

## **Ideas/Questions for Utilities--Climate Action & Resilience**

### **1) Distributed Generation**

Utilities in MA have to facilitate interconnection of distributed generation (e.g. solar) and could presumably make it easier or less easy to allow independent power sources and stored energy to connect to the grid.

Baystate CHP is planning (or has already) enabled "blackstart capabilities" to be able to start operation without the grid, thereby providing greater reliability. Utilities can NOT own electricity generation in MA, but can own storage. Utilities are generally interested in energy storage as means to accommodate the demand for more renewable DG on the grid.

resources: <https://ensia.com/voices/smart-utilities-embracing-distributed-electricity/>

ex: "virtual Power Plant" in New York: <http://newsroom.sunpower.com/2016-06-13-Con-Edison-Virtual-Power-Plant-Program-Combines-Solar-and-Storage-to-Improve-Grid-Resiliency>

### **2) Micro-grid**

A micro-grid is capable of maintaining electric services with distributed generation and connected loads even when the local grid goes down. In a catastrophic weather event, a microgrid can maintain at least basic services to critical facilities (hospital, first responders, town hall, public shelters, elderly housing, etc.). Ex-UMASS-Amherst campus; Boston has investigated opportunities.

What are the utilities thinking about maintaining critical services? And enabling people to shelter in place so that emergency workers do not have to spend precious time evacuating vulnerable populations?

Utilities could help or own or be open to a micro-grid. Utilities need to approve micro-grids and implement a "reverse power flow device" to enable micro-grids to function without sending power into the grid when the grid is down to protect workers fixing the grid.

Does MGM have a micro-grid? What kind of back-up power is at MGM? Might that be considered as a public sheltering place in case of emergency?

### **2) Renewables**

With over 65,000 solar systems now operation in MA, the utilities have been busy providing interconnection services. This trend is expected to continue and utilities must continue to advance the capabilities to provide these services, along with more solar + storage systems.

### **3) Energy Storage**

Respond to State's Advancing Commonwealth Energy Storage (ACES) demonstration project opportunity. RFP available here: <http://www.masscec.com/ACES>, responses due June 9.

ACES is looking to fund a range of energy storage case studies and business models. Examples include - utility owned storage at a sub-station, utility controlled storage located at a private site owned by the site or a third-party, etc..

### **4) Software to manage energy use**

### **5) Invest in energy efficiency**

Green Communities Act of 2008 de-couples energy sales and energy efficiency, so the utilities are provided the same regulated rate-of-return for energy efficiency savings and energy delivery. So there is NO disincentive for the utility to promote energy efficiency through MassSave.

### **6) Modernize the grid**

Utilities have all filed Grid Modernization plans with the DPU. These plans might be better communicated with the public.

### **7) Carbon Pricing**

Carbon pricing bills have been filed in the state legislature. Here are two helpful websites:

<http://citizensclimatelobby.org/two-new-bills-massachusetts-moves-carbon-pricing/>

<http://climate-xchange.org/massachusetts-campaign/about-the-bill/>

### **8) Net Metering**

Utilities are required to offer net metering for eligible distributed generation, up to prescribed caps.

**9) Bury wires** Burying utility lines are one way to greatly enhance system reliability and endurance through a storm. It is also VERY expensive, and typically limited to downtown urban cores.

**10) Trim trees**

Utility performance is evaluated periodically by DPU as part of their reconciliation of the cost recovery that utilities receive through their customers. One metric is efforts to provide reliable service. Since the storms of Irene and Sandy, utilities have made efforts to enhance tree trimming along power lines to reduce outages during such events.