

CLIENT: Lumcloon Energy Ltd

PROJECT: Screening Report for the Purposes of Environmental Impact Assessment in Respect of a Proposed BESS Facility at Lumcloon, Cloghan, Ferbane, Co. Offaly.



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Prepared by: Halston Environmental & Planning Ltd.

Date: February 2017

Document Control

Client: Lumcloon Energy Ltd.

Project Name Lumcloon BESS (Lumcloon)

Document Name Screening Report for the Purposes of Environmental Impact Assessment in Respect of a Proposed BESS Facility at Lumcloon Cloghan, Ferbane, Co. Offaly

Project Ref. No. SEP-0201

Document Checking:

Author: CS	Signed:
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Checked by: JB	Signed:
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Issue	Date	Status
v1.0	06/02/2017	Draft for client review
v1.1	13/02/2017	For Pre-Planning Discussion

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Purpose of the Study	1
1.2	Regulatory Context	1
1.3	EIA Screening Methodology	3
2	DESCRIPTION OF PROPOSED DEVELOPMENT	5
2.1	Site Location	5
2.2	Site Description	6
2.3	The Proposed Development	7
2.3.1	Process Description	9
2.3.2	Safety	11
2.3.3	Regulatory Frameworks and Environmental Licensing	12
3	MANDATORY EIA SCREENING	13
4	SUBTHRESHOLD DEVELOPMENT (DISCRETIONARY) EIA SCREENING	13
4.1	Characteristics of the Proposed Development	14
4.1.1	Size of the Proposed Development	14
4.1.2	Cumulative Effects with Other Proposed Development	14
4.1.3	Nature of Any Associated Demolition Work	14
4.1.4	Use of Natural Resources	15
4.1.5	Pollution and Nuisances	15
4.1.6	Risk of Accidents	15
4.1.7	Concluding Remarks	16
4.2	Location of Proposed Development	16
4.2.1	Abundance, Quality and Regenerative Capacity of Natural Resources	16
4.2.2	Absorption Capacity of the Natural Environment	18
4.2.3	Concluding Statement	19
4.3	Characteristics of Potential Impacts	19
5	ASSESSMENT FINDINGS	21
6	CONCLUSION	21

1 Introduction

This screening report has been prepared by Halston Environmental & Planning Ltd. (Halston) on behalf of Lumcloon Energy Ltd. (Lumcloon), to assist Offaly County Council in forming an opinion as to whether the proposed development should be subject to Environmental Impact Assessment (EIA) and if so whether and Environmental Impact Statement (EIS) should be prepared in respect of such works.

Lumcloon propose to develop a battery energy storage system (BESS) at Lumcloon, Cloghan, Ferbane, County Offaly. The development includes the installation of a state of the art emissions free 25MWh grid connected BESS which will include a building, outdoor switchgear and ancillary site supporting works.

1.1 Purpose of the Study

The purpose of this screening report is to detail findings from a desktop analysis of the receiving environment that may be affected by the proposed development and further to document the procedures and outcome of the process undertaken as part of the screening assessment. The report is to establish the likely effects of the scheme on the environment and advise if an EIA would be appropriate for the development proposal based on the desk top assessment and informed by existing available reports.

1.2 Regulatory Context

The obligations under Irish law in respect of Environmental Impact Assessment (EIA) and Environmental Impact Statement (EIS)^[3] are derived from obligations incurred as a result of membership of the European Community.

An EIS is defined in the EIA regulations as:

"A statement of the effects, if any, which proposed development, if carried out, would have on the environment".

This EIS is prepared by the developer and is submitted to a competent authority (CA) as part of a consent process. The CA uses the information provided to assess the environmental effects of the project and determine if consent should be granted

^[3] The revised EIA Directive (2014/52/EU) uses the term *environmental impact assessment* report rather than environmental impact statement. For the purposes of this document the term of environmental impact statement (EIS) is used as this is the term used in the current regulations in Ireland and is the term in common use for this kind of report. If any future change to the regulations alters the wording then this can be taken to be the same as an environmental impact assessment report.

EIA means a process consisting of:

- the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);
- the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;
- the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;
- the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and
- the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a."

Under Irish legislation, the type of development for which an EIS is required is prescribed by Part X of the 2000 Planning and Development Act and Part 10 of, and Schedule 5 ('Development for the Purposes of Part 10'), Schedule 6 ('Information to be contained in an EIS'), and Schedule 7 ('Criteria for determining Whether a Development would or would not be likely to have Significant Effects on the Environment') to the 2001 Planning and Development Regulations, as amended.

The first EIA Directive (85/337/EEC) came into force in 1985 and applies to a wide range of defined public and private projects, which are defined in Annexes I and II. The EIA Directive has been amended three times; 1997 (Directive 97/11/EC), 2003 (Directive 2003/35/EC) and 2009 (Directive 2003/35/EC).

The initial Directive of 1985 and its three amendments have been codified by Directive 2011/92/EU of 13th December 2011. The Directive provides the following in relation to the need for EIA.

- **Mandatory EIA:** all projects listed in Annex I of the Directive are considered as having significant effects on the environment and require an EIA. Annex I projects are those listed in Schedule 5 (Part 1) of the Planning and Development Regulations 2001-2013. Member States have to decide whether an EIA is needed for project listed in Annex II of the Directive. This is done by the "screening procedure", which determines the effects of projects on the basis of thresholds/criteria or a case by

case examination. In transposing the Annex II requirements of the Directive, Ireland chose to set mandatory thresholds for each of the project classes in Annex II. Annex II project are those listed in Schedule 5 (Part 2) of the Planning and Development Regulations 2001-2013.

