Steam Turbine Portfolio
Most economical products for all power ranges

SST-9000
SST-6000
SST-5000
SST-4000
SST-3000
SST-900
SST-700
SST-800
SST-600
SST-500
SST-400
SST-300
SST-200
SST-150
SST-111
SST-110
SST-100
SST-060
SST-050
SST-040

90 MW - 1,900 MW
2 MW - 250 MW
45 kW - 12 MW

Power and Gas – Steam Turbines
December 2014
SST-9000 series

General Description

- Highly reliable steam turbine for applications in the conventional islands of advanced pressurized water reactors
- Maximum reliability and availability
- High operational flexibility
- Low life cycle costs due to state-of-the-art efficiency
- Extended lifetime of up to 60 years, thanks to state-of-the-art engineering and advanced service concepts

Technical Description

- One double-flow saturated steam high-pressure (S) cylinder and up to three double-flow low-pressure (L) cylinders with shrunk-on disk rotors
- Shrunk-on disk design features proven technology: no stress-corrosion cracking that could require replacement of LP rotors or disks

Key Specifications Steam Turbine

- **Speed**: 3,000 / 3,600 rpm
- **Power output**: 800 MW to 1,900 MW
- **Steam parameters**
  - Main steam
    - 75 bar / 310 ºC
    - 1,090 psi / 590 ºF
- **Exhaust Areas**
  - 50Hz: 4 x 20 m² to 6 x 30 m²
  - 60Hz: 4 x 13.9 m² to 6 x 18 m²
- **Last blade profile length**
  - 50Hz: 55 inches to 72 inches
  - 60Hz: 42.3 inches to 55.8 inches

Yang Jiang
Nuclear Power Plant

**Customer:** China Nuclear Power  
**Country:** China  
**Scope of supply:** Unit 1: LP rotors and HP valves  
Unit 1-6: Instrumentation & Control Systems  
**Power output:** 1,103 MW (as built)  
**Efficiency:** 98.83%  
**Frequency:** 50 Hz (half speed)  
**Com. operation:** Unit 1 since May 2014
### General Description
- Applications: subcritical steam power plants, ultra-supercritical steam power plants, combined cycle power plants
- Up to 9 extractions for feed water preheating
- High turbine efficiency
- Enhanced operational flexibility, high availability and long lifetime
- Low complexity and low total plant costs
- Short project schedule and installation time

### Technical Description
- Features a barrel-type high-pressure (H) cylinder, an intermediate-pressure (I) cylinder and up to three double flow low-pressure (L) cylinders
- Customer specific adaptation

### Key Specifications Steam Turbine
- **Speed**: 3,000 / 3,600 rpm
- **Power output**: 120 MW to 500 MW for CCPP
  - 300 MW to 1,200 MW for SPP
- **Steam parameters**: Main steam / Hot reheat steam
  - 300 bar / 600 ºC / 620 ºC
  - 4,350 psi / 1,110 ºF / 1,150 ºF
- **Exhaust Areas**
  - 50Hz: 2 x 5 m² to 6 x 16 m²
  - 60Hz: 2 x 4.4 m² to 6 x 8.7 m²
- **Last blade profile length**
  - 50Hz: 26.2 inches to 56 inches
  - 60Hz: 25.8 inches to 37.6 inches

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### Reference Example
**Lünen Steam Power Plant**
- **Customer**: Trianel Kohlekraftwerk Lünen GmbH & Co. KG
- **Country**: Germany
- **Plant type**: Ultra-supercritical Steam Power Plant
- **Power output**: 750 MW (power plant)
- **Efficiency**: 46%
- **Com. operation**: 2013

Lünen is the most efficient and cleanest steam power plant in Europe.
SST-5000 series

Reference Example

Mellach
Combined Cycle Power Plant with district heating supply

Customer: VERBUND Thermal GmbH & Co KG
Country: Austria
Plant type: SCC5-4000F single shaft
Power output: 2x 419 MW (power plant)
Efficiency: 59%
Com. operation: 2012
Mellach is the most powerful and most efficient thermal power plant in Austria.

