

# Siemens Gamesa 4.X Modularity and flexibility





# Advanced solutions in their segment for efficiency and reduced LCoE

Continuous improvement with enhanced control system and blade aerodynamics

Siemens Gamesa, your technology partner One of the key aspects to Siemens Gamesa's success is the continuous development of advanced products adapted to the business case of every customer. We strive to provide the suitable technological solutions for each project, while driving down the LCoE. For this reason, we offer a catalog of solutions adapted to every type of site and condition, backed by:

- Our reputation as a stable partner (over 138 GW installed worldwide).
- A track record spanning more than 40 years.
- The recognition of the wind power sector.

ciemens Game

Two turbine models with flexible power rating to configure uniquely tailored solutions that meet site requirements

### Siemens Gamesa 4.X

Consisting of the SG 5.0-132 and SG 5.0-145 wind turbines, two solutions in the market for sites with medium and high winds, Siemens Gamesa is committed to create value for our customers through the continuous development of technologies targeting LCoE reduction.

With our control system, enhanced blade aerodynamics and structural modularity, the two models offer our customers higher flexibility to adapt to sites with a wide range of wind conditions and logistics constraints.

### **Siemens Gamesa technology**

Siemens Gamesa 4.X integrates geared technology 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.

In addition to this, the inclusion of an optional premium converter allows us to comply with the demanding grid connection requirements.

The new 64.5- and 71-meter blades, made of fiberglass reinforced with epoxy resin and pultruded carbon technology, integrate innovative aerodynamics and the DinoTails<sup>®</sup> technology, which guarantee the best balance between high energy production and reduced noise emission levels.

### **Enhanced efficiency**

With respect to the previous generation solutions, Siemens Gamesa 4.X introduces a control system, which optimizes the efficiency of the wind turbines and their 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 over 24% increase in AEP over previous solutions from the Siemens Gamesa 3.X platform.

# Technical specifications

|                                | SG 5.0-132   | SG 5.0-145                           |
|--------------------------------|--|--------------------------------------|
| General details                |  |                                      |
| Rated power                    | 5.0 MW   |                                      |
| IEC class                      | IA   | IIB                                  |
| Flexible power rating          | 4.0-5.0 MW   | 4.0-5.2 MW                           |
| Control                        | Pitch and variable speed   |                                      |
| Standard operating temperature | Range from -20°C to 45°C (with de-rating) $^{(i)}$                     |                                      |
| Rotor                          |  |                                      |
| Diameter                       | 132 m  | 145 m                                |
| Swept area                     | 13,685 m <sup>2</sup>  | 16,513 m <sup>2</sup>                |
| Blades                         |  |                                      |
| Length                         | 64.5 m   | 71 m                                 |
| Airfoils                       | Siemens Gamesa   |                                      |
| Material                       | Fiberglass reinforced with epoxy resin                                 |                                      |
| Tower                          |  |                                      |
| Туре                           | Multiple technologies available  |                                      |
| Height                         | 84 m and site-specific   | 91, 102.5, 127.5 m and site-specific |
| Gearbox                        |  |                                      |
| Туре                           | 3 stages   |                                      |
| Generator                      |  |                                      |
| Туре                           | 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 $^{\scriptscriptstyle (2)}$ |                                      |

<sup>(1)</sup> Different versions and optional kits are available to adapt machinery to cold climate, saline or dusty environments.

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

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