1 Introduction

1.1 General

This Environmental Impact Assessment Report (EIAR) has been prepared to accompany an application to An Bord Pleanála (ABP) for planning permission for the continued use of the West Offaly Power (WOP) tation (herein referred to as 'WOP Station') and associated ash disposal facility (herein referred to as 'ADF'), and to transition that station from peat to exclusive firing with biomass.

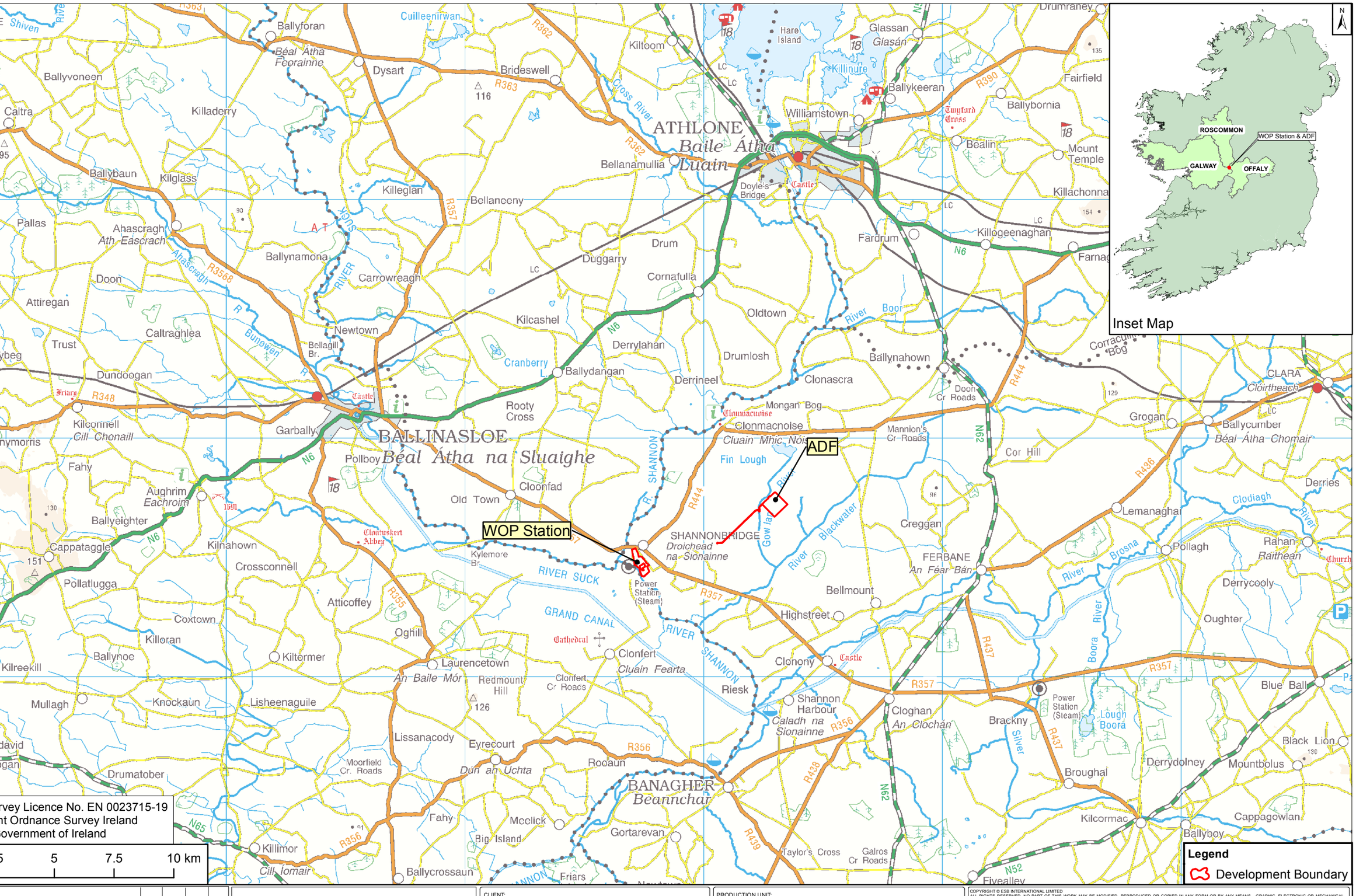
Permission is sought by the Electricity Supply Board (ESB) (the applicant) who also hold the Industrial Emissions (IE) licence (EPA Reg. No. P0611-02), for the WOP Station and ADF.

ESB was established in 1927 as a statutory corporation in the Republic of Ireland under the Electricity (Supply) Act 1927. ESB operates across the electricity market: from generation, through transmission and distribution to supply.