General Description

- Applications: Combined Cycle Power Plants, Steam Power Plants
- Various extractions for process steam and district heating possible
- High turbine efficiency
- Enhanced operational flexibility, high availability and long lifetime
- Low complexity and low total plant costs
- Short project schedule and installation time

Technical Description

- Features a combined high-pressure/intermediate-pressure (HI) cylinder and a double-flow low-pressure (L) cylinder
- Proven pre-engineered modules allow short project schedules and reduce site assembly and commissioning times as well as technical risk
- Elevation in low level or high level according to project needs

Key Specifications Steam Turbine

- **Speed**: 3,000 / 3,600 rpm
- **Power output**: 120 MW to 500 MW for CCPP
  - 120 MW to 700 MW for SPP
- **Steam parameters**: Main steam / Hot reheat steam
  - 177 bar / 600 ºC / 600 ºC
  - 2,570 psi / 1,110 ºF / 1,110 ºF
- **Exhaust Areas**
  - 50Hz: 2 x 5 m² to 4 x 16 m²
  - 60Hz: 2 x 4.4 m² to 4 x 8.7 m²
- **Last blade profile length**
  - 50Hz: 26.2 inches to 56 inches
  - 60Hz: 25.8 inches to 37.6 inches
SST-4000 series

General Description

- Applications: Combined Cycle Power Plants
- Extraction of large extent of process steam possible e.g. for sea water desalination
- High robustness
- Low investment costs

Technical Description

- Compact and fully pre-assembled intermediate pressure (I) module
- Features one intermediate-pressure (I) cylinder and one two-flow low-pressure (L) cylinder with down, double-side or single-side exhaust

Key Specifications Steam Turbine

<table>
<thead>
<tr>
<th>Speed</th>
<th>3,000 / 3,600 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output</td>
<td>100 MW to 380 MW</td>
</tr>
<tr>
<td>Steam parameters</td>
<td>Main steam, dual pressure</td>
</tr>
<tr>
<td></td>
<td>80 bar, 540 ºC</td>
</tr>
<tr>
<td></td>
<td>1,160 psi, 1,000 ºF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exhaust Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>50Hz: 2 x 5 m² to 2 x 16 m²</td>
</tr>
<tr>
<td>60Hz: 2 x 4.4 m² to 2 x 8.7 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last blade profile length</th>
</tr>
</thead>
<tbody>
<tr>
<td>50Hz: 26.2 inches to 56 inches</td>
</tr>
<tr>
<td>60Hz: 25.8 inches to 37.6 inches</td>
</tr>
</tbody>
</table>

Reference Example

Al Ezzel
Combined Cycle Power Plant

Customer: Al Ezzel Power Company
Country: Bahrain
Plant type: SCC5-2000E multi shaft 2x1
Power output: 2 x 475 MW (power plant)
Com. operation: 2007

The power plant makes an important contribution towards meeting the country’s growing power demand in an economic and environmentally compatible manner.
### SST-3000 series

#### Reference Example

<table>
<thead>
<tr>
<th>Ribatejo</th>
<th>Combined Cycle Power Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country:</strong></td>
<td>Portugal</td>
</tr>
<tr>
<td><strong>Plant type:</strong></td>
<td>SCC5-4000F single shaft</td>
</tr>
</tbody>
</table>
| **Power output:** | 3 x 390 MW (power plant)  
3 x 142 MW (SST) |
| **Efficiency:** | 57% |
| **Com. operation:** | 2006 |

The Ribatejo power plant was one of the most technological advanced Combined Cycle Power Plants at the time of construction.

### General Description

- Applications: Combined Cycle Power Plants
- High turbine efficiency
- Enhanced operational flexibility, high availability and long lifetime
- Low complexity and low total plant costs
- Short project schedule and installation time

### Technical Description

- Features a separate high-pressure (H) cylinder and combined intermediate-pressure/low-pressure (IL) cylinder with single flow axial exhaust
- Compact and fully pre-assembled

### Key Specifications Steam Turbine

- **Speed**: 3,000 / 3,600 rpm
- **Power output**: 90 MW to 250 MW
- **Steam parameters**: Main steam / Hot reheat steam
  - 177 bar / 565 ºC / 565 ºC
  - 2,570 psi / 1,050 ºF / 1,050 ºF

