



*ESB West Offaly Power,
Shannonbridge,
Co. Offaly
Ireland*

Proposal to use Biomass in ESB West Offaly and Lough Ree Power

ESB West Offaly Power, Shannonbridge, Co. Offaly



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Introduction

ESB Lough Ree Power P0610-02 and West Offaly Power P0611-02 current planning permissions expire on the 31st of December 2020.

Under ESB's project Gemini ESB is seeking to transition both stations from firing on Peat only, to cofiring with Biomass. ESB Lough Ree Power submitted a planning application PL 19/38 on the 13th of February 2019 to Longford County Council in relation to the transition to Biomass. ESB West Offaly Power submitted a planning application to an Bord Pleanála under the Strategic Infrastructure Development Applications (SID) process 303108 on the 26th of November 2018 also in relation to the transition to Biomass. Both process are currently ongoing with the respective authorities.

IE review applications for WOP for the full transition to biomass was submitted on the 22nd May 2019. ESB Lough Ree Power is currently under an IE review process P0610-03 for an increase in capacity for the ash disposal facility and a change to condition 5.5. However upon completion of this review a further application for LRP will be submitted to incorporate the transition to Biomass.

If planning permission is granted by the associated authorities to allow the stations to burn Biomass/Peat, then there is a potential period during which the current stations IE licences will remain in effect until the IE review process for the transition to full Biomass has been completed.

The current licences P0610-02 and P0611-02 contain condition 3.14; *"Combustion plant shall have the capacity to burn peat and use "short rotation biomass" as a potential fuel."*

The purpose of this document is to provide a proposal to the EPA on ESB's interpretation of "short rotation biomass" as contained in Condition 3.14. of the current licence.

Intpretation of Condition 3.14

The term Short Rotation Biomass is included in the IE Licences for WOP and LRP under condition 3.14, however the term was not defined therein. ESB interprets short rotation as outlined below as per the RED II directive under the definition of Biomass.

The European Union's directive to Member States in relation to renewable energy is set out in *"Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources {recast}"*, (*"RED II"*).



RED II includes the following definition for Biomass in Article 2;
(24) 'biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin;
(25) 'agricultural biomass' means biomass produced from agriculture;
(26) 'forest biomass' means biomass produced from forestry;

Short Rotation Forestry is a well-documented term in the biomass industry, see Appendix for referenced links. Short Rotation Forestry is, single or multi-stemmed trees of fast growing species grown on a reduced rotation length (less than 20 years in Ireland) primarily for the production of biomass and occupies a niche between the highly productive short rotation coppice systems and conventional forestry. It provides more flexibility than a coppice system in that a much wider variety of species can be used such as Eucalyptus, Sitka Spruce, Fir, Poplar, Ash, Alder, Pine. It is also noted that Eucalyptus is (woodchips, pellets etc) referenced as short rotation coppice/forestry in the Red II under Annex VI A, C , D and in Teagasc papers (see papers referenced in appendix below). Eucalyptus generally has a 10-20 year rotation

Short Rotation Coppice (SRC), is another well documented term within the biomass industry, and SRC generally refers to densely planted, high energy crops harvested on a two to five year cycle, with willow being the most prevalent in Ireland.

Biomass Trials 2019

ESB is proposing to conduct further Biomass trials in Q3 2019 in both stations and will be issuing a proposal on these trials to the EPA shortly. The purpose of this trial is to establish the logistics and blends involved in cofiring of imported Eucalyptus and Irish virgin non treated woodchip with Peat in an ISEM market.

Plant Modifications

As previously mentioned the stations are currently both seeking new planning permissions which will include the development of fuel management and handling facilities at both locations to facilitate the change in fuel type. In their respective planning applications , the sites are seeking to construct external concrete storage slabs and pellet silo's.

However until the new planning permission is granted, the station will optimize the existing infrastructure at the Fuel handling plant to allow the stations to burn both Peat and Biomass. The Biomass delivered to the stations will already have been processed offsite. All Biomass will



be delivered using existing infrastructure directly from the trucks via the lorry unloader into the Intermediate Peat Storage Shed (IPS). One half of the IPS will be emptied of Peat to allow for storage of the Biomass. Should it be required, any buffer Biomass stock will be stored in a designated hardcore area until the permission has been granted for the construction of external concrete storage slabs A 6 week combustion trial is proposed for both stations in Q3/Q4 of 2019, should the Biomass stored in the designated hardcore area during the trial have any potential run off of water, then this will be monitored. In the event, that run off becomes an issue during the trial, a proposal in relation to resolving this issue will be issued to Enforcement for approval.

Emissions

Based on previous trial data there are no anticipated impacts in relation to air from the burning of Biomass.

A 6 week combustion trial is proposed for both stations in Q3/Q4 of 2019. These trials will provide more extensive data on the impacts of co-firing of biomass on plant air emissions (NO_x, SO₂, Dust) and will be closely monitored using station CEMS .Operations staff will continually monitor the emissions and in the event any emissions approach the ELV for any reportable parameter, as per Schedule B(1)of the IELs, appropriate action will be taken to ensure compliance in accordance with the stations operating procedures.

In addition to this, testing through a certified ISO17025 external test house will also take place. This testing will confirm compliance with the stations current license and new LCP BAT.

Conclusion

It is ESB 's interpretation that short rotation Biomass /forestry includes Willow and Eucalyptus and virgin non treated Woodchip. ESB is seeking approval to cofire these types of Biomass materials under the current IE licence condition 3.14. The stations and their respective ADFs will continue to be managed in accordance with its IE licence and ADF operational plans. It is anticipated that a reduction of ash quantities will occur from the combustion of Biomass.

In the event the station does not receive a grant of planning from the respective planning authorities or ,suitable revised IE licences , it will continue to operate under its current IE licences until the expiry of its current planning at the end of 2020.



Appendices

Links

RED II Directive

https://eurlex.europa.eu/legalcontent/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC

Teagasc Referenced Links to Short Rotation Forestry

1. <https://www.teagasc.ie/crops/forestry/research/shortfor-project/shortfor-project---work-package-5/>
2. De Miguel, A., Sottocornola, M., Cronin, B. and Kent, T. (2016) **Exploring market opportunities for SRF** in the current Irish wood processing and solid biofuel sectors (PDF). Irish Forestry 73 (1&2): 141–160.