The EIAR has been prepared as required under Directive 2014/EU/52 of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment and Assessment under the EU Habitats Directive. The application for planning permission is made under the provisions of the Strategic Infrastructure legislation (as discussed in detail in the accompanying Planning Report (Document Ref QS-000206-01-R460-005).

1.2 The Development Sites

This application for permission relates to lands in Shannonbridge, Co. Offaly in the townland of Cloniffeen– the site of the existing WOP Station and associated activity and lands in the townlands of Clonfinlough, Clondelara, Leitra, and Derrylahan – the site of the existing ADF. The location of the sites is shown in **Figure 1-1.**



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ESB International is a trading name of ESBI Engineering & Facility Management Ltd.

Registered Office: as above
Registered in Ireland No. 155249

CLIENT: **ESB**

PROJECT: **West Offaly Power, Transition to Biomass**

CONTRACT

PRODUCTION UNIT: **Civil & Environmental Engineering**

DRAWING TITLE: **Figure 1.1- Location of WOP Station & ADF**

DRAWN	PRODUCED	VERIFIED	APPROVED	APPROVAL DATE
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1.2.1 The WOP Station Site

The WOP Station is located in Shannonbridge, County Offaly. Located on the eastern banks of the River Shannon, due south of the village, the site comprises industrial and brownfield lands. There has been continuous production of electricity at the site since 1965 when a 40 Megawatt[1] electric (MWe) unit was first commissioned. That station was extended in 1977 and again in 1982 when it had an installed electrical capacity of 125 MWe. The station was decommissioned in 2003. The existing WOP Station was commissioned in 2005. It is a peat-fuelled generation station with an installed capacity of 150 MWe.

The site accommodates structures and activities typical of a power station including fuel (currently peat) storage and handling areas and associated plant, the generation station itself, and a range of ancillary services including water treatment and management systems, offices and administration area. The established character and use of the WOP site is industrial – reflecting its long established use for power generation activity.

The lands at the WOP site are in the ownership of the ESB. The site is accessed from two entrance roads leading from the R357 Regional Road. The site is also served by a dedicated private railway operated by Bord na Móna, which links the peat supply bogs, ADF and the station.

WOP Station operates in accordance with its EPA Industrial Emissions (IE) Licence P0611-02 and in accordance with the Euopean Unions Emission Trading Scheme (ETS) and associated Greenhouse Gas Permit (IE_GHG077_10385_4) as administerd by the EPA.

It also currently operates under the Public Service Obligation (PSO) levy fueled by peat supplied by Bord na Móna Energy Limited and agreed with the EU Commission.

1.2.2 The Ash Disposal Facility (ADF) Site

To serve the needs of the WOP site, ESB developed a dedicated ash disposal facility (ADF) some 5.5 km from the station. This development site extends onto lands located within four townlands - Clonfinlough, Clondelara, Leitra, and Derrylahan. The ADF is managed and operated by Bord na Móna on behalf of ESB.

The established character and use of the site is inherently linked with the previous use of that bog for the industrial harvesting of peat, and the on-going operation of the established ADF.

[1] One Megawatt is equivalent to one thousand kilowatts (kW). A kilowatt hour, kWh, is the conventional unit of energy that electricity is measured by and charged for commercially. One megawatt electric (MWe) is the unit by which the installed electricity generating capacity or size of a generating station is quantified, representing the maximum electrical power output of the plant

The site is in a remote area of cutaway bogland. The ADF is a highly engineered site comprising a number of lined landfill cells, each of which is filled, sealed and capped. Associated infrastructure on the site includes a settlement lagoon and welfare facilities for staff. The site is operated in accordance with the requirements of the EPA and the conditions of an existing IE Licence.

The site is accessible via a c. 3 km roadway linking the site with the R357 from Shannonbridge to Cloghan. It is also served by a dedicated Bord na Móna rail-line that links the station and the ADF site. Ash is currently transported to the site by means of that dedicated rail-line.

The ADF operates under the same IE licence as the station – namely IE licence P0611-02.

1.3 The Proposed Development

In terms of this planning application, the proposed development comprises four distinct elements:

- the continued and on-going operation of the existing generating station and the associated ADF beyond the previously permitted date of 31st December 2020, including the continued use of all structures, plant, hard-surfaced areas and access ways on the existing sites;
- the phased transition of the WOP Station from peat-firing to firing exclusively on renewable biomass. From early 2020 (subject to the appropriate consents being secured) the station will be fuelled by reducing volumes of peat and increasing volumes of biomass, with an associated reduction in carbon dioxide emissions. By the end of 2027, the station will be fuelled exclusively by biomass;
- the development of fuel management and handling facilities on the WOP Station site to facilitate the change in fuel type;
- the development of additional landfill capacity at the existing dedicated ADF to facilitate the disposal of an additional c. 880,000 tonnes of ash from WOP Station, and associated ancillary development on that site including a new leachate lagoon.

