

Wind Energy Basics

Believe it or not, wind is a form of **solar energy**.

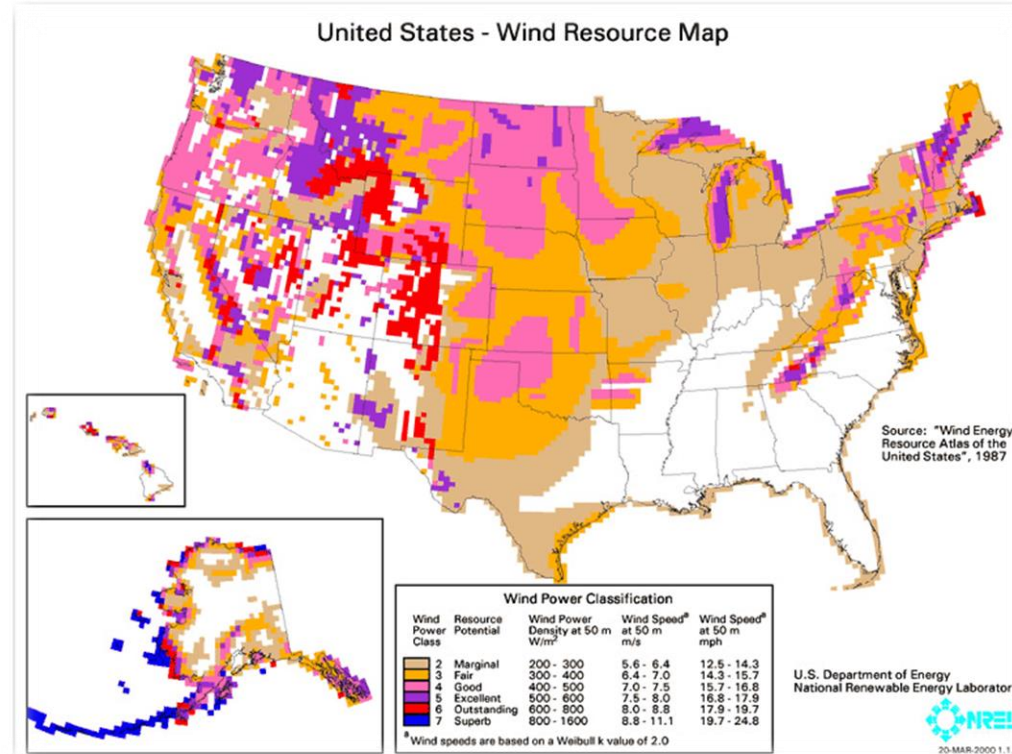
How? Wind is the product of:

1. The uneven heating of the atmosphere by the sun
2. the irregularities of the earth's surface
3. and rotation of the earth.

Most importantly for us, wind flow, or motion energy, when "harvested" by modern **wind turbines**, can be used to generate **electricity**.



Wind Energy Resources in the United States



Most of the regions in the Northwest and Central US have good wind resources, the best being located in Alaska

Advantages and Disadvantages of Wind-Generated Electricity

- **Pros:** Wind energy is a **free, renewable resource** that produces **clean, non-polluting, electricity**:
- According to the U.S. Department of Energy, California's wind power plants offset the emission of more than 2.5 billion pounds of carbon dioxide, and 15 million pounds of other pollutants that would have otherwise been produced. It would take a forest of 90 million to 175 million trees to provide the same air quality.
- **Cons:** The major challenge to using wind as a source of power is that it is **irregular** and does not always blow when electricity is needed.

Chemical Contribution to Wind Energy Technology:

Developing storage batteries for power transport from wind farms to locations of use.