WHY CHOOSE WIND TO POWER YOUR BUSINESS

Deciding whether or not you should invest in renewable energy technologies for your business can be challenging and overwhelming. Wind power and wind technologies have proven their efficiency, and the benefits for your business and the environment are tremendous. By investing in wind power, you will see an immediate return on your capital investment. This information sheet will assist you in understanding the basics of wind power.

HOW WIND POWER BENEFITS YOUR BUSINESS

Lower electricity bills - By installing a wind turbine to power your business, you will immediately take advantage of lower electricity bills. These savings coupled with State and/or Federal financial programs can offset your capital costs in several years, allowing you to put more of your profits back into your business.

Control over power cost - Wind power is the most productive and efficient source of renewable energy. By producing your own power, you will stay away from volatile energy costs, allowing you to plan your budget more effectively.

Being a Green business - Even if your business is not environmental by nature, your company will be valued by savvy clients who put a premium on sustainable and environmentally friendly business practices, allowing you to capture this growing clientele.

Visibility for your business - Nothing says progressive and responsible like a wind turbine. No matter how long you have been in business, your wind turbine will bring visibility and high interest in your services and products.

Your cost savings could mean:
Buying new equipment
Investing in technologies
Upgrading your facility
Hiring new employees
Improving your workplace
Offering new benefits

Start spinning and start saving!





WHAT MAKES A GOOD WIND SITE

Wind Speed - Wind speed is the most important factor in choosing a turbine site. Small increases in wind speeds make a significant difference in power output. A wind turbine at a 16-mph site can produce over 50% more electricity than the same turbine at a 13-mph site.

Topography and accessibility - Good wind sites are generally higher than the surrounding areas. Steep hills and cliffs can create wind turbulence that reduces energy output and leads to higher maintenance costs, while gradually sloping hills can increase wind speeds. Sites also need to accommodate access roads for construction and maintenance equipment.

Surface roughness - Tall obstacles such as buildings and trees can slow the speed of wind and create turbulence at low altitudes. Siting turbines in open fields or in the ocean reduces the effect of surface turbulence, while taller towers can be used to get turbine blades above turbulent areas.

Distance to transmission lines - In the case of commercial wind turbines, generated electricity must be fed into the electrical grid. Proximity and access to transmission lines are key; building new transmission lines can be very costly.

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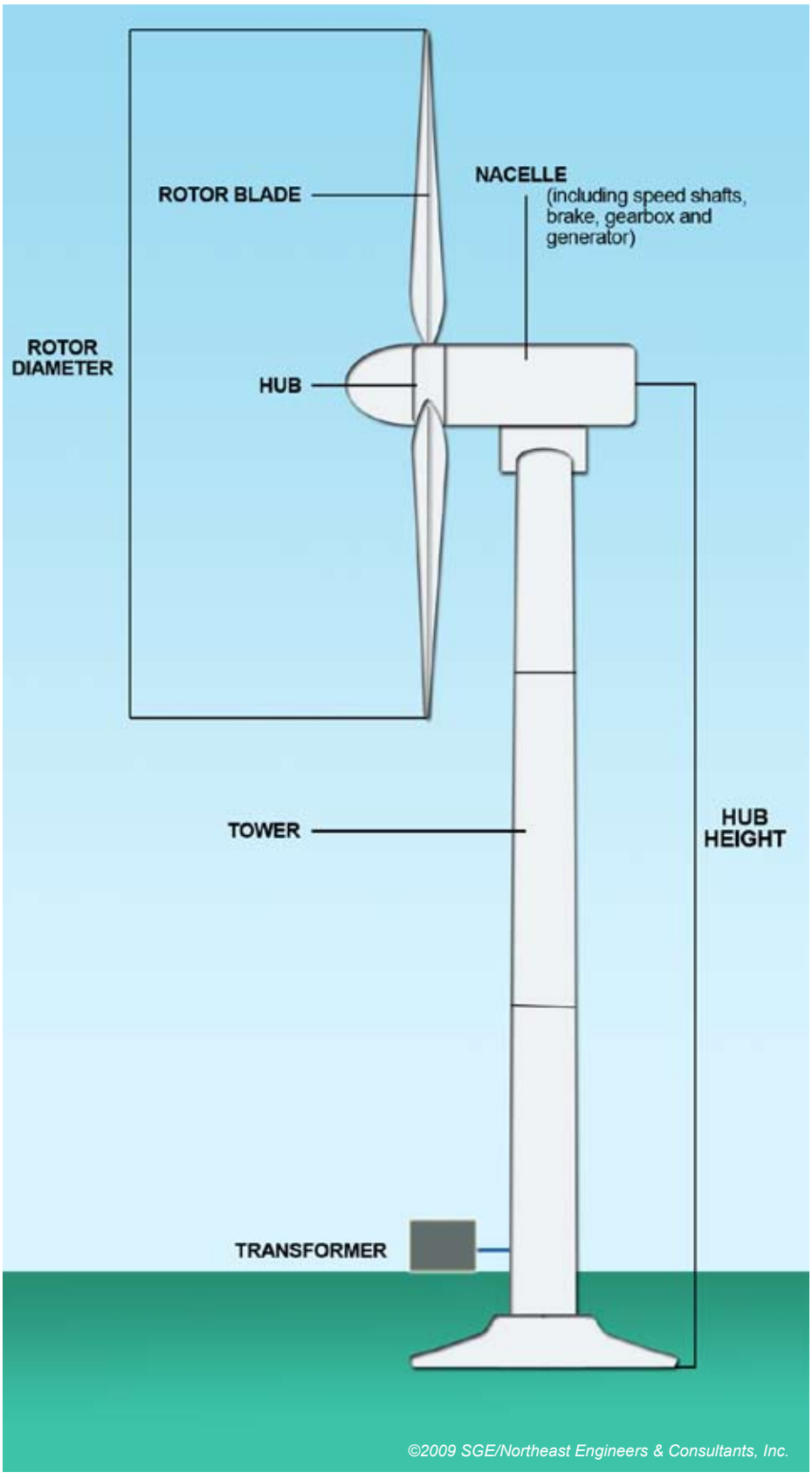
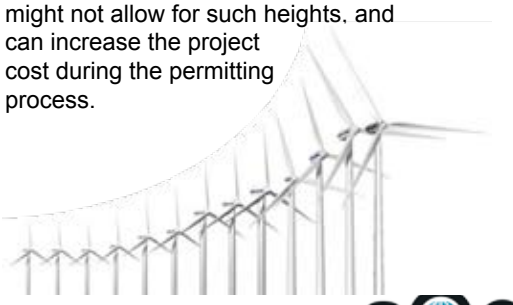
ANATOMY OF A WIND TURBINE



