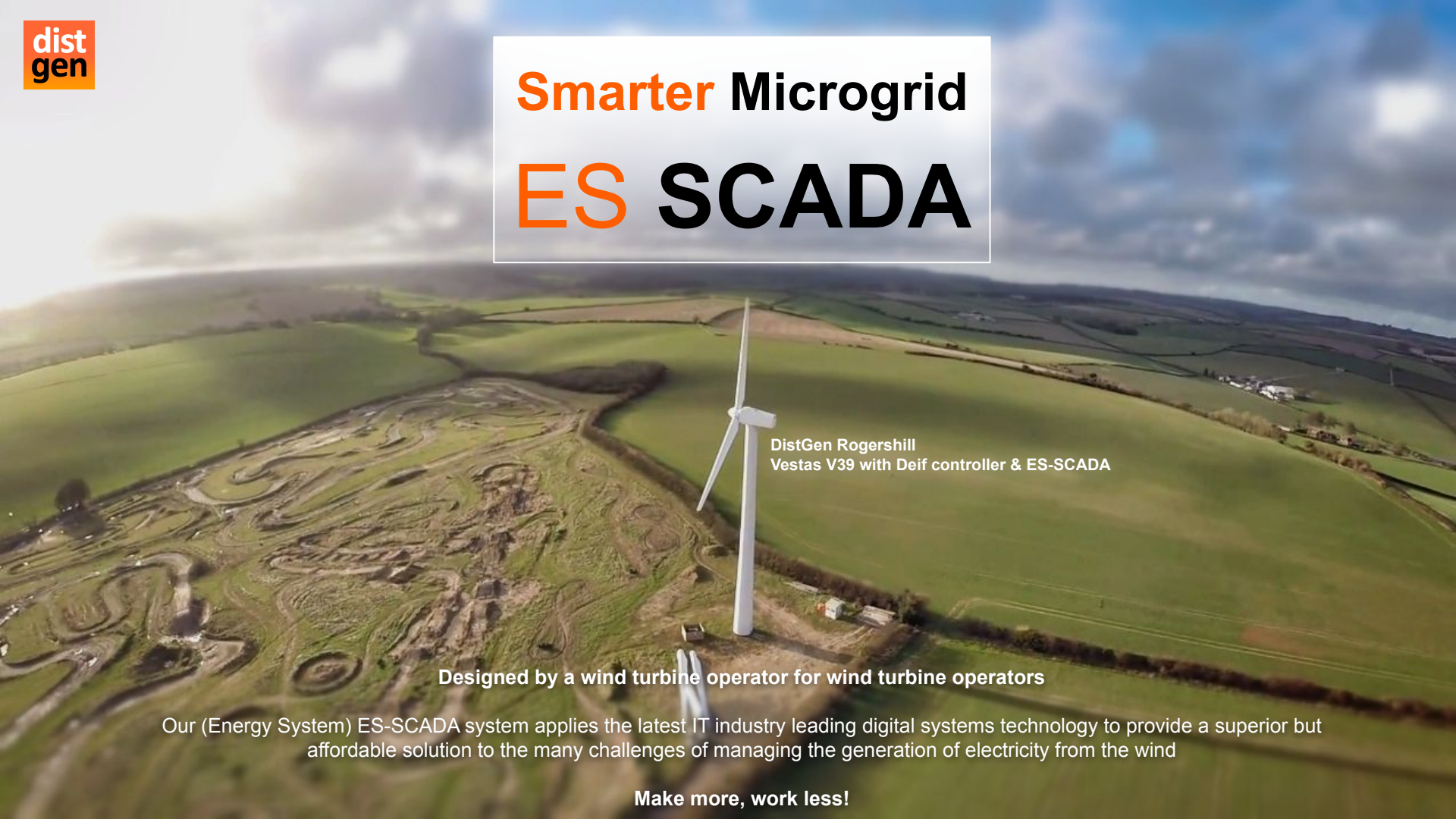


Smarter Microgrid ES SCADA

An aerial photograph of a white wind turbine standing in a green field. The landscape is a mix of green fields and brown, eroded earth. In the background, there are rolling hills and a small village under a cloudy sky.

