitats Directive and Special Protection Areas (SPA) designated under the Conservation of Wild Birds Directive (79/409/ECC[11]) as codified by Directive 2009/147/EC[12].

Article 6(3) of the Habitats Directive sets out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment (AA):

> *Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

A qualified ecologist has carried out an Appropriate Assessment (AA) screening assessment of the TNP to determine the impacts on Natura 2000 sites. The assessment maps and identifies all Natura 2000 sites within a 15km radius of each of the plants participating in the TNP.

The potential impact of combustion emissions, in particular nitrogen oxides and sulphur dioxide, on Natura 2000 sites is through potential acidification and eutrophication. The potential for such impacts is completely dependant on the volume of the pollutants being discharged to atmosphere. Under both the TNP and the alternative scenario, the total emissions from all plants, and nationally, will be significantly reduced in the period 2016 to 2020. As a result the potential for acidification and eutrophication will be significantly reduced in future years leading to a benefit to Natura 2000 sites.

The findings of the AA Screening Report indicate that none of the Natura 2000 sites within 15km of each of the plants within the TNP will be adversely affected. A finding of No Significant Effects Matrix has been completed and is presented in the AA Screening Statement.

On the basis of the findings of this Screening for Appropriate Assessment of Natura 2000 sites, it is concluded that the TNP will not have a significant effect on the Natura 2000 network and a Stage 2

Appropriate Assessment is not required. A copy of the Appropriate Assessment Screening Report is presented in **Appendix F** of this document.

7 REFERENCES

1. Directive 2010/75/EC on industrial emissions (integrated pollution prevention and control)

2. Commission Implementing Decision of 10 February 2012 laying down rules concerning the transitional national plans referred to in Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions

3. Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment

4. Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

5. Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants

6. Energy UK Guidance on submission of data for the UK Transitional National plan (Version 8 Final, May 2012)

7. Graham D P, Salway G, Ray P, Stack Gas Flow Rate Calculation for Emissions Reporting - A Guide to Current Best Practice for the Operators of Coal Fired Boilers, PT/07/LC422/R, May 2007.

8. Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control.

9. S.I. No. 436/2004 — Planning and Development (Strategic Environmental Assessment) Regulations 2004

10. S.I. No. 477/2011 — European Communities (Birds and Natural Habitats) Regulations 2011.

11. Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds

12. Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

APPENDIX A

TNP COMBUSTION PLANT DETAILS

Table A.1 List of Combustion Plants included in the TNP

A	B	C	D		E	F	G	H
Number	**Plant name**	**Plant location (address)**	**Date on which the application for the first permit for the plant has been submitted and date on which the plant has been put into operation for the first time**	**OR Date on which the first permit for the plant has been granted**	**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 (total extension in MW)**	**Total rated thermal input on 31/12/2010 (MW_{th})**	**Annual number of operating hours (average 2001-2010)**	**Pollutant(s) (SO_2, NO_x, dust) for which the plant concerned is NOT covered by the transitional national plan**
P0605-MP1/2	Units 1 and 2, Moneypoint Generating Station	Killimer, Kilrush, County Clare	1985	NA	NA	1602	NA	NA
P0605-MP3	Unit 3, Moneypoint Generating Station	Killimer, Kilrush, County Clare	1985	NA	NA	801	NA	NA
P0561-AD1	Unit 1, Aghada Generating Station	Whitegate, Midleton, County Cork	1980	NA	NA	655	NA	NA
P0561-AT1	Turbine CT11, Aghada Generating Station	Whitegate, Midleton, County Cork	1980	NA	NA	310	NA	SO_2, Dust
P0561-AT2	Turbine CT12, Aghada Generating Station	Whitegate, Midleton, County Cork	1980	NA	NA	310	NA	SO_2, Dust
P0561-AT4	Turbine CT 14, Aghada Generating Station	Whitegate, Midleton, County Cork	1980	NA	NA	310	NA	SO_2, Dust
P0578-MRT	CT Unit, Marina Generating Station	Centre Park Road, Cork	1980	NA	NA	310	NA	SO_2, Dust
P0606-GR1/2	Units1 and 2, Great Island Generating Station	Campile, County Wexford	1967/1968	NA	NA	318	NA	NA
P0606-GR3	Unit 3, Great Island Generating Station	Campile, County Wexford	1972	NA	NA	304	NA	NA
P0607-TB1/2	Units 1 and 2, Tarbert Generating Station	Tarbert, Listowel, County Kerry	1969	NA	NA	374	NA	NA
P0607-TB3/4	Units 3 and 4, Tarbert Generating Station	Tarbert, Listowel, County Kerry	1969	NA	NA	1428	NA	NA
P0035-RA1	Rusal Aughinish	Aughinish Island, Askeaton Co. Limerick	1983	NA	NA	300	NA	NA
P0482-EP1	Edenderry Power Limited	Ballykilleen, Edenderry, County Offaly	NA	1999	NA	298	NA	NA

