



BRIEFING

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Net Metering in Montana

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Nearly all households pay utility companies monthly for electricity service. Many consumers are looking for ways to reduce these bills. One option to reduce this monthly bill is for customers to generate some or all of their own electricity, usually through a small wind turbine or photovoltaic solar panel. This type of arrangement is referred to as net metering.

Net metering involves installing a special electricity meter that can measure electrical flow in both directions. Traditional electric meters only measure electricity flowing from the utility company to the customer. Because net metering customers are generating electricity in addition to using electricity, a special meter must be installed that can measure the flow of electricity both from the consumer and the utility company.

A net metering customer's production and use of electricity will not be equal most of the time. When their production of electricity is less than their use, additional electricity is supplied by the utility company through the electrical grid. Alternatively, when a customer generates more electricity than they are using, excess electricity is transferred to the electrical grid and is used by other customers. At the end of the billing period the net metering customer's electrical production is subtracted from their total electrical consumption. The customer is billed only for the net amount (this is why

this arrangement is referred to as net metering) of electricity consumed. In rare situations a customer may produce more electricity than they use, in which case the excess amount is may be carried over to the next billing period or transferred to the utility company at a price (often zero) determined in the net metering contract.

The contract provided by the utility company determines how often the account is "trued up". The true up period is the point in time when the difference between production and consumption of electricity is computed. Arrangements with the utility company will also determine the price of any electricity purchased from the utility company and the price at which any excess power will be purchased by the utility company.

Net metering offers several potential benefits. Net metering projects may provide a positive financial return for system owners. In these cases, the value of the reduction in monthly electric bills is larger than the value of the cost of installing and maintaining the system. Not all net metering projects will provide positive financial returns but some may. Some customers enjoy knowing that some of the electricity they are using is provided by a renewable resource. Other customers simply enjoy being somewhat self-sufficient in their electrical use.

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Objective

Analysis

for Informed

Decision Making

Opponents of net metering often cite these issues. First, net metering has potential to reduce revenue for utility companies. Customers that reduce their electrical bills also reduce their payments to the utility companies that help pay for fixed costs, such as transmission infrastructure. If a sufficiently large portion of the utility company's customers reduced their bills through net metering the service and infrastructure of the utility could be harmed. In Montana, this has not been a significant issue due to the low number of net metering customers. Second, others have cited the long pay back periods for investments in net metering systems. Many of the net metering systems installed will never provide a positive financial return to the owner; and those that do will generally require many years to provide a positive financial return.

Is net metering right for me?

A customer should ask themselves several questions when considering a net metering project. One of the first questions to ask is "will zoning regulations for my area allow for the installation of a wind turbine or solar panel?" It is fairly common for cities and sub-divisions to limit the height of structures in their jurisdiction. Even small wind turbines are often mounted on 30 to 80 foot tall towers. If zoning laws prohibit wind towers or solar arrays you may not be a good candidate for a net metering project. Net metering projects also tend to have fairly high initial costs. Small wind turbines systems (including towers and installation) often cost \$10,000 to \$50,000 depending on the size and features of the system. Some financial assistance maybe available to offset some of these costs (see section on page 3) but in most cases the customer will be responsible for the bulk of these costs. Another factor to consider is the quality of the resource available. Some locations have better wind and/or solar resources than other locations. The better the resource the more power the system will generate.

Montana Net Metering Regulations

State laws provide a basic regulatory framework that customers and utility companies must follow. Additional regulations are implemented by individual utility companies. Many of these regulations are in place to ensure the safety and viability of the electrical grid system.

Montana Laws

State regulations pertaining to net metering are described in Title 69, chapter 8, part 6 of the Montana Code Annotated. These laws require that net metering systems be interconnected to the electrical grid using a standard kilowatt-hour meter which registers the flow of electricity in two directions. State regulations allow utility companies to charge a net metering customer a minimum monthly fee, equal to the minimum fee other customers pay. This fee helps utility companies pay for fixed costs associated with maintaining electrical lines and other infrastructure, which are unrelated to a customer's electrical usage. State law also provides the framework for the billing method that utility companies are allowed to employ for net metering customers. Under this framework net electricity usage during the billing period is calculated. If the electricity supplied by the utility company exceeds the electricity generated by the customer, then customer will be billed for the net electricity supplied. If the electricity generated by the customer exceeds the electricity supplied by the utility then the customer is credited for the excess kilowatt hours generated during the billing period. Excess credits may only used during the customers designated 12 month billing period.

