

Bioenergy plant optimisation

Reducing cost and increasing efficiency with Thermoflex modelling

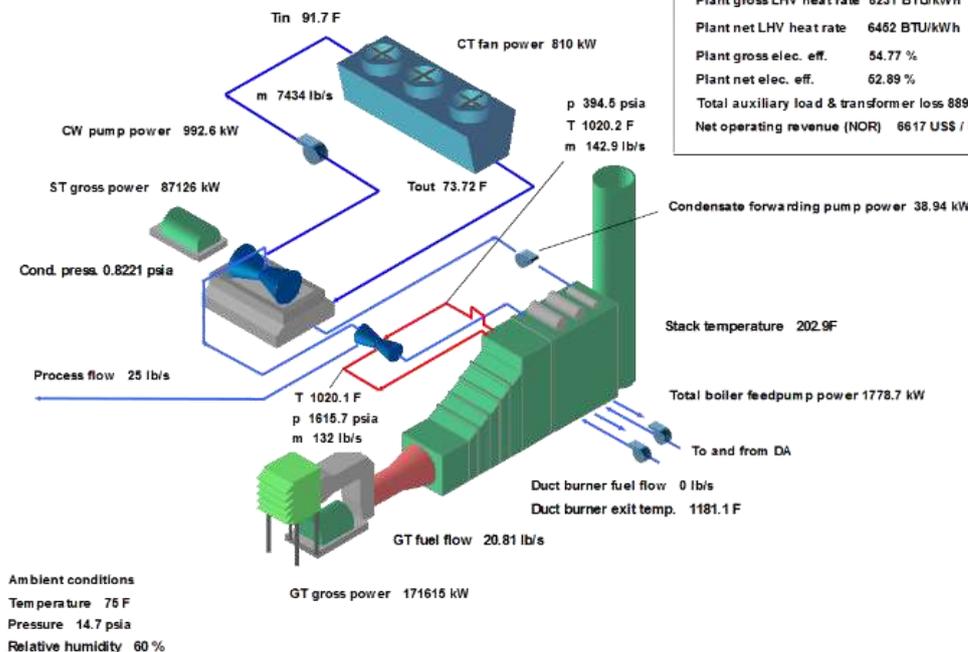
Frazer-Nash Consultancy has extensive experience in providing high-quality expertise to the power generation industry. In recent years our core capabilities have grown to include through life cost modelling using industry leading tools such as Thermoflex. This can be applied to all fuel types for both small and large scale plants, including all types of bioenergy plant.

Using Thermoflex, Frazer-Nash thermal power specialists have supported clients in helping them improve efficiency, reliability, availability and flexibility. We've also used Thermoflex in relation to bioenergy plants and analysing environmental impacts.

We provide wider services, including but not limited to:

- ▶ Project development services such as feasibility studies, conceptual design, cost analysis and investment decision support.
- ▶ Planning, design and implementation of new bioenergy power plants including CHP.
- ▶ Assistance with operation, maintenance, upgrading, life extension and plant optimisation.

Example model for net operating revenue



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PROJECT EXAMPLES:

- ▶ **Supercritical plant** – Thermoflex model built to justify capital expenditure and validate expected improvement in power output and heat rate through modification to the high pressure feed water heater system.
- ▶ **Off-Design performance loss** – Produced a Thermoflex model of a steam turbine used in a sugar mill to quantify the impact on shaft power and revenue loss from the removal of a steam turbine stage.
- ▶ **Upgrade** – Generated a complete plant model of a 500 MW coal power station to substantiate OEM efficiency and power claims for upgrading the IP steam turbine.
- ▶ **Environmental** – Produced a Thermoflex model to optimise the process and layout of a new flue gas heating system to mitigate against particle fallout over the surrounding area.
- ▶ **Bioenergy** – Acted on behalf of an investment company who wanted assurance regarding a new boiler's performance and CAPEX costs. We were able to provide this assurance through detailed whole plant and cost modelling.

For more information about Frazer-Nash please visit our website.
www.fnc.co.uk

www.fncaustralia.com.au

Offices throughout the UK and Australia

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