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THE GAS TURBINE: AE94.3A

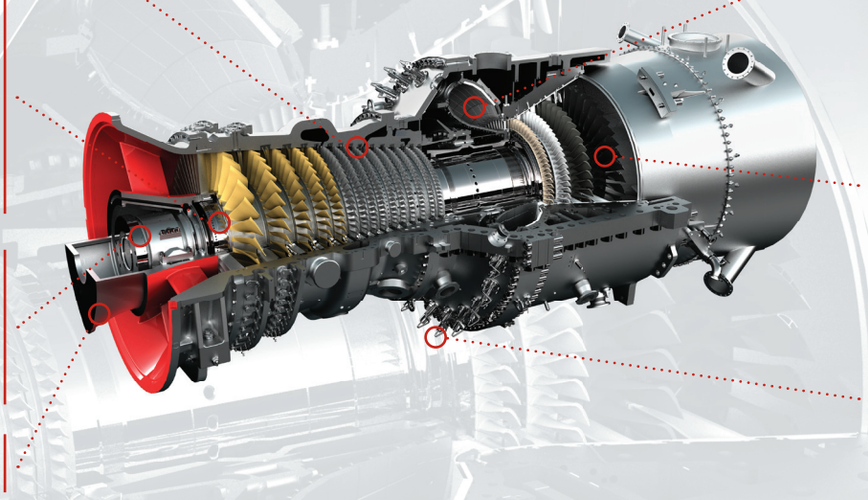
Proven technology for efficient power generation

15 stages axial compressor with variable guide vanes*

Single shaft, internally **air-cooled rotor**, disk type with Hirth serration and central tie rod

Rotor Displacement System (RDS) for gap optimization

Cold-end generator



Annular type Combustion Chamber lined with individually replaceable tiles

4 stages, **air cooled** turbine, axial discharge, advanced cooling technique*

24 dry low NOx burners for premix operation both for gas and for oil mode

**All vanes and blades replaceable with rotor in place.*

Fast, flexible and cost effective

The simple and robust design of the AE94.3A has made it possible to accommodate continuous upgrades over the years, progressively enhancing performance while maintaining and even improving the level of reliability (> 99.5%). Its balanced thermal distribution throughout the entire engine, combined with its extreme operating simplicity, enables high cycling capability. It can be started and stopped without any time limitation and reaches base load in approx. 20 minutes, a key factor for grid stability and peak plants. With a grid frequency regulation capacity of 50 MW/mi, the AE94.3A is aligned with all requirements.

Multi fuel and Hydrogen capable

A wide selection of fuels can be used: pure natural gas with hydrocarbons in various proportions, up to 40% hydrogen blended with natural gas, and liquid fuels such as Diesel Oil, High-Speed Diesel, and Naphtha.

2 units fed with hydrogen enriched off gas in Commercial Operation since 2006, with more than 300.000 EOH.

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Environmentally sustainable

NOx level down to **15 ppm in dry gas mode** and **60 ppm in dry oil mode** (with possibility to reach **25 ppm** with small water amount).

Smart maintenance approach

- Extended time between major overhauls (up to 5 years, depending on operating conditions)
- High durability of hot gas path parts
- Quick on-site operations

→ **One of the easiest and low-cost maintenance solution for class F gas turbines available nowadays.**

Customized service agreements, including upgrading packages, allow Customers to choose the best solution to fit their needs.

One site two solutions

Thanks to the possibility of decoupling the AE94.3A gas turbine from its generator, the latter can be used as a synchronous condenser. This solution allows for an increase in asset utilization and maximizes the profitability of the investment.

Natural gas ISO conditions	AE94.3A Performance
Power output (MW)	340
Efficiency (%)	40.3
Exhaust Mass Flow (Kg/s)	755
Exhaust Temperature (°C)	593
GT minimum load (%)	30%

Power Plant Configuration	1+1	2+1
CC Net Output (MW)	495	992
CC Net Efficiency (%)	60	60.3
CC Net Heat Rate (kJ/kWh)	5,995	5,970
Plant Turndown Minimum load (%)	35%	20%

General note: *Performance data are calculated with 100% methane (LHV) at ISO conditions, direct cooling.*

References:

120+ units

total > 5 millions EOH

For more information, please visit ***www.ansaldoenergia.com***

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