Electricity starts with our generator

Customer Event Steam Turbine and Generators 2023

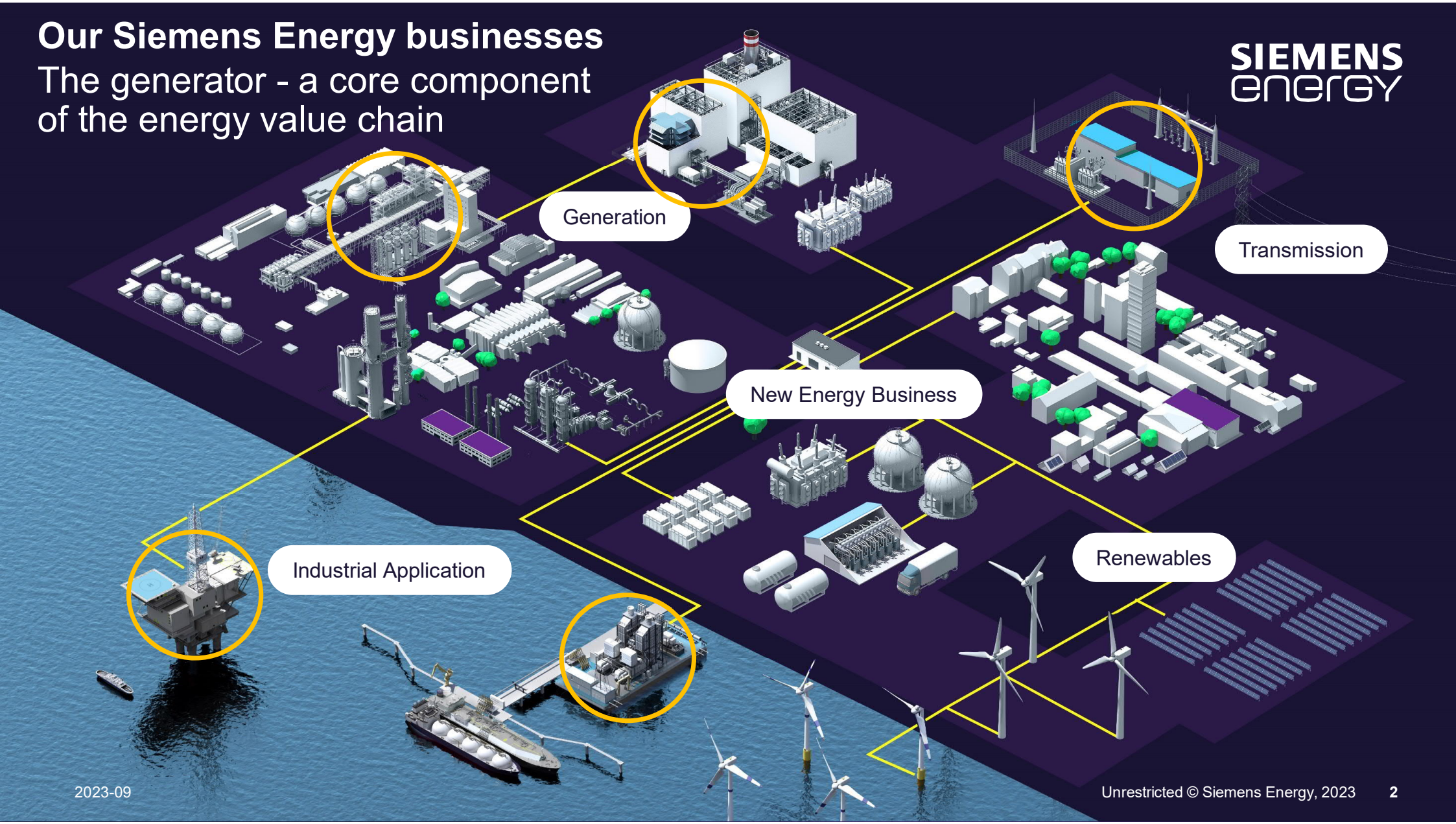


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Our Siemens Energy businesses

The generator - a core component of the energy value chain



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Facts and figures about TI STG industrial generator business

SIEMENS energy



More than **520**

employees worldwide



More than **1350**

Units installed since 1990



60%

of employees are working in manufacturing



77-years

generator experience in Erfurt

32 years with Siemens



More than **90**

Countries of generator installation



Complete value chain within **STG Erfurt** organization

Covering R&D, PM, MF, SCM

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From service shop to market leader in air cooled generator technology

1945
Foundation of "VEB Reparaturwerk Erfurt"

1951
VEB Reparaturwerk
„Clara Zetkin"


SIEMENS

1991/93
Acquisition by Siemens AG,
from 1993 part of Siemens PG „Generators Services and Components"

1998
Competence Center for development and manufacturing of generators up to 140 MW;
component supplies in global network of Siemens PG