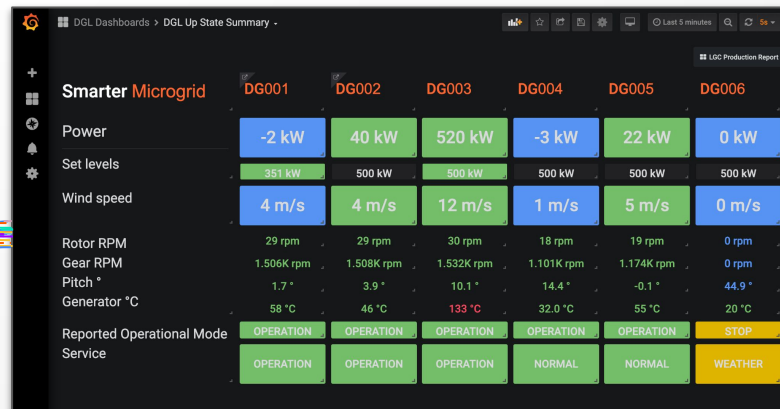
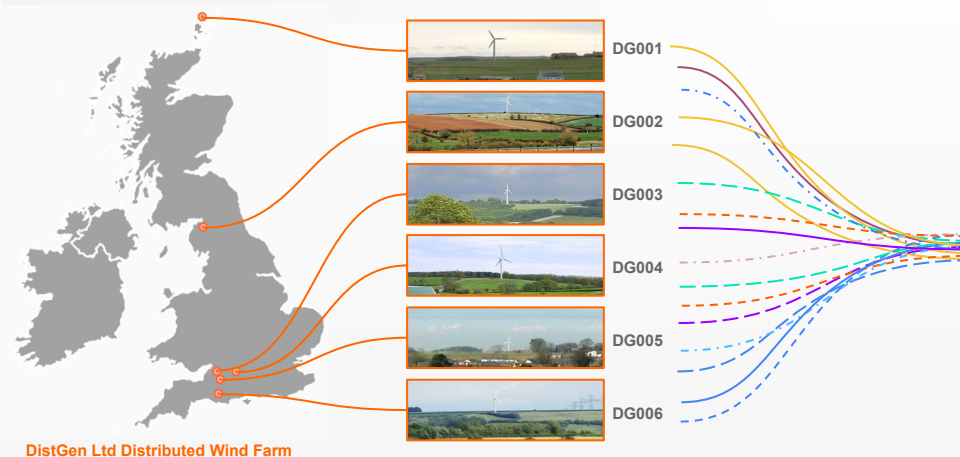
DistGen Rogershill
Vestas V39 with Deif controller & ES-SCADA

Designed by a wind turbine operator for wind turbine operators

Our (Energy System) ES-SCADA system applies the latest IT industry leading digital systems technology to provide a superior but affordable solution to the many challenges of managing the generation of electricity from the wind

Make more, work less!

Superior real time visualisation of your business' Key Performance Indicators (KPI)



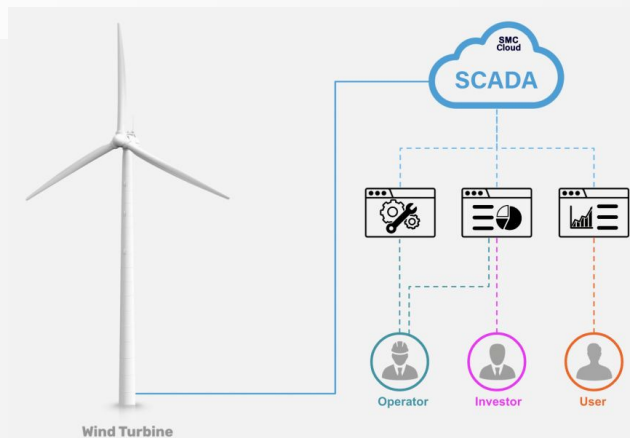
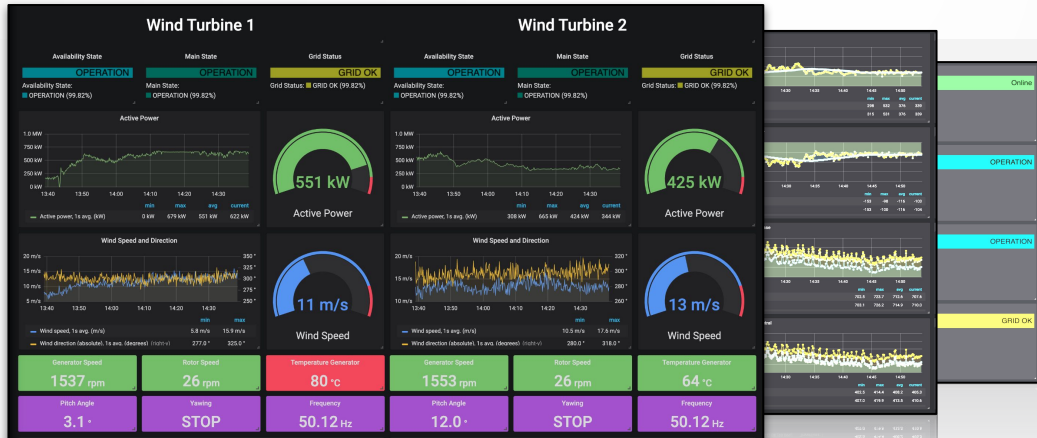
Smart digitalisation, changing the way the energy business is done.

