

An Overview of Small-Scale Wind Electric Systems

Affordable,
Clean
Energy
For
Homes,
Farms
& Businesses



Why Wind?

- **Gain energy independence**
- **Ease demand on the power grid**
- **Reduce vulnerability to volatile utility prices**
- **Reduce air pollution from fossil electricity sources**



A Valuable, Widely-Available Resource

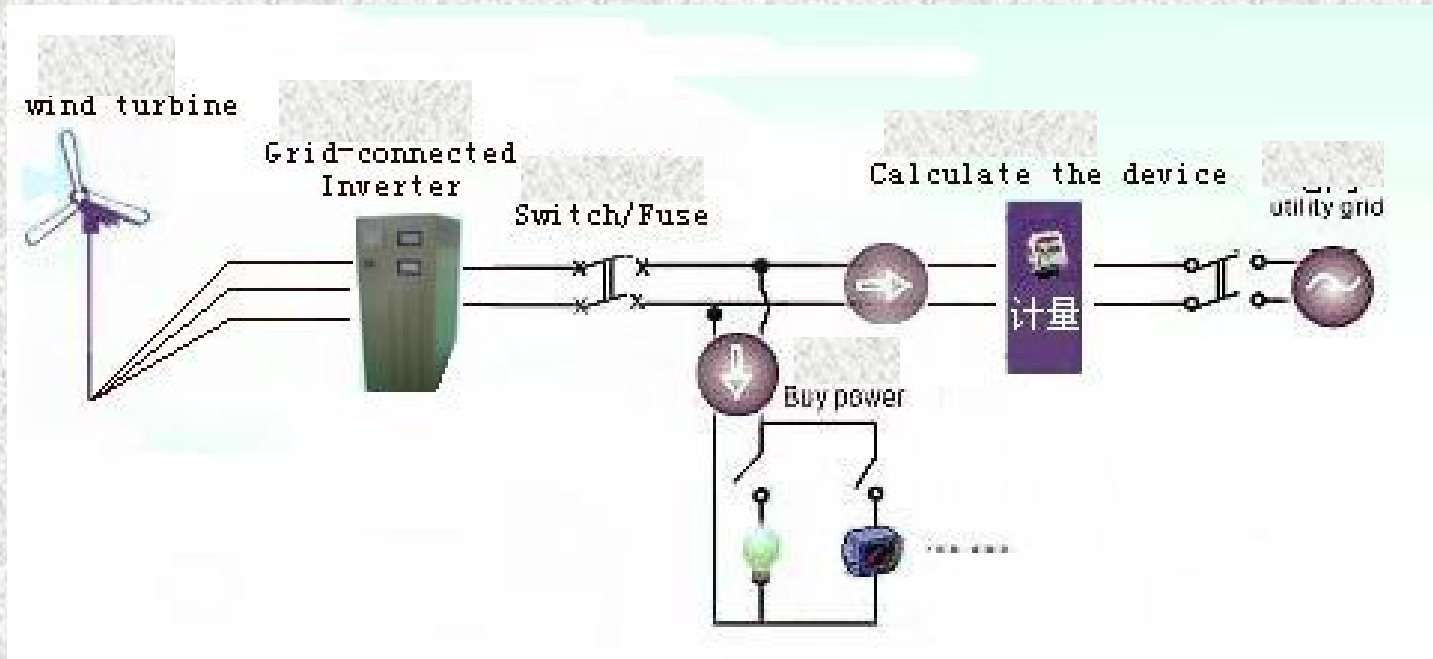
Wind energy's most important benefit is its lack of emissions of both air pollutants and greenhouse gases when compared with alternative methods of generating electricity.

Wind power requires no mining, drilling, transportation of fuel, or water usage, and does not generate radioactive or other hazardous or polluting waste.



How

Wind Turbines Work



Typical Applications

Farms, Homes, Businesses



Although wind turbines involve a significant initial investment, they can be competitive with conventional energy sources when you account for a lifetime of reduced or altogether avoided utility costs, especially considering escalating fuel costs.

Homes use approximately 9,400 kilowatt-hours (kWh) of electricity per year (about 780 kWh per month). Depending upon the average wind speed in the area, a wind turbine rated in the range of 5 to 15 kilowatts would be required to make a significant contribution to meet this demand.



Frequently-Asked Questions

Will I have to change any of the wiring in my house?

NO. A wind turbine is easily retrofitted to virtually any home without the need to change any wiring or appliances.

Will I have to perform much maintenance?

Most small turbines have very few moving parts and do not require any regular maintenance. They are designed for a long life (up to 20 years) and operate completely automatically.

Do wind turbines make noise or interfere with TV reception?

A typical residential wind system makes less noise than the average washing machine. Wind turbines do not interfere with TV reception.

Will a wind turbine save me money?

The wind turbine typically lowers your electricity bill by 50 – 90 percent.

Do small wind turbines need to be lit?

Lights are not required on structures less than 91.44 metre.

How do residential wind turbines work?

A wind turbine, which is installed on top of a tall tower, collects kinetic energy from the wind and converts it to electricity that is compatible with a home's electrical system.



In a normal residential application, a home is served simultaneously by the wind turbine and a local utility. If the wind speeds are below cut-in speed (11 – 16 km/h) there will be no output from the turbine and all of the needed power is purchased from the utility. As wind speeds increase, turbine output increases and the amount of power purchased from the utility is proportionately decreased. When the turbine produces more power than the house needs, the extra electricity is stored in the batteries.