- **Exhaust Areas**
  - 50Hz: 5 m² to 12.5 m²
  - 60Hz: 4.4 m² to 8.7 m²

- **Last blade profile length**
  - 50Hz: 26.2 inches to 45.1 inches
  - 60Hz: 25.8 inches to 37.6 inches
SST-900

Reference Example

<table>
<thead>
<tr>
<th>Customer</th>
<th>Goeteborgs Energi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Sweden</td>
</tr>
<tr>
<td>Plant type</td>
<td>Combined Heat &amp; Power</td>
</tr>
<tr>
<td>Power output</td>
<td>141 MW</td>
</tr>
<tr>
<td>Inlet temperature</td>
<td>540 ºC / 1004 ºF</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>100 bar / 1450 psi</td>
</tr>
</tbody>
</table>

The plant in Gothenburg is powered by 3 gas turbines SGT-800 and one SST-900

General Description

- Typical applications: combined cycle power plants, fossil fuel steam, district heating, waste-to-energy, industrial plants
- Single casing turbine, dual casing for reheat applications available with impulse blading
- Compact plant layout and wide application range
- High reliability, availability and efficiency

Technical Description

- Simple foundation
- Easy installation and maintenance
- Short start-up time and quick load changes

Key Specifications

<table>
<thead>
<tr>
<th>Speed</th>
<th>3,000 / 3,600 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output</td>
<td>up to 250 MW</td>
</tr>
<tr>
<td>Extraction</td>
<td>Controlled (up to 1): ≤ 55 bar / 798 psi Uncontrolled (up to 7):≤ 60 bar / 870 psi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Live steam parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet pressure:</td>
</tr>
<tr>
<td>Inlet temperature:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reheat live steam parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet pressure:</td>
</tr>
<tr>
<td>Inlet temperature:</td>
</tr>
</tbody>
</table>
SST-800

Reference Example

Igelsta

Customer: Sjöderenergi
Country: Sweden
Plant type: Biomass district heating
Power output: 90 MW (SST-800)
Inlet temperature: 540 °C / 1,004 °F
Inlet pressure: 85 bar / 1,305 psi

Sweden’s largest biomass plant is situated in Södertälje. The plant produces 200 MWth and 85 MWe

General Description

- Typical applications: combined cycle power plants, combined heat and power plants, oil & gas industries, industrial power plants (captive power plants, waste heat recovery, chemical/petrochemical industries, paper mills, metal and mining, cement plants, district heating plants, biomass and waste-to-energy plants
- Center steam admission: The reverse steam flow adjusts the thrust and relieves the bearings of large steam turbines
- Single casing steam turbine
- Outstanding efficiency, high availability

Technical Description

- Condensing or back-pressure applications
- Reaction blading for generator or mechanical drive
- Multi-casing solutions possible
- Fast start-up times

Key Specifications

- **Speed** 3,000 / 3,600 rpm
- **Power output** up to 250 MW
- **Live steam parameters**
  - Inlet pressure: ≤ 165 bar / 2,395 psi
  - Inlet temperature: ≤ 565 °C / 1,049 °F
- **Exhaust steam parameters**
  - Back pressure: ≤ 72 bar / 1,044 psi
  - Condensing: ≤ 0.3 bar / 4.4 psi
- **Steam Extraction**
  - Controlled (up to 2): ≤ 65 bar / 1,044 psi
  - Uncontrolled (up to 7): various pressure levels

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SST-700

Reference Example

**Termo Bahia**
Combined Cycle Power Plant

**Customer:** TermoBahia  
**Country:** Brazil  
**Power output:** 250 MW (power plant)  
21 MW (steam turbine)  
**Inlet temperature:** 585 ºC / 1,085 ºF  
**Inlet pressure:** 165 bar / 2,393 psi  

The company provides service to the state, chemical and petrochemical markets.

