

Replacement of peat with biomass in electricity generation

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The target for 30% co-firing with biomass by 2015 was originally set for the peat stations in the Government's White Paper on Energy, published in 2007. It was also included as a key action, saving up to 900,000 tonnes of CO₂ per annum, in the National Climate Change Strategy 2007-2012. The overall Governmental objective was to reduce the intensity of greenhouse gas emissions from power generation while maintaining diversity in the fuel mix.

Co-firing with biomass commenced at Edenderry Power Ltd. [EPL] in 2008, and the volumes have been increasing year-on-year: starting with 2% in 2008; increasing to 6.7% in 2009; 11% in 2010 to reach 30% by 2015. As a result, 300,000 energy tonnes of peat or 2.3 petajoules (PJ) will be replaced by biomass as a fuel for Edenderry power plant.

ESB has also carried out co-firing trials with a range of biomass materials at Lough Ree and West Offaly power stations.

For Bord na Mona Feedstock the challenge is:

1. To create a sustainable biomass supply to replace peat incrementally over the next four years reaching 300 kt by 2015. This biomass stream must have the capability of being expanded to 500 kt delivered to EPL by 2020.
2. Replicate the strategy for biomass supply to EPL to meet the requirements of the ESB's plants at West Offaly and Lough Ree when their specific needs are known in the run up to the expiry of PSO support for these plants in 2019.
3. Supply biomass requirements of Bord na Mona's fuel and horticulture businesses over the next 10 years.

The 2015 requirement for EPL will be sourced as follows:

1. 30% sawmill residues and pulpwood from forest thinnings.
2. Energy crops including willow, miscanthus and black oats. Quantities for miscanthus are quite low but chipped willow is a very suitable fuel for the boiler at EPL. First crops of willow will be sown by farmers within a 50 km radius of the plant in early 2011. Black oats will be test burned in 2011 to assess their technical and economic viability.
3. Imports: Palm Kernel Shells [PKS], almond shells, cocoa shells are showing positive results as they are dry [moisture content of c.10%] with a calorific value equal to peat. Work will continue in trialling other imports e.g. grape seed.

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