

Bioenergy

Frazer-Nash is a multidisciplinary engineering consultancy that excels at solving some of today's most complex challenges in engineering. Drawing upon our experience of both conventional power plant and gas turbines means we understand the specific project demands of the bioenergy sector.

OUR SERVICES

System Design

Frazer-Nash has significant experience in the design of process plant installations, such as gas processing plants. By integrating proven engineering design practice with systems engineering, we are able to offer the complete engineering package from requirements definition through to final design and commissioning strategy.

Electrical, Control and Instrumentation

We have many years experience of electrical and control projects working across a range of sectors including nuclear, aerospace, military and conventional power. This provides us with a unique set of skills, which enables us to develop services that directly meet the needs of the bioenergy sector.

Fluid, Thermal and Structural Analysis

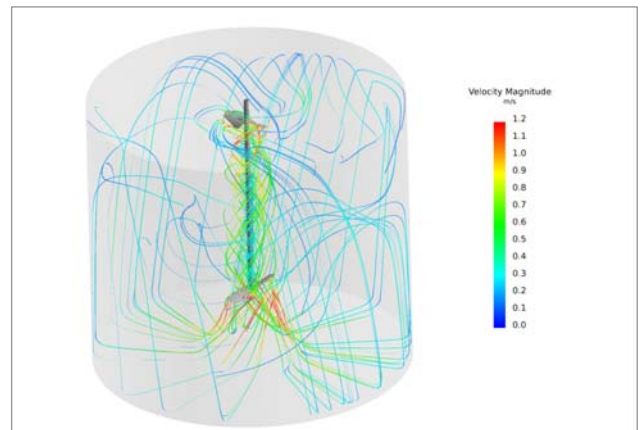
We are experts in the fields of fluid, thermal and structural analysis and our experience can be used to help support projects as part of our wider integrated design approach.

Combustion Modelling and Atmospheric Gas Dispersion

Frazer-Nash specialise in solving complex dynamics problems such as combustion and gas dispersion modelling, including Atmospheric Dispersion Modelling (ADM).

Supportability

It's important to consider reliability, maintainability and supportability in order to minimise the total life cycle cost. Frazer-Nash can influence the design to make assets more reliable, more maintainable, increase availability and drive down operation costs.



CFD model of Anaerobic Digester

Safety, Environmental and Human Factors

We can carry out a variety of independent safety assessments including HAZOP, FMEA and ATEX analysis. These assessments provide recommendations to eliminate or reduce risk to an acceptable level, in line with appropriate legislation and guidelines such as DSEAR.

Independent Technical Assessments

Frazer-Nash regularly performs Independent Technical Assessments (ITA), which can provide reassurance as to the suitability of equipment design.

OUR PROJECT EXPERIENCE

- ▶ Plant Design – providing detailed design for a biogas reactor, including aspects of concept design including material choice and thermal analysis.
- ▶ Grid Compliance – project to validate the feasibility of the concept solution of connecting a CHP plant in an industrial site with export facilities to the National Grid
- ▶ Technical Due Diligence – we have provided support to an investor in investigating the suitability of a biogasification technology for a planned project.
- ▶ AD Mixing CFD Modelling – we have carried out multiple CFD studies to analyse and compare the effectiveness of mixing in different anaerobic digester designs, improving digester operational efficiency.
- ▶ Biogas Process Pipework Modelling – modelling of heat transfer and pressure drops in a biogas process plant to help improve the overall efficiency of the system.
- ▶ Controller Tuning - extensive modelling, simulation, system identification and control systems analysis to ensure that CHP plant control systems satisfied National Grid requirements.