Table A.1 List of Combustion Plants included in the TNP (continued)

A	I	J						K	L	M
Number	**Indicate if the plant is a gas turbine or gas engine**	**Annual amount of fuel used (average 2001-2010) (TJ/year)**						**Average annual waste gas flow rate (average 2001-2010) (Nm^3/y)**	**Annual quantity of S in indigenous solid fuels used which was introduced into the combustion plant (average 2001-2010) (tpa)**	**Conversion factor(s) used in case the waste gas flow rate was calculated from the fuel input (per fuel type) (Nm^3/GJ)**
		hard coal	**lignite**	**biomass**	**other solid fuels**	**liquid fuels**	**gaseous fuels**			
P0605-MP1/2	2 x Utility Boiler	33917	0	0	0	974	0	12628004757	NA	364 (Coal) 290 (Heavy Fuel Oil) 284 (Other Liquid)
P0605-MP3	Utility Boiler	16604	0	0	0	476	0	6181833956	NA	364 (Coal) 290 (Heavy Fuel Oil) 284 (Other Liquid)
P0561-AD1	Utility Boiler	0	0	0	0	0	10561	2948734016	NA	279 (Gas)
P0561-AT1	Gas Turbine	0	0	0	0	128	1087	1024981487	NA	842 (Gas) 857 (Gas Oil)
P0561-AT2	Gas Turbine	0	0	0	0	98	907	847640883	NA	842 (Gas) 857 (Gas Oil)
P0561-AT4	Gas Turbine	0	0	0	0	111	1076	1001720171	NA	842 (Gas) 857 (Gas Oil)
P0578-MRT	Gas Turbine	0	0	0	0	10	4713	3977541145	NA	842 (Gas) 857 (Gas Oil)
P0606-GR1/2	Utility Boiler	0	0	0	0	1597	0	463173011	NA	290 (Heavy Fuel Oil) 284 (Other Liquid)
P0606-GR2	Utility Boiler	0	0	0	0	770	0	223260765	NA	290 (Heavy Fuel Oil) 284 (Other Liquid)
P0606-GR3	Utility Boiler	0	0	0	0	2348	0	680977213	NA	290 (Heavy Fuel Oil) 284 (Other Liquid)
P0607-TB1/2	Utility Boiler	0	0	0	0	1689	0	489759042	NA	290 (Heavy Fuel Oil) 284 (Other Liquid)
P0607-TB3/4	Utility Boiler	0	0	0	0	12850	0	3726223214	NA	290 (Heavy Fuel Oil) 284 (Other Liquid)
P0035-RA1	Utility Boiler	0	0	0	0	6571	0	1905511278	NA	290 (Heavy Fuel Oil)
P0482-EP1	Utility Boiler	0	0	200	7550	1	0	2976811949	NA	NA

APPENDIX B

TNP EMISSIONS CEILINGS

Table B.1 Calculation of 2016 Emissions Ceilings

A	B	C	D	E	F	G	H	I	J	K
Number	**name**	**reference oxygen content (%)**	**relevant ELV for SO_2 (mg/Nm^3)**	**relevant desulphurisation rate (where applicable)**	**plant's contribution to the 2016 SO_2 ceiling (tpa)**	**relevant ELV for NO_x (mg/Nm^3)**	**plant's contribution to the 2016 NO_x ceiling (tpa)**	**relevant ELV for dust (mg/Nm^3)**	**plant's contribution to the 2016 dust ceiling (tpa)**	**Comments**
P0605-MP1/2	Units 1 and 2, Moneypoint Station	6% (Coal) 3% (Liq. Fuel)	400	NA	5051	200 (Coal) 400 (Liq. Fuel)	2582	50	631	Coal, Heavy Fuel Oil and Other Liquid fuel mix
P0605-MP3	Unit 3, Moneypoint Station	6% (Coal) 3% (Liq. Fuel)	400	NA	2473	200 (Coal) 400 (Liq. Fuel)	1264	50	303	Coal, Heavy Fuel Oil and Other Liquid fuel mix
P0561-AD1	Unit 1, Aghada Station	3%	35	NA	103	200	590	5	15	NA
P0561-AT1	Turbine CT11, Aghada Station	15%	NA	NA	NA	50 (Gas) 120 (Gas Oil)	59	NA	NA	Gas and Gas Oil fuel mix
P0561-AT2	Turbine CT12, Aghada Station	15%	NA	NA	NA	50 (Gas) 120 (Gas Oil)	48	NA	NA	Gas and Gas Oil fuel mix
P0561-AT4	Turbine CT14, Aghada Station	15%	NA	NA	NA	50 (Gas) 120 (Gas Oil)	57	NA	NA	Gas and Gas Oil fuel mix
P0578-MRT	CT Unit, Marina Station	15%	NA	NA	NA	50 (Gas) 120 (Gas Oil)	199	NA	NA	Gas and Gas Oil fuel mix
P0606-GR1/2	Units 1 and 2, Great Island Station	3%	1583	NA	733	450	208	50	23	SO_2 ELV based on linear scale in Table C.1 Heavy Fuel Oil and Gas Oil mix
P0606-GR3	Unit 3, Great Island Station	3%	1674	NA	1140	450	306	50	34	SO_2 ELV based on linear scale in Table C.1 Heavy Fuel Oil and Gas Oil mix
P0607-TB1/2	Units 1 and 2, Tarbert Station	3%	1219	NA	597	450	221	50	24	SO_2 ELV based on linear scale in Table C.1 Heavy Fuel Oil and Gas Oil mix
P0607-TB3/4	Units 3 and 4, Tarbert Station	3%	400	NA	1491	400	1491	50	186	Heavy Fuel Oil and Gas Oil mix
P0035-RA1	Rusal Aughinish	3%	1700	NA	3239	450	857	50	95	NA
P0482-EP1	Edenderry Power Limited	6%	1208	NA	3596	600	1786	100	298	SO_2 ELV based on linear scale in Table C.1
Sum					**18423**		**9668**		**1609**	

