SG 2.9-129
Built on a foundation of proven technology and continuous innovation
Increased capacity factor for greater returns

SG 2.9-129: a turbine with a certified 25 year design lifetime built for the needs of the American market

Siemens Gamesa, your trusted technology partner

One of the key aspects to Siemens Gamesa's success is the continuous development of new and advanced products adapted to the business case of every customer. We strive to provide the best technological solutions for each project, while driving down the LCoE.

For this reason we offer an optimized, streamlined catalog of proven solutions for different site conditions and financial performance indicators. Our solutions are backed by:

- Our reputation as a trusted and stable partner (+95 GW installed worldwide).
- A proven track record spanning over almost 40 years that makes Siemens Gamesa a benchmark for wind projects.
- The recognition of the wind power sector.
The SG 2.9-129 wind turbine for medium to low-wind sites
The SG 2.9-129 wind turbine is the latest Siemens Gamesa onshore turbine developed to meet the medium to low-wind site and market conditions of the American market. The turbine is designed based on the foundation of the proven 2.3 MW geared product series, one of the most robust and successful turbine lines in the market, with over half of the 9,793* units installed globally installed in North America (more than 6,700 units). The product configuration maintains a similar design, utilizing components from its predecessor, the SWT-2.625-120.

To deliver the lowest Cost of Energy and maximize performance across various sites in the U.S., the SG 2.9-129 is designed with the higher capacity factor our customers demand. This improved model demonstrates our ability to offer flexible solutions for every context while delivering a certified 25 year design lifetime, standard.

Proven technology
The experience acquired through our latest products, specifically in the optimization of design, prototyping, validation and industrialization processes, along with enhanced design tools such as FEA, thermal modeling and grid analysis has been a key factor in the development of the SG 2.9-129 wind turbine.

- Siemens Gamesa has incorporated proven technologies into this wind turbine, boosting capacity and simplifying maintenance.
- Aeroelastic tailored blades with 129-m rotor diameter.
- IntegralBlade® technology, DinoTails® Next Generation, Vortex Generators and cross-section (airfoil) designs.
- Adaptive yaw system for optimized performance.
- Gearbox with two planetary stages and one helical for increased capacity.
- Efficient direct cooling system.

* Figures as of CY2Q2019

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Technical specifications

### General details
- **Rated power**: 2.9 MW
- **Wind class**: S
- **Control**: Pitch and variable speed
- **Standard operating temperature**: Range from -20ºC to 45ºC

### Rotor
- **Diameter**: 129 m
- **Swept area**: 13,070 m²
- **Power density**: 221.88 W/m²

### Blades
- **Length**: 63.5 m
- **Airfoils**: Siemens Gamesa
- **Material**: Fiberglass reinforced with epoxy resin

### Tower
- **Type**: Tubular steel tower
- **Height**: 87 m and site-specific

### Gearbox
- **Type**: 3 stages

### Generator
- **Type**: Full scale converter
- **Voltage**: 690 V AC
- **Frequency**: 60 Hz
- **Protection class**: IP 54
- **Power factor**: 0.9 CAP-0.9 IND throughout the power range

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Swept area increase

<table>
<thead>
<tr>
<th>ORIG.</th>
<th>SG 2.9-129</th>
<th>SWT-2.625-120</th>
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<tbody>
<tr>
<td>Swept area increase</td>
<td>~16%</td>
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AEP increase SG 2.9-129 vs. SWT-2.625-120

<table>
<thead>
<tr>
<th>Average wind speed (m/s)</th>
<th>5.5</th>
<th>6</th>
<th>6.5</th>
<th>7</th>
<th>7.5</th>
<th>8</th>
<th>8.5</th>
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<tbody>
<tr>
<td>AEP MWh @ k=2.5</td>
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<td>+10.3%</td>
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(1) Different versions and optional kits are available to adapt machinery to high or low temperatures and saline (CA) or dusty environments. Derating may apply under certain siting conditions above 30ºC.
(2) Power factor at generator output terminals on lower side of MV transformer.