1978/82
Construction
of large building complex at northern end

1990
Department of VEAG Berlin

2005
First EX-P / API project
TEC Brazil



2011
20 years of Siemens Thüringen



2008
Delivery of the
500th Generator "Thorold"
Canada

2012
Highest Load of generator orders in history of Erfurt

2016
Delivery of the
1,000th Generator
USA SynCon

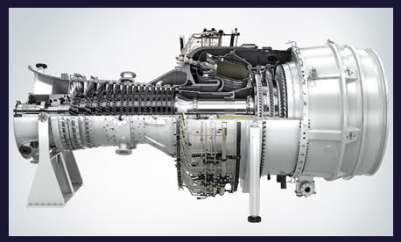
2018
Market introduction of 2p Baukasten application for SGT800

2019
Delivery of first O&G offshore footprint
BP Ula



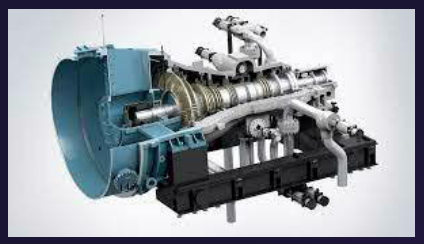
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Target customer products for industrial generators



Industrial Gas turbine:

The SGT-800 gas turbines, fired with natural gas in the beginning, will successively be converted to the combustion of ever greater proportions of hydrogen – with the long-term goal of 100%
green hydrogen operation.



Industrial Steam turbine:

All applications for Siemens energy Steam turbine.



Synchronous condenser:

A synchronous condenser provides short-circuit power, inertia and reactive power for dynamic loads. Siemens Energy supplies a broad range of generators up to 1,300 MVA at full speed.



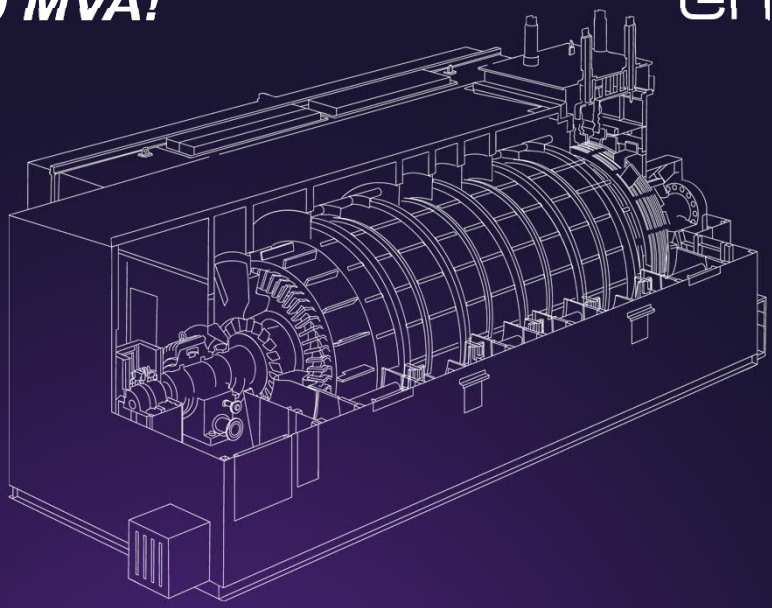
Compressors:

Devolving electrical drives for compression trains. From standard processes to high-pressure applications, our single-shaft compressors are the ideal solution for a wide range of industries and process applications.

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Siemens Energy Generators
Market leading technology from 25 to 370 MVA!



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Applications of STG industrial generators
Electricity starts with our generators!

SIEMENS energy

Gas and steam power plants

Our air-cooled generators fit to most steam and gas turbines on the market for maximum flexibility.



Oil and gas applications

Special explosion protection solutions are offered for a broad variety of applications and the highest operational safety.



Synchronous condenser

Solution for transmission grid stabilization with a high amount of power infeed from renewable sources.



Renewable energies

Using natural sources like biomass, solar and geothermal energy for power generation.



Footprint™ generators

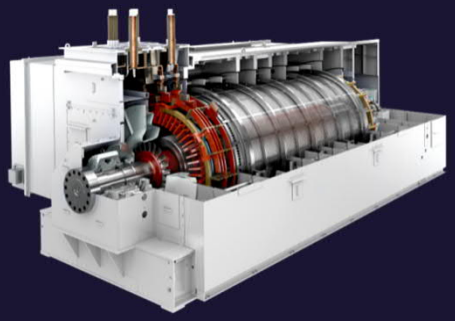
Replacement of older, high- maintenance generators from different OEMs with state-of-the-art Siemens SGen-100A-2P series generators.



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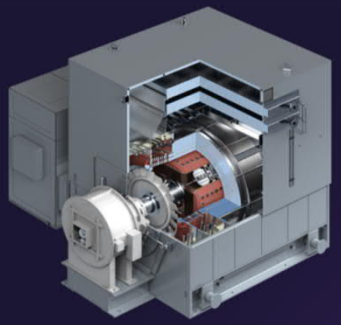
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STG Erfurt products
Full capability in 2pole and 4pole generator technology!



