SG 4.5-145
On the way to the next generation

SIEMENS Gamesa
RENEWABLE ENERGY

Benchmark solution in its segment for efficiency and reduced LCoE

SG 4.5-145: continuous improvement with a new state-of-the-art control system and enhanced blade aerodynamics

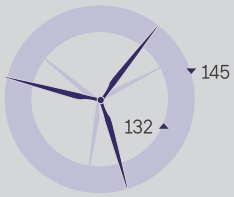
Siemens Gamesa, your trusted technological partner for wind power projects

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 adapted to every type of site and condition, backed by:

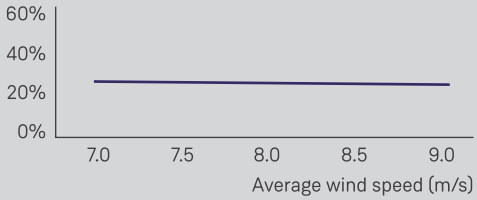
- Our reputation as a trusted and stable partner (+90 GW installed worldwide).
- A proven track record spanning over almost 40 years that makes Siemens Gamesa a benchmark for wind projects.
- The recognition of the wind power sector.

Swept area increase



21%

AEP increase SG 4.5-145 vs. SG 3.4-132 (preliminary)



28%

SG 4.5-145 wind turbine

The SG 4.5-145 turbine is the latest addition to the Siemens Gamesa 4.X platform. This model, a benchmark solution for sites with medium winds, is the result of the operational experience accumulated by the company in the wind power market.

The SG 4.5-145 represents Siemens Gamesa's commitment to create value for our customers through the continuous development of new technologies that improve the performance, competitiveness and quality of our products. With a new state-of-the-art control system, enhanced blade aerodynamics and structural modularity, the SG 4.5-145 offers our customers higher flexibility to adapt to sites with a wide range of wind conditions and logistics constraints.

Proven Siemens Gamesa technology

The SG 4.5-145 leverages the knowledge acquired through the development of our latest products and integrates innovative technologies to achieve higher efficiency and cost-effectiveness.

It relies on proven concepts with extensive track record in the market, such as the combination of a three-stage gearbox (two planetary and one parallel) and a doubly-fed induction generator, which offer the higher levels of reliability. In addition to this, the inclusion of an optional premium converter allows us to comply with the most demanding grid connection requirements.

The new 71-meter blade, made of fiberglass reinforced with epoxy resin, integrates innovative aerodynamics and the DinoTails® Next Generation technology, which guarantee the best balance between high energy production and reduced noise emission levels.

Greater efficiency and profitability

With respect to the previous generation solutions, the SG 4.5-145 introduces a new control system, which optimizes the efficiency of the wind turbine and its applicability in a wide range of sites. It also offers flexible power rating, depending on the noise requirements, temperature and electrical properties of the project. With an increase of 21% of the swept area and 28% of AEP over the SG 3.4-132 wind turbine, this model is a benchmark in its segment for LCoE and profitability.

Technical specifications

General details	
Rated power	4.5 MW (flexible power rating available)
Wind class	IEC IIB
Control	Pitch and variable speed
Standard operating temperature	Range from -20ºC to 40ºC (with de-rating) (1)
Rotor	
Diameter	145 m
Swept area	16,513 m²
Blades	
Length	71 m
Airfoils	Siemens Gamesa
Material	Fiberglass reinforced with epoxy resin
Tower	
Type	Multiple technologies available
Height	90, 102.5, 127.5 m and site-specific
Gearbox	
Type	3 stages
Generator	
Type	Doubly-fed induction machine
Voltage	690 V AC
Frequency	50 Hz/60 Hz
Protection class	IP 54
Power factor	0.9 CAP-0.9 IND throughout the power range (2)

(1) Different versions and optional kits are available to adapt machinery to high or low temperatures and saline or dusty environments.

(2) Power factor at generator output terminals, on low voltage side before transformer input terminals.

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