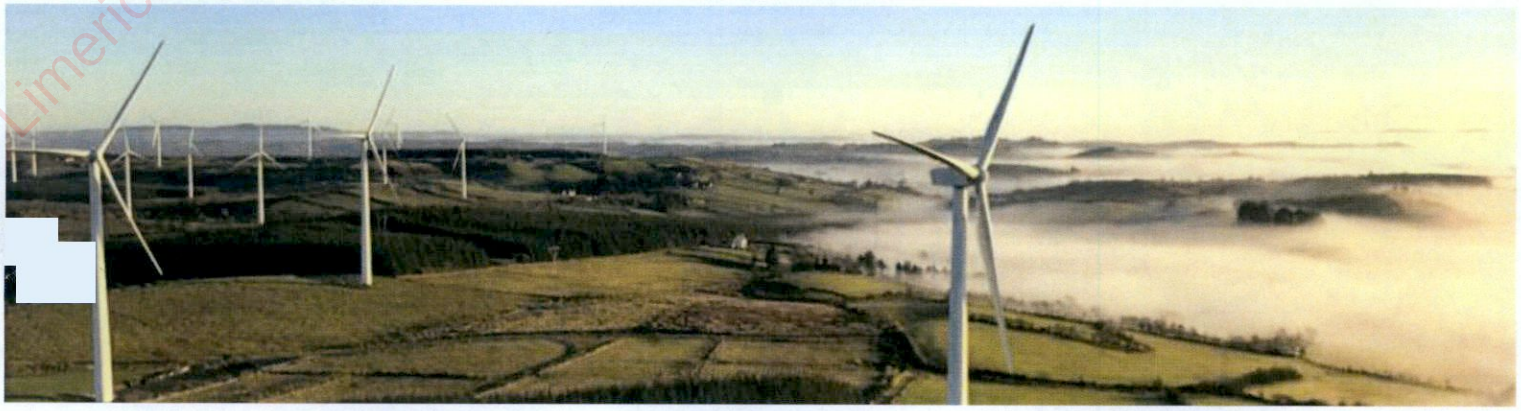
Annex 3.3



Knockastanna Wind Farm Extension of Operational Life

Annex 3.3: Planning-Stage Decommissioning Plan

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1.0 Introduction

Galetech Energy Services (GES), on behalf of SSE Renewables Generation Ireland Limited ('SSE'), has prepared this Decommissioning Plan to establish the appropriate methodologies to be implemented, and management of, the decommissioning of the Knockastanna Wind Farm.

1.1 Background to this Report

Following a comprehensive lifetime extension assessment of the existing wind turbines and ancillary infrastructure at the Knockastanna Wind Farm, it is proposed to continue the operation of the existing development for a further period of 15-years from their currently required date of decommissioning. At the end of the proposed additional operational period, several options will be available to SSE, including:-

- Further operation of the existing turbines subject to a technical assessment of the wind turbines;
- Refurbishment/replacement of the turbines and continued operation; and
- Decommissioning of the wind farm.

However; it is assumed for the purposes of this document that a full decommissioning of the Knockastanna Wind Farm will take place after the further period of operations. It should be noted that decommissioning is required under the extant planning permission and the proposed development will be simply postponing those activities for another 15-years. That said, decommissioning activities have evolved since the original planning application was submitted and this Planning Stage Decommissioning Plan has been prepared to account for such updates.

This Decommissioning Plan is based upon current technologies, methods and best practice. During the proposed additional period of operations, it is likely that additional methods will be developed and current methods further evolved as experience of decommissioning similar developments increases.

Prior to decommissioning, SSE will engage with the Planning Authority to agree a specific Decommissioning Plan to ensure the appropriate decommissioning and reinstatement of the site having regard to prevailing environmental conditions and to ensure the use of best available recycling technology and techniques available at the time. **This document should, therefore, be considered to be a 'live' document** which will be further developed by the appointed decommissioning contractor who will prepare and insert detailed method statements relative to each individual work stream.