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**General Description**

- Typical applications: concentrated solar-thermal power plants, waste-to-energy plants, combined cycle power plants, fossil fuel steam plants, district heating plants  
- Easy installation and maintenance  
- High reliability, availability and efficiency  
- Dual casing, compact design

**Technical Description**

- Best use of large changes in volumetric flow from inlet to outlet  
- Turbine steam expansion divided into two different modules: high-pressure turbine (HP) and one low-pressure turbine (LP)  
- Short start up-time

**Key Specifications**

<table>
<thead>
<tr>
<th><strong>Speed</strong></th>
<th>≤ 13,200 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power output</strong></td>
<td>up to 175 MW</td>
</tr>
<tr>
<td><strong>Live steam parameters</strong></td>
<td></td>
</tr>
</tbody>
</table>
  Inlet pressure: ≤ 165 bar / 2,393 psi  
  Inlet temperature: ≤ 585 ºC / 1,085 ºF |
| **Exhaust steam parameters** |  
  Back pressure: ≤ 40 bar / 580 psi  
  Condensing: ≤ 0.6 bar / 8.7 psi |
| **Steam Extraction** |  
  Controlled (up to 2): ≤ 40 bar / 580 psi  
  Uncontrolled (up to 6): ≤ 120 bar / 1,740 psi |
### General Description
- Typical applications: chemical and petrochemical industry, pulp and paper mills, steel works & mines, power plants, seawater desalination plants, energy-from-waste plants (waste incinerators)
- Single casing steam turbine
- Condensing and back-pressure applications, either geared or directly coupled
- Design enhancements lead to an increased efficiency, lower flow losses, reduced start-up times and faster load changes

### Technical Description
- Customized steam path according to the customer’s needs
- Reliable and flexible design available with axial or radial exhaust
- Up to eight uncontrolled extractions with various pressure levels
- Or up to five uncontrolled in combination with two controlled extractions

### Key Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exhaust steam parameters</strong></td>
<td>Back pressure: ≤ 80 bar / 1,160 psi Condensing: ≤ 1.0 bar / 15 psi</td>
</tr>
<tr>
<td><strong>Steam Extraction</strong></td>
<td>Controlled (up to 2): ≤ 72 bar / 1,044 psi (ext. valve) Uncontrolled (up to 6): ≤ 85 bar / 1,233 psi</td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>3,000 to 18,000 rpm</td>
</tr>
<tr>
<td><strong>Power output</strong></td>
<td>up to 150 MW</td>
</tr>
<tr>
<td><strong>Live steam parameters</strong></td>
<td>Inlet pressure: ≤ 165 bar / 2,393 psi Inlet temperature: ≤ 565 ºC / 1,049 ºF</td>
</tr>
</tbody>
</table>
## Reference Example

<table>
<thead>
<tr>
<th>Customer:</th>
<th>Shanghai Municipal Electric Power Co</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country:</td>
<td>China</td>
</tr>
<tr>
<td>Application:</td>
<td>Booster pump drive</td>
</tr>
<tr>
<td>Power output:</td>
<td>19.4 MW (steam turbine)</td>
</tr>
<tr>
<td>Speed:</td>
<td>5,912 rpm</td>
</tr>
<tr>
<td>Inlet temperature:</td>
<td>343 °C / 649 °F</td>
</tr>
<tr>
<td>Inlet pressure:</td>
<td>11.1 bar / 160.9psi</td>
</tr>
</tbody>
</table>

## General Description

- Typical applications: industrial applications (chemical & petrochemical, steel works), power plants (power generation, generator drive, heat & power), mechanical drive (compressor drive, boiler feed water pump drive)
- Single casing, double flow steam turbine
- Two steam inlets, customized steam path
- Used as an entire drive or as the low-pressure module of a multiple-casing turboset
- Directly driven or geared

## Technical Description

- Customized steam path according to the customer’s needs
- Fast and early layout planning
- Short delivery time due to extensive pre-design
- Compact design minimizes space requirements of installation
- Easy access to mechanical components facilitates maintenance
- Remote control for simple operation