The biomass will comprise indigenous and imported material defined as:

- non-pelleted woody biomass; e.g.
    - products, co-products, by-products and residues of the forestry sector such as brash, thinning and other residues from the forestry sector where those materials are produced from the active management and felling of commercial forests,
    - products, co-products, by-products and residues - such as saw dust, sourced from timber mills, manufacturing processes and the forestry sector; and

  - wood chips produced by the timber industry – whether from commercial products or chipped wood arising from other commercial activities such as rubber tree plantations.
- products, co-products, by-products and residues from energy crops,
- products, co-products, by-products and residues from agricultural industries, e.g. plant derived husks, shells, and pulp; and
- manufactured wood pellets.

Further detail is provided in Chapter 4 of this EIAR.

Associated with the extended operational life of the station there will be on-going harvesting of peat by Bord na Móna for the initial period – to fuel co-firing up to the end of 2027. This activity is subject to separate IPC licensing held by Bord na Móna. Although consent for that activity is not subject of this planning application, environmental impacts associated with that activity are considered in the EIAR.

This phased transition is a commercial and socio economic necessity related to the level of financial support for biomass electricity generation, the requirement for a transition period away from peat as a fuel and the emergence of a biomass supply chain sector which will influence both its availability and economic cost.

The justification for the phased transition period is set out in more detail in Chapter 3, Alternatives and the phased transition is described in Chapter 4.

1.4 Objectives of the Project

The ESB is committed to transitioning to a low carbon economy for Ireland with plans which include investment in biomass, wind, hydro, solar, electric heat and transport. As part of this transition, ESB is planning to convert the generating stations at WOP in Shannonbridge and ESB's other midland station Lough Ree Power (herein referred to as 'LRP') in Lanesborough, from peat to biomass. This will allow the stations to continue to support the regional economy, local jobs and to contribute to Ireland's security of clean energy supply through diversification of fuel source and utilisation of indigeneous fuel supply.

These existing stations currently contribute significantly to the regional economy of the Midlands through direct and indirect employment and in annual contributions to the local authorities in the form of rates. The proposed development will see the power stations continuing operation by supporting the transition away from peat fuel towards renewable and sustainable biomass in a manner consistent with EU and Government Policy whilst continuing to underpin the region's economy and sustaining employment in an economically-challenged area.

The biomass demand generated by the projects will be fulfilled both by indigenous biomass sources and imported biomass supply. As the Irish forest estate continues to mature, particularly with the private forest estate increasingly reaching thinnning and harvesting phases of its lifecycle, reliance on imported biomass is expected to decrease. Although not dependent on a specifically developed indigenous biomass

energy crop to ensure operation, the biomass demand generated by the plants has the potential to stimulate an indigenous energy crop biomass industry, such as willow growing for example, in the future. This would further displace imported biomass for energy generation purposes and increase security of supply overall.

The proposed development has the following key objectives:

Objective 1. To support ESB's transition to low carbon clean energy production thereby directly supporting the de-carbonisation of the energy generation sector as a whole in line with National and EU policy.

Objective 2. To continue to contribute strategically to the socio-economic wellbeing of the Irish State and the Eastern and Midland Region in which West Offaly Power is situated, in line with National and EU policy.

Objective 3. To continue to contribute towards security of clean electricity supply into the future through diversification of fuel source and utilisation of indigeneous fuel supply in line with National and EU policy.

1.4.1 The Proposed Development in Summary

Chapter 4 outlines in detail the nature and extent of the proposed development.

The proposed development relates to the continued operation of the existing peat-fuelled WOP Station and the phased transition of that station towards exclusive firing with sustainable and renewable biomass. Associated with that next phase of activity, permission is being sought for the continued use of existing ancillary infrastructure – including the development of a discrete number of new landfill cells at the existing ADF.

As the current planning permission is due to expire in December 2020, the baseline against which the impacts have been principally assessed is the 'no-development scenario' that would arise if the proposed development does not take place and the WOP Station closes.

The transition to 100% biomass will comprise initial phases of co-firing characterised by the combustion of reducing volumes of peat and associated reduction in carbon dioxide emissions.

As noted in Paragraph 1.3 above, associated with the extended operational life of the station there will initially be on-going harvesting of peat by Bord na Móna to enable the co-firing phase. The environmental impacts associated with that activity have been considered in the planning application and supporting documentation Environmental Impact Assessment Report (EIAR).