- Sub Threshold EIA: In cases where projects are below the Annex II thresholds there is a requirement to carry out EIA where the competent/consent authority considers that a development would be likely to have significant effects on the environment. In particular, the sub threshold development assessment covers;
 - sites of conservation sensitivity, and
 - those considered likely to have significant effects on the environment.

EIA Directive 2011/92/EU was amended in 2014 by Directive 2014/52/EU which entered into force on 15 May 2014. Member States have until the 16th May 2017 for transposition /application of the directive. The type of development for which EIS is required is prescribed in the planning and development legislation outlined above.

1.3 EIA Screening Methodology

Screening is the first stage in the EIA process whereby a decision is made on whether or not EIA is required. The screening of the proposed BESS facility considered the requirements as outlined in the following

- EIA (Amendment) Regulations 1999;
- Planning and Development Act 2000 – 2013;
- Guidance on EIA, Screening, European Commission, 2001;
- EIA, Guidance for Consent Authorities regarding Sub-threshold Development, DoEHLG, 2003;
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009; and
- Interpretation of Definitions of Project Categories of Annex I and II of the EIA Directive, European Commission, 2015.

A desktop study of a number of different receptors within and in the vicinity of the site were undertaken to establish an opinion as to whether the development is likely to have significant effects on the environment.

The first step is to examine whether the proposed project is a type that is prescribed in the regulations; i.e. mandatory Annex I and II projects. The project needs to be considered in its entirety for screening purposes to avoid project splitting. Where there is no mandatory requirement (mandatory Annex I and II projects), screening advances to

sub-threshold development assessment, where the competent authority evaluates whether the project is likely to have significant effects on the environment.

In considering whether a sub-threshold proposed development is likely to have significant environmental effects, the competent authority must have regard to the criteria set out in Article 27 of the European Communities (EIA) Regulations 1989 (the Regulations). This article refers to the criteria for determining whether a development would or would not be likely to have significant effects on the environment set out in Annex III to the EIA Directive, as amended.

The criteria, as transposed in Irish legislation, are grouped under the following three headings;

- (i) Characteristics of the Proposed Development,
- (ii) Location of the Proposed Development, and
- (iii) Characteristics of Potential Impact.

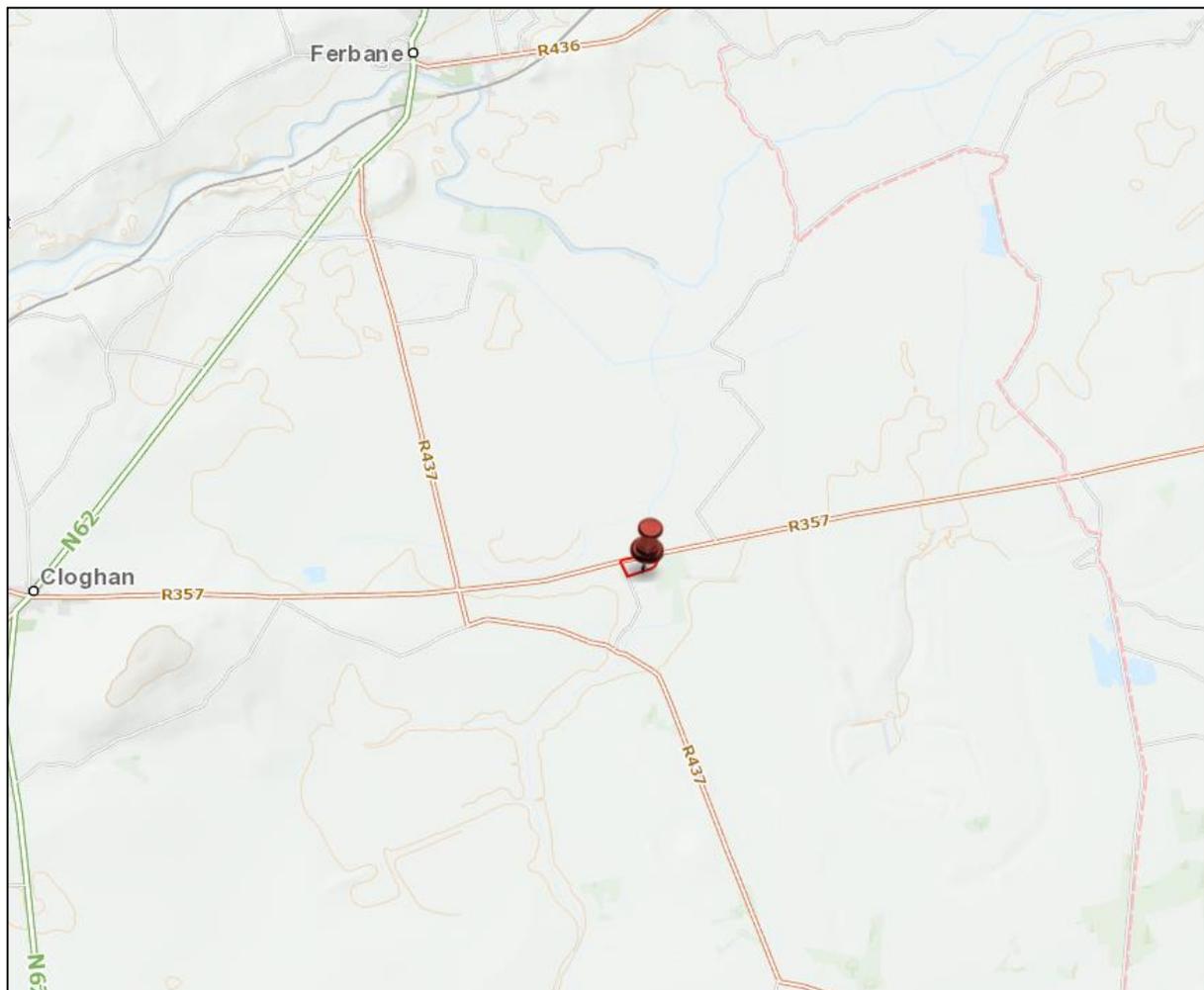
Competent /consent authorities must have regard to these criteria in forming an opinion as to whether or not a sub-threshold development is likely to have significant effects on the environment. The key issue is 'are the likely effects *"significant" in the context of these criteria*'. The DoEHLG Guidance Document Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-threshold Development states *that "those responsible for making the decision must exercise their best professional judgement, taking account of considerations such as the nature and size of the proposed development, the environmental sensitivity of the area and the nature of the potential effects of the development. In general, it is not intended that special studies or technical evaluations will be necessary of the purpose of the making a decision"*.

