

# SGT-800 Performance Enhancement

Applicable for 43-47.5 MW ratings



# SGT-800 Industrial gas turbine Development timeline and status

> 350 units sold and > 7 million fleet hours

1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Development start

43.0 MW

45.0 MW

47.5 MW

50.5 MW

53/54 MW

56/57 MW

“A” -platform  
“B” -platform

## Evolutionary development step-by-step

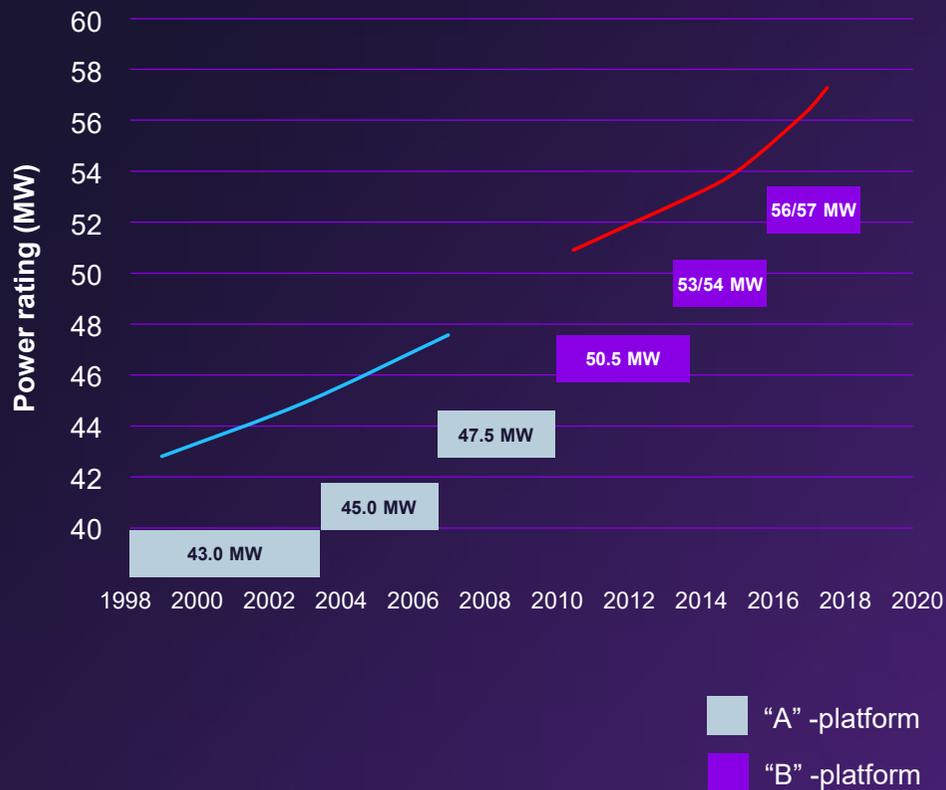


### Fleet statistics for complete package

- Fleet Availability 97.7%
- Fleet Reliability 99.6%

Evaluation based on ISO 3977:9  
Statistics based on 2018 data

# SGT-800 Industrial Gas Turbine - Siemens Energy Product Strategy



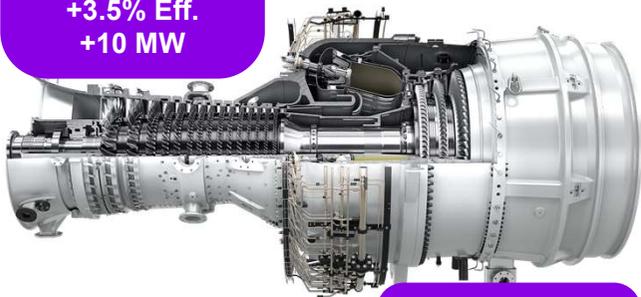
- Siemens Energy's Product Strategy is based on platform generations ("A", "B", ...) with an introductory rating followed by **continuous small step improvements**
- The improvements are built on **extensive commercial operation feedback and engine testing**
- This strategy will secure **reliability** since **proven experience** is valid for the engine type platform generation
- The "B"-platform introduced in 2010 had an introductory rating of 50.5 MW with built in growth potential without any major redesign and is today delivering up to 57 MW
- The "B"-platform fleet leader has > 55 000 h commercial operation and in total more than 160 "B"-platform units sold by end of 2018

