

The Wrong Prescription for Net Metering

The Washington Electric Cooperative recently requested permission to impose fees on its net metering members in order to assure that the net metering program would be fair to all Co-op members.

Renewable Energy Vermont, the trade association that represents solar panel and wind turbine installers, criticized WEC because the fees would be bad for business. REV went on to suggest that WEC should address the fairness issue not by imposing a fee, but by doing more to encourage net metering with wind turbines. This is a terrible idea.

Vermont has had an electricity net metering program since 1998. The current version of the program allows Vermonters to generate electricity (with solar panels, wind, methane, or small hydro) and sell it to their utility. The sale results in a reduction of the net-metering customer's bill, not a cash payment. It is possible for a customer to zero out his bill.

The reduction of the customer's bill reduces revenue to the utility. The utility would have used some of that revenue to pay for its distribution infrastructure (poles and wires). These costs must then be borne by other ratepayers. To visualize why this poses a danger to the utility and its ratepayers, imagine an extreme case where everybody net metered and everybody zeroed out his bill. Now ask yourself who will pay for the utility's poles, wires, trucks, buildings, and employees.

The legislature directed the Public Service Department to study this issue, so the Department assembled a year's worth of detailed wind and solar production data and incorporated it into a spreadsheet model. They used the model to determine whether the benefits of net metering outweighed its costs. They issued their final report in January, 2013. You can find the report and the model on the Department's website.

The PSD identified a number of benefits from net metering that could help utilities recover some of the money that the program costs them. Some of the benefits were real and had actual dollar values (like avoided costs for electricity, reserve capacity, and regional transmission). Other benefits were real, but had estimated dollar values (like avoided costs for distribution system upgrades).

The Department built a variety of assumptions into their analysis. Under the set of assumptions they thought most likely, they found that over a lifetime of twenty years, solar trackers (i.e., solar panels that track the sun across the sky) would provide a small net benefit to a utility and its ratepayers, fixed solar installations (those that don't track) would impose some cost, and wind turbines would impose a substantial cost.

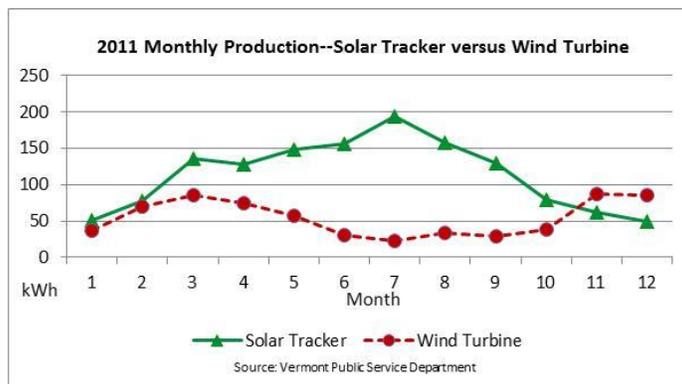
When the Department ascribed a hypothetical dollar value to greenhouse gas avoidance, they found that both fixed solar and solar trackers would provide considerable benefit. But, even with the hypothetical payment, wind would remain a loser. (The dollar value of GHG avoidance is hypothetical because utilities do not really receive payments for it.)

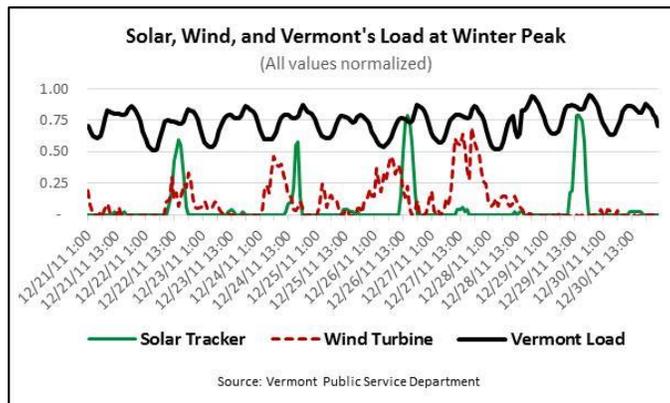
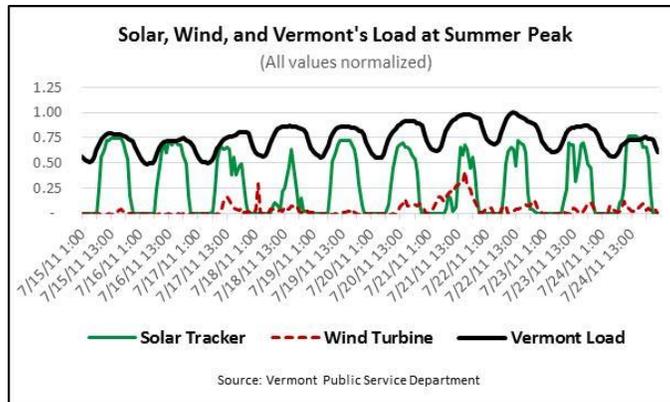
Why do solar panels provide more benefit than wind turbines? The PSD data shows that solar panels produce electricity when we need it most and wind turbines produce when we need it least. That means that solar panels help utilities avoid buying electricity when it is most expensive. It also means that solar panels help reduce the load on the grid when the grid is most stressed, thereby reducing the need for expensive upgrades to the transmission and distribution systems.

The PSD analyzed the impact of net metering on a statewide basis, so some of the differences among the state's electric utilities were not considered. Like New England as a whole, Vermont's statewide demand for electricity peaks in the summer. Some of Vermont's northern utilities (like WEC and VEC) may experience their peak demand in the winter. This means that regional and statewide costs and benefits affect them differently. In the past, VEC has argued that because they are a winter-peaking utility, the PSD analysis overstates the benefits that net metering offers them.

The PSD report acknowledges the high cost of net-metered wind, but concludes that it isn't a problem because there are so few wind turbines in the net metering program. Apparently, REV would like to change this by encouraging more wind net metering at WEC.

It may be that REV's suggestion is based upon a belief that wind complements solar—that if the sun isn't shining, the wind must be blowing. This is not supported by the PSD's data. Take a look at the following three charts and judge for yourself. The first chart plots the PSD's wind and solar production data by month. The second and third charts show hourly production during Vermont's summer peak and winter peak.





REV is not alone in wanting more net-metered wind turbines. Green Mountain Power spent over \$500,000 to install a 100kW turbine at the Northlands Job Corps in Vergennes. GMP CEO Mary Powell said, "This is just the first of what we hope to be many Vermont-made community-scale wind turbines in our state."

Not only was the installation of the Vergennes turbine costly, the PSD study says that enrolling it in the net metering program will cost GMP's ratepayers an additional \$58,000 over its projected 20-year life. Oh well, it could be worse—net-metering a 350kW turbine would cost over \$200,000.

GMP ratepayers should be pleased that the roll-out of these turbines has been so unsuccessful.

While GMP can spread the costs of its Vergennes boondoggle over lots of ratepayers, WEC cannot. WEC is so small that it wouldn't take many turbines to swamp its members. That's why we are anxious to hear more details about REV's plan to achieve fairness at WEC with more net-metered wind.