

Understanding MMWEC

Founded in 1976, through an act of the state legislature, MMWEC is a non-profit, public corporation and political subdivision of the Commonwealth of Massachusetts with the power to issue tax-exempt revenue bonds to finance electric facilities and other projects.

Serving as the joint action agency for Massachusetts municipal light plants (MLPs), MMWEC works for the common good of its Member and Project Participant utilities. Through delivery of wholesale power supply, financial, risk management, and other services, MMWEC enables MLPs to meet their energy needs and deliver reliable, low-cost service to their customers. Of the 40 MLPs in Massachusetts, 20 are Members of MMWEC and 28 are MMWEC Project Participants.

To ensure MLPs have sufficient energy and capacity to meet their ISO-NE requirements, MMWEC owns, operates, or serves as joint owner in multiple generating projects such as Stony Brook Energy Center, Berkshire Wind Power Project, Seabrook Station, and Millstone Unit 3. A fifth project, Project 2015A, is in development.



MMWEC CONTACT INFORMATION

Massachusetts Municipal Wholesale
Electric Company

327 Moody St.

Ludlow, MA 01056

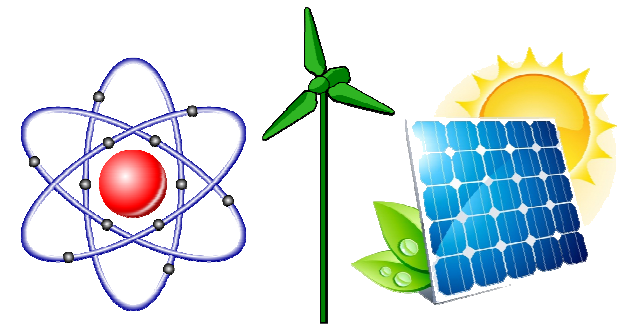
413-589-0141

Email: mmwec@mmwec.org

Visit us at www.mmwec.org



How MMWEC MLPs are meeting their energy and capacity requirements



MASSACHUSETTS MUNICIPAL WHOLESALE
ELECTRIC COMPANY

Energy, Capacity, and Complying with ISO-NE Requirements

- **Capacity** and **Energy** are both components of the power grid, but function differently.
- **Capacity** is the ability to generate energy/electricity.
- **Energy** is the amount of electricity used by the customers of a Municipal Light Plant (MLP).
- By law, the independent system operator for New England (ISO-NE), is charged with ensuring there is enough **Capacity** to meet regional needs.
- As participants of ISO-NE, MLPs must provide both **Capacity** and **Energy** to meet their customers' electricity usage.
- While the ability to have **Capacity** available at all times is required, because of varying energy usage, not all of that **Capacity** is needed at all times.

How MMWEC Member MLPs Meet Their Capacity and Energy Obligations

- MMWEC Member MLPs meet **30% of their ISO-NE Capacity** requirements through entitlements in carbon emitting generating resources, yet these resources supply only **1.8% of the Energy** usage of these MLPs.
- **53%** of MMWEC's Member MLPs' **Energy** usage are met by entitlements in non-carbon emitting resources including wind, nuclear, solar, and hydro generation.
- While carbon emitting resources can operate at any time when called upon by ISO-NE, renewable resources are not available at all times, such as overnight (solar) or in periods of low wind (wind). Consequently, ISO-NE credits carbon emitting resources for **Capacity** up to 100% of their capability, while crediting renewable resources for **Capacity** at only a small portion of their capability. For example, ISO-NE credits the Berkshire Wind Power Project Phase 1 with **2 MW of Capacity**, despite the project being capable of providing **15 MW**.

How MMWEC Balances Energy and Capacity Berkshire Wind Power Project Phase I

- A 10 turbine, **15 MW** wind project that yields **1.65 MW of Capacity** (**11%** of capability), operated by MMWEC but owned by the Berkshire Wind Power Cooperative, whose Participants are MMWEC and 14 of its Members.

Project 2015A

- a **55 MW** gas and oil-fired project that yields **55 MW of Capacity** (**100%** of capability), owned by MMWEC with 14 MMWEC Members having entitlements.

Emitting & Non Emitting Resources Balance

	Berkshire Wind Phase 1	Project 2015A
ISO Recognized Capacity (MW)	1.65 MW	55 MW
Yearly Energy MWh (% of Capability)	48,903 (38%)	13,140 (2%)
Carbon Produced/ Displaced tons	23,742	7,085

- The **55 MW** from Project 2015A fulfills a portion of MMWEC Members' **Capacity** requirements. This allows for increased investment in non-emitting **Energy** generating units that are not recognized by ISO-NE as providing **Capacity** equal to their **Energy** capabilities. Stated differently, to obtain **55 MW of Capacity** from a wind project would require a wind project capable of producing **475 MW of Energy** (190 wind turbines occupying over 1,500 acres of land).