



**WIND EXPERIENCE
IN
RHODE ISLAND**

MA WIND WORKING GROUP

July 8, 2015



ISO NE's Regional Plan



“The region’s heavy dependence on natural-gas-fired generation to meet its electricity needs has resulted in recent operating problems.” ISO NE 2013 Regional System Plan, p. 9





“Build on Rhode Island’s existing successes to pursue a renewable energy and distributed generation future” - OER’s State Energy Plan









RI OER's Cost/Benefit Study



HANDY LAW

“All three scenarios considered, which add between 164 MW and 1008 MW of renewable energy capacity to Rhode Island between 2015 and 2024 (including REF capacity), yielded net positive economic and environmental impacts.” DG Standard Contract and REF Jobs, Environmental and Economic Impact Study, The Brattle Group April 2014.

RHODE  ISLAND
IT'S  ALL 
IN *our* 
BACKYARD



RI Cares About Climate!



Greenhouse gas reduction mandates by 2020, 2035 and 2050 of 10%, 45% and 80% below 1990 levels, respectively. RI Gen Laws §23-84.1-1 et seq





RI Knows Distributed Generation!



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160 Megawatts by 2019! RI Gen Laws §39-26.2-1 et seq

4 MW Solar Farm (Millbury MA)

4.5 MW Wind (NBC)





RI Knows Net Metering Too!



Any eligible net metering resource owned by a public entity is an eligible net metering system and all designated accounts shall be eligible for net metering. RI Gen Laws §39-26.4-3. NM cap removed. RIGL §39-26.4-3





PORTSMOUTH PROJECT



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- AAER 1.5MW; Jake gearbox; AERR fails; orphaned tech. . .
- Operated 39 months netting \$880K; 2011 net metering rate case (see <http://www.ripuc.org/eventsactions/docket/D-10-126page.html>); 5/12 bearing failure; \$1.8M debt & no longer risk tolerant. . .
- 2013 Windland proposal: split repair; O&M for fee & gets 30% of net revenue; ultimately refused to split repair. . .
- 2014 Gemini deal: gearbox replace w RM Wilson (Jake warranty 6 yrs reduced to 3 & then withdrawn due to no AERR cert) or gearbox repair (\$1.1M; 6-9 months; 5 yr warranty); O&M \$38K/yr for 10 years; availability guaranty 85% & bonus over 92%; self insured & state supports reserve & PP+L extension; cash positive in year 10 if. . .Town would not tolerate risk for return.
- 2014 WED: Vensys 1.5MW direct drive (most common turbine design in world); 10 yr warranty at 96% availability w power curve; propose to pay off debt; no tax/rent until yrs 25-30 (\$10K rent); 25 yr PPA (3.8 MW; retail w floor of \$.155/kwh; & RECs); NGrid requiring another interconnection impact study and extensive system modification (must be resolved for project to proceed). . .



COVENTRY PROJECT



- ▣ 10 Vensys 1.5MW DD turbines on leased land on farms and open space; all local approvals done
- ▣ Off-takers: Coventry (remote NM), 3 DG Contracts (one for excess on Coventry), 3 bought by West Warwick; other 4 REG program (160MW) &/or another public entity
- ▣ Roads in, some foundations in, turbines ordered (w same warranty as Portsmouth), 7 arrive December, Vensys provides O&M
- ▣ NGrid: eligibility; petition on IC tax & estimated cost; from \$270K to \$1.3M back down to \$413K after petition and legislation (but we do ductwork); ISO OP-14 rule change for “model generator” – project size now based on all projects interconnecting to any new line extension (major burden)



ENERGY ACTION PLAN



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- ▣ Accelerate project development in DSM & supply; sector goals and focus/collaboration on energy action plan; attack peak gas constraints (\$)
- ▣ Public sector leadership: EE (including streetlight reform); meet RES; NM; State plan & Resilient RI & Green Infrastructure Bank; municipal procurement (WW saves over \$40M. . .); streetlights
- ▣ Other load targets: Churches (IPL), Housing (GHHI), community power, REG (160MW) - including residential solar program, Least Cost Procurement & EE
- ▣ What's reasonable target? When? Regional challenge (kw per capita)?



Top 10 List of RI Wind Facts



- 10) WED has studied the wind resource throughout RI & has yet to find a location where the wind resource is not adequate to make wind development economical based on current technology
- 9) If the new 160MW REG program goal were fulfilled only by solar power it would require the use of @800 acres of land/roof area. Wind would require @80 acres or @60 acres if fulfilled with 2.5MW turbines. There are 776,957 acres of land in Rhode Island.
- 8) The wind turbines located at the Narragansett Bay Commission's Fields Point facility supply 60% of the energy demands for that wastewater treatment facility and the administrative buildings at that location for a net savings of over \$1 million per year.
- 7) West Warwick projects savings of over \$40 million from net metering over the life of its three wind turbines.
- 6) The noise standard for wind included in the recommended siting guideline proposed to date (but not final), if made generally applicable, would not allow the installation of new roads.
- 5) ISO NE considers our region's over-reliance on natural gas one of the biggest threats to our future energy security.
- 4) Two major power producers in our region have recently announced closure, VT Yankee (nuclear) and Brayton Point (coal).
- 3) With MA's denial of the proposed regional alliance for enhanced natural gas and hydropower transmission, wind energy is the best prospect for resolving RI's energy problem.
- 2) WED's current plan to build 10 wind turbines in Coventry RI by the end of 2015 will cost \$70M and create 91.25 FTE jobs, making it one of the most significant economic development projects under way in RI.
- 1) WED's Coventry project is projected to save the public sector at least \$45M on energy costs over the following 25 years.



Some Obstacles



- WED refuted National Grid's position that its first Coventry turbine was ineligible for the DG program because it had to be considered together with Coventry 2 (a net metered turbine) for size eligibility constraints. See http://www.ripuc.org/eventsactions/docket/4288-4277-NGrid-Ord21087_6-28-13.pdf.
- NGrid's interconnection feasibility study for Coventry 2 estimated a cost of \$270,502. The joint Impact Study for Coventry 1 and 2 then required \$1,126,540 +/- 25% to interconnect 2 turbines, \$907,000 of which was for "Modifications to Company EPS." After administrative litigation at the PUC and legislative advocacy, NGrid's cost quote is now \$413,186 per turbine, but WED will install the duct bank.
- WED petitioned the PUC to resolve that NGrid is not entitled to charge an estimated amount for interconnection costs without triuing that number up according to its actual costs. (see Docket 4483 - <http://www.ripuc.org/eventsactions/docket/4483page.html>). Two resulting audits revealed that one project's estimated payment of \$91,531 was \$59,154.99 higher than the actual cost and the other project's estimated payment of \$169,767 was \$47,855.18 higher than actual cost.
- NGrid charges an interconnection tax despite an IRS safe-harbor for distributed generation interconnections to send electricity to the grid. Pending resolution - <http://www.ripuc.org/eventsactions/docket/4483page.html>.
- Rhode Island's siting guidelines for wind are long overdue and have thus far been sabotaged by oppositional interests, and are not based on real engineering and would be infeasible for wind. See http://www.planning.ri.gov/documents/LU/Wind%20Energy%20FacilityGuidelines_June-2012_.pdf.
- The DG Board's consultant used data from coastal Massachusetts projects (some undeveloped) to set the capacity factor and DG price for 1.5MW turbines even after WED gave the actual capacity factor for projects built or studied in RI. See <http://www.ripuc.org/eventsactions/docket/4288-2014page.html>
- It is not clear how local tangible property taxes will be assessed to these projects. Unpredictable taxation is a detriment to project development.



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