1.5 Relevant Legislation

1.5.1 Basis for Environmental Impact Assessment

1.5.1.1 European Law

The requirement to undertake Environmental Impact Assessment (EIA) derives from European Communities Directive 85/337/EEC (as amended by Directives 97/11/EC, 2003/35/EC) and from Directive 2011/92/EU (as amended by Directive 2014/52/EU, referred to as the Amended EIA Directive[2]).

The Amended EIA Directive introduced changes to the manner in which environmental impact assessment is completed. This Directive is enacted into Irish Legislation through the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, S.I. 296 of 2018[3].

Under the Directive and Regulations, projects of a type specified in Annex I of the Directive automatically require EIA. Annex II of the Directive allows for the screening of projects for EIA on a case-by-case basis, with the relevant national authority having the discretion to identify specific project types to which this applies. Those projects are screened against criteria laid down in Annex III of the Directive, namely:

- Characteristics of the project;
- Location of the project; and
- Type and characteristic of the potential impact.

1.5.1.2 Irish Law

In Irish legislation, Section 172 of the Planning and Development Act (as amended) [4]establishes the requirement for EIA, stating:

> *'An environmental impact assessment shall be carried out by the planning authority or the Board, as the case may be, in respect of an application for consent for proposed development where either—*
>
> *1. the proposed development would be of a class specified in—*
>
> *(i) Part 1 of Schedule 5 of the Planning and Development Regulations 2001,*
>
> *and either—*
>
> *(I) such development would exceed any relevant quantity, area or other limit specified in that Part, or*

[2] DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

[3] https://www.housing.gov.ie/planning/legislation/si-no-296-2018-european-union-planning-and-developmentenvironmental-impact

[4] www.irishstatutebook.ie

(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,

or

(ii) Part 2 of Schedule 5 of the Planning and Development Regulations 2001 and either—

(I) such development would exceed any relevant quantity, area or other limit specified in that Part, or

(II) no quantity, area or other limit is specified in that Part in respect of the development concerned,

Or

(b)(i) the proposed development would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but does not exceed the relevant quantity, area or other limit specified in that Part, and (ii) the planning authority or the Board, as the case may be, determines that the proposed development would be likely to have significant effects on the environment.'

The classes of development where an EIA is mandatory are set down in regulations. In addition, Schedule 5 sets out thresholds for projects, and if that threshold is exceeded an EIA must be carried out. These are mandatory requirements.

Finally where a project is of a type listed in the regulations but does not meet or exceed the applicable threshold then the likelihood of the project having significant effects on the environment – as considered against a range of prescribed criteria, must be assessed.

1.6 The Form and Content of an EIAR

1.6.1 Legislative Requirements

Directive 2014/52/EU and S.I. 296 of 2018 introduces the term *environmental impact assessment* report (EIAR) rather than *environmental impact statement* (EIS) as previously used.

The Directive requires that the EIAR provides:

"A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge."

Article 3 states that the EIA shall:

"identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

Article 5 states that an EIAR should contain, at least:

- *a description of the project comprising information on the site, design, size and other relevant features of the project;*
- *a description of the likely significant effects of the project on the environment;*
- *a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*
- *a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*
- *a non-technical summary of the information referred to in points (a) to (d); and*
- *any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.*

Annex IV requires that *'the description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short term, medium term and long term permanent and temporary, positive and negative effects of the project. The description should take into account the environmental protection objective established at Union or member State level which are relevant to the project.'*

1.6.2 Provisions for EIA Scoping

Scoping is a process that determines the particular issues which need to be examined in an EIAR. As outlined in the EPA Guidance, the process of EIA scoping can be informal or formal.

1.7 The EIAR for the Proposed Development

1.7.1 EIA Screening

In the preparation of this EIAR, an EIAR Screening and Scoping Request was prepared and circulated to key consultees.

That report screened the proposed development to determine whether an EIAR is required, having regard to Directive 2011/92/EU as amended by Directive 2014/52/EU, and existing national legislation and guidance. It concluded that the proposed development was of a type referred to under two classes of Schedule 5 of the Planning and Development Regulations, 2001-2015, namely:

> *Class 2.a) A thermal power station or other combustion installation with a total energy output of 300 megawatts or more.*

The proposed development is a thermal power station fuelled by peat and biomass, and ultimately biomass. The station process is essentially comprised of a boiler unit, a turbine unit and generator unit. The boiler unit burns the fuel and produces steam at high pressure and temperature. This steam is used to turn the turbine which drives the generator and produces electricity, thereafter the exhausted steam is further cooled and converted back to water which is fed to the boiler to form a closed loop. The boiler unit typically operates at 91% efficiency taking in typically 378 MWth every hour in the form of fuel, producing 344 MWth of steam and exhausting 34 MWth of heat up the stack.

