

Wind & solar power...immediate solutions



Wind farms can produce from 5 megawatts to 600 megawatts of electricity. More powerful wind turbines are currently being developed.

Wind and solar power can help reduce CO₂ emissions in the near term. The ability to deploy these technologies is immediate. Wind and solar produce virtually no greenhouse gases as a byproduct of power production. Both have strategic roles in the fight against climate change and both should be deployed in suitable areas.

Technology Options

Wind Power

Currently, a single wind turbine can produce 1.8 megawatts of electricity, although more powerful turbines are in development. Several wind turbines together equal a "wind farm," which today produces from 5 megawatts to 600 megawatts, enough to power 5,000 to 600,000 homes.

According to an analysis by the Environmental Law and Policy Center of the Midwest, Ohio has the potential to generate around 920 megawatts, which would power 920,000 homes. Currently, Ohio has one utility scale wind farm, generating 7.2 megawatts.

Hybrid Wind Power

Wind air compression involves storing wind directly in tanks. The compressed air is released for power

the OEC'S Top Ten

1. Carbon bio capture
2. Carbon geological capture
3. Bio products
4. Methane emission reductions
5. Greenhouse gas markets
6. Electric & heating efficiency
7. Vehicle efficiency
- 8. Wind & solar power**
9. Low or no-carbon energy systems
10. Cleaner diesel

generation during high demand. To improve the ability to dispatch wind energy from a wind farm by 30%-65%, diesel generators using biofuels can be used in conjunction with the wind turbine.

Solar Power

Solar electrical systems, or photovoltaic cells, are electricity-producing devices made of semiconductor materials. The current generation of solar technology is a descendant of the 1960's and 70's space explorations. Global solar production grew from 10 megawatts in 1980 to 1,200 megawatts in 2004. The next generation of solar technology, thinner than Generation I and less expensive, is seeing some commercial activity through applications involving tents, bags, and blankets.

Costs

Wind best competes commercially in high wind areas. In other areas, wind power has relied on government production tax credit, to maintain its viability.

Solar installations can offset electricity needed for homes and businesses. The current electric retail rate is \$.845 per kWh for residential customers. Today's solar panels cost about \$.30 per kWh, averaged over the 30-year life span of the panel.



Recommendations for a better Ohio

Adopt an advanced technology portfolio standard

This portfolio standard should require power suppliers to produce and/or obtain a portion of their power from renewable energy sources.

Commercialize new technologies

A big challenge in solar and wind technologies is the “valley of death.” This refers to the difficulty in obtaining funding or financing to move from the research and development stage to the fully commercial stage. Ohio should consider directing money from the Ohio 3rd Frontier project to focus on the commercialization challenge facing new energy technologies.

Form a targeted grants program

The Ohio Energy Loan Fund Grants program provides financial support for distributed generation projects. Given the limited funding under the program, the Ohio Department of Development should consider developing performance standards for solar systems. Setting standards would help educate end users and leverage them as a stronger force in product innovation.

Develop a power production tax credit

Ohio should consider adopting a production tax credit for wind power. This credit applied at the federal level has been very successful.

Establish a state government procurement policy

The state should establish a policy which requires the government to purchase at least 10% of its energy from cleaner energy sources.

Promote a transparent, standardized grid interconnection

The Public Utilities Commission of Ohio should develop a system that provides transparent tracking of how electricity transmissions and distribution companies apply the Institute of Electronics Engineers’ standards for each interconnection. Specific issues tracked should include size of generation facility, generation type (fuel, etc.), type of contact (net metering, etc.) and how the utility discretion is applied.

Foundation for Action

- Ohio is second in the nation for companies that are in the wind turbine manufacturing supply chain.
- One of the largest solar panel manufacturers in the nation, First Solar, is located in Perrysburg, Ohio.
- Ohio House Bill 247 (Skindell 126th GA) calls for a Renewable Portfolio Standard of 20% by 2021, utilizing wind, solar, geothermal, and hydropower.
- The Bowling Green Municipal Utility has developed the first utility scale wind power production facility (4 megawatts) in Ohio.



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commercialization of new technologies

transparent, standardized grid interconnection

power production tax credit

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Read all details of the OEC’s global warming study, Ohio Climate Road Map, Part 2 at www.theOEC.org.

Toward a cleaner earth