Our ES-SCADA software enables you to:

To get the best from your generating assets we believe you need to thoroughly exploit the wealth of information embedded in the monitoring data. We have utilised our decades of software development expertise and 14 years of renewable energy generation experience to produce a state of the art Smart Digitalisation system. Our Unified Management System provides a live digital visualisation and overview of the performance of your fleet so you have better control of your business.

- Easily understand and interpret the mass of complex operational, generation, production and reliability data produced by your wind turbines and electrical infrastructure
- Continuously improve the utilisation and productivity of your generating assets
- Remotely manage your generating assets from anywhere
- Share a single Unified Management System across all the interested parties including owners, landlords, funders, operators, maintenance managers and technicians...and your mates at the bar and whoever else needs to know

ES-SCADA visualises the data, all of the useful data, and nothing but the useful data when the data is useful.



Dashboards

Our system, built on a powerful and flexible data visualisation platform (Grafana), allowing you to track your KPIs and so optimise your asset's performance. Production of new dashboards when requested or customisation of existing ones is easy and quick allowing you to track your KPIs

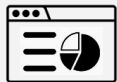
Reports

Generator performance (mechanical reliability, availability, power curve...)
 Asset productivity (kWh, financials)
 Resource reporting (wind speed, wind direction, turbulence...)

Alerts

Alerts actively inform you of error events so you can rapidly organise for them to be resolved and so minimise expensive generator outages - you can relax because you know what is going on at all times and can rely on the system to tell you when something different occurs

ES-SCADA provides role based permissions and access levels so each user can have a tailored set of dashboards, reports and alerts suited to their specific needs.



Superior real time monitoring and control of your generating assets

Built by a Wind Turbine (WT) operator for WT operators

- + The SCADA system was designed and built inhouse to address our specific requirements first
- + Made to help wind turbine operators take full advantage of the DEIF retrofit WT controller



Everything you need - no bloatware

- + ES-SCADA Basic is a lightweight package that provides all of the essential functionality 'out of the box'
- + Customisable to best match the needs of each individual user
- + A raft of 'concealed' functionality that can be configured for access when needed

Low Cost - High Function & High Quality

- + Performance scalability and functional extensibility to service the demanding needs of sophisticated/power users
- + Open standard Raspberry Pi hardware platform user can buy themselves
- + Super low cost integrated UPS allows you to keep monitoring the site even while the grid is down
- + ES-SCADA Basic dashboards, reports & alerts for 3 seats from £80 pm



Networking challenges overcome

One of the biggest challenges we have encountered was unreliable internet access in remote rural areas. In order to provide a reliable management system, we developed a SCADA system that can operate and provide reliable data networking in the most challenging environments:



High reliability monitoring

- Works well everywhere including locations with relatively poor mobile data coverage
- 'No LAN' 3G/4G GSM 'to the cloud' WAN multi turbine (windfarm) solution.
- Computer host hardware 'auto set up' and software updates delivered 'automagically' 'Over-The-Air' from the cloud.
- WT control functionalities such as: Start, remote Stop & Restart are available through the same interface

Simple to install

- Plug&Play mobile data network setup & operation ('near zero' IT skills needed)
- Simple physical installation (at worst just two cables to plug in)
- Tiny form factor
- Negligible power consumption

