

## Assystem: Winner of the 2015 French Grand Prix for Engineering

*Energine is an engine that converts heat into electricity*

- **90% of wasted heat can be converted into useful heat and electrical energy**
- **30% savings at the pump**

**Paris, 14 October 2015** - Assystem, an international engineering group and innovation consultancy has been awarded the 2015 French National Grand Prix for Engineering for the development of a new generation of external heat supply engines called Energine.

Developed by Assystem engineers in partnership with the FEMTO-ST Institute, the Energine solution produces mechanical or electrical energy from a source with a temperature in excess of 150°C. A member of the family of External Heat Supply Engines in which no fuel is burned, this innovative engine can be integrated into a heat-emitting industrial process to convert the heat into electricity. This innovation can also recycle the exhaust heat from a vehicle to reduce its consumption, or deliver high heat yields in homes and commercial buildings.

Under the auspices of the French Ministries of Ecology, Economy and Housing, in partnership with the French Engineering association, Syntec-Ingénierie, and the French media group, Moniteur, the French Grand Prix for Engineering gives recognition to engineering professionals for the quality of the design and conduct of an outstanding project due to its innovation and creativity in either infrastructure and industrial products (transport, energy, and networks), public facilities, the building sector, industrial construction, complex systems or industrial processes.

Dominique Louis, Chairman and CEO of Assystem Group, said: "We extend our sincere thanks to the members of the jury. This award directly rewards the work and innovative spirit of Assystem's engineering people. Energine is one of a new generation of engines that contribute directly to reducing the impact of energy production and consumption. We are proud to contribute to industrial advances that can lead to more sustainable world."

Assystem engineers responsible for the development of Energine had to meet extremely demanding technical objectives and processes:

- Developing cogeneration from biomass or potentially wasted heat so as to preserve the environment.
- Producing decentralized electricity so as to reduce transmission losses and quickly respond to changes in needs.
- Reducing the system's energy consumption and boost performance.
- Very high energy efficiency.
- Low noise emission.
- Minimized maintenance.
- Optimized control.

Inspired by the Ericsson cycle dating back over 160 years, this project has led to several technical innovations:

- Integration of a system to control the engine's displacement and power to ensure production that is adapted to both needs and the heat source
- Simple linear motion and completely free control of valves as there are no camshafts
- Replacing the piston/cylinder system by deformable metal enclosures which will help eliminate leaks, reduce mechanical losses, and promote heat exchange
- Development of a high-efficiency linear alternator enabling it to be used as a cogenerator

Thibaut Cartigny, EnerGINE project leader at Assystem: "The EnerGINE engine is a genuine innovation. In France, one third of energy consumption in industry and buildings is lost as wasted heat. EnerGINE not only recycles this lost energy but above all enables 90% of it to be used above 150°C. This converts into 25% electrical energy and 75% useable thermal energy. EnerGINE forms part of the Assystem Innovation Factory projects that aim to stimulate, promote and develop tomorrow's world while aligning with human, environmental and technological challenges. This has been a successful wager and a promising solution for tomorrow."

#### **About FEMTO-ST**

With more than 700 members, the FEMTO-ST institute is one of France's largest public research lab in engineering science. Working jointly with the universities in East of France (UFC, ENSMM, UTBM) and France national Research Center (CNRS), its pluridisciplinary aims at mastering micro and nanotechnologies, integrating new competences in the fields of automatic control, microrobotics, materials and surfaces and reinforcing its research activities in energy, transport, healthcare and telecoms.

For more information: [www.femto-st.fr/en/](http://www.femto-st.fr/en/)

#### **About Assystem**

Assystem is an international Engineering and Innovation Consultancy. As a key participant in the industry for 50 years, Assystem supports its customers in developing their products and managing their capital expenditure throughout the product life cycle. Assystem employs nearly 12,000 people worldwide and reports nearly €900 million in revenue. The Company is listed on NYSE Euronext Paris.

For more information: [www.assystem.com](http://www.assystem.com)

Follow Assystem on Twitter: [@Assystem](https://twitter.com/Assystem)

#### **PRESS CONTACTS**

##### **Pauline Bucaille**

VP, Communications & Investor Relations

Tel.: +331 55 65 03 08 [pbucaille@assystem.com](mailto:pbucaille@assystem.com)