SGen-100A-2P Series

- Power spectrum
  25 – 370 MVA
- High reliability and availability



SGen-100A-4P Series

- Power spectrum`
  25 – 85 MVA
- High reliability and availability



Synchronous condenser

- Reactive Power
  +225/-120MVAr









Components

- Stator laminations
- Stator bars
- Rotor machining
- Mid-size machining
- Exciter units

Supply Management, Development, Sales, Design

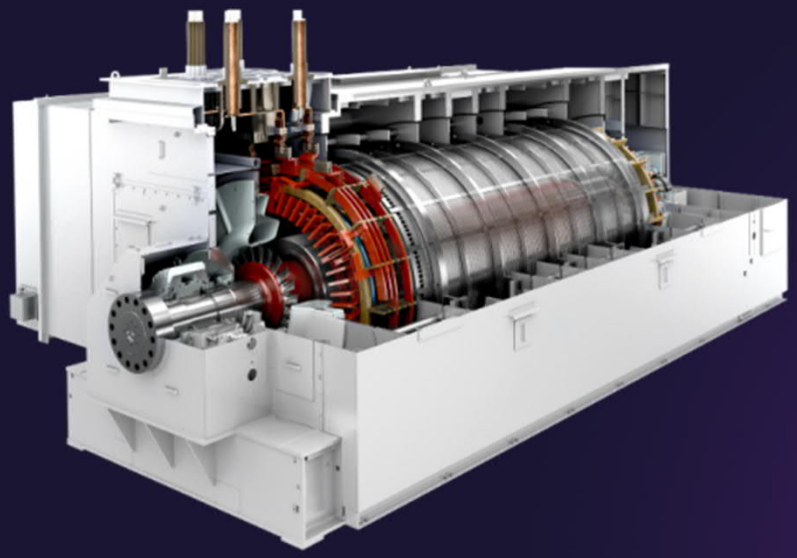
Competence Centre

Full Service

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SGen-100A-2P-series
Our best-in-class solution for industrial applications!



Technical specifications

• Apparent power	up to 370 MVA
• Efficiency	up to 98.9%
• Power factor	0.80 to 0.85*
• terminal voltage	up to 20kV

* (Adaptation to customer requirements)

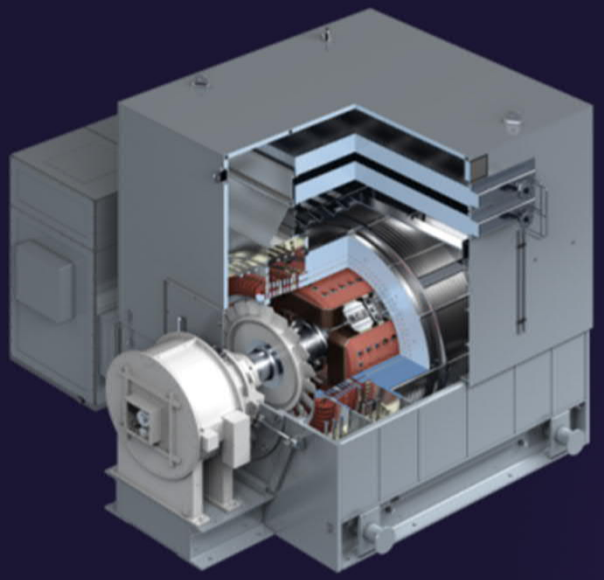
Characteristics

- Air-cooling increased up to 370 MVA
- Efficiency of up to 98.9% for air cooling
- Innovative design based on proven technology – more than 1,900 air-cooled generators in use worldwide
- Short installation and commissioning times
- Maximum flexibility in operation
- Low life cycle costs

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SGen-100A-4P-series
Our leading solution for smaller industrial applications!



Technical specifications

- Apparent power up to 80 MVA
- Efficiency up to 98.5%

Characteristics

- Air-cooled stator and rotor winding
- High energy efficiency up to 98.5%
- Design suitable for 50 and 60 Hz
- Different types of cooling available TEWAC, TEAAC or OAC
- Maintenance free global vacuum pressure impregnated stator core and winding (GVPI)
- Modular design –easy to adapt to customer requirements
- Base frame machine with mounted pedestal bearings
- Long service life for up to 10,000 start/stop cycles and to remain stable during load changes or flexible operation
- Brushless or static excitation

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Synchronous Condenser for grid stability in a renewable world



Technical specifications

- Apparent power **+225 / -120 MVAr**
- Efficiency up to 98.9%
- Power factor 0.80 to 0.85*
- Terminal voltage up to 20kV

*(Adaptation to customer requirements)

Characteristics

- Short-circuit power capability
- Reactive power compensation
- Short-term overload capability
- Inertia to the transmission system
- Leveling out of “grid signals”
- Support of grid to island operation capabilities

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Key Take Away – Location Erfurt
Electricity starts with our generators!

SIEMENS energy



Your competitive location

All functions under one roof: manufacturing, engineering, project management, purchasing and sales.



Your future-oriented location

You benefit from 75+ years of experience in electrical engineering and highly automated manufacturing of electrical machinery. Vicinity to technology clusters in Ilmenau and Jena enables latest technology and innovation for your product.



Your success is our promise

You receive the best-in-class product with dedicated customer support.

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Contact for questions

Electricity starts with our generator



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STG Head of Industrial Generators Sales

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fabian.petereit@siemens-energy.com

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