Agder Biocom together with Windsor can deliver environmentally friendly and efficient bioenergy heat plants

- Agder Biocom design and manufacture bioenergy heat plants
- The Agder Biocom burner is unique in the market, and is designed with a range of thermal outputs from 0.5 MW to 5 MW.
- Agder Biocom have experience and references from over 700 bioenergy heat plants, most of them in full operation in Europe today
- Owned by the Norwegian industrial group, Tratec Group; significant experience within large projects, combustion, fuel handling and automation
- Windsor are finalising the NZ and Australian distribution / manufacturing agency
Agder Biocom combustion plants – cleaner energy
0.5 MW to 5.0 MW biomass combustion plants

- Environmentally friendly technology leads to extremely low emissions
  - Patented gasification technology with very low dust emissions
  - Eliminates the need for bag-houses, wet scrubbers etc.
- Good turndown ratio.
  - Advanced control system and patented burner makes it possible to regulate the output from 0-100%.
- Bang for buck
  - Efficient technology and a compact size leads to a lower investment per MW than conventional systems.
- Long life-time and low maintenance costs
  - Minimal heat exposure on walls and grate, therefore increasing the life of these items
- Compact size and tailor-made design
  - Each plant is designed for the customers particular needs including retro fitting to existing boilers.

Unique and reliable biomass combustion technology

1. Gasification
2. Patented gas-burner
3. Stoker screw
4. Ash handling
5. Boiler system

• The technology is based on a patented two-chamber gasification concept which has been fully developed and tested since 2006 in Norway
• This combustion technology has been in operation in New Zealand
• Full-scale 1 MW bioenergy plant in Norway in operation for 1 year
• The testing program has confirmed all environmental and economic advantages; and extremely low emissions!
Residues to Revenues 2009

How does it work?

• The fuel is fed into the gasifier unit (over fire)

• A low temperature, low velocity fire releases hydrogen and carbon monoxide from the wood waste.

• The gas is blown into a traditional shell & tube type boiler where air is introduced to complete combustion.

• Ash remaining in the gasifier is mechanically removed.

New Zealand 3 MW bioenergy plant, based on the patented Agder Biocom technology, has been in operation
Residues to Revenues 2009

Full-scale 1.2 MW Gasification plant in Risør, Norway

Applications

The Agder Biocom plant is suitable for

- Timber drying, by firing an existing steam or hot water boiler, or a new plant
- Building heating systems, office buildings, schools, Hospitals etc, change from coal to wood pellets.
- Greenhouse operations.
- Bio-security heat treatment chambers.
The pilot program has confirmed the benefits of the Agder Biocom combustion technology

- Emission testing at 1.2 MW combustion plant in Norway
  - Particulate: Averaging around 11 mg/Nm³

- Produced heat/power effect from bioenergy burner
  - 0.5 MW to 5 MW burners are available today

- Fuel
  - Wood chips, briquettes, pellet, saw dust, other clean wood fuel
  - Fuel moisture content under 40-45% (OWB)
  - For fuel moisture content >45% we recommend to add a fuel dryer system

New project

Windsor intends to install an Agder Biocom 1MW gasifier at Waiairiki Institute in Rotorua during 2009.
- Energy Efficiency Conservation Authority (EECA) supported project with government funding assistance
- Conversion of existing gas fired boiler to on-site generated wood waste
- Part of a project to reinvigorate Waiairiki’s Forestry School
- The gasifier output will heat two small Windsor timber drying kilns
- A fuel drier may be incorporated into the project so that various fuels can be sampled to determine combustion effectiveness and blending requirements
- Part of a planned Waiairiki Institute bio-energy training course
0.5 – 5.0 MW combustion plants: Environmental friendly, short delivery time and competitively priced

Ready for the market now!
Talk to Windsor about funding options!