2 Description of Proposed Development

2.1 Site Location

The site is in the townland of Lumcloon, which is approximately 5km south of Ferbane and approximately 20km south-west of Tullamore, County Offaly. Grid coordinate ref. 613663E 719691N (IG 213715E 219661N) and approximately 46m above ordnance datum (m AOD). A site location map is provided Figure 2.1 below.

Figure 2.1 Site Location Map



The landownership at the proposed development site is approximately 11 acres (4.45 hectares) and is located adjacent to the R357. It is proposed to develop the BESS facility on approximately 6 acres (2.5ha) of the overall landholding (i.e. western half). The site is about 5km south east of Ferbane, approximately 22km south of Athlone and 20km west of Tullamore. The proposed development lands are brownfield and the site is part of the former ESB owned peat fired power station site, which was decommissioned in 2004. The site is situated in the Shannon River basin district and the Silver River is located

approximately 50m to the east of the overall site. The Silver River flows north into the Clodiagh, which joins the Brosna River, which in turn flows into the River Shannon. There is a relatively small wooded area in the north western area of the site. There are large parcels of cutaway bogland and forestry to the south west and north-west of the site and industrial railway associated with the former peat power station run out from the former peat power station to the surrounding boglands.

The surrounding topography is generally flat with nearby once-off rural housing primarily located south west of the site along a local road, which borders the site to the west and runs in a south western direction from the R357 to the R437.

2.2 Site Description

The site is predominantly flat generally ranging in height (between 45m ordnance datum (OD) and 47m OD Malin Head datum). The site formed part of the former ESB peat fired power station which was closed in 2001. The former ESB owned peat power station was commissioned in 1957 (60,000 kW). A further 30,000 kilowatts was commissioned in January 1964. This brought the total capacity of the station to 90,000 kilowatts (90MW). The station burned approximately 2,000 tonnes of peat per day, delivered to the site by rail from the surrounding boglands. The plant comprised four units which produced two million units of electricity per day when on full load. Each unit consisted of a boiler, a turbine, a generator and a transformer. The electricity was generated at 10,000 volts and transformed to 110,000 volts for transmission into the national grid. Two reinforced concrete hyperbolic cooling towers stood at the site through which 18,184m³ of water per hour was continuously circulated and cooled. Each tower had an internal diameter of approximately 60 metres and rose to almost 90 metres in height above ground level.

Following its closure, ESB carried out decommissioning and environmental exit audits between 2003 and 2008. Some low-level was identified which it was determined presents a low risk to environmental and human health receptors. The site was also determined to be '*asbestos safe*'. The proposed industrial development of the site will not be affected or restricted by the low-levels of residual soil contamination at the site. It is stated with the exit audit reports prepared on behalf of ESB that no remedial action will be required and the site is suitable for redevelopment for industrial purposes.

Project economics and land availability are identified as criteria which may be of overriding importance when developing this type of project. Adding to this the availability of suitable development lands in close proximity to the electricity transmission network (high voltage) is a key factor in considering and determining a suitable site location for this development. This site at Lumcloon was chosen for the following reasons:

- Access to the electricity transmission system via the four 110kV three phase transmission lines at the site, two of which
- Availability, access and ownership of lands,
- The site is brownfield and has a history of energy related development
- Low population density and proximity to residential properties
- Road access and traffic. The site is accessible by regional road with no requirement for construction of roads to access the proposed location
- History of power generation in the local community – improves acceptability by the local community
- Visual – single storey building with ancillary outdoor ground level components
- Preliminary environmental assessments have not shown any reason why the site could not be redeveloped for the intended purposes.
- Development is sufficiently sized to provide optimum support services to the grid.

2.3 The Proposed Development

Lumcloon propose to develop a 25 megawatt-hour (MWh) end of life (EoL) BESS facility at the Lumcloon site. The BESS facility will be developed to facilitate and support the electricity grid providing a continuous flow of electricity and matching supply and demand. The plant will be capable of providing a system services to the electricity grid which the plant will get paid for where contract obligations are fulfilled under the Delivering a Secure Sustainable Electricity System (DS3)' programme. The plant will absorb and inject energy as demanded by the power system numerous times over an annual period over short duration events.

In order to appropriately size the BESS facility, extensive modelling assessment have been completed by Lumcloon. Parameters including system power and energy requirements, siting considerations, economics and system parameters (e.g. temperature, charge/discharge rates, depth of discharge (DoD), state of charge (SoC), efficiency, charge/discharge regimes, energetic losses).

At some stage in life cycle of the BESS, internal or external key parameters of the BESS system may have changed in such a way (whether technical, financial or otherwise) that its performance is affected. There EoL of a BESS heavily depends on the application. For Li-ion batteries, lower SoC leads to higher calendar lifetime. The rate of capacity reduction of a battery over time (number of cycles) may be approximately constant and continues to do so after specified battery lifetime. Batteries can continue to be used albeit with a reduced capacity. The overall energy throughput of a battery, until EoL is reached,

increases with shallower cycle depth; i.e. if a battery can deliver 1000 cycles at 100% DoD till EoL it can deliver more than 5000 cycles with 20% cycle depth.

