

SGT-800 Performance Enhancement

50.5-54 MW rating up to 56 MW

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Background

- Siemens Energy is continuously improving its Industrial Gas Turbine portfolio and invests heavily into R&D to bring you top-of-the-line innovations.
- Since the introduction of SGT-800 at 43 MWe, Siemens Energy has been working on enhancements together with our customers and R&D experts.
- As part of our improvement strategy, Siemens Energy is now able to offer a retrofit upgrade package which can increase your SGT-800 Gas Turbine power output up to the 56 MWe ISO rating.
- The 56 MWe rating of the SGT-800 has been available to new customers since 2017, and this retrofit upgrade package is now available for existing customers.

Fleet applicability and capability

The retrofit upgrade package is available for all SGT-800s with 50.5, 53 and 54 MWe rating, and worthwhile for:

- Any sites looking to retain the size of their balance of plant, including the original GT package, and receive an increase to Power Output and Efficiency.

- Any installations where the SGT-800 operates for long periods at high ambient temperatures and where electrical demand increases during the summer.
- Any customer looking to improve time between overhauls by implementing this upgrade and applying a FlexLTP* with dynamic lifing.

Product Overview

The key principles behind this newly launched retrofit upgrade package are as follows:

- The retrofit upgrade package is built on accumulated operating experience of the SGT-800 50.5 MWe since 2010 and the 56 MWe since 2019.
- The enhancement is generated by changes in the compressor and turbine section and control system.
- The retrofit upgrade package may increase power output up to 56 MWe, depending in general on capacity of the customer's AC Generator and Gearbox. The exact increase in performance and scope of work needs to be specified on a case-by-case basis.
- The upgraded core engine can be retrofitted into existing packages as it retains common interfaces.

*Flexible Long Term Program

Benefit

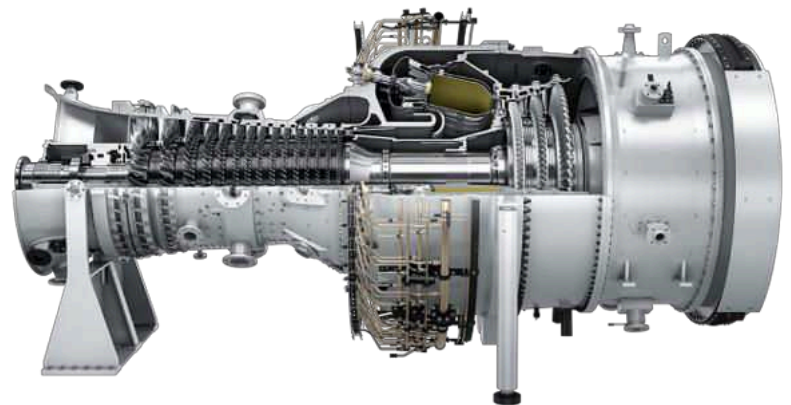
- Increased Power Output from 2 MWe up to 5MWe based on ISO conditions (limited by the capability of the driven unit), see Table 1.
- Improvement in full load efficiency up to 1%-point results in reduced fuel cost and reduced carbon footprint.
- Optimized site-specific performance level according to limitations in steam cycle or driven equipment can be done.
- Easy to be implemented during a scheduled Hot Gas Path inspection or Major Overhaul and thereby having reduced impact to downtime when implemented during an already planned overhaul.

Support Services and Implementation

- Implementation of the SGT-800 Performance Enhancement is highly recommended at a Hot Gas Path inspection or ideally at a Major Overhaul when downtime is anticipated and planned.
- It is recommended to plan for this upgrade at least 1 year prior to your next inspection/overhaul.
- All Installation and Commissioning work will be carried out by Siemens Energy qualified Field Service Engineers.
- Please contact your Siemens Energy Sales Representative for further information or via Siemens Energy MyAdvisor page at <https://siemens-energy.secure.force.com/myAdvisor>

Table 1: performance data for ISO power 50.5, 53, 54 and 56MW

ISO Power	50.5 MW	53 MW	54 MW	56 MW
Heat Rate (Kj/kWh)	9395	9227	9207	9161
Efficiency electric (%)	38.3	39.0	39.1	39.3
Exhaust gas flow (kg/s)	134.2	137.6	136.7	137.3
Exhaust gas temperature (°C)	551	549	560	563



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