



9HA.01/.02 GAS TURBINE

The World's Largest and Most Efficient Heavy Duty Gas Turbine

The 9HA high efficiency, air cooled gas turbine is the industry leader among H-class offerings. With two available models—the 9HA.01 at 397 MW and the 9HA.02 at 510 MW—customers can select the right capacity to meet their generation needs. Thanks to a simplified air cooled architecture, advanced materials, and proven operability and reliability, the 9HA delivers the lowest life cycle cost per MW. The economies of scale created by this high power density gas turbine, combined with its more than 61% combined cycle efficiency, enables the most cost effective conversion of fuel to electricity to help operators meet increasingly dynamic power demands.



397-510 MW Simple Cycle Output
>61% COMBINED CYCLE EFFICIENCY

Industry-Leading Operational Flexibility for Increased Dispatch and Ancillary Revenue

- Fast 10-minute ramp-up from start command to gas turbine full load.
- Up to 70 MW/minute ramping capability within emissions compliance.
- Reaches turndown as low as 40% of gas turbine baseload output within emissions compliance.
- Fuel flexible to accommodate gas and liquid fuels with wide gas variability, including high ethane (shale) gas and liquefied natural gas.

Least Complex H-Class Offering

- A simpler configuration than GE's previous H-class fleet and one that does not require a separate cooling air system.
- Modular systems ease installation and reduce on-site labor requirements.
- Streamlined maintenance with quick removal turbine roof, field-replaceable blades, and 100% borescope inspection coverage for all blades.

Full-Load Validation

- At the heart of GE's heavy duty gas turbine validation program is the advanced full-scale, full-load test facility in Greenville, SC.
- GE's 9HA gas turbine has been fully validated in its full speed, full-load test facility over an operating envelope larger than the variances an entire fleet of turbines would experience in the field, an approach that is superior to operating a field prototype for 8,000 hours.

	9HA.01	9HA.02
Frequency	50	50
SC Net Output (MW)	397	510
SC Net Heat Rate (Btu/kWh, LHV)	8,220	8,170
SC Net Heat Rate (kJ/kWh, LHV)	8,673	8,620
SC Net Efficiency (% LHV)	41.5%	41.8%
Exhaust Energy (MM Btu/hr)	1,906	2,430
Exhaust Energy (MM kJ/hr)	2,011	2,564
GT Turndown Minimum Load (%)	40%	40%
GT Ramp Rate (MW/min)	60	70
NO _x (ppmvd) at Baseload (@15% O ₂)	25	25
CO (ppm) at Min. Turndown w/o Abatement	9	9
Wobbe Variation (%)	+/-10%	+/-10%

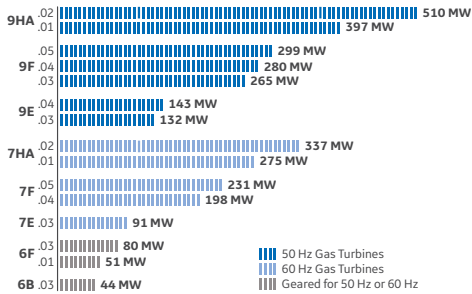
Power Plant Configuration	1x1 SS 9HA.01	1x1 SS 9HA.02
CC Net Output (MW)	592	755
CC Net Heat Rate (Btu/kWh, LHV)	5,540	5,517
CC Net Heat Rate (kJ/kWh, LHV)	5,845	5,821
CC Net Efficiency (% LHV)	61.6%	61.8%
Bottoming Cycle Type	3PRH	3PRH
Plant Turndown - Minimum Load (%)	47%	47%
Ramp Rate (MW/min)	60	70
Startup Time (Hot, Minutes)	<30	<30

Power Plant Configuration	2x1 MS 9HA.01	2x1 MS 9HA.02
CC Net Output (MW)	1,181	1,515
CC Net Heat Rate (Btu/kWh, LHV)	5,540	5,495
CC Net Heat Rate (kJ/kWh, LHV)	5,845	5,798
CC Net Efficiency (% LHV)	61.6%	62.1%
Bottoming Cycle Type	3PRH	3PRH
Plant Turndown - Minimum Load (%)	24%	24%
Ramp Rate (MW/min)	120	140
Startup Time (Hot, Minutes)	<30	<30



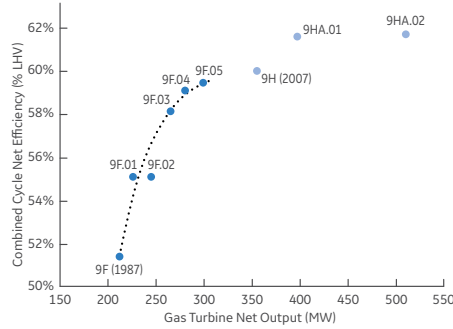
Efficient, Flexible, Reliable Power

GE offers the world's largest range of heavy duty gas turbines—from 44 to 510 MW.

