



Vestas **Yaw Power Backup** System

Extending turbine yawing capabilities to grid loss events

Benefits of Vestas Yaw Power Backup System:

- Maintain the yawing functionality of turbines in grid loss events
 - Full integration with the Vestas SCADA system
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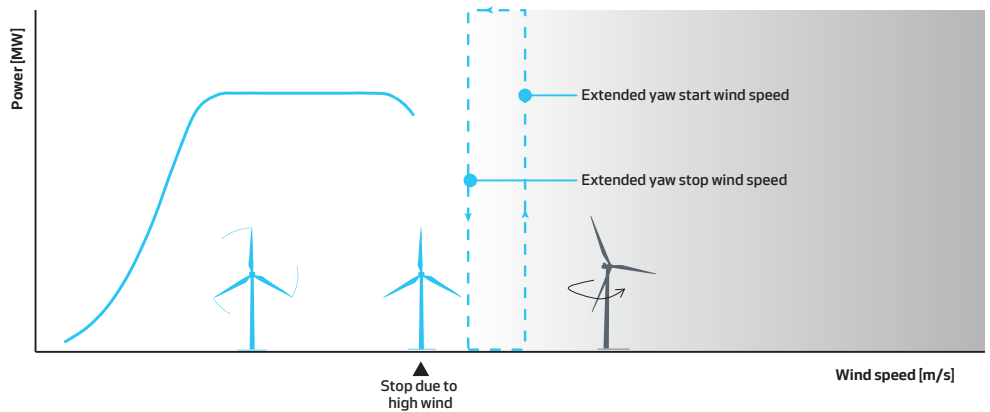
The Vestas yaw system continuously controls the position of the nacelle to maximise the turbine performance depending on changing wind conditions. When high wind speeds trigger a cut-out event, yaw systems also become essential mechanisms to safeguard the structural integrity of the turbine by yawing the nacelle towards the wind direction.

In rare extreme climate events power from the main power grid can be lost, preventing the standard yaw system to work. With the Vestas Yaw Power Backup System the yaw system can operate independent of grid power.

Wind. It means the world to us.™

Vestas' extended yaw mode:

Control feature of Vestas' yaw system that maintains the yawing functionality of turbines under high wind speeds. Vestas' yaw system operates in extended yaw mode when the wind speed exceeds the defined value for yaw start, and stops when the wind speed reduces below the defined extended yaw stop value*.



Availability of Vestas Yaw Power Backup System:

- V100-2.0 MW[®]
- V110-2.0 MW[®]
- V120-2.2 MW[™]
- V117-4.2 MW[™]
- V136-4.2 MW[™]
- V136-4.5 MW[™]
- V150-4.2 MW[™]
- V150-4.5 MW[™]
- V150-6.0 MW[™]
- V162-6.2 MW[™]
- V162-6.8 MW[™]

*All Vestas wind turbines available for the Vestas Yaw Power Backup System can operate in extended yaw mode using grid power as a standard. The configuration and size of the Vestas Yaw Power Backup system is country and site dependent, subject to regulation and site conditions.

**Vestas does not guarantee full turbine protection by the Vestas Yaw Power Backup System in cut-out events.

Protecting your wind turbines in case of grid loss

Vestas Yaw Power Backup System includes a power backup unit based on a diesel generator, as well as compensation and control equipment. These elements are placed centrally in the wind park to provide electricity to the wind turbines in case of power outage from the grid.

In addition, Vestas Yaw Power Backup System includes dedicated control features and wind measurement equipment in the wind turbine. This allows the individual wind turbine to preserve the yawing functionality under unusual conditions. Depending on site conditions and turbine type, the maximum wind speed the turbine can withstand safely after a cut-out event can double with the Vestas Yaw Power Backup System**.

Full system integration

Vestas Yaw Power Backup System is compatible with Vestas SCADA system and operates as a fully integrated part of the wind power plant. Vestas SCADA system monitors the operations of the Vestas Yaw Power Backup System, and it also enables to control the start and stop of the system if needed.

When wind speeds decrease below the defined value for extended yaw mode stop, Vestas SCADA system automatically ceases the extended yaw mode and enables the turbine to re-enter normal operation. In addition, in case alarms have been activated during extended yaw mode operation, these can be acknowledged through Vestas SCADA system to resume regular turbine operation.

For more information

Learn more on vestas.com. Please contact your local Vestas office for market specific availability and further information.

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