Megawatt-hour refers to how much energy is stored and how much energy the plant can deliver in a given hour. The size of conventional power fossil fuel power plants are typically described in megawatts (MW) as these generation plant can generate electricity continuously. It should be noted that a grid connected BESS isn't designed to operate in this fashion and accordingly it is commonplace and more appropriate to describe the size in terms of MWh. Therefore it was concluded by Lumcloon that the optimum size of plant will be c. 25MWh at the site in Lumcloon, Cloghan, Co. Offaly.

The proposed BESS development will comprise a simple battery storage building (steel frame structure) with a floor area of approximately 4,000m² which will house the modular array of lithium ion (Li-ion) battery units. Li-ion battery and will be assembled within modules and the-modules will be self-contained and certified for intrinsic safety. The battery modules will be placed in racks which will be modular to allow ease of replacement. Sufficient clearance between racks to allow for safe access and replacement of modules.

It is proposed that the height of the building will be approximately 6.1m and photovoltaic (PV) panels will be installed on the roof to supply power to the HVAC units. Separate rooms within the building will be included for SCADA and control equipment, heating, ventilation and air conditioning (HVAC) equipment and fire suppression equipment.

Power control system (PCS) units and small transformers will be positioned externally in self-contained weather-proof housing and in grid layout format. The external appearance and cladding of the building will be designed to complement the setting.

Other external elements of the proposed development include a security kiosk at the entrance and internal access roads. The facility will be access from the R357 which runs along the front (north) of the site. No new permanent vehicular access roads are required. It is proposed to connect to the electricity transmission system via the existing transmission lines located near the western boundary of the site.

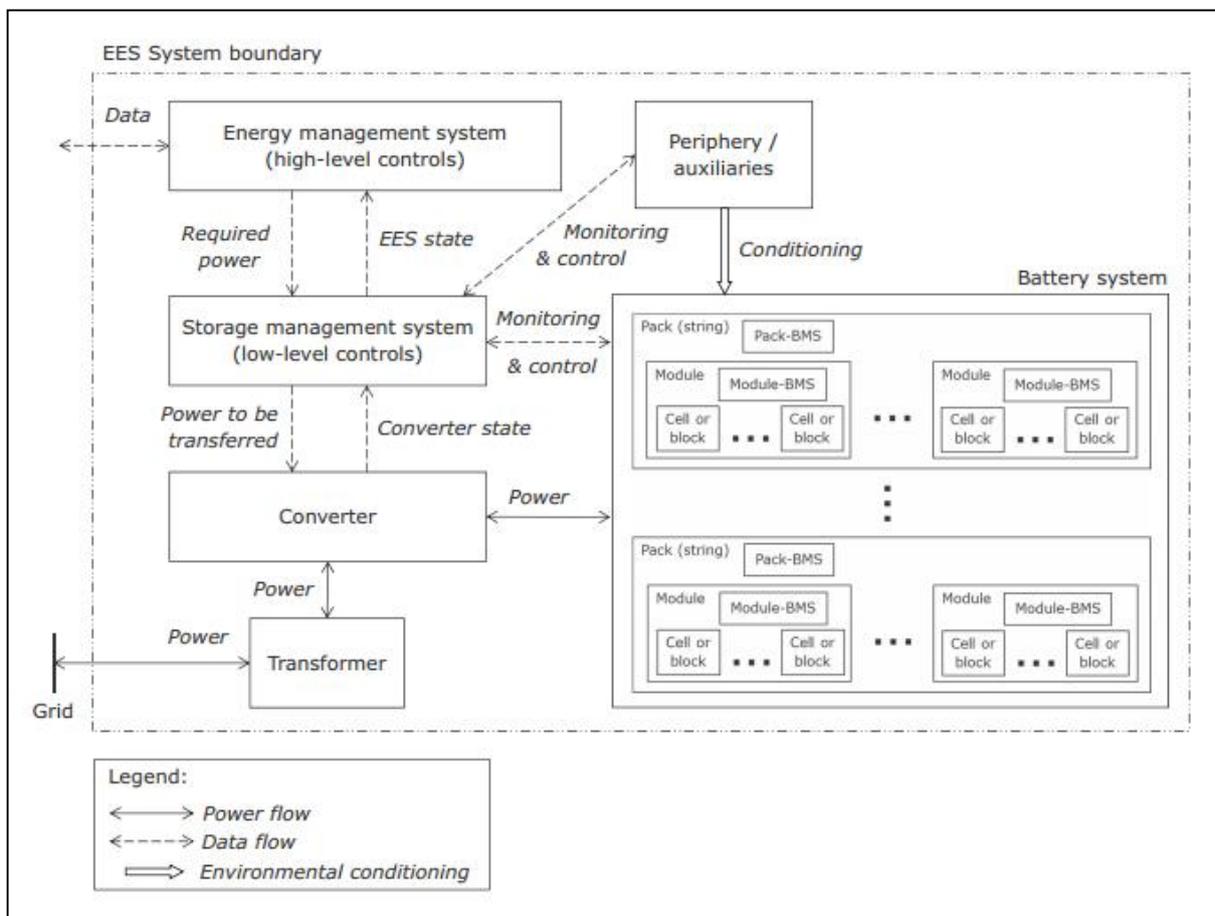
A switchyard and associated electrical plant including transformers will be located on lands adjoining the western boundary. The existing transmission lines and pylons will be positioned in the proposed switchyard and the BESS will connect to the national electricity grid at this point. The connection point will be accessible for both the system operator and the BESS owner. The grid connection will be made in accordance with national / international regulations and codes and an agreement between the TSO and BESS owner.