## Key Specifications

<table>
<thead>
<tr>
<th>Speed</th>
<th>≤ 15,000 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output</td>
<td>up to 100 MW</td>
</tr>
<tr>
<td>Live steam parameters</td>
<td></td>
</tr>
<tr>
<td>Inlet pressure:</td>
<td>≤ 30 bar / 435 psi</td>
</tr>
<tr>
<td>Inlet temperature:</td>
<td>≤ 400 °C / 750 °F</td>
</tr>
<tr>
<td>Exhaust steam parameters</td>
<td></td>
</tr>
<tr>
<td>District Heating:</td>
<td>≤ 1.5 bar / 21.75 psi</td>
</tr>
<tr>
<td>Condensing:</td>
<td>≤ 0.5 bar / 7.25 psi</td>
</tr>
<tr>
<td>Steam Extraction</td>
<td></td>
</tr>
<tr>
<td>Controlled:</td>
<td>none</td>
</tr>
<tr>
<td>Uncontrolled (up to 2):</td>
<td>various pressure levels</td>
</tr>
</tbody>
</table>
### Reference Example

**Customer:** Tirme  
**Country:** Spain  
**Plant type:** Energy from Waste plant  
**Power output:** 38 MW (steam turbine)  
**Speed:** 4,500 rpm  
**Inlet temperature:** 397 °C / 746 °F  
**Inlet pressure:** 50 bar / 725 psi

The EfW-plant in Palma de Mallorca has a capacity of about 430,000t per year. Mallorca reached zero landfill waste.

### General Description

- Typical applications: power generation industrial power plants, biomass, district heating, combined cycle power plants, mechanical drive, Waste heat recovery
- Single casing
- Modular package design allows a wide variety of applications
- Utilization of selected proven components assures high reliability and easy maintenance
- Short delivery time due to extensive pre-design

### Technical Description

- Compact design minimizes space requirements of installation
- Easy access to mechanical components facilitates maintenance
- Remote control for simple operation
- Proven installation and maintenance concept lowers maintenance costs
- Comprehensive spare-part service, repairs and maintenance solutions designed to increase reliability and availability of plants
- Prepared for remote monitoring

### Key Specifications

- **Speed** ≤ 8,000 rpm  
- **Power output** up to 65 MW  
- **Live steam parameters**  
  - Inlet pressure: ≤ 140 bar / 2,030 psi  
  - Inlet temperature: ≤ 540 °C / 1,004 °F
- **Exhaust steam parameters**  
  - Back-pressure: ≤ 25 bar / 363 psi  
  - Condensing: ≤ 0.3 bar / 4.4 psi
- **Steam Extraction**  
  - Controlled (up to 4): ≤ 45 bar / 510 psi  
  - Uncontrolled: ≤ 60 bar / 870 psi
**SST-300**

### Reference Example

**Customer:** EC Mielec  
**Country:** Poland  
**Plant type:** Cogeneration / CHP Plant  
**Power output:** 30.44 MW_e / 170.5 MW_th  
21 MW (SST-300)

**Speed:** 6,000 rpm  
**Inlet temperature:** 440 ºC / 824 ºF  
**Inlet pressure:** 40 bar / 580 psi  
**Controlled extraction:** 6 bar / 87 psi

### General Description

- Typical applications: district heating, industrial power plants, petrochemical, refineries, cogeneration, combined cycle power plants, biomass plants
- Single casing steam turbine
- High reliability, availability and efficiency
- Packaged in a base frame-mounted design
- Wide variety of configurations to satisfy the industrial customer’s individual needs in the most economical way

### Technical Description

- Compact design minimizes space requirements of installation
- Short delivery time as the design is proven and modular
- Low maintenance costs due to easy access to mechanical components
- Remote control for simple operation
- Operational flexibility including rapid load changes
- Fast and early layout planning

### Key Specifications

- **Speed** ≤ 12,000 rpm
- **Power output** up to 50 MW
- **Live steam parameters**
  - Inlet pressure: ≤ 120 bar / 1,740 psi
  - Inlet temperature: ≤ 540 ºC / 1,004 ºF
- **Exhaust steam parameters**
  - Back-pressure: ≤ 16 bar / 232 psi
  - Condensing: ≤ 0.3 bar / 4.4 psi
- **Steam Extraction**
  - Controlled (up to 2): ≤ 25 bar / 363 psi
  - Uncontrolled: ≤ 60 bar / 870 psi
## SST-111

