Receipt of ROC incentives boosts UK expansion plans for Energos

Clean energy recovery from waste business Energos (www.energos.com) says that fresh government support will help the company to progress its proposed multi-million pound UK investment, after becoming the first waste fuelled gasification or pyrolysis plant operator to receive Renewable Obligation Certificates (ROCs).

The first payment of ROCs has been paid to Energos for the final quarter of 2010, and will continue to be issued by Ofgem. The auction price for ROCs approached £50 in March 2011.

The ROCs apply to the Isle of Wight gasification plant, which employs Energos technology and was the UK's first full scale gasification plant to operate on household waste. As an advanced conversion technology it receives ROCs for each megawatt hour of renewable electricity generated from the renewable portion of the residual waste (typically more than 60% of the waste).

ROCs are not available to incineration schemes, unless they generate both heat and electricity and meet strict quality standards, but are available to gasification and pyrolysis schemes as advanced conversion technologies.

Nick Dawber, Managing Director of Energos said: "Now we have reached agreement with Ofgem and are receiving ROCs, we can press ahead with developing several small scale projects in the UK. Planning consent has been granted for seven more energy recovery facilities using Energos technology. These are community sized plants that can supply both heat and/or electricity from non-recyclable and non-hazardous household waste and commercial waste streams."

As well as providing a long-term, secure, energy supply, Energos gasification technology will qualify for the forthcoming Renewable Heat Incentive. In addition, as renewable energy it is exempt from obligations under the EU Emissions Trading Scheme. Under phase 2 of the scheme, companies should be allowed to trade the resultant CO2 credits.

Energos' eighth energy recovery facility has recently been completed in Sarpsborg, Norway, which brings operating experience for the Energos technology to more than 450,000 hours over 14 years.

A typical Energos plant generates 9MWe of renewable electricity, sufficient to power 10,000 homes. It is designed to complement recycling initiatives and is a small scale model that is ideally suited to serving local communities. As such, facilities can often be sited next to energy consumers to optimise heat recovery, or in locations where a heat delivery or district heating system could be developed. Energos systems provide a local solution for local waste and eliminate the unnecessary transport of waste.

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Notes to Editor ‘

Energos, part of UK clean tech group ENER-G (www.energ.co.uk), began operating its first advanced thermal conversion facility in Norway at Ranheim in 1997. The company uses its own patented gasification technology, an advanced two-stage thermal treatment process that converts residual, non-recyclable waste into a gas by using the heat of partial combustion to liberate the hydrogen and carbon within the waste. Residual waste is fed into the gasification chamber, where it is manufactured into a syngas. This syngas is then transferred to a secondary oxidation chamber where it is fully combusted in a controlled environment that enables much tighter control than can be achieved in conventional energy from waste plants – resulting in extremely low emissions. The resulting heat energy is used to produce steam, which can be used to supply renewable heat and/or electricity.

Energos plants operate with NOx emissions of less than 25% of the EU limit, without any form of de-NOX system. At the same time CO and TOC emissions are also much lower than the limits and process stability is excellent.

Planning consent has been granted for eight UK plants using Energos technology at: Knowsley, Merseyside; Irvine, Scotland; Newport, South Wales; Barry, South Wales; Doncaster, Yorkshire; Bradford, Yorkshire, and Lincolnshire, as well as the plant operating on the Isle of Wight.

The UK Renewables Obligation specifically supports gasification as an advanced conversion technology for producing renewable energy from municipal waste. To obtain Renewable Obligation Certificates (ROCs) gasification schemes must produce syngas with a CV greater than 2 MJ/m^3 and where the syngas produced is of sufficiently good quality (with a CV of greater than 4 MJ/m^3) the electricity produced benefits from 2 ROCs per MWh.

Full accreditation for the Isle of Wight plant was granted by Ofgem after agreement had been reached regarding the fuel measurement system, including the measurement of the biomass content of the fuel and the syngas gross calorific value (GCV).

The plant is part of the Isle of Wight Council’s Resource Recovery Facility operated by Biffa subsidiary Island Waste Services. It utilises a refuse derived fuel, supplied under contract from the Isle of Wight Council’s integrated waste management contractor. As the fuel has been pre-treated, the biodegradable energy content has to be measured rather than being ‘deemed’.

The plant was the first to employ a continuous calorimeter to measure the GCV of the syngas produced by the process. This was also a first for the supplier of the metering facilities as the syngas is produced at a high temperature and has to be measured in its raw condition. The plant is producing a syngas with a GCV in excess of the 4 MJ/m^3, required for double ROCs.