



## In This Issue

- Getting ready for winter
- Turbine upgrades
- Battery storage project completed
- WTN partnership
- Additional services
- Yeti spotted!

## Getting Ready for Winter

The clocks are about to change and colder weather is on the horizon. Whilst this may mean we all reach for thicker clothes and turn up the heating, don't forget you also need to think about your turbine before and during the winter. Both from an operational and safety point of view.



## Turbine Operation During Winter

Your turbine is very capable of surviving typical winter weather as long as its operational, well maintained, and monitored by a service partner such as RES. When spinning it will remain warm and dry with the risk of damp and condensation minimal, meaning there is less chance of moisture affecting your turbine's electrical systems. However, if there are prolonged periods of cold, windless weather, this is where problems can start to occur. Usually there are heaters in turbine electrical cabinets to keep moisture at bay and, as long as the grid connection has not been cut, they will do their job. However, long periods of inactivity can cause greases and oils to thicken, especially in the gearbox and yaw mechanism. When the wind picks up you will notice turbines require stronger than normal winds to start turning again and they may be slightly noisier as its harder to turn the gears in the cold oil. Once the oil starts to circulate and heats up, all should return to normal, however, turbine performance in low windspeeds can be poor for a period of time. Some turbines have oil heaters to keep gearboxes at an optimum temperature. If you feel your turbine isn't operating at its peak in cold weather, these can be supplied and retro-fitted by Realise Energy Services. Turbine anemometers and wind vanes should also be heated to optimise performance. We often see these heaters fail which results in a whole host of bigger issues. The fact the heaters are not working often only comes to light when the anemometer fails in cold weather. Make sure they are checked before winter.

At storm force wind speeds, 25m/s+, turbines shut themselves down and turn into the prevailing wind. However, if they shut down due to an unscheduled power outage, this could leave them incorrectly orientated during high winds causing a risk of damage or stress on various components. While unlikely to cause any significant issues, it is worth having your turbine inspected if the storm has been prolonged and severe. One important point is that whilst turbines will operate up to 25m/s, they generally do not restart themselves until the average wind speed drops below 20m/s for a specified period of time. A degree of patience is required. Starting wind turbines manually in high wind speeds is not recommended!

On a more positive note, winter is 'high season' for wind turbines and brings the strong and denser generating winds all wind turbine owners look forward too. With less leaves on trees to cause any obstruction or turbulence, turbines can make the most of the wind at this time of year. To maximise income at this time of year, a pre-winter inspection and service is recommended. Adjusting your service schedule to fit in planned maintenance over the slower summer months to fit the seasons is a sensible strategy.

Winter is the harvest season for wind turbine owners - make sure yours is ready!

## Safety

If restarting a turbine after a prolonged period of down time in cold, icy weather, care is needed as ice can form on the blades. This will fall off as the rotor begins to turn and can (and does!) cause damage to people and cars if underneath or close to the turbine.

For emergencies and to ensure any repairs and servicing can be completed quickly so not to adversely affect turbine availability, it is helpful if access roads can be kept clear, particularly after heavy snowfall. Our service vehicles are all 4x4's and equipped with all terrain tyres and can usually get to most sites. However, sometimes the trip from the car to the turbine can be interesting for our engineers! The more you can help with keeping access to your turbines clear, the sooner we can get to your turbine.



*Yeti or Realise engineer?*



## Turbine Upgrades

Realise Energy Services is not just all about repairs and servicing. There are a wide range of different 'upgrades' for wind turbines that can improve efficiency and performance. Here are a selection on offer:

- Gearbox oil heaters – Better cold weather low wind performance and less gear wear.
- Asset Management Software – Optimises operation through better analysis of SCADA and meter data.
- Acoustic blade condition assessment – Assess your blade for damage before it becomes costly.
- Turbine controller upgrade – Increased functionality and operational performance.
- Condition Monitoring Sensors – Increased knowledge of operational performance and proactive maintenance ahead of breakdowns.
- Climb assist – Faster and safer access for engineers.

Please get in touch for further details and pricing.

## Battery Storage Project Completed

Realise Energy Services has recently completed its first battery storage installation in Scotland. The project comprised an off-grid property and two stand-by generators backed-up by a 10kW lithium-ion battery supplied under our distributorship agreement with our partners, Wattstor. This signals the start of a number of battery installations across the country for Realise, the next a somewhat larger grid-connected 2MW battery in the Midlands.

Another developing market is the world of Uninterruptible Power Supplies (UPS). Increasingly businesses need to protect themselves from small yet increasing power outages. These can cause more significant issues particularly in data, process, manufacturing and health-based industries. Traditional dated and costly stand-by generators are being swapped for fast and efficient batteries acting as support UPS.

If you are interested in adding battery storage or a UPS to your business, please do get in touch.

## New All-Inclusive contract for WTN wind turbines

With many WTN turbines coming to the end of their initial 5-year warranty period, Realise Energy Services Ltd. has launched a new 'All-Inclusive' contract specifically for these owners. Our 'All-inclusive Contract' is a Service and Maintenance Agreement, Monitoring, Warranty, Availability Guarantee and Service Level Agreement all wrapped into one straightforward package. This replaces the requirement for separate service and maintenance agreements, manufacturer's warranty and monitoring / data payments direct with WTN. A fixed annual fee covers all turbine remote monitoring and control, reporting, servicing, scheduled, unscheduled and proactive maintenance costs and all replacement parts, (minor and major). The package also includes a compensated 48-hour service level agreement and a compensated annual availability guarantee for WTN turbines.

In summary, you will have guaranteed performance for a known cost and no hidden surprises.

## Additional Range of Services Offered

Realise Energy Services offers the following additional services for turbine owners:

- All Inclusive Service Contracts with availability and performance guarantees
- Turbine inspections and reporting (Operation, Performance and Statutory / HSE Reporting)
- Communication and SCADA upgrades
- Tower latchway and climb assist upgrades
- Blade inspection, assessment and repair
- Tower and nacelle refurbishment and painting
- HV assets/transformer inspection and servicing
- Oil sample analysis
- Site maintenance



*Blade adjustments*



*Scheduled servicing to manufacturer's protocols*



*Blade tip repairs*



*Electrical servicing*

***If you need an experienced and reliable turbine support service and your current service and maintenance contract is due to expire over the next few months, please do contact us to get a free, no obligation quotation.***

### Contact Us

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