To prevent vandalism, maintain public safety and meet the requirements of the associated legislation and codes, perimeter fencing will be installed. This is to be 3m high “weldmesh” type fencing coloured green to reinforce the proposed landscaping and minimise the overall visual impact of the site.

2.3.1 Process Description

The grid connected BESS will provide the power system with system services, increasing the stability and reliability of the power system. The plant will consume energy at a low rate in order to recharge the batteries and condition the batteries to the optimum State of Charge (Soc). On detection of a fall in system frequency, caused by an imbalance between energy generation and energy demand, the plant will inject power to restore the balance. Maintaining the balance between generation and demand ensures that the power system operates without loss of supply to consumers.

Figure 2.1 General Schematic and Components of a BESS



Source: *Safety, Operation and Performance of Grid-Connected Energy Storage Systems, Recommended Practice, DNVGL-RP-0043, DNV GL AS December 2015*

All lithium-ion technologies are based on the same principle: Lithium is stored in the anode (or negative electrode) and transported during the discharge to the cathode (or positive electrode) via an organic electrolyte. The most popular materials are graphite for the

anode and a metal oxide for most of the cathode materials. The cathode material is based on Nickel, Manganese and Cobalt or made of iron phosphate. All of these materials have good lithium insertion or intercalation properties, allowing the storage of a large amount of electrical energy under a chemical form.

A BESS consists of numerous components which are vital to the operation of the system. The battery cell is the smallest subpart of the system and the cells store the energy. The cells are aggregated into modules which has a positive and negative terminal and contained in hard casing with a battery management system (BMS - analyser that continuously checks module parameters such as voltage, current, temperature and Soc. The modules are then aggregated to a pack (or string), again with one positive and one negative terminal. The power control system (PCS) on each pack delivers information on the state of the pack to the superior control system for the BESS.

There will be no significant process emissions (air, water, noise) during the operational phase of the plant. Low levels of noise will be generated from HVAC units which will be installed at the site to condition the building. The HVAC units will be suitably positioned on site to mitigate any potential impact from noise at residential receivers. The closest residential receiver to the site is located approximately 400 south /south-west of the site. This is considered a substantial distance given the characteristics of noise sources which will be generated at the site.

Management of wastewater effluent generated at the site will be undertaken in accordance with the EPA Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e ≤ 10). This is deemed to be the most suitable approach due to the fact that;

- a) the facility will have low occupancy numbers during operation,
- b) the proposed site is located in an area which is not served by sewer,
- c) no process related effluents are generated /discharged at the site.

Sustainable drainage systems will be used to ensure there is no increase in flood risk at or in the vicinity of the site. Proposed floor levels will be set 500mm above the estimated 100 year flood level of the Silver River.

There is no requirement for use of water in the process. It is proposed to apply to secure a connection to the private group water supply system (for potable purposes), which runs along the R357 at the front (north) of the site.

The plant will operate autonomously on a 24-hour basis, continuously monitoring the conditions on the power system and automatically responding if required. The development will employ up to five persons during the operational phase.

Additional persons will be employed to carry out periodic inspections and maintenance works. Temporary construction jobs shall also be provided during the construction of the plant which may take up to twelve months.

Following a review of development proposals and the listed activities in the First Schedule to the EPA Act 1992 to 2013, it was concluded that the proposed BESS development will not require a licence (Integrated Pollution Control or Industrial Emissions) under the EPA licensing regime.

2.3.2 Safety

The major safety aspects which are considered in the design of the proposed BESS facility are categorised as electrical and electrochemical. Electrical hazards occur when there is a live contact between a person and an electrical system exposing the person to severe electric shocks. The risks and mitigating safety features associated with ancillary plant, such as high voltage switchgear and transformers, are relatively well understood.

The choice of Li-ion is justified by its long lifespan, high energy efficiency, operation at undefined / low state of charge, as well as its compactness, maintenance-free design and system communication capability.

In terms of electrochemical and Li-ion batteries, the operating temperature range for Li-ion batteries is 0-70°C. Therefore the facility will be fitted with passive (insulating materials, sufficient cell separation distances) and active control /containment measures (e.g. HVAC) to ensure adequate cooling and management of temperature excursions within the battery building. This operating range prevents potential for occurrence of thermal risks and internal shorts. The safety and fire risk of the BESS will be designed to include appropriate measures such as;

- Adequate means of escape for all persons on the premises, via multiple egress routes from all zones within the facility;
- A zoned design providing areas of containment;
- Appropriate levels of fire resisting construction to contain any fire that occurs. In particular the main structural components of the building will have 60 minutes of fire resistance capability;
- Fixed fire detection and suppression system for each zone, utilising an inert gas suppression system to contain and control any fire in the event of a catastrophic failure;
- The means of escape will be illuminated and provided with emergency lighting;

- The premises will be provided with automatic detection and alarm, in accordance with BS5839 Part 2, for warning all persons on site in case of fire; and
- Hand held fire extinguishers will be provided, in locations to be agreed with the approval Authorities.

Protections will be installed at all levels: cell, module and battery. Li-ion batteries are equipped with electronic protections, mechanical design and electric design incorporating the necessary redundancies in the risk control chain to ensure the reliability of the safety functions.

2.3.3 Regulatory Frameworks and Environmental Licensing

2.3.3.1 EPA Licensing (IE and IPC)

Following a review of development proposals and the listed activities in the First Schedule to the EPA Act 1992 to 2013, it is concluded that the proposed BESS development will not require a licence (Integrated Pollution Control or Industrial Emissions) under the EPA licensing regime.

2.3.3.2 Seveso Directive (COMAH)

The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner.

