SIEMENS
Ingenuity for life
The Onshore Direct Drive platform –
your solution for every situation
Picture a turbine that offers maximized
performance for your unique wind site
under any conditions.
siemens.com/wind

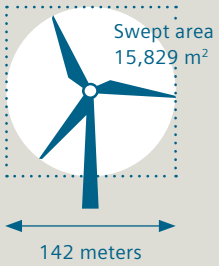
There is a reason why customers continue to rely on Siemens. Because for 30 years, the world has experienced the innovation and risk mitigation that has established Siemens as one of the leading global supplier of onshore wind power solutions.

Returns are secured through the utilization of experience, industry insight, and proven wind turbine technology. The Onshore Direct Drive platform is a prime example of this, a range of turbines flexible in performance and ability to harvest the potential of your unique site and conditions. It combines advanced site engineering with intelligent software to enable real-time, enhanced power optimization.

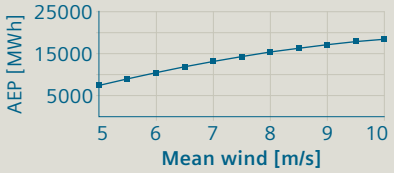
The only constant is the need for adaptability.

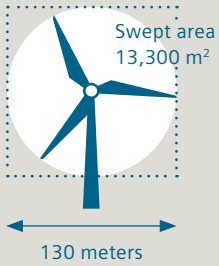
Offering the Complete Portfolio

Whatever your site's wind class, the Onshore Direct Drive platform has you covered.

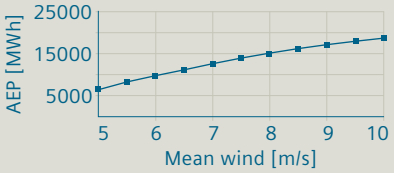


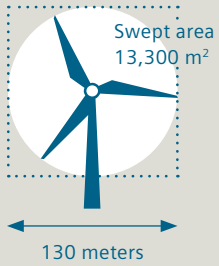
SWT-3.15-142	
IEC Class	IIIA
Nominal power	3.15 MW
Rotor diameter	142 m
Blade length	69.3 m
Swept area	15,829 m²
Hub height	109, 129, 165 m



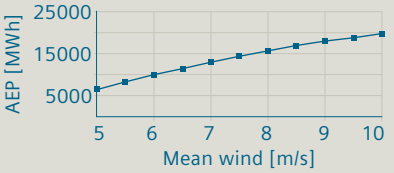


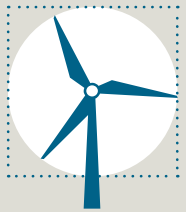
SWT-3.3-130 Low Noise	
IEC Class	IIA
Nominal power	3.3 MW
Rotor diameter	130 m
Blade length	63 m
Swept area	13,300 m²
Hub height	85, 135, 165 m





SWT-3.6-130	
IEC Class	IIA
Nominal power	3.6 MW
Rotor diameter	130 m
Blade length	63 m
Swept area	13,300 m²
Hub height	85, 115, 135, 165 m





IEC I class turbine *	
IEC Class	IA/S

* This turbine is currently under development

Direct Drive Technology

Evolved design for unrivaled efficiency and adaptability.

The Onshore Direct Drive portfolio leverages proven, standard design components, while advancing certain key components and introducing new design concepts for increased flexibility.

The turbine generator has a simple and robust design that is expected to improve efficiency even at low loads. The direct drive technology in combination with the SICS controller enables real-time Power Optimization and can be applied using a single design across all wind classes.

This product portfolio was developed by Siemens by bringing together all the expertise, customer feedback, and experience of 30 years in wind power. By doing so, we are able to offer you a compact, simplified, and efficient range of wind turbines suited to any situation.

Every environment offers unique challenges. But wherever your site, Siemens wind turbines are designed to always offer optimized performance.

Optimized Performance

Ingenuity in every step for your continual benefit.

The Onshore Direct Drive platform optimizes performance by leveraging every single step of a project's lifecycle and is designed to enable customers to achieve maximum return on investment.

Advanced Site Engineering

From the very start, customers have partnered with Siemens during the site engineering process. This consists of collecting preliminary data, measurement, analysis, and modeling. In combination with Siemens' local expertise, this information is used to design the optimal park layout for optimized energy production.

Grid Performance Optimization

In order to maintain grid stability and mitigate risk, Siemens offers adaptable technologies and full-scope solutions that help our customers achieve grid compliance and enhanced stability.

Wind Turbine Site Optimization

Along with advanced site engineering, Siemens' portfolio of performance features helps improve your turbines' performance – even in complex site conditions.

Remote Diagnostic Service

Siemens offers 24/7 remote diagnostic-service monitoring throughout the lifetime of a turbine, to safeguard your investment and ensure continued operation.

Real-time Power Optimization

Flexible so you don't need to be.

Real-time Power Optimization is supported by the direct drive generator – which produces power at a rating across a specific range – and Siemens' intelligent Integrated Control System (SICS) working together.