> *Class 11(b) – being 'other projects' defined as*
>
> > *(b) Installations for the disposal of waste with an annual intake greater than 25,000 tonnes.*

The proposed development is expected to generate approximately 52,000 tonnes of ash from co-firing of biomass and peat.

Having regard to the thresholds set out under Class 2(a) and 11(b) the proposed development is therefore subject to EIA.

1.7.2 EIA Scoping

The aforementioned EIA Screening and Scoping Request set out the Applicant's proposed approach to the scoping of the EIAR. In February 2018, this was circulated to consultees through an informal pre-planning consultation process, carried out in compliance with the prevailing guidance as set out in the EPA Guidelines. A copy of the cover letter accompanying this report is provided in **Appendix 1-1**.

The conclusions from the scoping process were:

- This EIAR was to be prepared for the proposed development
- The range of environmental topics included in the EIAR would be:
    - Population and Human Health
    - Biodiversity

- Land & Soil, Geology and Hydrogeology
- Surface Water
- Noise
- Climate and Air Quality
- Material Assets
- Traffic and Transport
- Cultural Heritage
- Landscape and Visual

The scoping report was issued to nineteen consultees, namely:

- An Taisce
- Birdwatch Ireland
- Offaly County Council (Environmental Section)
- Offaly County Council (Planning Section)
- Roscommon County Council (Environmental Section)
- Roscommon County Council (Planning Section)
- Galway County Council (Environmental Section)
- Galway County Council (Planning Section)
- Environmental Protection Agency (EPA)
- Bord na Móna
- Irish Water
- Fáilte Ireland
- Friends of the Irish Environment (FoIE)
- Inland Fisheries Ireland (IFI)
- Irish Peatland Conservation Council
- National Monuments Service (NMS)
- National Parks & Wildlife Services (NPWS)
- Irish Raptor Study Group
- Transport Infrastructure Ireland

Responses were received from eight of the nineteen consultees – Offaly County Council (Planning & Environment Sections), Roscommon County Council (Environment Section), An Taisce, Environmental Protection Agency, Irish Peatland Conservation Council, Fáilte Ireland and Transport Infrastructure Ireland. Additional responses were also received from An Bord Pléanala and the Health Service Executive through the EPA. These responses are summarised on **Table 1-1** below.

Table 1-1 Summary of Issues Raised in Scoping Reponses and Relevant Reference in EIAR

Consultee	Key points raised	Relevant EIAR Section
Offaly County Council – Planning & Environment Sections	1. Planning Policy. 2. Traffic. 3. Flood Risk. 4. Landscape 5. Appropriate Assessment. 6. EIAR	1. Planning Report 2. Traffic and Transport (Chapter 12) 3. Chapter 8 and Chapter 15 4. Landscape and Visual (Chapter 14) 5. Appropriate Assessment Screening Report and NIS 6. Chapters 1-16 of the EIAR
Roscommon County Council – Environment Section	No Comments	n/a
An Taisce	1. Peat 2. Biomass 3. Bioeconomy Policy	1. Chapter 4 and Chapters 1-16 of the EIAR 2. Chapter 4 and Chapters 1-16 of the EIAR 3. Chapter 4 of the EIAR
Environmental Protection Agency	1. Direct and indirect significant effects of the project 2. Assessment of peat supply activities. 3. Assessment of the landfill site 4. EIS/EIAR Guidelines. 5. BAT conclusions for large combustion plants.	1. Chapter 5 -16 of the EIAR 2. Chapter 5 -16 of the EIAR 3. Chapters 5 -16 of the EIAR 4. Chapters 1-16 of the EIAR 5. Air and Climate (Chapter 10)
An Bord Pleanála (via the EPA)	1. EIAR Phases and mitigation and monitoring 2. Qualifications/Experience 3. Climate Change. 4. Accidents & Risk Assessment. 5. Biomass. 6. Peat Supply Bogs. 7. Human Health.	1. Chapters 5 -16 of the EIAR 2. Chapter 1 of the EIAR 3. Air and Climate (Chapter 10) 4. Chapter 5 and Chapter 15 5. Chapter 1 and Chapter 4 6. Chapter 1 and Chapter 4 and Biodiversity (Chapter 6) 7. Population and Human Health (Chapter 5)
Health Service Executive (via the EPA)	1. Biomass Fire Risk. 2. Composting & Mould.	1. Chapter 5 and Chapter 15 2. Chapter 5 and Chapter 15
Irish Peatland Conservation Council	1. Biomass Transition and Source of Biomass 2. GHG Emissions. 3. Supply Bogs –Transition, Restoration and Future	1. Chapter 4 2. Chapter 4 and Air and Climate (Chapter 10) 3. Chapter 4 and Biodiversity (Chapter 6)