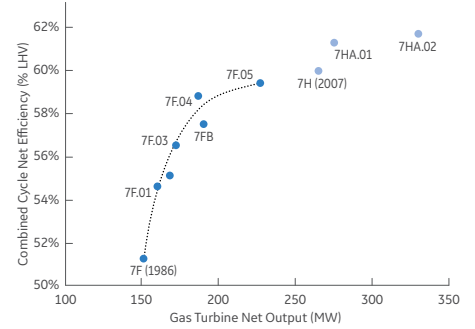


Product Platform Evolution

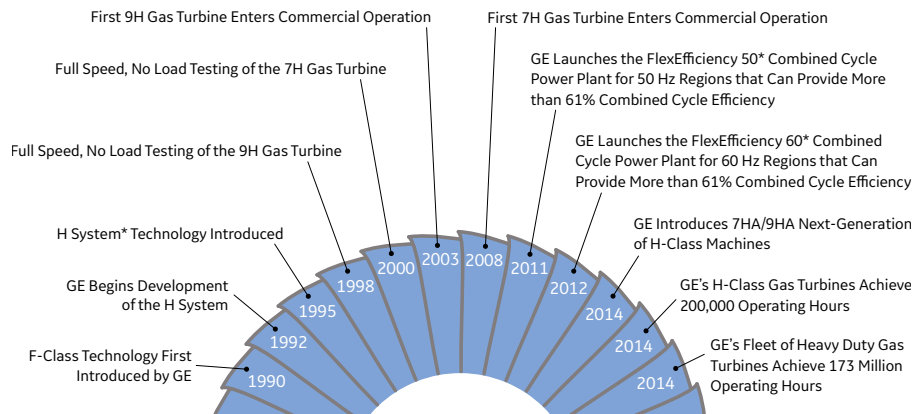
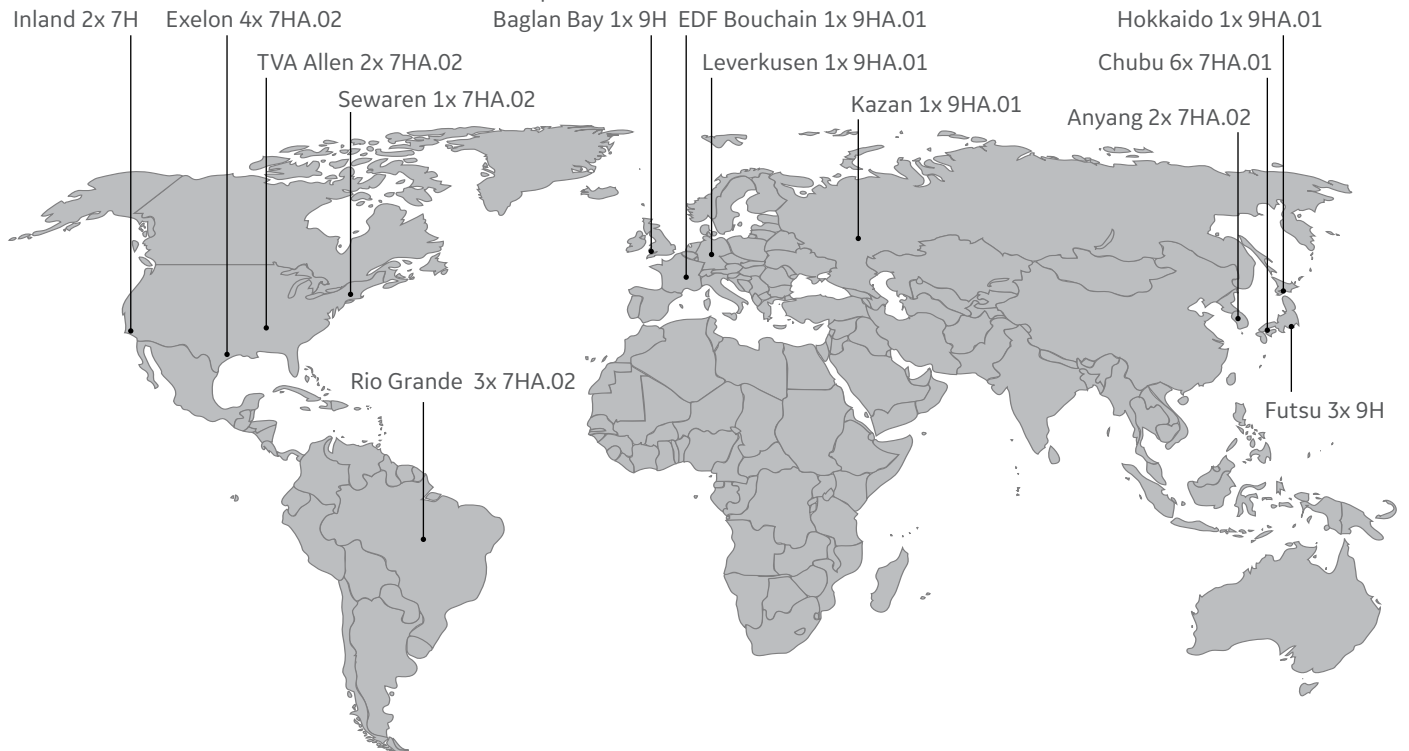
50 Hz



60 Hz



H-Class Gas Turbine Awards



* Trademark of General Electric Company.