

Case Study 1 – Electricity Generation from Biomass

Client: Oxara Energy Group Ltd

Project: Biomass Technical and Market Review

Project Outline

Renewable Energy Consultants was engaged by Oxara to prepare a report on the UK Biomass Power Generation Market covering the key technical issues, regulatory issues and main UK and European providers of equipment. The focus of the report was on power plant with an output of around 20 MWe using clean biomass fuels; (i.e. not fuels that are classed as wastes and would be subject to WID).

Renewable Energy Consultants Role

Renewable Energy Consultants prepared a report covering the following issues:

- Brief descriptions of the power plant cycles associated with the following combustion processes:
 - Stoker / vibrating grate
 - Fluidised bed combustion
 - Gasification
 - Pyrolysis.
- Guidance regarding:
 - Expected annual plant availability
 - Technical risks associated with the combustion plant
 - Indicative thermal efficiency of the total power plant
 - The maturity of the combustion technology and technical risks
 - Typical operating scale of a single unit at present
 - Range of fuels and fuel specifications
 - Fuel handling process, including conditioning, storage, metering and sampling
 - Quantities of other raw materials required in the process
 - Description and issues relating to flue gas conditioning
 - Description and issues relating to resultant waste water effluent
 - Ash disposal/utilisation for furnace bottom ash and fine ash
 - Indicative capital, operating and insurance costs of the entire power plant.
- Envisaged Regulatory Issues including:
 - Environment Agency expectations as to what is considered to be Best Available Techniques regarding process, emissions to air, land and water
 - Certification and trading process for Climate Change Levy - Exemption Certificates and Renewable Obligation Certificates on electrical export
 - Other regulatory issues that may impact on the viability of a biomass power plant in the UK.
- Summary of Main Equipment Providers, including:
 - Reference list of main UK suppliers of main plant items
 - Reference list of main UK suppliers of biomass fuel
 - Reference list of EU EPC Turnkey providers for plant of this type
 - Reference list of EU O&M service providers for plant of this type.