### Reference Example

<table>
<thead>
<tr>
<th>Exeter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer:</strong></td>
<td>Groupe TIRU</td>
</tr>
<tr>
<td><strong>Country:</strong></td>
<td>Great Britain</td>
</tr>
<tr>
<td><strong>Plant type:</strong></td>
<td>Waste Incineration</td>
</tr>
<tr>
<td><strong>Power output:</strong></td>
<td>4,7 MW (SST-111)</td>
</tr>
<tr>
<td><strong>Speed:</strong></td>
<td>11,000 rpm</td>
</tr>
<tr>
<td><strong>Inlet temperature:</strong></td>
<td>385 °C / 725 °F</td>
</tr>
<tr>
<td><strong>Inlet pressure:</strong></td>
<td>40 bar / 580 psi</td>
</tr>
</tbody>
</table>

### General Description

- Typical applications: waste-to-energy plants, biomass plants, combined cycle power plants, district heating plants, fossil fuel steam plant
- Multistage, condensing steam turbine with an integrated gearbox
- Multicasing design approach permits up to two controlled extractions
- Operation in various steam supply systems
- Possibility of including a reheat system to optimize efficiency

### Technical Description

- Fast start-up without preheating
- Saturated steam operation
- Package design
- Oil supply system integrated into the baseframe

### Key Specifications

<table>
<thead>
<tr>
<th><strong>Speed</strong></th>
<th>1500 / 1800 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power output</strong></td>
<td>up to 12 MW</td>
</tr>
<tr>
<td><strong>Live steam parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Inlet pressure:</td>
<td>≤ 131 bar / 1,900 psi</td>
</tr>
<tr>
<td>Inlet temperature:</td>
<td>≤ 530 °C / 985 °F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Exhaust steam parameters</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Back-pressure:</td>
<td>≤ 26 bar / 377 psi</td>
</tr>
<tr>
<td>Condensing:</td>
<td>≤ 0.06 bar / 0.87 psi</td>
</tr>
</tbody>
</table>
### General Description

- Typical applications: waste-to-energy plants, biomass plants, combined cycle power plants, district heating plants, fossil fuel steam plants
- Dual casing turbine on one gearbox which can run on different steam lines
- Backpressure, extraction or condensing type
- Package unit design, extremely compact construction
- Suitable for ORC (Organic Rankine Cycle), suitable for gas expansion

### Technical Description

- Oil unit integrated in base frame
- Nozzle group control valves available
- Quick-start without pre-heating
- Pressure controlled extraction
- High pressure / low pressure applications
- Meet requirements of API 611/612 (if overhung and integral gear is accepted)
- ATEX version available

### Key Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed</strong></td>
<td>1500 / 1800 rpm</td>
</tr>
<tr>
<td><strong>Power output</strong></td>
<td>up to 7 MW</td>
</tr>
<tr>
<td><strong>Live steam parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>≤ 131 bar / 1,900 psi</td>
</tr>
<tr>
<td>Inlet temperature</td>
<td>≤ 530 °C / 985 °F</td>
</tr>
<tr>
<td><strong>Exhaust steam parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Back-pressure</td>
<td>≤ 29 bar / 420 psi</td>
</tr>
<tr>
<td>Condensing</td>
<td>≤ 0.08 bar / 1.16 psi</td>
</tr>
</tbody>
</table>

### Reference Example

**Eccleshall**

- **Customer:** Eccleshall Biomass
- **Country:** United Kingdom
- **Plant type:** Biomass Power Plant
- **Power output:** 2.65 MW (steam turbine)
- **Speed:** 1,500 rpm
- **Inlet temperature:** 450 °C / 842 °F
- **Inlet pressure:** 41 bar / 594 psi

Typical applications: waste-to-energy plants, biomass plants, combined cycle power plants, district heating plants, fossil fuel steam plants.
### Reference Example

<table>
<thead>
<tr>
<th>Bad Elster</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer:</strong> eins energie</td>
</tr>
<tr>
<td><strong>Country:</strong> Germany</td>
</tr>
<tr>
<td><strong>Plant type:</strong> Waste heat recovery</td>
</tr>
<tr>
<td><strong>Power output:</strong> 866 kW (SST-060)</td>
</tr>
<tr>
<td><strong>Speed:</strong> 17,944 rpm</td>
</tr>
<tr>
<td><strong>Inlet temperature:</strong> 340 ºC / 644 ºF</td>
</tr>
<tr>
<td><strong>Inlet pressure:</strong> 12.0 bar / 174 psi</td>
</tr>
</tbody>
</table>