The intention is to achieve this through tiered controls on the operators of the establishments subject to the regulations - the larger the quantities of dangerous substances present at an establishment, the more onerous the duties on the operator.

In June 2015 the Seveso II Directive (96/82/EC) was replaced by a new European Directive 2012/18/EU (Seveso III Directive) in Ireland. The introduction of Directive 2012/18/EU ensures conformity with Regulation (EC) No. 1272/2008; classification, labelling and packaging of chemical substances and mixtures (CLP). Previously, dangerous substances classification under Seveso II related to the Dangerous Substances Directive 67/548/EEC (which is now to be replaced by the CLP Regulations) and substances were grouped in terms of their properties. Schedule 1, Part 1 deals with hazard classification according to CLP and Schedule 1, Part 2 is now the named dangerous substances (as opposed to the opposite under Seveso II).

The Directive defines storage as *"the presence of a quantity of dangerous substances for the purposes of warehousing, depositing in safe custody or keeping in stock"*. The

Directive doesn't specifically mention "*energy storage*" and it is unclear if substances contained in the batteries at the proposed facility can be defined as being "*stored*". Therefore it is proposed to consult with the Health and Safety Authority to determine if the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) applies to the proposed BESS facility.

2.3.3.3 Batteries and Accumulators

Directive 2006/66/EU concerns Batteries and Accumulators and Waste Batteries and Accumulators. The Directive applies to all batteries and accumulators placed on the European Union market, unless, covered by Article 2.2 of the Directive¹. Several materials commonly found in modern batteries are considered to be hazardous and accordingly these will be disposed of in accordance with the relevant regulations.

3 Mandatory EIA Screening

We have reviewed the mandatory list of development which requires an EIS under Part 1 and 2, Schedule 5 of the Planning and Development Regulations and the proposed development of a c. 25MWh grid connected BESS facility does not fall under mandatory EIA. Where no mandatory requirement is concluded, screening advances to sub-threshold development assessment, where the competent authority evaluates whether the project is likely to have a significant effect on the environment, with reference to its scale, nature, location and context. In terms of sub-threshold EIA, the following is presented to address this provision in the legislation.

4 Subthreshold Development (Discretionary) EIA Screening

In considering whether a sub-threshold proposed development is likely to have significant environmental effects, the planning authority must have regard to criteria set out in Article 27 of the European Communities (EIA) Regulations, 1989 (the Regulations). This article refers to the criteria for determining whether a development would or would not be likely to have significant effects on the environment set out in Annex III to the EIA Directive, as amended.

The criteria, as transposed in Irish Legislation, are grouped under the following three headings:

- Characteristics of Proposed Development,

¹ Those used in equipment used to protect essential national security interests and equipment designed to be sent into space. Fuel-cells, classical capacitors and super-capacitors are also not covered by the definition of batteries in Article 3(1).

- Location of Proposed Development, and
- Characteristics of Potential Impacts.

Component/consent authorities must have regard to these criteria in forming an opinion as to whether or not a sub-threshold development is likely to have significant effects on the environment. The key issue is 'are the likely effects "significant" in the context of these criteria'. The DoEHLG Guidance Document Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-Threshold Development states that *"Those responsible for making the decision must exercise their best professional judgement, taking into account of considerations such as the nature and size of the proposed development, the environmental sensitivity of the area and the nature of the potential effects of the development. In general, it is not intended that special studies or technical evaluations will be necessary for the purpose of making a decision"*.

4.1 Characteristics of the Proposed Development

4.1.1 Size of the Proposed Development

The size of the proposed development is small in scale and local in nature. The overall development area of the site will be 2.5 hectares (ha). The overall footprint of the c. 25MWh BESS building will be <0.5ha. This allows sufficient buffers and set back distances and set down areas during construction related works. The building will be similar to a warehouse in appearance and the operational site will be secured around its perimeter to prevent unauthorised access.

4.1.2 Cumulative Effects with Other Proposed Development

Impacts caused by one project, which may be considered minor and insignificant, can combine with other environmental impacts already present or planned in the project area. Together, these impacts may become significant and adverse. The consideration of these "cumulative" effects is therefore discussed here. There are no substantial cumulative effects arising from the development proposal when considered with existing and future growth patterns and trends envisaged for the area.

4.1.3 Nature of Any Associated Demolition Work

It is not envisaged that there will be any spoil materials arising from construction, as all the excavated soil will be re-used as part of the construction process. The disturbance of contaminated soil during construction has the potential to impact on groundwater quality. However where necessary, excavated soils determined to be contaminated will be removal and disposed at a licensed facility.

4.1.4 Use of Natural Resources

It is proposed to use, in so far as possible, raw materials for construction from local sources to support the local economy and minimise environmental impact associated with vehicle emissions. The BESS facility will comprise above ground structures which will be a combination of steel beams, concrete insulation and metal cladding. The potential impact on natural resources is unlikely to be significant as the proposed storage facility will have a maximum footprint of <0.5ha which will include a single story building.

4.1.5 Pollution and Nuisances

There are no process effluent discharges to ground or waters. Foul effluent will be managed during the operational phase by a proprietary treatment system. The system will be designed in accordance with the EPA Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses. Foul effluent generated during the construction phase of the development will be collected and transported off site for disposal.

Nuisance arising during the construction and installation of the system is possible, albeit temporary in nature, primarily arising from increased traffic on the local road network. Traffic emissions will not be significantly increased as a result of the proposed development.

The plant will not generate significant noise levels during the operational phase and it is expected that the noise impact at the residential receivers closest to the facility will be below typical EPA (Environmental Protection Agency) noise limits for industrial installations of 55dB LAr,T during daytime (07.00hr to 19.00hr), 50dB LAr,T during evening time (19.00hr to 23.00hr) and 45 dB LAeq, T during night time (23.00hr to 07.00hr).