1.2 Description of the Proposed Development

The existing development comprises:-

- 4 no. wind turbines;
- Associated turbine foundations and crane hardstandings;
- 1 no. electrical control building with a total footprint of 66 square metres (m^2), including welfare facilities and associated electrical equipment enclosure;
- Underground electrical cabling between each of the existing wind turbines and the electrical control building;
- 1 no. site entrance from the L-5029-419 and 2km of site access tracks; and
- Site drainage infrastructure.

As described above, it is proposed to continue the operation of the existing development for a further period of 15-years, from its currently required date of

decommissioning in 2023, to 2038.

2.0 Decommissioning & Restoration Plan

2.1 General Principles

Unlike most other forms of development, decommissioning of wind farms is typically a straightforward process. Infrastructure can readily be dismantled on site and removed. Following the restoration of the site, there would be no significant visible evidence of prior existence, and no legacy of pollution.

The decommissioning of the Knockastanna Wind Farm is not expected to pose significant risks to the environment; nevertheless, effects need to be addressed in order to ensure that no, or minimal, impact on the environment occurs.

All measures described within the Environmental Impact Assessment Report (EIAR) with regards to mitigation and protection for ecological receptors, waste management, surface water management and prevention of pollution will apply to decommissioning works; subject to review of relevant regulations and best practice at that time.

In general, all structures above ground level shall be dismantled and removed from the site for reuse or recycling where possible; however, access tracks may be retained depending on the proposed future use of the site. It is likely that, in order to minimise environmental disturbance, the majority of sub-surface elements of the wind farm shall remain in situ. For example, electrical cabling shall be removed and recycled but the ducting within which it is located would remain to avoid unnecessary excavations and ground disturbance.

The overriding principle of the decommissioning process is to minimise the extent of any ground disturbance on site. While groundworks are an inevitable consequence of the decommissioning process, they shall only be undertaken where absolutely necessary.

The following sections detail the methodologies likely to be implemented during decommissioning; however, as described above, a site-specific approach will be agreed with the Planning Authority.

2.2 Wind Turbines

Prior to any decommissioning works being undertaken, a comprehensive health and safety assessment will be carried out. In advance of works to the turbines, they will be disconnected from the on-site electrical network by an appointed electrical contractor. Turbine dismantling will be undertaken in reverse order to the methodology employed during their construction. Cranes will be brought to site and will utilise the existing crane hardstandings.

Wind turbines are comprised of the tower, nacelle and blades which are modular items that can be disassembled. If the turbines are to be sold on or reused elsewhere they shall be removed from site by specialist vehicles similar to those used during their transportation to site.

If wind turbine components are not to be reused then they shall be recycled where possible.

The tower sections and nacelle are inert steel/ferrous metal structures which are readily recyclable. These will be sent to a licensed waste facility for recycling.

The turbine blades are constructed of fibreglass which is not readily re-used or recyclable. Due to the large number of turbine blades currently being decommissioned globally, extensive research[1] is being undertaken to find an alternative use for the fibreglass. There are a number of emerging innovations for fibreglass recycling including the re-purposing of fibreglass for other civil engineering projects (e.g. as a component in concrete production, roofs for social housing and incorporation to the construction of electrical powerline masts/structures.) While extensive research is being undertaken to find a means of recycling decommissioned wind turbine blades[2], this EIAR assumes that, at the proposed date of decommissioning, all blades will be removed to an approved waste management facility.

Having been dismantled, the turbine blades will be processed on the crane hardstanding to accommodate their removal by standard HGVs. This process is likely to avoid the requirement for abnormal-sized loads, or oversized vehicles, to utilise the local road network.

2.3 Turbine Foundations

Wind turbine foundations are likely to be grubbed to a depth of 1m below ground level using conventional mechanical diggers. Exposed rebar and holding down bolts shall be burned off and removed off-site to an approved waste handling facility for recycling where possible. The broken concrete will be removed from site and disposed of at an approved waste management facility. Alternatively, it may be used on site as an inert fill to make up levels as part of a wider decommissioning/restoration plan, reducing the need for the importation of additional soil onto the site. Excavated areas shall then be soiled over, seeded out or allowed to vegetate naturally.

