

Gas turbine SGT-800

For power generation applications

Proven reliability, flexible solutions, low emissions and excellent performance make the SGT-800 the perfect choice. Typical applications include both simple and combined cycle plants for industrial or oil and gas power generation, as well as combined heat and power (CHP) generation.

High efficiency

- Outstanding in combined cycle
- Excellent steam-raising capability
- High electrical efficiency
- Hot climate option

Important features

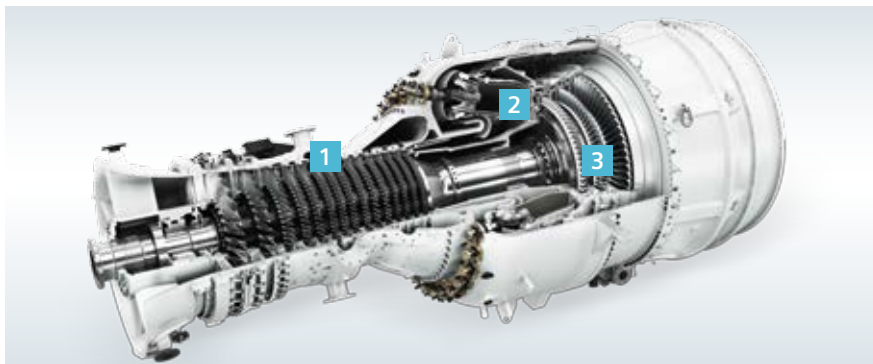
- Robust industrial design for high reliability and easy maintenance
- Dual-fuel DLE combustion system for low emissions and high fuel flexibility
- High operational flexibility including 10-minute start capability and fast load-following for grid support or island mode operation

Customer service and maintenance

- Flexible standardized time- and cycle-based maintenance concepts
- Up to 60,000 equivalent operating hours (EOH) between major overhauls
- On-site maintenance or modular overhaul
- Option for off-site maintenance with 48-hour core engine exchange
- Maintenance-friendly design
- 24/7 support including emergency service and specialist helpdesk
- Full field service, diagnostic support, and remote monitoring

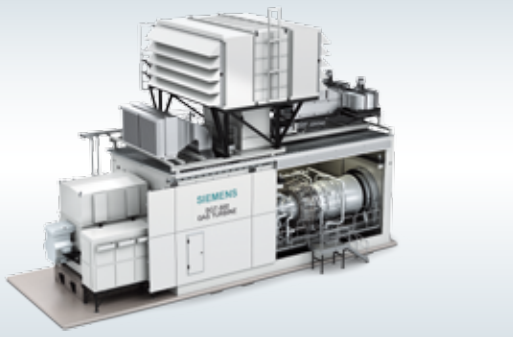
Key benefits

- 47.5–57.0 MW(e) power output
- >40% simple cycle efficiency
- >58.5% combined cycle efficiency
- More than 325 units sold
- More than 5 million fleet hours
- High reliability and availability
- Low lifecycle costs
- Robust dual-fuel (gas/liquid) DLE combustion system
- On-load fuel changeover capability
- Excellent fuel flexibility
- High content of inert gases, hydrogen and heavy hydrocarbons
- Low emissions over a wide load range
- Capable of single-digit NO_x and CO



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

- 1 Compressor**
15-stage compressor with variable guide vanes on the first 3 stages. A hot-climate option available for increased power and efficiency.
- 2 DLE combustion system**
Robust dual-fuel (gas/liquid) Dry Low Emission (DLE) combustion system for low environmental footprint and excellent gas fuel flexibility.
- 3 Turbine**
A highly efficient 3-stage turbine design offering optimal performance and lifetime. High exhaust energy giving excellent cogeneration/combined cycle characteristics.



50 Hz	564 MW
SGT5-9000HL	564 MW
SGT5-8000HL	465 MW
SGT5-8000H	450 MW
SGT5-4000F	329 MW
SGT5-2000E	187 MW
60 Hz	386 MW
SGT6-9000HL	386 MW
SGT6-8000H	310 MW
SGT6-5000F	250 MW
SGT6-2000E	117 MW
50 or 60 Hz	53 to 66 / 54 to 62 MW
SGT-A65 TR	53 to 66 / 54 to 62 MW
SGT-800	48 to 57 MW
SGT-A45 TR	39 to 44 MW
SGT-750	40 / 41 MW
SGT-700	33 / 34 MW
SGT-A30 RB	27 to 37 / 28 to 38 MW
SGT-A35 RB	27 to 37 / 28 to 38 MW
SGT-600	24 / 25 MW
SGT-400	13 to 14 / 13 to 15 MW
SGT-300	8 / 8 to 9 MW
SGT-100	5 / 6 MW
SGT-A05 AE	4 to 7 MW

Gas turbines from 4 to 564 MW

SGT-800 Classic package

The gas turbine and gearbox are placed on a single base frame or with the gearbox directly on the foundation. The mechanical auxiliary systems are mounted on a separate skid placed close to the gas turbine inside the enclosure.

