Online Supervisory and Control Systems
Integration using VestasOnline
Meeting business requirements

Customer operation center

Monitoring and control data

SCADA Server

OPC

Database

Direct read-only access to database

Customer reporting center

FTP and email containing turbine operational data

Meteorological forecasting center

Production and availability PDF reports via email

Email and SMS with turbine events

Customer management

Service personnel

Meteorological forecasting center

Service personnel

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”When you buy a billion-dollar power plant, you expect to know every detail about its operational performance!”

VestasOnline gives you these advantages……………

- Online Production View
- Plant Layout View
- Event View
- Production reports
- Statistic Reports
- Event Notification
Why have a VestasOnline System?
The most advanced system on the market today

Standard Features:

- Plant Layout view
- Event notification
- Basic Statistics
- Online Production View
- Event View
- 24/7 surveillance
- Standard Production Reports

Additional Features:

- Production Control
- Grid Control
- 3rd Party grid integration
- Plant Customization
- Customized Reports
- Data export
Maximizing Revenue

- Fast and **precise control** of wind power plant output
- **Minimize grid integration costs** by utilizing turbine capability to the max
- **Easy integration** into standard power forecasting and trading systems
- **Detailed reporting** of production figures, lost production figures at curtailment and bonus/tariff schemes
The Gain by using intelligent power regulation

Each turbine output will be regulated with reference to Point of Inter-Connect, instead of stopping turbines, to be the utility setpoint.
New Setpoint from Utility
Grid Compliance

- **Fast and precise control/support** of grid voltage, reactive power and power factor according to grid code specification

- **Fast and precise control/support** of grid frequency according to grid code specification

- **Easy integration** with utilities and substation equipment using industry standard communication protocols

"Helps you to be grid code compliant"
Advanced scheduling and ramping

Power Factor regulation according to a timetable

Ramp up/down features which can be controlled separately.

Hourly, daily or weekly scheduled derating.
Substation Monitoring and Control

- Data collection
- Event collection
- Monitoring and trending
- Alarm announcement
- PCC measurement (*)

(*) Requires a VestasGridPanel connection at PCC
Summary Customer gains

- Compliance
  - Control/support of grid voltage, reactive, and power factor according to grid codes

- Requirements
  - Third party data requirements such as forecasting

- Flexible
  - Substation solution and data integration

- Cost of Energy Reduction
  - Customizable solutions

- Maximization Generation
  - Automated control both at a turbine and SCADA level, contractual availability calcs
Thank you for your attention