



# DESIGN SYSTEMS, INC.

Specializing in Manufacturing Process Design & Integration

## Wind Technology

Wind Technology converts the kinetic energy of the wind into electricity. Given the multidisciplinary nature of wind farm projects, the integration of all components is essential to the success of the project. DSI can design and integrate the wind farm components, including the generator step-up specification into a cost effective solution for your specific project. The DSI team can manage the overall project including: design, schedule, cost evaluation and risk management.

DSI offers an advanced control system to continually adjust the blade pitch angle in the turbine to enable it to achieve optimum rotational speed and maximum lift-to-drag at each wind speed. This "variable speed" operation maximizes the ability of the turbine to remain at the highest level of efficiency resulting in greater annual energy production yield as compared with machines operating at constant speed. Additionally, while constant speed rotors must be designed to deflect high wind gust loads, the variable speed control system enables the loads from the gust to be absorbed and converted to electric power. Generator torque is controlled through the frequency converter. This control strategy allows the turbine rotor to over-speed operation in strong, gusty winds thereby reducing torque loads in the drivetrain. The wind turbine converts the extra energy in wind gust to electric power.



### Design Systems

#### Wind Technology Services:

- Design a unique system to meet your performance requirements.
- Conduct site surveys and identify potential applications.
- Identify the basic configurations and components required for system installations.
- Obtain wind data and apply this information in estimating the performance of wind systems.
- Identify electrical and mechanical design issues associated with wind system installations.

#### "BOTTOM-LINE" RESULTS:

- Infinite Energy Resource
- Reduce Operating Expense
- Reduce dependency on a centrally controlled power grid and energy infrastructure
- Reduce Pollution

WIND TECHNOLOGY

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