Overall it is considered that there is potential for water pollution impacts during construction, although these are unlikely to be significant on the basis that good site construction management practices are adopted.

4.1.6 Risk of Accidents

Having regard to the fully automated and enclosed system proposed for the battery storage facility, the risk of accidents is considered low. During the construction phase a small amount of both solid and liquid waste will be produced at the facility. Waste oils, solvents and paints will be stored in a temporary bunded area prior to transport off site by a licensed contractor.

It is not envisaged that there will be any spoil materials arising from construction, as all the excavated soil will be re used as part of the construction process and used to form

boundary berms. All other solid waste generated during the construction phase will be adequately segregated and stored prior to transfer to an authorised facility for recovery/recycling/disposal.

Once construction is complete, there will be no significant effluent waste generated from the BESS facility and therefore there is no risk to the Silver River located east of the site.

4.1.7 Concluding Remarks

Given the information available it cannot be categorically stated that there will be no impact arising from the proposed development. What has been determined however is that should impacts occur, then those impacts are not likely to be significant or can be mitigated to acceptable levels with standard engineered and procedural controls .

Whilst the possibility of disruption to residents living in the area, during the construction phase exists, such disruption is likely to be localised and temporary in nature. Increases to traffic during construction stage works is not envisaged to be significant.

4.2 Location of Proposed Development

It is proposed to develop the BESS facility on 6 acres (2.5 ha) of development lands, which are under the applicant company's control. The site is situated in the town land of Lumcloon, approximately 5km south east of Ferbane, 22km south of Athlone and 20km west of Tullamore. The site is a brownfield site and formed part of the former Ferbane peat fired power station site, which was operated by the ESB and fully decommissioned in 2004. The ESB subsequently obtained planning permission in 2004 for a 100MW gas fired power plant at the site, but did not proceed with the proposed development. There are large parcels of cutaway bogland and forestry to the south west and north-west of the site and industrial railway associated with the former peat power station runs out from the former peat power station to the surrounding boglands. The surrounding topography is generally flat with nearby once-off rural housing primarily located south west of the site, along a local road (Millbrook Road) bordering the site to the west and which runs in a south western direction from the R357 to the R437.

4.2.1 Abundance, Quality and Regenerative Capacity of Natural Resources

The existing site comprises a brownfield site that presents a damaged landscape with a core that possesses no unique landscape features. It is fenced off and inaccessible with well wooded or vegetated boundaries that screen the majority of the site. The key landscape features of the application site are the woodland block to the north-west and

some of the vegetation aligning the boundary with the R357 road. It carries no landscape designations and has a *low value and quality*.

Beyond the site periphery, is a remote and sparsely populated landscape that has been subject to a history of large scale industrial peat extraction. Subsequent conifer plantations across the peatlands have somewhat angular forms and can be considered incongruous with what would be perceived to be the natural landscape character of this area. The essence of the Bog of Allen landscape itself is one of notable flatness and it has a rarity in terms of character, but many areas have been affected or damaged to such a degree that restoration is required and suggests an overall rating of *medium value and quality* landscape. The Offaly County Development Plan classifies landscape sensitivity across the Bog of Allen area and the application site is located in an area classified as '*low sensitivity*'.

There are areas that have remained untouched or have been restored (such as the nearby Lough Boora Parklands) and this has redressed some of the historical lands-use disturbance and these areas have a *high value and quality*.

The proposed development site is underlain by Waulsortian Limestones (WA). There are no recorded karst features at the site of the proposed development and the immediate surroundings.

The subsoils in the area are dominated by cutover peat bogs with areas of till derived chiefly from limestone and areas of alluvium associated with the Silver River, which lies to the east of the site. Previous site investigations indicate that subsoils at the site comprise moderately permeable glacial till deposits overlying moderately to highly permeable gravels with an average thickness of 5.3m. A thin layer of black sandy clay perhaps representing peat ash was encountered in boreholes drilled in the centre and eastern areas of the proposed development site. The limestone in this area is classified by the GSI as Locally Important (LI) aquifer which is described as bedrock which is moderately productive in local zones only.

The GSI database indices groundwater vulnerability at the proposed development site is High (H). The groundwater vulnerability at the proposed development site is revised to range from High (H) to Moderate (M), based on subsoil permeability and thickness recorded during site investigations.

The groundwater is considered to be flowing to the east/northeast towards the main groundwater discharge feature in the area, the Silver River.

The site is located in the Shannon International River Basin District and the Brosna River Catchment, adjacent to the Silver River and immediately upstream of Lumcloon Bridge.

The Silver River rises in the Slieve Bloom Mountains and flows in a northerly direction through Kilcormac towards Lumcloon and joins the River Brosna approximately 3km downstream from Lumcloon Bridge. These river catchments contain a wide variety of associated water features and also ecologically important areas which are reliant on good water quality.

The most noticeable hydrological feature within the site consists of a drainage ditch that runs along the northern site boundary and in parallel to the Regional Road R357. Changes in the hydrological regimes can occur due to alterations in the surface water drainage patterns. The conversion of relatively permeable green-field areas into impermeable surfaces, such as road and roof surfaces can result in an increase in the runoff in terms of peak flow and flow volume.

The proposed development is located within an unmanaged brown field site containing evidence of natural recolonisation. According to the National Parks and Wildlife Service (NPWS), there are no ecological designations (including Natura 2000² sites) at the site. The National Monuments Service interactive map/search facility that provides access to all records of the Archaeological Survey of Ireland (ASI) stored on its national database, commonly known as the Sites and Monuments Record (SMR). National Inventory of Architectural Heritage (NIAH) sites have also been compiled and recorded on a county by county basis. According to the NMS interactive map/search facility there are no SMRs or NIAHs at or in close proximity to the site which need to be considered as part of this assessment.

