

Extreme Makeover

Net Metering's Economic Impact

Supplementing Personal Consumption

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The concept of net-metering was first introduced to Massachusetts in 1982 as a policy to encourage small distributed generation into the local electric grid. Net-metering, when originally implemented, was intended to allow small property owners to supplement their own electric

consumption with on-site power generation. When a property owner produces more electricity than what is being consumed at any given time, the net-meter will spin backwards. When the on-site consumption outpaces the electrical production, the net-meter spins forward. At the end of a billing cycle, if the host customer has consumed more than what is produced, they will pay for that “net” power. If the host customer used less than what was produced, a credit equivalent to the value of the total net power will be rolled into the next billing cycle. This simple concept is widely used in many states to help keep track of the production of renewable energy generation projects.

There are two types of net-metering that is commonly used in the solar industry in Massachusetts. The first type is *Behind-the-Meter* Net-metering, which refers to solar projects that have an on-site consumption. These projects are designed and operated under the premise that all the power produced on a yearly basis is fully consumed at the project location. Typical Behind-the-Meter project would be a commercial roof-top solar system where the power is used by the property owner. The second type is *Virtual* Net-metering, which refers to solar projects that are built purely for exportation of power. Virtual Net-metering projects include large ground mounted arrays where all the power production is credited “virtually” or on paper from the on-site meter to a client designated meter on an off-site location. In a Virtual Net-metering scenario, the on-site meter would be referred to as the production meter and is constantly spinning backwards.

Recently in Massachusetts, the capacity for net-metered projects have reached beyond the regulated capacity. Proponents of the solar industry have been lobbying the local utilities commission to increase the pool of available projects in order to support further development. This endeavor has been met with mixed sentiments in both the private and public sectors. Since solar projects produce intermittent power that is sold to

single off-takers, it relies heavily on net-metering to allow for tracking of production and sale of energy. Without net-metering, these projects would not be able to sell or use power due to seasonal and hourly shaping of electric production from the sun's energy. Since net-metering credits come at a cost that is recovered from all rate payers, local opponents state increasing the pool of net-metering projects would come at an unsustainable price.

Net-metering in its essence is a zero sum model. However, utilities claim that their profits are forfeited when clients produce their own power. Utilities claim that solar projects still rely heavily on the electric grid, but do not pay into the cost of maintaining and improving the existing infrastructure. To recoup this loss of potential revenue, the utilities are regulated by the state to claim those funds from the local rate payers for each kWh of energy solar projects produces.

This loss of revenue to utilities is similar to a toll road. Since solar projects can net-meter, they are essentially allowed to drive through the roads at toll-free. This is not the case for the most part. It would be true to say that after a period of time, a toll road that serves as infrastructure for the public, should be converted to toll-free once the cost has been paid. Additionally, new roads or electrical infrastructures are typically paid by solar developers are part of their Interconnection Service Upgrade costs. These costs help bring out additional electric power lines to solar projects in remote areas, and to pay for new service upgrades.

Ultimately, net-metering should be allowed to continue in Massachusetts to help sustain the growth of renewable energy. If the cost of net-metering to rate payers become unsustainable, the other solution would be a feed-in-tariff, where the energy produced is sold directly to the electric grid rather than single off-takers. This allows all the rate-payers to benefit from the cheaper and cleaner energy, rather than letting it benefit the few.

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