Consultee	Key points raised	Relevant EIAR Section
	4. Supply Bogs- Cumulative Impacts	4. Chapters 5 -16 of the EIAR
Fáilte Ireland	1. Assessment of tourism Impacts and Tourism Guidelines	1. Population and Human Health (Chapter 5) and Landscape and Visual (Chapter 14)
Transport Infrastructure Ireland (TII)	1. Traffic. 2. Landscape. 3. Air Quality. 4. Noise.	1. Traffic and Transport (Chapter 12) 2. Landscape and Visual (Chapter 14) 3. Air and Climate (Chapter 10) 4. Noise (Chapter 9)

1.8 Public Consultation

Public consultation is a key element in the environmental impact assessment process. Every effort has been made by the project team to provide relevant information to the public to ensure a thorough understanding of the project and an opportunity for meaningful comment during the process.

Offaly County Council were briefed on the proposed project in December 2017 and the locally elected representatives from Birr Municipal District Council were briefed on the proposed project in January 2018. During the course of project development, updates were provided to the Planning Authority.

A public consultation meeting was held in Shannonbridge, County Offaly on the 21st February, 2018 at the Parish Hall. The event was advertised in the Offaly Independent and the Tullamore Tribune[5] newspapers and copies of the advertisements are provided in **Appendix 1-2**. A radio advertisement was placed on Midlands's radio and posters advertising the event were also placed locally.

The public consultation meeting provided information through a number of means:

- Poster display on various aspects of the project including a range of indicative layouts,
- Displayed samples of biomass to demonstrate the proposed fuel; and
- Representatives from both ESB and Bord na Móna and the EIA team attended to answer any queries and expand on the displays.

Twenty seven people registered their attendance at the public consultation event, however the actual attendance was above this figure. The majority of attendees were supportive of the proposed development in terms of the potential to retain employment within the area. Specific queries arose in relation to traffic, noise, community gain and the type of biomass.

Further details of the project were also provided on the ESB webpage - https://www.esb.ie/our-businesses/generation-energy-trading-new/midland-stations which also included details of a dedicated project email address; midlandstations@esb.ie and local dedicated community liaison officer. A community newsletter was also circulated in June 2018 and a copy of this was also provided on the ESB webpage.

As part of the formal planning process, the ESB engaged in pre-application discussions with An Bord Pleanála. The consultation file associated with those discussions now forms part of the public record.

[5] Note the Tullamore Tribune is available before the published date on the newspaper

Plate 1-1 Biomass Samples at the Public Meeting, Shannonbridge, February 2018

Plate 1-2 Public Meeting, Shannonbridge, February 2018

1.9 EIAR Methodology

The EIAR identifies, describes and presents an assessment of the likely significant impacts of a project on the environment and focuses on effects that are both likely and significant.

1.9.1 Methodology Framework

The following methodological framework has been used in the preparation of this EIAR:

- Definition of Study Area: This took into account the WOP Station, ADF, peat supply bogs and likely transportation routes and means for delivery of biomass and peat to the plant.
- Data collection, baseline description and evaluation using site visits, field surveys and published reference materials as appropriate.
- Identification of potential likely environmental effects (direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project.
- Identification and definition of appropriate mitigation measures to minimise potential effects (avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements).
- Identification and evaluation of residual impacts once mitigation measures have been implemented.

1.9.2 Referenced Guidance

The following EPA guidelines informed the EIA process:

- EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, Draft, August 2017,
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (September 2003),
- EPA Guidelines on the Information to be Contained in Environmental Impact Statements (March 2002); and
- Advice Notes for Preparing Environmental Impact Statements (Draft September 2015).

The Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment (August 2018) published by the Department of Housing, Planning and Local Government have also been considered in the preparation of this EIAR.

1.9.3 Structure of the EIAR

The Structure of the EIAR follows the EPA guidance document and is presented in the following volumes;

- Volume 1- Non-Technical Summary
- Volume 2 - Main EIAR
- Volume 3 - Appendices

A standalone Appropriate Assessment (AA) Screening and subsequent Natura Impact Statement (NIS) has also been produced in accordance with the requirements of the EU Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations 2011. **Table 1-2** below sets out the structure of the EIAR.

