Fig. 1 – The second Wärtsilä bio-fuelled power plant ordered by Renogen will be situated right next to the existing, identical plant in Amel, Belgium.

WÄRTSILÄ BIOPOWER PLANTS IN THE ARDENNES, BELGIUM

The recent order from Belgian power producer Renogen S.A. for a second unit, again underscores the efficiency of Wärtsilä's modular BioPower energy plants.

Wärtsilä will provide the Belgian independent power producer Renogen S.A. with a second biomass-fuelled combined heat and power plant.

Due for delivery in July 2008, the new plant is a duplicate of the existing BioPower plant already installed by Wärtsilä. Both plants are BioPower 5 CEX plants that will burn non-contaminated wood residues supplied by the local forestry industry.

The power plants are located in the municipality of Amel in the Ardennes, also called the first "sustainable industrial area" in the southern part of Belgium. The new plant, just like the previous plant, will have a net electrical power output of 3.3 MWe, and a thermal output of up to 10 MWth for district heating. The electrical output in condensing operation is 5.3 MWe. They will deliver hot water to local industrial businesses with the electricity generated being fed to the local grid. The two plants will be eligible for carbon emission credits (so called "green certificates") applicable in Belgian Wallonia.

Wärtsilä will deliver the complete new plant under an equipment, procurement and construction contract (EPC). There is also a full O&M contract to cover operation and maintenance after the plant is commissioned.

The new BioPower plant, is based on the same well-proven modular concept as the earlier plant. "Wärtsilä's modular approach brings several benefits to us," says Mr **Yves Crits**, CEO of Renogen S.A. "The site work is minimized and delivery time is short, in addition the plant can grow with the growth of heat demand on the industrial estate," he continues.

The modular approach also means consistent quality owing to the factory assembly of modules and compact, but well-considered layout arrangements requiring less floor area for the power plant building. This proven technology results in a reliable, durable plant. The plants are also highly automated, enabling unmanned operation.

Wärtsilä's biomass-fuelled plants are clean and efficient. They are practical solutions for meeting the needs for renewable energy supplies with minimum environmental impact. They incorporate patented Wärtsilä BioGrate combustion technology to burn biomass fuels with high combustion efficiency and low NO_x and CO emissions. The moisture content of the fuel can be as high as 55%. The fly ash is removed from the flue gases in an electrostatic filter.

The BioPower plant operates on a closed steam-feed water cycle separate from the hot water system. Superheated steam is generated in an efficient water-tube boiler, and supplied to a high-efficiency reaction-type condensing extraction steam turbine driving an alternator. The water is then heated by steam extracted from the turbine.

Wärtsilä BioPower plants are highly modular, being based on well-proven standardised components with a conservative design approach. The plants can thus be delivered and installed quickly.