- Modular and flexible package design
- Easily transported and installed at site
- On-site maintenance inside the package

SGT-800 Single Lift package

A single-lift driver unit (i. e., skid-mounted gas turbine, gearbox and mechanical auxiliary systems) or as a complete skid-mounted train (including the generator) for 3-point mount installations, e.g. for power barges.

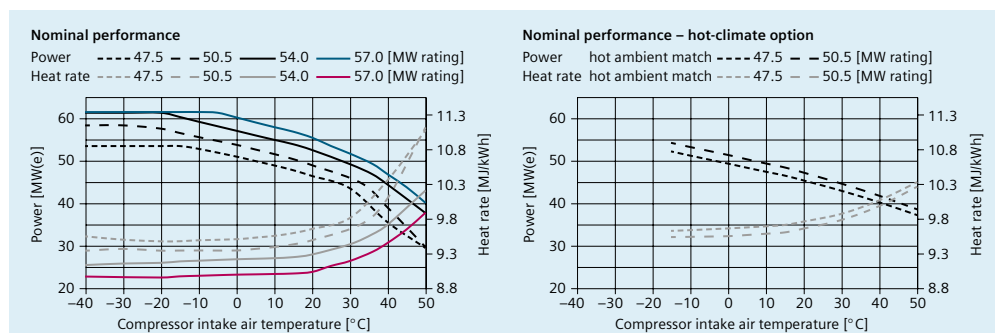
- Single-lift capability and small footprint
- Short installation and commissioning time
- 48-hour core engine exchange optional
- Available with a special US-adapted option

	Simple cycle power generation			
Power output	47.5 MW(e)	50.5 MW(e)	54.0 MW(e)	57.0 MW(e)
Fuel	Natural gas, other gases within specification, liquid fuel (Diesel No.2) and dual fuel (gas and liquid)			
Frequency	50/60 Hz			
Gross efficiency	37.7%	38.3%	39.1%	40.1%
Heat rate	9,547 kJ/kWh	9,389 kJ/kWh	9,206 kJ/kWh	8,970 kJ/kWh
Turbine speed	6,608 rpm			
Pressure ratio	20.1 : 1	21.0 : 1	21.4 : 1	21.8:1
Exhaust gas flow	132.8 kg/s	134.2 kg/s	135.5 kg/s	136.6 kg/s
Exhaust temperature	541°C (1,007°F)	553°C (1,027°F)	563°C (1,045°F)	565°C (1,049°F)
NO _x emissions	≤15 ppmvd	≤15 ppmvd	≤15–17 ppmvd	≤20 ppmvd

	Combined cycle power generation	
Siemens combined cycle power plant	SCC-800 1 x 1	SCC-800 2 x 1
Net plant power output	66.6 – 80.7 MW(e)	135.4 – 163.1 MW(e)
Net plant efficiency	53.8 – 58.0%	54.7 – 58.6%
Net plant heat rate	6,693 – 6,207 kJ/kWh	6,583 – 6,143 kJ/kWh
Number of gas turbines	1	2

	Physical dimensions	
	Classic package	Single lift package
Approx. weight	285,000 kg (628,300 lb)	305,000 kg (672,400 lb)
Length	20.8 m (68 ft)	22.0 m (72 ft)
Width	7.3 m (24 ft)	4.7 m (16 ft)
Height	6.6 m (22 ft)	5.3 m (17 ft)

SGT-800 performance



Above performances at ISO conditions, natural gas fuel

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Subject to changes and errors.
The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

Note: All performance values are based on standard design, ISO ambient conditions and natural gas fuel. NO_x emissions at 15% O₂ on fuel gas (with DLE). The combined cycle plant SCC-800 is available based on one or multiple SGT-800 gas turbines. Combined cycle performance is based on two pressure non-reheat or three pressure non-reheat bottoming cycle. Dimensions depending on configuration. Dimensions exclude inlet filter housing and exhaust stack. For power generation, AC generator is included.