

WIND ENERGY FUNDAMENTALS



70% OF VERMONTERS SUPPORT CLEAN ENERGY & WIND HERE'S WHY:

Vermonters value self-resiliency and local sustainability.

- Wind energy is a local and sustainable way to reduce our dependence on fossil fuels, and harness our State's natural resources for heating, electricity, and ultimately transportation.

Wind power is a safe, reliable way to generate energy.

- Wind energy has the lowest lifecycle greenhouse gas emissions compared to other conventional and renewable resources.²

Wind has the lowest impact on water quality compared to other sources of energy.

COST & SUBSIDIES

Wind is our lowest cost, new renewable energy option.

- Wind energy is among the lowest cost, new renewable energy technologies. It is competitive in price with conventional sources such as coal, nuclear, and natural gas, in some instances.⁵
- In Vermont, utility-scale wind costs roughly \$.09- \$.12/kWh; utility-scale solar costs roughly \$0.25/kWh.⁶

Wind energy stabilizes the price of energy.

- Wind energy "acts as a hedge against future volatility of natural gas prices."¹¹ It offers a long term fixed price, versus an adjustable price.¹²
- When the wind is blowing, Vermont wind power is sold to Vermont utilities, which reduces our use of higher-cost spot market sources.
- In 2013, approximately 40% of Vermont's electricity will come from spot market resources (gas, oil, coal, nuclear).⁹

Fossil fuel subsidies far outweigh support for wind power.

- A four-year extension of the Production Tax Credit for wind costs approximately \$13.6 billion. Meanwhile, the federal government is set to provide over \$113 billion in subsidies to the fossil fuel industry over the next 10 years, at a time when the 5 largest oil companies made \$1 trillion in profit over the last decade.⁸
- "Today, as we seek to move towards a more independent and clean energy future, the truth is that **renewables—from a historical perspective—are if anything under-subsidized**".⁷
- During the first 15 years of each energy subsidy, the **federal commitment to oil & gas was five times greater** than the federal commitment to renewables, and more than **10 times greater for nuclear**.⁷

WHAT'S THE LIFE OF A WIND FARM?

Today's wind turbines are designed to last 20-25 years.

- Searsburg has been in operation since 1997, and is still providing emission-free, reliable energy to more than 2,000 Vermont homes.
- Presently, Vermont wind projects have contributed over \$8 million in decommissioning funds.

RESOURCES

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RELIABILITY

“Renewable electricity generation from technologies that are commercially available today, in combination with a more flexible electric system, is **more than adequate to supply 80% of total U.S. electricity generation in 2050 while meeting electricity demand on an hourly basis in every region of the country.**”¹³

Other countries have successfully implemented renewables without having to expand storage.

- Germany has demonstrated **25%** renewables without storage, and a new report predicts they can go as high as **50%** without storage.¹⁴
- Denmark is already sourcing over **40%** of its power from renewable sources and has not had to create any major power storage infrastructure so far.¹⁴

California’s goal is to produce 33% of the state’s electricity with renewables by 2020.¹⁴

- The California Independent System Operator suggests that no new “flexible” (backup) generation will be needed to support renewables for this target.¹⁵

Independent System Operators of New England (ISO-NE) states that the New England electric grid can handle up to 24% of wind energy without having any impact on grid stability.¹⁰

- We are at 7.2%.¹⁶

PROPERTY VALUES & TOURISM

Wind projects do not affect property value.

- A recent study in Lempster, NH concluded that having a view of one or more turbines has no relation to residential property values.¹⁷

Grouse Peak Wind Farm in Vancouver, BC offers guided tours where tourists can ride to an observation deck at the top of a turbine.

- Tourists ascend the 20-story turbine to take in the 360 degree view of British Columbia (pictured, left).



Photo credit: www.grousemountain.com/eye-of-the-wind

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