THE RIGHT SIZE AND HEIGHT

In many ways, land that sits under a quality 'wind field' is no different than land that sits over an oil field. In general, larger machines have greater economy of scale, and the tendency is to try to put up the biggest machine possible. However, most often, especially in suburban or populated areas, it is not simply a matter of 'how big of a turbine I can buy.' Rather, it becomes a balancing act between trying to find the right sized turbine for the site while considering all parameters. For instance, most turbines are limited by zoning statues to fit within a fall zone. Smaller mid-scale turbines and towers (65 Kw – 400 Kw) may also ultimately be more cost effective if they are easier to permit because of their smaller size and usually lower towers than a larger machine. State rules can also be a factor when determining a turbine size. For example, in Rhode Island, power cannot be assigned to other meters (virtual net-metering), therefore restricting the size of the turbine, as only the on-site load can be accommodated by the net metering program, and excess power is wasted.

The power in the wind may be five times greater at the height of a 40-story building than the breeze on your face. The wind blows faster at higher altitudes because of the drag of the surface and the viscosity of the air. When the atmosphere becomes stable, wind speed close to the ground usually subsides whereas at turbine hub altitude it typically does not decrease and may even increase. Doubling the altitude of a turbine, then, increases the expected wind speeds by 10% and the expected power by 33%. As a rule of thumb, small turbines should be mounted at least 30 feet above any structures or natural features within 300 feet of the installation to provide the turbine unobstructed access to the wind. Even though height is a factor when choosing the most optimum wind turbine, doubling the tower height generally requires doubling the diameter as well, increasing the amount of material by a factor of eight. In addition, local zoning regulations might not allow for such heights, and can increase the project cost during the permitting process.



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WHAT IS NET METERING

Net metering programs adopted in many states offer the potential for businesses to realize financial benefits from installing renewable energy systems. Net metering allows consumers to offset the cost of electricity they buy from a utility by selling renewable electric power generated at their businesses back to the utility. In essence, a customer's electric meter can run both forward and backward in the same metering period, and the customer is charged only for the net amount of power used. By definition, true net metering calls for the utility to purchase power at the retail rate and use one meter. States have adopted a number of variations on this theme.

As part of the Energy Policy Act of 2005, all public electric utilities are now required to offer net metering on request to their customers. Utilities have three years to implement this requirement.