2.4 Crane Hardstandings & Access Tracks

Hardstands shall be grubbed up to a depth of 1m below ground level and the excavated material shall be used to regrade the hardstand area to match existing ground contours and profile. Additional inert material derived from demolition in other areas of the site may be used if sufficient material is available. Once the area has been profiled to match the surrounding ground, soil shall be spread over the reinstated area. This area shall then be seeded out or allowed to vegetate naturally. If it is decided not to retain the access tracks on site for future use, then these shall be removed using a similar methodology.

2.5 Transformers & Cabling

The decommissioning of transformers will depend entirely on any future use of the wind turbine. If the turbine is to be used elsewhere, the transformer will be removed from site for refurbishment and future use. If the turbine is to be recycled or sent for disposal, the transformer will be removed to an approved waste handling/recycling facility and stripped of any useable parts with the remainder being recycled.

The cables at the Knockastanna Wind Farm contain a core of copper which can be recycled. Cables shall be pulled from the existing ducting and removed to an approved waste handling facility where the cores shall be recycled and the remaining material shall be disposed of at an approved facility.

[1] https://www.re-wind.info/

[2] Additionally, SSE Renewables is currently involved in the SusWIND project which seeks to increase the sustainability of existing wind turbine blades.

2.6 Electrical Control Building

In the first instance, it should be noted that the electrical control building is under the control of ESB Networks and may be retained following the decommissioning of the wind farm. However, for the purposes of this assessment, decommissioning is assumed. The on-site electrical control building will involve the strip-out and removal of steel, conductors, switches, and other materials and equipment that can be reconditioned and reused or recycled. A soft strip of the building shall ensure that all fixtures and fittings are removed prior demolition.

Demolition of the control building shall take place using conventional demolition methods. Foundations and building services shall be grubbed up to a depth of 1m below ground level. The demolition waste shall comprise mainly rubble (blocks, broken concrete, and plaster etc.) and timber. Rubble can be segregated to provide an aggregate material which may be used in the reinstatement of the site while un-suitable material will be removed and disposed of at an approved waste management facility.

Timber and other waste shall be segregated according to material type with a view to recycling where possible or disposal. All demolition materials which cannot be reused on site shall be removed off site to a licensed waste handling facility for recycling or disposal. Excavations shall be backfilled with suitable material, soiled over and seeded out or allowed to vegetate naturally.

3.0 Environmental Management Provisions

3.1 Waste Management

The decommissioning phase will be undertaken in accordance with all prevailing best practice methods including in relation to waste management and the waste hierarchy.

The contractor must be committed to preventing waste through implementing reduction and effectively managing resources. This will ensure that:-

- Legal obligations are met;
- Waste production is minimised;
- Build costs are minimised;
- A framework for continuous assessment and best practice is implemented; and
- Carbon emissions and negative environmental impacts of and from waste materials are reduced.

3.2 Timing of Works

Given the presence of the proposed development site within a Slievefelim to Silvermines Mountains Special Protection Area (SPA), the most intrusive decommissioning works (e.g. excavations and ground profiling) will be carefully scheduled to avoid the coldest winter months and the main bird breeding season (the main breeding season being April to August inclusive). The precise scheduling of works will be reviewed by an ecological/ornithological consultant prior to commencement.

3.3 Ground Disturbance, Material Excavation & Reinstatement

During decommissioning, all plant and machinery will keep to existing infrastructure (e.g. tracks and hardstanding) and will not encroach upon adjacent habitats unless this is essential in order to progress the decommissioning works. In the event of any necessary encroachment into adjoining habitats; given the presence of wet heath at the proposed development site; appropriate trackway or matting shall be placed to

avoid any loss of the adjoining habitat. However, no encroachment into areas of blanket bog will be permitted.

The reinstatement of any areas disturbed during the decommissioning works will be undertaken. The contractor will record excavated volumes and storage areas, and volumes and type of material utilised for reinstatement of relevant areas. This information will be updated for the duration of the decommissioning works.