The construction phase of the development will have a temporary impact on the R357 in terms of traffic flows; however this will be of a short term nature. The operational phase impacts are much smaller due to the low number of site operatives. It is expected that both scenarios will result in total traffic volumes much less than the capacity of the existing R357.

4.2.2 Absorption Capacity of the Natural Environment

The natural environment will not be adversely impacted upon by the proposed development given the historical brownfield nature of the setting and the relatively minor development footprint of the BESS light industrial facility.

² SPAs and SACs make up a European network of sites known collectively as Natura 2000 habitats

4.2.3 Concluding Statement

There are no sensitive receptors in the area that may be negatively impacted upon as a result of the proposed development, including residential, environmental and cultural heritage receptors.

4.3 Characteristics of Potential Impacts

EIA Section	Summary of Impacts
Human Beings	<p>There will be no severance of land as a result of the proposed development or loss of rights of ways or amenities or rezoning of land required. There will be no impact to surrounding agricultural lands. It is proposed that the development proposal will have a positive impact on local economy during the construction phase.</p> <p>Potential impacts associated with the construction and operation phases of the development in terms of noise, air quality and traffic have been accounted for and adherence to any mitigation measures recommended will ensure that there will be no negative environmental impacts or effects on human beings.</p>
Flora & Fauna	<p>There are no designated conservation areas within the proposed development. There are no risks to potential spillage to the open water body adjacent to the site during construction.</p> <p>The site contains recolonising bare ground habitat which is not a thriving habitat for flora or fauna. Therefore, the proposed site won't be contributing to a large amount of habitat loss.</p> <p>Given that there was a peat fired power station in operation on the proposed development site, and decommissioning works have been complete, the site is not a thriving habitat for fauna as the land is still quite bare with concrete. Any impacts to fauna that may be present is likely to be temporary in nature during construction and no significant impact is envisaged.</p>
Soils & Geology	<p>According to the Teagasc Soil Map, the soils within the area around the proposed development site include peat, fine loamy drift with limestone, river alluvium, lake alluvium and coarse loamy over calcareous gravels. The geology of the area of the site is made up of limestone and volcanic rocks.</p> <p>Soils underlying the site are described by the GSI (Geological Survey Ireland) as "made ground" comprising spoil material from the decommissioned peat station. The bedrock aquifer is described as moderately productive only in local zones.</p> <p>There are no proposed discharges to ground associated with the storage facility. The only potential impact to ground disturbance</p>

	<p>is during the construction phase which is not expected to be a highly significant impact.</p> <p>There is some low level contamination present on areas of the site associated with historic activities. The proposed industrial development of the site will not be affected or restricted by the low-levels of residual soil contamination at the site. It is stated with the exit audit reports prepared on behalf of ESB that no remedial action will be required and the site is suitable for redevelopment for industrial purposes</p>
Water	Due to the proposed development being small scale, the risk of contaminated water discharge to the Silver River during construction is low. It is not predicted to have a significant impact to the open water body.
Air & Climate	The proposed BESS facility will not generate any noxious fumes or odours. It will not result in an increase of traffic due to the small amount of employees that will be at the site daily and therefore, will not be negatively impacting on the air quality or climate through vehicle emissions. The potential impacts arising are deemed to be insignificant to the surrounding area.
Noise & Vibration	<p>The measured noise levels at the noise monitoring location have been deemed to be in accordance with the relevant guideline noise limits outlined in the World Health Organisation (WHO) Guidelines for Community Noise. The predicted noise levels at the nearest residential properties are in accordance with the WHO Guidelines for Community Noise during day-time and night-time. Therefore, no adverse noise impact shall arise.</p> <p>The only noise, after construction is complete, is from fans in the roof of the building to keep the building cool and the level of noise will not exceed any guidelines.</p>
Landscape	The site itself is bare and vacant. The site is mainly surrounded by wooded land and hedgerows so is not very visible from the road, R357. It is not expected that the proposed development will negatively impact the landscape as it will only be a single story building that won't be easily identifiable in the setting.
Material Assets	There are no potential material assets arising
Cultural Heritage	There are no recorded archaeological monuments within the landholding of the proposed development.
Interaction of Foregoing	All above receptors contribute to the distinctive character of the rural area and the region. Given then local scale of the proposed works the cumulative impacts on the suite of these features are not considered to be significant.

5 Assessment Findings

The development does not fall under Schedule 5 Part 1 or Part 2 of the Planning and Development Regulations 2001 – 2013.

The project was therefore assessed as a subthreshold development. Following consideration of the characteristics of the proposed development, the location of the proposed development and the characteristics of potential impacts, it is concluded that development of the proposed BESS facility on lands at Clonliffeen is not likely to have significant effects on the environment. Accordingly subthreshold EIA should not be required.

6 Conclusion

The DoEHLG Guidance Document 'Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-Threshold Development notes that the need for sub-threshold EIA should be fairly limited in Ireland in light of the approach adopted by Ireland in setting lower mandatory thresholds than comparable Annex I thresholds in the Directive.

However, the Guidance document also states that *'the greater the number of different aspects of the environment which are likely to be affected and the greater the links between the effects, the more likely it is that an EIS should be carried out. Where complexity of impacts is deemed to apply in the case of a specific sub-threshold development proposal, there should be a predisposition towards the preparation of an EIS'*.

In the instance of the proposed development works, it is considered that the local and small scale nature of the works associated with the construction and operation of a BESS facility, which will have minor emissions to the receiving brownfield environmental, does not result in a project with a series of complex impacts.

The overall conclusion for this screening report is that the proposed development of a BESS facility on lands at Lumcloon, Cloghan, Co. Offaly does not require a full Environmental Impact Statement.