Table 1-2: Structure of the EIAR

Chapter	Section
Volume 1 NTS	Non-Technical Summary
Volume 2 Chapter 1	Introduction
Volume 2 Chapter 2	Need for the Proposed Development
Volume 2 Chapter 3	Alternatives Considered
Volume 2 Chapter 4	Description of the Existing and Proposed Development
Volume 2 Chapter 5	Population & Human Health
Volume 2 Chapter 6	Biodiversity
Volume 2 Chapter 7	Land & Soils, Geology & Hydrogeology
Volume 2 Chapter 8	Surface Water
Volume 2 Chapter 9	Noise
Volume 2 Chapter 10	Climate & Air Quality
Volume 2 Chapter 11	Material Assets
Volume 2 Chapter 12	Traffic and Transport
Volume 2 Chapter 13	Cultural Heritage
Volume 2 Chapter 14	Landscape and Visual
Volume 2 Chapter 15	Major Accidents and Interaction of Impacts
Volume 2 Chapter 16	Mitigation and Monitoring
Volume 3	Appendices

1.9.4 Availability

This EIAR is available for complimentary download at www.westoffalypower.ie

Copies of this EIAR - including the Non-Technical Summary and the Appropriate Assessment Screening Report and Natura Impact Statement, may be inspected free

of charge or purchased by any member of the public during normal office hours at the following locations:

- The Offices of An Bord Pleanála, 64 Marlborough Street, Dublin 1, D01V902,
- The Offices of Offaly County Council, Áras an Chontae, Charleville Road, Tullamore, Co. Offaly, R35 F893; and
- The Offices of Offaly County Council – Edenderry Municipal District Offices, Edenderry Town Hall, Edenderry, Co. Offaly, R45 K766.

1.9.5 Impact Assessment

As required by Annex IV (of the Directive), the EIAR provides a description of the likely significant effects of the project on the environment resulting from, inter alia:

a) the construction and existence of the project, including, where relevant, demolition works;
b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources.
c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
e) the cumulation of effects with other existing and/ or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;
g) the technologies and the substances used.

The description of the likely significant effects include the direct effects and indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project.

The project baseline has been assessed where appropriate against the general criteria set out in **Table 1-3** below as set out in the EPA guidelines on the information to be contained in environmental impact assessment reports. In some cases specific assessment criteria adopted from the EPA guidelines such as those developed by the National Road Authority have been used`, such as those used to assess biodiversity impacts.

It should be noted that the significance of the effect can have different meanings for different topics and this is reflected in individual sections.

Table 1-3: Impact assessment evaluation criteria

Quality of Effects	
Positive Effect:	A change which improves the quality of the environment
Neutral Effect:	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative Adverse Effect:	A change which reduces the quality of the environment
Significance of Effects	
Imperceptible Effect:	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effect	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effect	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effect:	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant Effect	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.
Extent/Context of Effects	
Extent	The size of the area, the number of sites, and the proportion of a population affected by an effect.
Context	The extent, duration, or frequency in terms of conforming or contrasting with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Duration and Frequency of Effects	
Momentary effects	Effects lasting from seconds to minutes
Brief effects	Effects lasting less than a day
Temporary effects	Effects lasting less than a year
Short-term Effects:	Effects lasting one to seven years.
Medium-term Effects:	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years.
Permanent Effects (Impact):	Effects lasting over sixty years
Reversible Effects:	Effects that can be undone, for example through remediation or restoration
Frequency of Effect	How often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)

Types of Effects	
Indirect Effects	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway
Cumulative Effect:	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects
'Do-Nothing Effects':	The environment as it would be in the future should the subject project not be carried out.
'Worst Case' Effects:	The effects arising from a project in the case where mitigation measures substantially fail.
Indeterminable Effects:	When the full consequences of a change in the environment cannot be described.
Irreversible Effects:	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
Residual Effects:	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
Synergistic Effects:	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

1.9.6 Cumulative Impact

The potential cumulative impact of the proposed development in combination with other existing or approved developments in the area is considered in each chapter of this EIAR with the purpose of identifying the influence the proposed development will have on the surrounding environment when considered cumulatively and in combination with relevant existing and approved projects.

Cumulative Impacts are impacts that act together over a time period and spatial area and which can lead to an overall greater impact than occurs individually. These can be:

- intra-project cumulative impacts, that is cumulative impacts that can occur arising from different elements of the main project, or
- inter-project cumulative impacts, that is impacts that in combination with impacts from other projects could have a cumulative effect.

Detailed cumulative impact assessments are included in each relevant chapter of the EIAR and include both existing and approved plans, project and activities.