Reinstatement will be completed using site-won materials wherever possible without compromising or damaging established/existing habitats. Natural vegetation will be preferred; however, native seed mixes may also be selected to complement surrounding species. The seed mix and method of application will be agreed with a suitably qualified ecologist to ensure that the reinstated habitats are compatible with those existing and surrounding the reinstated areas at the time of decommissioning.

All temporarily stockpiled materials will be stored in designated areas and isolated from any surface drains and a minimum of 50m away from surface water where possible. Aggregate or fine materials storage will be enclosed and screened/sheeted. No storage of materials within areas of blanket bog or wet heath shall be permitted.

Soil and vegetation must be stored separately from subsoil and shall be retained and reinstated on all areas of stripped ground as soon as possible to prevent erosion and leaching/loss of nutrients. Excavated turves; particularly in the case of wet heath, shall be appropriately stored to protect the plant species; shall be reinstated with the vegetated side facing upwards, in order to speed up the re-generation process, minimise the need for re-seeding, and help maintain the original species mix.

3.4 General Pollution Prevention Measures

Pollution prevention methods will be undertaken in accordance with those measures set out in the EIAR and prevailing best practice procedures. Any material or substance which could cause pollution, including fuels/oils or silty water will be prevented from entering groundwater, surface water drains or surface waters by the appropriate use of, and appropriate placement of, temporary cut-off drains and silt traps. Any sign of ineffective water treatment measures or evidence of silted or contaminated water entering surface water on-site, will be reported immediately to the contractor. The precise implementation of these measures will be detailed in a Surface Water Management Plan (SWMP) to be prepared prior to decommissioning.

All refuelling will be carried out in a designated area over an impermeable surface (hardstanding/protective layer/trays) at least 50m from surface waters/surface water drains where possible. Refuelling and transfer of fuels will only be carried out under the supervision of an appropriately trained supervisor. Fuel pipes on plant outlets at fuel tanks etc. will be regularly checked and maintained to ensure that no drips or leaks to ground occur.

Irrespective of the buffer distance and location of refuelling, interceptor drip trays will be available in accordance with standard good practice. Interceptor drip trays will be positioned under any stationary mobile plant to prevent oil contamination of the ground surface or water. Plant and site vehicles are to be well maintained and any vehicles leaking fluids must be repaired or removed from site immediately. Any servicing operations shall take place over drip trays.

Areas of waste oil/fuel/chemical storage and refuelling will be located 50m away from surface waters or drainage paths. Such storage areas will be appropriately sited to prevent the downward percolation of contaminants to natural soils and

groundwater.

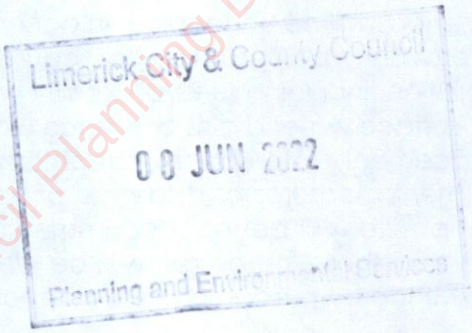
Fuel, oils and chemicals will be stored on an impervious base within a bund able to contain at least 110% of the volume stored. Rainwater will not be allowed to accumulate within the bund and in any way compromise the required 110% volume capacity. No tanks or containers may be perforated or dismantled on-site. A competent operator shall empty all contents and residues for safe disposal off-site in accordance with current waste regulations.

With regards dust emissions; a water bowser will be available to spray work areas and haul roads, especially during periods of excavations works coinciding with dry periods of weather, in order to suppress dust migration from the site. Additionally, all loads which could cause a dust nuisance will be covered to minimise fugitive emissions during transport; while speed limits will be strictly enforced to avoid dust emissions.

No burning of any materials shall be permitted; while the use of herbicides will also be avoided.

4.0 Monitoring

A monitoring period of 2-years, immediately following the decommissioning and restoration activities, will be implemented to monitor *inter alia* the vegetative re-colonisation of the site and to ensure that drainage measures continue to function correctly. The monitoring period will allow the site to experience seasonal changes and to determine if additional restoration works are required.



Annex 4.1