Utility Company Net Metering Policies

Utility companies are allowed to establish the details of their net metering policy within the broad provisions provided by the Montana

law. Electric customers in Montana are served by an investor owned utility company (NorthWestern Energy at: www.northwesternenergy.com) and Montana-Dakota Utilities (www.mdu.com) or one of about two dozen electrical cooperatives. For a list of Montana electric cooperatives, visit www.mtco-ops.com. Not all of the state laws pertaining to net metering apply to electric cooperatives in the same way they apply to investor owned utility companies. Many of the electric cooperatives have adopted the same net metering policy.

Northwestern Energy Policy

Northwestern Energy (NWE) customers are allowed to install net metering projects with generating capacities of up to 50 kW. Under NWE's policy if a net metering customer produces more electricity that is used during the true up period (one year) the excess production is not purchased by NWE. That is, net metering customers do not generate revenue beyond reductions in their bill from net metering projects. However, to the extent that net metering customers are able to replace purchased electricity, the amount replaced is valued at retail rates rather than wholesale rates. A copy of NWE's net metering policy is available at:

www.northwesternenergy.com/display.aspx?Page=Net_Metering&Item=91.

Montana-Dakota Utilities

MDU also limits net metering projects to a maximum of 50 kW. A copy of MDU's net metering policy is available at: www.montana-dakota.com/Pages/ViewMDURates.aspx.

Rural Electric Cooperatives

Montana's Rural Electric Cooperatives have adopted a uniform net metering policy; although individual cooperatives may choose to modify this policy. The policy limits net metering projects to a capacity of 10 kW and the true-up period is defined as a year. Customers of a REC should contact their local cooperative to obtain details about their net metering policy. A copy of the uniform policy is available at: www.dsireusa.org/documents/Incentives/MT10R.htm.

Incentives

Governments, utility companies and non-profit organizations offer a variety of programs to support alternative energy development. These incentives may include tax credits based on capital costs or electrical production. Other incentives may be in the form of a grant or other direct payment. Free or reduced cost technical or business planning advice may also be available. The requirements to qualify for these incentives vary depending on the specifics of each program. More information is available in AMPC Briefing Paper number 94 "*Wind Energy Subsidies and Programs: US Federal and State of Montana Initiatives*" available at: www.ampc.montana.edu/briefings/briefing94.pdf. Additional information may also be available from your utility company.

Economics

The key economic issues for net metering wind projects are the costs and the revenues generated by the system. There are two main components to the purchase cost of small wind turbines; the turbine assembly and the tower. Some systems are sold in packages that include both the turbine and tower, while others are sold separately. Turbines with capacities of 1kW to 20kW are generally priced in the

\$1,000 to \$3,000 range per kW of capacity. Larger turbines tend to have lower costs per kW. Typical 10 kW turbines are priced in the \$25,000 to \$35,000 range. Tower prices range from around \$10,000 for 60 foot towers to over \$20,000 for towers 120 foot towers. Taller towers are more expensive but tend to improve the electrical output of the turbine. Installation costs and maintenance costs vary depending on the type of system.

The revenue (reduced electrical charges) generated by a net metering project is determined by the amount of electricity produced and the rate at which it offsets electricity that otherwise would have been purchased. The amount of electricity produced is determined by the size of the wind turbine, the quality of the wind resource and the height of the tower. The size of the turbine and height of the tower can be changed selected based on the customer's situation. The wind resource cannot be changed by a customer, however proper site selection and tower height maximize the potential of the wind resource. Electricity generated by net metering projects offsets electricity that would have been purchased at retail price from the utility company. In Montana the state wide average retail price for electricity in 2008 was 9.22 cents per kilowatt hour. This was below the national average of 11.36 cents. The financial performance of net metering projects improves as electricity rates increase. Additional revenue may also be available in the form of grants or tax credits.

Conclusion

Net metering is an opportunity for individuals to reduce their electric bills and invest in renewable energy. The guide provides a brief overview of the key issues surrounding net metering in Montana. For additional information about wind energy and net metering please visit: www.msuextension.org/energy/wind/windhome.asp.

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