



High Wind Ride Through

Providing more predictable power output

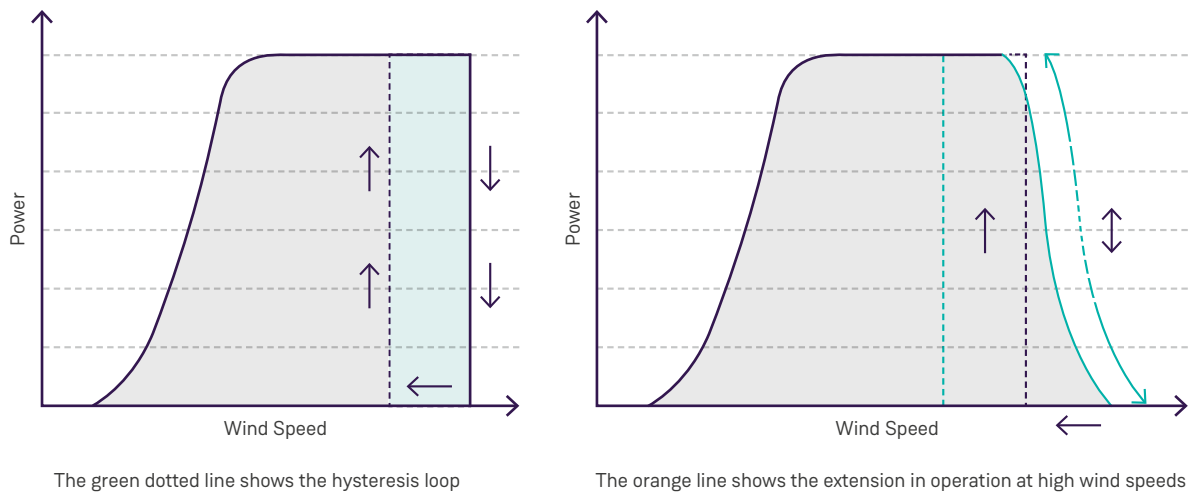
The Siemens Gamesa High Wind Ride Through application allows a wind turbine to operate at some storm-level wind speeds and is a breakthrough in stabilizing energy output.

The HHWRT® functionality is an intelligent solution for both onshore and offshore wind turbines that enables more stable energy production.

When the wind speed is higher than 25 meters per second, wind turbines typically shut down in order to avoid overload. Equipped with the HHWRT® system, the wind turbine will moderate power output instead of shutting down completely. This results in a more continuous power output at high wind speeds.

As a result, the operating range of the wind turbine at high wind speeds is extended. This is achieved by intelligently pitching the blades out of the wind as soon as the rated power output is reached eliminating abrupt cutouts so that grid stability is significantly improved. Furthermore the HHWRT® feature performs adjustments to rotational speed as a load reduction measure, reducing rotational speed in periods of high turbulence. This is an advantage, especially for larger wind farms where commitment to a certain level of energy production.

Fig. 1: Power curve without and with High Wind Ride Through



Increased production time

After a cutout a conventional wind turbine will not start operating again until the wind speed has dropped significantly in order to avoid multiple start-ups and shutdowns caused by minor changes in wind speed (also referred to as a hysteresis loop). Minimizing the hysteresis loops can increase the wind turbine's production time.

Key benefits of High Wind Ride Through

- The HWRT[®] feature moderates the wind turbine power at higher winds rather than stopping the wind turbine abruptly.
- The wind turbine becomes more grid-friendly, as the amount of energy fed into the grid becomes more continuous and predictable with the HWRT[®] functionality. This can be an advantage when commitment to a certain level of energy production is required.
- Increase in production time at applicable sites due to the avoidance of hysteresis loss (Fig. 1).
- Reduced wear and tear on components due to fewer stops of the wind turbine (and lower loading in high winds).

For more information, contact our Customer Support Center or your local Siemens Gamesa sales representative.

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