This upgrade is based on implementing B-platform parts into A-platform units

## Performance Enhancement SGT-800 43, 45, 47.5 MW upgrade to 49 – 53 MW rating

- Proven robust industrial design
- Enhanced performance through implementation of 50 to 57 MW ratings components

Simple cycle  
Up to:  
+3.5% Eff.  
+10 MW



Comb. cycle  
Up to:  
-3.5% Heat r.  
+ >20 MW

### Your benefits

- Improved efficiency
- Enables fuel savings
- Higher power output
- Enable increased profitability
- Improved cyclic capability

Potential to extend time between overhauls when combining the upgrade with a FlexLTP Tailored maintenance plan [www.siemens.com/FlexLTP](http://www.siemens.com/FlexLTP)

**Trust the SGT-800 performance enhancement to the people who designed and built your gas turbine**

# Flex LTP – The future of Equipment Lifecycle Support

The Flex LTP solution will derive from pre-defined models, with the flexibility to apply contract scope, payment model and up-selling options to further tailor the maintenance to customer's individual needs.



## Flexibility in all we offer

### Customize your own gas turbine based on your operational needs

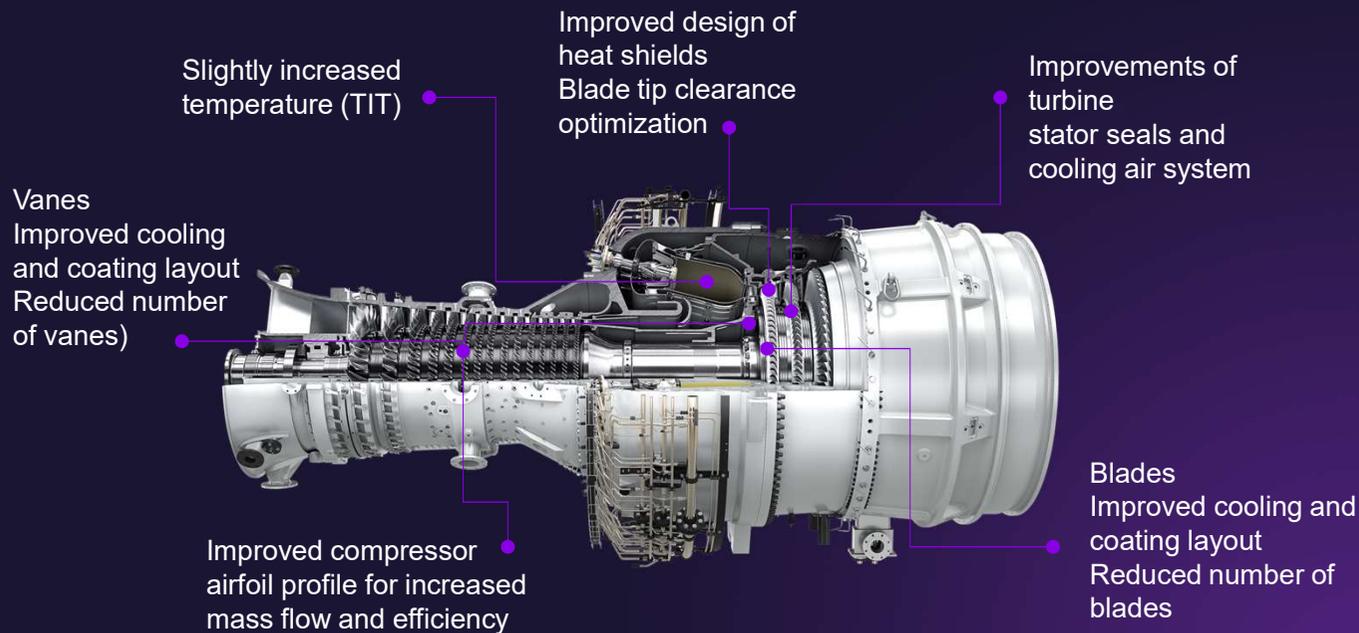
- No matter what conditions prevail Siemens Energy will have the technology, competence and skills to always offer a unique solution optimized for each single customer.
- The future is here, (New operation regimes)
  - Balancing renewables
  - Grid support
  - Spinning reserve
  - Topping power efficiency
- When joining us in a FlexLTP our continuous support will ensure financial robustness and maintained long term profitability.

