

2G supplements the aura series with powerful modules

CHP manufacturer 2G Energy extends the aura model range to a performance range of 100-420 kWe with very low NOx emissions.

Heek, 08/03/2020 - Three years after the introduction of the low-emission aura series with CHP modules of 100 kW and 170 kW electrical output, CHP manufacturer 2G Energy AG is adding two powerful natural gas modules to the series. 2G Energy is thus expanding its product portfolio for those customer applications in which low emissions high performance and low operating costs are important.

The new modules aura 408 EG and aura 412 EG with an output of 280 kWe / 408 kWth and 420 kWe / 611 kWth are unique in the market in terms of efficiency, performance, and lifecycle costs for particularly low-emission CHP units. You can achieve nitrogen oxide values of less than 50 mg / Nm³ in operation without a lean-burn combustion concept or SCR catalytic converter (selective catalytic reduction process). These low values are made possible by the company's Lambda-1 technology, which is a core element of engine development at 2G. The $\lambda = 1$ is the fuel ratio at which there is exactly the amount of air that is theoretically required to completely burn the fuel.

Module 408 is based on a 4-stroke V8 engine, the module 412 on a V12 engine. Both modules have an overall efficiency of over 94% with a thermal efficiency of around 56%. The module complexity is limited by a single-stage charge air cooler, the combustion air is weakly charged with the help of a turbocharger. Since no SCR catalytic converter is used, the lifecycle costs of all aura modules are reduced by eliminating the injection of a urea solution.

For Frank Grewe, Head of Development at 2G Energy AG, the original motivation for the new development is based on the requirements of international markets: "Originally, metropolitan areas such as Tokyo, London or California with their high requirements for low nitrogen oxide limit values were the trigger for our development work at 2G. Given the very low NOx emissions of the aura modules, possible tightening of the limit values in Europe, and metropolitan demands for low NOx, these low Nox levels will cause no problems for our customers. We create future security for our domestic customers. "

Even with the introduction of the aura series in 2017, in addition to reducing emissions, the increasing performance was an important aspect of 2G's development goals, Grewe sums up: "With the aura 404 and 406 modules, we can achieve a higher power output thanks to a specifically higher performance of 15% compared to the competition. We achieved an overall efficiency of 102% for the aura 404 module, with the help of electrical efficiency of 37% and thermal efficiency of 65%, which is made possible by a condensing exhaust gas heat exchanger. "

In addition to reducing nitrogen oxide emissions and improving performance, reducing the total cost of ownership was also a top priority in the development of the new modules. Accordingly, Grewe emphasizes that e.g. the aura 408 with 8 cylinders is significantly less fuel-efficient than conventional 12-cylinder units with the same performance due to better efficiency values for thermal and electrical power. In his opinion, the proven ease of service of the 2G engine concept also plays a major role in the commercial view of

investment. It is achieved by minimizing the number of cylinders with single cylinder heads and reducing lifecycle costs, e.g. through digitized remote maintenance.

In the development work for the aura series, 2G was able to demonstrate an advantage over new developments from the competition since the company has launched more than 500 units and over 6 million operating hours. The agenitor series since its introduction in 2011 has the greatest operational experience in using the latest engine technology in Europe. The agenitor series is the long-standing core segment of 2G's engine development and the technical basis for the aura series and the agenitor hydrogen CHP unit.

Bilder



aura 408:

The new low-emission module aura 408 (280 kWel) from 2G is based on the proven agenitor platform and, in addition to NOx emissions of less than 50 mg / Nm³, has a particularly specific efficiency.

Image source 2G Energy AG

About 2G Energy AG (<http://www.2-g.com>)

2G Energy AG is an internationally leading manufacturer of combined heat and power plants (CHP) for the decentralised provision of power and heat on the basis of gas motors driven by natural gas, biomethane, biogas, sewage gas, landfill gas or hydrogen. The portfolio includes plants with an electrical output of 20 to 4,000 kW. The customer base ranges from farming to municipalities, the housing industry, commercial enterprises, medium-sized industry and large industry to the energy sector.

In addition to its headquarters in Heek, in the Münsterland region of Germany, with development and production. 2G is also represented in several European countries through its own subsidiaries. Since it was founded in 1995, 2G has commissioned more than 6,000 plants worldwide.

Through combined heat and power generation, they reach overall efficiency levels of between 85% and far above 90%. 2G is consistently expanding its technological leadership through continuous research and development work in gas motor technology for natural gas, biogas and synthesis gas applications (e.g. hydrogen). In addition to designing and manufacturing CHP plants, the company offers full solutions, from planning and installation to servicing and maintenance services. CHP plants are increasingly gaining importance in intelligent networked energy systems, called virtual power plants, due to their decentralisation, controllability and predictable availability.

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