The SICS is a control unit consisting of a turbine controller and a full-scale converter, which improves power production and power quality. Using innovative features and reading various parameters from the wind farm control system, the SICS offers real-time Power Optimization based on the needs and conditions of the wind farm. By monitoring various sensors and producing power accordingly, the SICS, together with the SCADA system, enable different functions as conditions dictate, supporting noise-reduced operation, bat protection, and shadow-flicker avoidance, for example.

These features help achieve power production while remaining within the design load envelope, and power quality management. Combined, these features result in 'intelligent' wind turbines designed to optimize your AEP at all times.

Optimized grid connection stability

Variable Speed Range – improves turbine efficiency and supports reduced loads, acoustic noise, and flicker at low wind speeds
Local Voltage Control – controls reactive power in response to system voltage variations

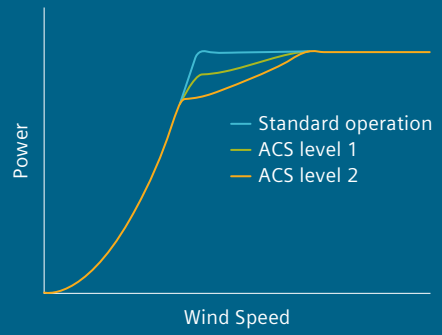
Fault Ride Through – designed to withstand low/high-voltage events without tripping the machine

Inertial Response – supports grid stability in low frequency situations

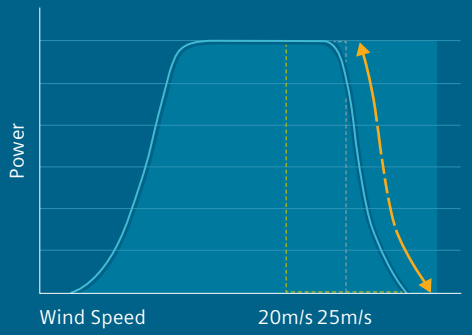
Local Frequency Response – controls active power in response to under- and over-frequency events

Power quality – operates within harmonic content and flicker limits

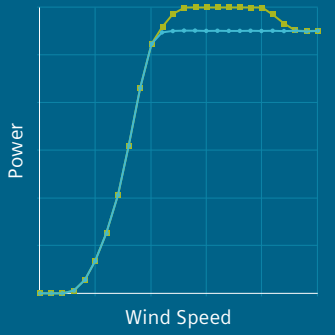
Optimized power production



Adaptive Control Srategy
ACS uses software to allow the turbine to operate under complex climatic conditions, keeping the loads within the design envelope and minimizing power losses.



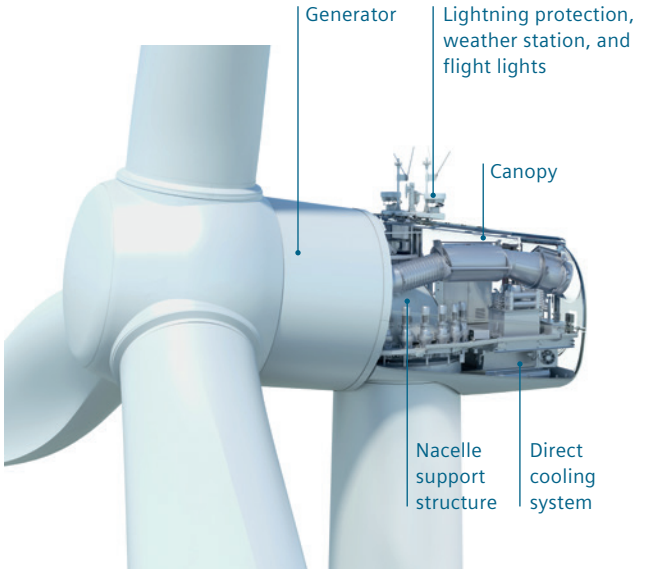
High Wind Ride Through
The High Wind Ride Through feature overcomes shutdowns due to high wind, with an intelligent load-based reduction in output power, to enable more stable energy production.



Power Boost Function
This controller feature can increasea a turbine's AEP by up to 4% depending on site conditions, by raising the output limitation under specific operating conditions.

Proven Technology

Designed for maximum reliability.



Nacelle

- Proven components, rigorously tested for improved reliability
- One nacelle and generator hub for all wind conditions helps drive down LCoE
- Innovative direct cooling system for improved efficiency
- Upgraded generator, yaw and SICS converter for increased performance
- Simple layout of components creates a comfortable workspace for technicians

Blades

- Aeroelastic tailoring of blades has demonstrated optimized energy harvesting while staying within the design load envelope
- Hybrid carbon technology is used to achieve a lightweight design for the larger rotor used at onshore low wind sites
- DinoTail® Next Generation serrations and blade add-ons are designed to control noise levels without sacrificing performance

Tower

- Proven, cost-efficient tubular steel tower concept for short installation time for all wind conditions
- A range of tower heights are offered in each wind class
- 165 m hybrid tower design allows optimal energy extraction in low wind conditions

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