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World's Smallest Biomass Plant Reaches Operational Landmark

Cheshire-based plant completed feat within seven weeks and with almost no human interference

By

PE

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The world's smallest biomass power plant has passed 1,000 hours of operation, according to the German firm behind the technology.

Entrade Energiesysteme said its E3 micro-scale biomass CHP plant, located at TW Power's site in Cheshire, passed 1,000 hours of operation in under seven weeks with almost no human interference.

The E3, which is packed into a shipping container and can be installed in less than one day, produces 22kW electrical energy and 55kW thermal energy and can be scaled up by connecting plants in series.

The advanced gasification technology uses widely available standard EN plus1 pellets. The fuel is broken down into 'syngas', an energy-rich gas similar to natural gas. The syngas is fed into an internal combustion engine to generate electricity, and simultaneously delivers both heating and cooling by capturing heat throughout the process.

David Tomkinson, director and founder of TW Power, said: "Clean gasification has always been a big issue for small biomass CHP. The inevitable buildup of tar has usually required 24/7 maintenance to deal with regular breakdowns. By comparison, the E3 produces almost no tar, and runs around the clock with approximately 15 minutes of maintenance per week.

"As a small business, the E3 will produce a bit more power than we need, which means that will sell any excess energy directly back to the grid. Even without running the machine at full capacity, we expect the machine to pay for itself in less than four years."

Designed for mass production, the E3 can be produced at €2,500 per kW installed capacity, which is already below large scale biomass power plants. In the UK the E3 is able to deliver electricity at 6.3p per kWh.

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