FAIRPORT FUELS TILBURY BIOMASS CONVERSION PROJECT

By providing a pellet transfer system Fairport Engineering will assist RWE npower in its plans to convert the 1,050MW coal-power station at Tilbury to run on wood pellets. Following conversion work over the summer, the station will burn an estimated 2,300,000t of biomass over the remainder of the plant's lifetime, making it the largest wood burning plant in the UK.

A European environmental directive means that Tilbury has to cease production at the end of 2015. RWE npower's intention is to convert the plant to see if the new technology is feasible since biomass on this scale has yet to be commercially proven in the United Kingdom. Trialing biomass at Tilbury will help resolve any technical problems faced by the emerging biomass technologies that are generally regarded as low carbon or "carbon neutral". It will also offer a significant carbon emission saving, reduce emissions of nitrogen & sulphur oxides as well as reducing ash production..

In order to ensure that the biomass fuel used by the facility comes from sustainable sources, RWE npower intends to use certified Green Gold Label wood pellets, a large amount of which would come across the Atlantic from RWE Innogy's wood-pellet plant in Georgia. The Green Gold Label is a pan-European credential that ensures maximum levels of sustainability of the fuel.

The pellets will be transported from the ship to the boiler bunkers using much of the existing conveying and storage systems.

It has, however, been recognised that the dust and fines present in the pellets present environmental, health and safety issues which the system must eliminate. In order to achieve this dust will be extracted from the pellets and transported and stored separately.

The system is designed to handle the maximum rate of 1,200t/h from two continuous ship unloaders operating at the same time and will also involve the replacement of the existing junction tower drop chute/diverter systems by fully enclosed types. These will be specifically designed to minimise pellet damage and dust escape. In addition dust extraction measures will be introduced at all transfer points to abate dust emissions.

During the design development phase engineers from RWE npower and Fairport worked closely together assessing a number of solutions for the project before deciding on the current technical strategy. Fairport's extensive experience in alternative fuel handling and processing systems was used to great effect in this activity especially the recent knowledge derived from it's SRF production facilities in Liverpool. This close co-operation with RWE npower continues to the present day with Fairport assisting with the installation activities.

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