



Extra Power

Boosting nominal power to increases annual energy production

Extra Power is an upgrade that consists of a transfers of state-of-the-art algorithms and strategies into to older turbines, allowing them to operate like new.

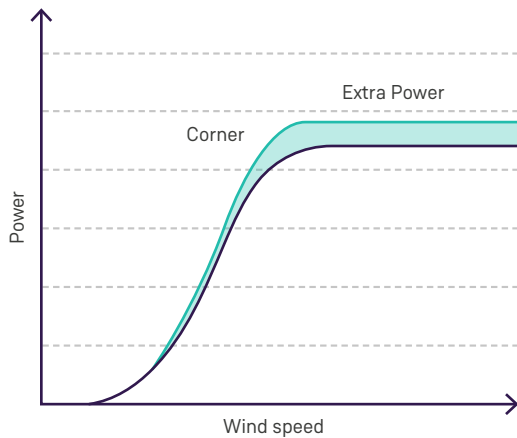
This upgrade improves the maximum power produced in the corner and the nominal part of the power curve, by increasing the maximum torque.

As a result, the wind turbines are able to generate up to 2% more energy.

Extra Power is available for G9X platforms (2.0 MW: G97, G87CS, G90CIA and G114 2.0/2.1 MW).

An improved corner strategy increases production at medium wind speeds. The power is increased above nominal power for short time periods to compensate for power losses due to turbulence. The result is an improved transition between the partial and the nominal power range is improved. Production improvements depend on site wind conditions (Weibull parameters: K, Vm, turbulence, wind shear, upflow).

Fig. 1: Extra Power – Power curve



Platforms	Original (kW)	Up to (kW)	Extra Power	AEP* increase
2.0 MW	2,000	2,070	3.5%	0.7%–2%
2.1 MW	2,100	2,170	3.3%	0.7%–2%

*Depending on: temperature, voltage, reactive power and nominal power increase

Key benefits of Extra Power

- No upfront costs
- Energy production increased by up to 2%, from day one
- OEM-designed and third-party approved
- Measurable increase in energy production, demonstrated in a report provided every quarter
- Includes the necessary software upgrades (incl. SCADA)
- Improved performance in high-wind conditions



Industry approved

The Extra Power product for G97 has been validated by Garrad Hassan:

- Turbine integrity is not compromised
- Modifications will not affect the turbine design life

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