Table B.2 Calculation of 2019 Emissions Ceilings

A	B	C	D	E	F	G	H	I	J	K
Number	**name**	**reference oxygen content (%)**	**relevant ELV for SO_2 (mg/Nm^3)**	**relevant desulphurisation rate (where applicable)**	**plant's contribution to the 2019 SO_2 ceiling (tpa)**	**relevant ELV for NO_x (mg/Nm^3)**	**plant's contribution to the 2019 NO_x ceiling (tpa)**	**relevant ELV for dust (mg/Nm^3)**	**plant's contribution to the 2019 dust ceiling (tpa)**	**Comments**
P0605-MP1/2	Units 1and 2, Moneypoint Station	6% (Coal) 3% (Liq. Fuel)	200	NA	2525	200 (Coal) 150 (Liq. Fuel)	2511	20	253	Coal, Heavy Fuel Oil and Other Liquid fuel mix
P0605-MP3	Unit 3, Moneypoint Station	6% (Coal) 3% (Liq. Fuel)	200	NA	1236	200 (Coal) 150 (Liq. Fuel)	1229	20	124	Coal, Heavy Fuel Oil and Other Liquid fuel mix
P0561-AD1	Unit 1, Aghada Station	3%	35	NA	103	100	295	5	15	NA
P0561-AT1	Turbine CT11, Aghada Station	15%	NA	NA	NA	50 (Gas) 90 (Gas Oil)	56	NA	NA	Gas and Gas Oil fuel mix
P0561-AT2	Turbine CT12, Aghada Station	15%	NA	NA	NA	50 (Gas) 90 (Gas Oil)	46	NA	NA	Gas and Gas Oil fuel mix
P0561-AT4	Turbine CT14, Aghada Station	15%	NA	NA	NA	50 (Gas) 90 (Gas Oil)	54	NA	NA	Gas and Gas Oil fuel mix
P0578-MRT	CT Unit, Marina Station	15%	NA	NA	NA	50 (Gas) 90 (Gas Oil)	199	NA	NA	Gas and Gas Oil fuel mix
P0606-GR1/2	Units 1 and 2, Great Island Station	3%	200	NA	93	150	69	20	9	Heavy Fuel Oil and Gas Oil mix
P0606-GR3	Unit 3, Great Island Station	3%	200	NA	136	15+0	102	20	14	Heavy Fuel Oil and Gas Oil mix
P0607-TB1/2	Units 1 and 2, Tarbert Station	3%	200	NA	98	150	74	20	10	Heavy Fuel Oil and Gas Oil mix
P0607-TB3/4	Units 3 and 4, Tarbert Station	3%	200	NA	745	150	559	20	75	Heavy Fuel Oil and Gas Oil mix
P0035-RA1	Rusal Aughinish	3%	250	NA	476	200	381	25	48	NA
P0482-EP1	Edenderry Power Limited	6%	300	NA	893	250	744	20	60	NA
Sum					**6305**		**6319**		**608**	

Table B.3 Overview of Emissions Ceilings

	2016	2017	2018	2019	2020
SO_2	18423	14384	10344	6305	3153
NO_x	9668	8552	7435	6319	3160
Dust	1609	1275	942	608	304