### General Description

- Typical applications: waste-to-energy plants, biomass plants, combined cycle power plants, district heating plants, fossil fuel steam plants
- Stand out by rugged design and renowned reliability even under the most severe operating conditions
- Ideal for saturated steam service
- Quick-start without pre-heating
- Condensation or back-pressure turbines

### Technical Description

- Oil unit integrated in base frame
- Nozzle group control valves available
- Meet requirements of API 611 / 612 (if overhung design and integral gear is accepted)
- ATEX version available
- Suitable for ORC (Organic Rankine Cycle)
- Suitable for gas expansion

### Key Specifications

- **Speed**
  - 10,500 to 23,000 rpm
- **Power output**
  - up to 6 MW
- **Live steam parameters**
  - Inlet pressure: ≤ 131 bar / 1,900 psi
  - Inlet temperature: ≤ 530 ºC / 985 ºF
- **Exhaust steam parameters**
  - Back-pressure: ≤ 29 bar / 420 psi
### Reference Example

**SW Bremen**

**Customer:** Turbinen- & Motoren-Service GmbH  
**Country:** Germany  
**Plant type:** Energy from Waste  
**Power output:** 520 kW (steam turbine)  
**Speed:** 10,438 rpm  
**Inlet temperature:** 399 ºC / 750 ºF  
**Inlet pressure:** 40.9 bar / 593.2 psi

### General Description

- Typical applications: waste-to-energy plants, biomass plants, combined cycle power plants, district heating plants, fossil fuel steam plants
- Single-stage, condensing or backpressure steam turbine
- Low-maintenance because of the simple design
- Extremely failure safe

### Technical Description

- Quick-start compatible
- Turbine with integral oil supply
- Meet requirements of API 611 / 612 (if overhung design and integral gear is accepted)
- ATEX version available

### Key Specifications

- **Speed**  
  4,500 to 10,500 rpm
- **Power output**  
  up to 0.75 MW
- **Live steam parameters**  
  - Inlet pressure: ≤ 101 bar / 1,465 psi
  - Inlet temperature: ≤ 500 ºC / 930 ºF
- **Exhaust steam parameters**  
  - Back-pressure: ≤ 1 bar / 14.5 psi to 17 bar / 246.5 psi
**Reference Example**

<table>
<thead>
<tr>
<th>Customer</th>
<th>Coretec Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Belgium</td>
</tr>
<tr>
<td>Plant type</td>
<td>Biomass Power Plant</td>
</tr>
<tr>
<td>Power output</td>
<td>265 kW (steam turbine)</td>
</tr>
<tr>
<td>Speed</td>
<td>3,000 rpm</td>
</tr>
<tr>
<td>Inlet temperature</td>
<td>245 ºC / 473 ºF</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>28 bar / 406.1 psi</td>
</tr>
</tbody>
</table>

**General Description**

- Typical applications: waste heat recovery (e.g. after block heat and power stations), small combined heat and power (CHP) systems, small biomass power plants, decentralized solar power plants
- Predesigned steam turbine for generator drive with a high degree of operational reliability
- Single stage, impulse turbine
- Favorably priced turbine in an extremely small and compact design
- Short start-up times

**Technical Description**

- Minimal foundation work thanks to small and compact design
- Largely maintenance-free due to stalwart, robust construction
- High availability thanks to resilient and sure technology
- Quick start without preheating of the turbine due to minimized gyrating masses
- Quick development and commissioning due to production orientated design

**Key Specifications**

- **Speed**: 3000 / 3600 rpm
- **Power output**: up to 0.3 MW
- **Live steam parameters**
  - Inlet pressure: ≤ 40 bar / 580 psi
  - Inlet temperature: ≤ 400 ºC / 752 ºF
- **Exhaust steam parameters**
  - Back-pressure: ≤ 7 bar / 101.5 psi
  - Condensing: ≤ 0.1 bar / 14.5 psi