SGT-800

Industrial gas turbine

The SGT-800 industrial gas turbine offers broad flexibility in fuels, operating conditions, maintenance concepts, package solutions, and ratings.

The excellent efficiency and steam-raising capability make it outstanding in cogeneration and combined cycle installations. The SGT-800-based power plant, designed for flexible operation, is perfectly suited as grid support.

The SGT-800 combines a simple, robust design, for high reliability and easy maintenance, with high efficiency and low emissions. With a proven, long-term record of successful installations around the world, the SGT-800 is an excellent choice for power generation for industrial and oil and gas applications.

References

Amata Nakorn, Thailand

Combined cycle cogeneration power plants
Customer: Amata B. Grimm Power Limited (ABP)
Scope: 12 × SGT-800 gas turbines and 9 × SST-400 steam turbines

Hassi R'mel, Algeria

Combined cycle power plant
Customer: Abengoa
Scope: 2 × SGT-800 gas turbines and 1 × SST-600 steam turbine

Two SGT-800 packages at Amata Nakorn, Chonburi, Thailand

SGT-800 core engine is available in three ratings with standard options for hot and cold climates

Classic package – easily transported and installed at site, easy on-site maintenance

Single lift package – short installation and commissioning time at site; U.S. adapted version

Power generation: 47.5/50.5/53.0 MW(e)

- Proven reliability
- Flexible solution
- Excellent performance

	Simple cycle power generation		
	47.5 MW version	**50.5 MW version**	**53.0 MW version**
Power output	47.5 MW(e)	50.5 MW(e)	53.0 MW(e)
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Gross efficiency	37.7%	38.3%	39.0%
Heat rate	9,547 kJ/kWh	9,389 kJ/kWh	9,231 kJ/kWh
Turbine speed	6,608 rpm	6,608 rpm	6,608 rpm
Pressure ratio	20.1 : 1	21.0 : 1	21.4 : 1
Exhaust gas flow	132.8 kg/s	134.2 kg/s	137.2 kg/s
Exhaust gas temperature	541 °C (1,007 °F)	553 °C (1,027 °F)	551 °C (1,024 °F)
NO_x emissions	≤ 15 ppmvd at 15% O_2 on fuel gas (with DLE)		
	1 × 1 Combined cycle power plant		
Net plant output	66.6 MW(e)	71.4 MW(e)	74.0 MW(e)
Net plant efficiency	53.8%	55.1%	55.6%
Net plant heat rate	6,693 kJ/kWh	6,530 kJ/kWh	6,475 kJ/kWh
Number of gas turbines	1	1	1
	2 × 1 Combined cycle power plant		
Net plant output	135.4 MW(e)	143.6 MW(e)	150.0 MW(e)
Net plant efficiency	54.7%	55.4%	56.2%
Net plant heat rate	6,583 kJ/kWh	6,494 kJ/kWh	6,406 kJ/kWh
Number of gas turbines	2	2	2

	Physical dimensions	
	Classic package	**Single lift package**
Approx. weight	290,000 kg (617,300 lb)	320,000 kg (705,500 lb)
Length	27.9 m (91 ft)	19.6 m (64 ft)
Width	7.3 m (24 ft)	4.7 m (15 ft)
Height	15.1 m (49 ft)	15.3 m (50 ft)

Note: Standard design; ISO ambient conditions. No intake or exhaust loss. Fuel: Natural gas. Options available for other gases within specification and dual fuel with gas and Diesel no 2.
The combined cycle plant SCC-800 is also available based on more than two SGT-800. All combined cycle performance is based on 2 pressure, no reheat.
Dimensions exclude inlet filter housing and exhaust stack. For power generation, AC generator is included. For mechanical drive, driven equipment is excluded.