- Net metering is a financial incentive for customers who install renewable energy systems.
- Customers tend to see lower bills with net metering. The payment system does not have to be disrupted as the utility company does not have to account separately for electricity produced by customer-generators. In general, net metering customers do not produce more electricity than they consume during billing periods; the customer only pays a reduced bill.
- Net metering participants are more aware of energy consumption, and tend to consume less energy than is generated. Studies, including some sponsored by utilities, have shown direct, measurable benefits for having generation located close to the end user.

Merchant power, where the power is generated for sale to the 'grid' and sold at a wholesale rate, is typically done on larger wind facilities, rather than servicing local point loads. In New England, this wholesale rate is about $.055 per KwHr, which is the ISO's 'avoided cost'.

You can find specific information about net metering in your State on the Interstate Renewable Energy Council website www.irecusa.org/index.php?id=90

YOUR WIND TURBINE PROJECT STEP-BY-STEP

INSTALLATION 1-2 months

- prepare site
- construct foundation
- erect tower and turbine
- complete electrical interconnection
- test turbine and electrical connection

PLANNING 3-4 months

- obtain permits
- obtain interconnect agreement
- secure funding
- order turbine
- site-specific engineering

WIND STUDY 2-12 months

optional study based on financing, site location and results of feasibility study

- MET tower
- sodar technologies

FEASIBILITY STUDY 1-2 months

- define goals
- wind mapping
- conduct site and energy assessment
- review economics
- determine zoning and permitting requirements
- review funding options

FUNDING AND INCENTIVES

The cost of investing in wind energy is now in a range that is competitive with power from new conventional power plants. Even though the up-front, capital cost of wind energy is more expensive than that of some traditional power technologies such as natural gas, combined short and long-term costs (including cost of capital, cost of fuel, and cost of operations and maintenance over the lifetime of the plant) of wind energy can now be very competitive with that of other energy sources.

Federal and State governments offer several tax incentives and funding opportunities to assist with the development of wind power and to help alleviate the up-front, capital cost.

Small Wind Systems Tax Credit

Under present law, a federal-level investment tax credit (ITC) is available to help consumers purchase small wind turbines for home, farm, or business use. Owners of small wind systems with 100 kilowatts (kW) of capacity or less can receive a credit for 30% of the total installed cost of the system. The ITC, written into law through the Emergency Economic Stabilization Act of 2008, is available for equipment installed from October 3, 2008 through December 31, 2016. The value of the credit is now uncapped, through the American Recovery and Reinvestment Act of 2009.

The Production Tax Credit (PTC) Extension

In October 2008, Congress acted to provide a one-year extension of the Production Tax Credit (PTC) through December 31, 2009. Under present law, an income tax credit of 2.1 cents/kilowatt-hour is allowed for the production of electricity from utility-scale wind turbines. This incentive, the renewable energy PTC, was created under the Energy Policy Act of 1992 (at the value of 1.5 cents/kilowatt-hour, which has since been adjusted annually for inflation).

Rapid Depreciation

Double-declining balance, five-year depreciation schedule (I.R.C. Subtitle A, Ch. 1, Subch. B, Part VI, Sec. 168 (1994) (accelerated cost recovery system)) is another federal policy that encourages wind development by allowing the cost of wind equipment to be depreciated faster.

States also offer their own incentives and grant programs. Visit www.dsireusa.org to learn more.

DID YOU KNOW?

Using today's technologies, there is theoretically enough wind power flowing across the United States to supply all of our electricity needs. North Dakota alone could supply about one third of the nation's electricity. However, less than 1% of the nation's electricity is currently supplied by wind power.

Fossil fuel-fired power plants produce more than 40% of the United States' total emissions of carbon dioxide responsible for global warming. Fossil fuels are America's primary source of energy, accounting for more than 70% of current U.S. electricity generation.

Wind turbines are quiet. An operating modern wind farm at a distance of 750 to 1000 feet is no noisier than a kitchen refrigerator, and much quieter than other types of modern-day equipment. Even in rural or low-density areas, where there is little additional sound to mask that of the wind turbines, the sound of the blowing wind is often louder.

For more information on wind power and other renewable energies, visit:
U.S. Department of Energy, Energy Efficiency and Renewable Energy, www.eere.energy.gov
U.S. Department of Energy, Wind and Hydropower Technologies Program, www.windpoweringamerica.gov
American Wind Energy Association, www.awea.org
National Renewable Energy Laboratory, www.nrel.gov
Interstate Renewable Energy Council, www.irecusa.org
Energy Information Administration, www.eia.doe.gov
DSIRE, Database of State Incentives for Renewables and Efficiency, www.dsireusa.org