



SG 3.4-132

The most profitable product in its segment



Optimum LCoE for medium and high winds

SG 3.4-132: a wind turbine to ensure enhanced performance with the highest levels of reliability

Siemens Gamesa,
your trusted
technology
partner

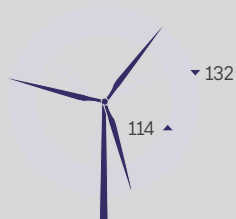
One of the key aspects to Siemens Gamesa's success is the continuous development of new and advanced products adapted to the business case of every customer. We strive to provide the best technological solutions for each project, while driving down the LCoE.

We know that needs vary greatly, for this reason we offer an optimized, streamlined

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

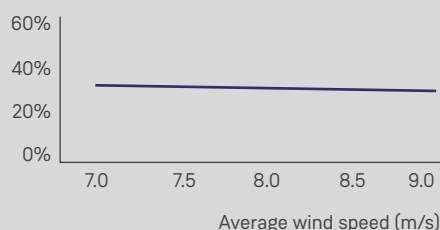
- Our reputation as a trusted and stable partner (+84.5 GW installed worldwide).
- A proven track record spanning over 35 years that makes Siemens Gamesa a benchmark for wind projects.
- The recognition of the wind power sector.

Swept area increase



+34%

AEP increase SG 3.4-132 vs. SG 2.6-114



+30%

The most profitable product in its segment

The SG 3.4-132 wind turbine is integrated in the portfolio of Siemens Gamesa with a clear objective: to complement the product offer for medium- and high-wind sites in markets where our customers require solutions with nominal powers higher than 3 MW with an optimum Levelized Cost of Energy.

This multimewatt turbine, part of the Siemens Gamesa 3.X platform, is a natural evolution of the Siemens Gamesa 2.X product series, one of the most successful in the market, backed by over 50.7 GW installed in the 2.0-2.9 MW segment. Thanks to the operative experience accumulated over more than 35 years in the wind energy market, and due to the application of thoroughly tested and validated technologies, this Class I/II solution ensures enhanced performance with the highest levels of reliability.

An efficient solution for medium- and high-wind sites

The SG 3.4-132 turbine, available for locations with high and moderate wind conditions, improves on the production capacity of the model SG 2.6-114, both boosting the nominal power up to 3.465 MW and increasing the rotor swept area by 34%. This makes it one of the most efficient and cost-effective solutions for these types of sites.

This model also has an extensive portfolio of towers with heights ranging from 84 to 165 meters, which enables it to comply with the different maximum blade tip height restrictions in the market.

Based on proven technology

With a new 64.5-meter fiberglass blade, optimized for medium- and high-wind sites and with thoroughly tested and validated airfoils, the SG 3.4-132 model guarantees both high energy production and low noise emission levels, with maximum theoretical value for this turbine fixed at 106.3 dBA. Siemens Gamesa incorporates proven technology into this model, such as the combination of a three-stage gearbox (two planetary stages and one parallel) and a doubly-fed induction generator. This is the same solution used in the Siemens Gamesa 2.X platform.

Technical specifications



General details

Rated power	3.465 MW
Wind class	IEC IA/IIA
Flexible power rating	3.3-3.75 MW
Control	Pitch and variable speed
Standard operating temperature	Range from -20°C to 30°C ⁽¹⁾

Rotor

Diameter	132 m
Swept area	13,685 m ²
Rotational speed	6.82 - 10.9 rpm
Power density	253.20 W/m ²

Blades

Length	64.5 m
Airfoils	Siemens Gamesa
Material	Fiberglass reinforced with epoxy or polyester resin

Tower

Type	Multiple technologies available
Height	84, 97, 101.5, 114, 134, 154, 165 m and site-specific

Gearbox

Type	3 stages
Ratio	1:102.75 (50 Hz) 1:123.3 (60 Hz)

Generator

Type	Doubly-fed induction machine
Voltage	690 V AC
Frequency	50 Hz/60 Hz
Protection class	IP 54
Power factor	0.925 CAP-0.925 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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Summary: Application Appendix A to the Application of Black Fork Wind Energy, LLC
electronically filed by Mr. Michael J. Settineri on behalf of Black Fork Wind Energy LLC