- Full range optimization of operations based upon specific needs
  - Availability & Reliability
  - Efficiency & Power
  - Emissions
  - Life-cycle costs
- Customized timing and scope of maintenance activities
- Possibility to extend time intervals between major overhauls

**We want to work together with you to create a tailor-made maintenance program that best suits your specific needs.  
Let us help you optimize your operation.**

# SGT-800 Industrial Gas Turbine - Performance Improvement Areas

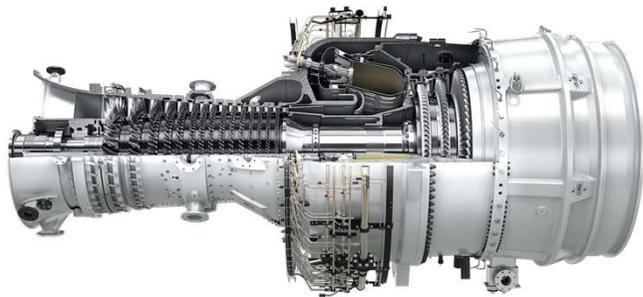
## To go from 43, 45, 47.5 MW ratings to 49 - 53 MW rating



**Siemens Energy's existing and mature core engine technologies are used**

- Minor improvements of combustor and turbine section parts for higher efficiency and power
- All upgrade components from B-platform SGT-800 are retrofitable for 43, 45, 47.5 MW rated SGT-800
- Only improvements of gas turbine parts using Siemens Energy existing and mature core engine technologies
- No revolution – just further small step improvements using the well proven and reliable B-platform components with more than 160 units sold and fleet leader > 55 000 h (end of 2018)

## Performance Enhancement SGT-800 43, 45, 47.5 MW upgrade - Product information



The enhancement can preferably be installed at a Hot Gas Path inspection (B-inspection) or at a Major Overhaul (C or D-inspection).

### Initial engineering study

- The actual site and machine conditions will be investigated for an appropriate scope of supply.

The scope of supply, subject to the specific offer, depending on the outcome of the engineering study and your needs:

- Replacement of the enhanced parts
- Auxiliaries modifications
- Engine control adjustments
- Commissioning

Performance evaluation can be performed before and after the enhancement



## Performance Enhancement SGT-800 43, 45, 47.5 MW upgrade - Product information



Fuel Savings



More Power

- Siemens Energys new performance upgrade enables fuel savings and CO2 emission reduction.  
**A contribution to a sustainable future!**
- Up to 3.5% increase of simple cycle GT efficiency, and up to an additional 10 MW output, enhancing the power of 43-47.5 MW units up to 53 MW.
- For a combined cycle application this could give a power increase of more than 20 MW and 3.5% lower heat rate.
- This product is flexible and will be adapted to your specific operational needs in terms of Power output, Time Between Overhauls (EOH and EOC).

**This performance  
enhancement enables  
largescale profit increases and  
a rapid Return On Investment**



## Disclaimer

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