This information was complied based on relevant developments within the vicinity of WOP Station and ADF, including the peat supply bogs. The material was gathered through a search of relevant planning authorities online planning registers, reviews of relevant EIS/EIAR documents, planning application details which identified past and future projects, their activities and their environmental impacts.

The in-combination assessment of projects considered the following;

- WOP Peat Supply Bogs (existing activity)
- Lumcloon Energy, battery storage facility, Offaly (permitted) which is located in proximity to WOP Station
- Lough Ree Power Station, Longford (existing) and which will also be subject to a planning application to transition of the station from peat to biomass
- Edenderry Power Ltd, Offaly (existing), which currently co-fires peat and biomass and is operated by Bord na Móna
- Other peat harvesting activities (existing activity)

The relevance of the above projects is considered on a case by case basis in each chapter as necessary depending on the interaction and likelihood of in combination impacts.

1.9.7 The Project Team

This EIAR has been prepared by a team led by ESB International with input provided as detailed in **Table 1-4.**

Table 1-4: EIAR Contributors

EIAR Topic	Main Contributor	Experience (Years) & Qualifications
Chapter 1 Introduction	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESB International (ESBI) Emma Delaney, Senior Environmental Consultant, ESBI	37 Yrs, PhD, BSc 14 Yrs, BA, MSc
Chapter 2 Need for the proposed development	John O'Connor, Generation Projects Delivery Manager, ESB Helen O'Keeffe, Senior Planner ESBI Paul Cullen, Commercial Projects Manager, ESB	22 Yrs, Hons.Bsc (Eng), MSc, CEng 18 Yrs, BE, MRUP MSc 30 Yrs, BE, MEDes. MBA
Chapter 3 Alternatives Considered	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESBI	37 Yrs, PhD, BSc
Chapter 4 Description of the Existing and Proposed Development	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESBI Helen O'Keeffe, Senior Planning Consultant, ESBI Paul Cullen, Commercial Projects Manager, ESB	37 Yrs, PhD, BSc 18 Yrs, BE, MRUP MSc 30 Yrs, BE, MEDes. MBA
Chapter 5 Population and Human Health	Emma Delaney, Senior Environmental Consultant, ESBI Dr. William Hynes, Future Analytics	14 Yrs, BA, MSc 22 Yrs, BSc MRUP MSc PhD MRICS MSCSI MRTPI MIPI MCILT
Chapter 6 Biodiversity	Geoff Hamilton, Senior Ecologist, ESBI	13 Yrs, BA MSc MCIEEM
Chapter 7 Land & Soils, Geology & Hydrogeology	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESBI	37 Yrs, PhD, BSc
Chapter 8 Surface Water	Oonagh Duffy, Senior Environmental Consultant, ESBI Ger Morgan, Aquatic Services Unit, University College Cork Adrian Buckley, Consultant Senior Hydrologist, ESBI	10 Yrs, BSc, MSc, MCIWEM, C.WEM, C.Env 36 Yrs, BSc (Hons), MSc 25 Yrs, BE, MEngSC, PhD, Ceng
Chapter 9 Noise	Dr. Andy McKenzee, Hayes McKenzie Limited	36 Yrs, PhD BSc FIOA
Chapter 10 Climate & Air Quality	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESBI Dr. Edward Porter, AWN Consulting	37 Yrs, PhD, BSc 20+ Yrs, PhD C Chem, MRSC MIEnvSc, MIAQM
Chapter 11 Material Assets	Emma Delaney, Senior Environmental Consultant, ESBI	14 Yrs, BA, MSc
Chapter 12 Traffic and Transport	Matt Foy, Atkins. Martin Deegan, Atkins.	16 Yrs, BA, BAI, CENG, MIEI, MCIHT 25 Yrs, BEng, MSc, CENG, MICE
Chapter 13 Cultural Heritage	Martin Byrne Byrne Mullins and Associates	30+ Yrs, BA, MA, Dip EIA Mgmt
Chapter 14 Landscape & Visual	Richard Barker, Macroworks	21 Yrs, MLA, PG Dip BA Environ
Chapter 15 Major Accidents and Interaction of Impacts	Dr. Paddy Kavanagh, Senior Team Leader Planning & Environmental, ESBI	37 Yrs, PhD, BSc
Chapter 16 Mitigation and Monitoring	All contributors	

1.9.8 Difficulties Encountered

There were no particular difficulties encountered in the production of the EIAR for the proposed development that would lead to deficiencies in the assessment.

The surveys, assessments and information that form the basis of this EIAR are based on the design of the project as described in Chapter 4. The design has been developed to a stage that allows the Competent Authority to assess the EIAR in order to make a determination to grant or refuse the application.