ARC Advisory Group

Green Energy

IEEE Green Energy Conference

March 22, 2024

Today's Discussion

Start	End	Description
2:40	3:05	Decarbonizing Electric Power. Rick Rys P.E. (Chemical) Engineer (R2Controls) Consulting for ARC (Market Research) Prosumer Light commissioner

HERS rating was -3, but!!! New patterns and EV > Net Zero

Princeton MA, Light Department

PMLD is very small

- ~1500 customers, 0 industrial, few commercial
- 4 linemen
- 2 office workers
- 1 General Manager
- 3 elected commissioners

2008 Ice storm

2008 Ice storm

Firsthand Experience: Regulation influence on MA Utility

- PMLD (Princeton (MA) Municipal Light Department) one of 41 Muni's in the state- I'm the Chairman of the light board
- Comprehensive Clean Energy and Climate Change Policy Act (Section 99) requires each municipal utility to purchase a specified percentage of their electricity from renewable energy sources.
  - 50% non carbon emitting by 2030
  - 75% non carbon emitting by 2040
  - 100% non carbon emitting by 2050

PMLD System

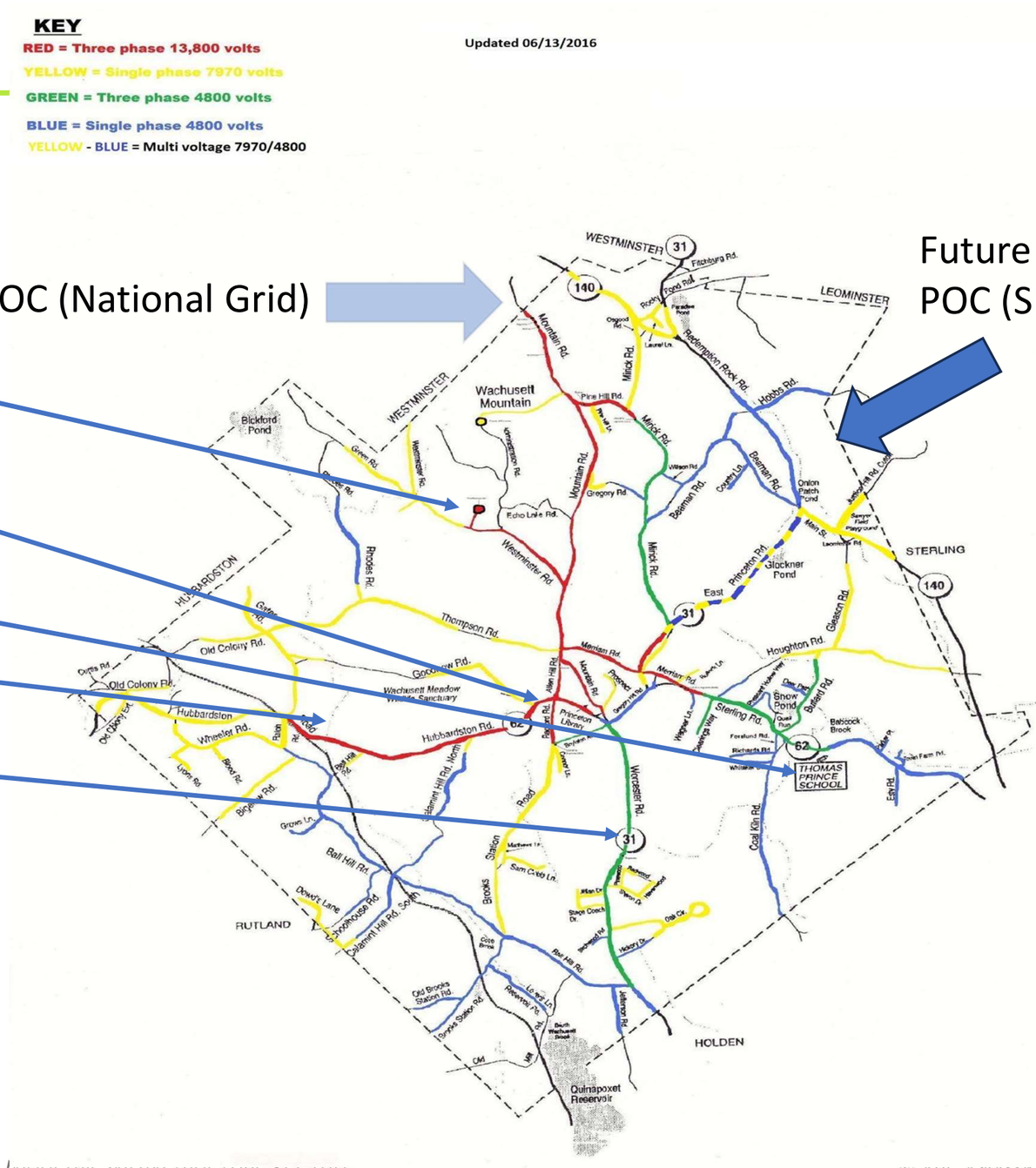
Wind Turbines

Town Hall, Fire, Police

Prince School

Future? Solar field

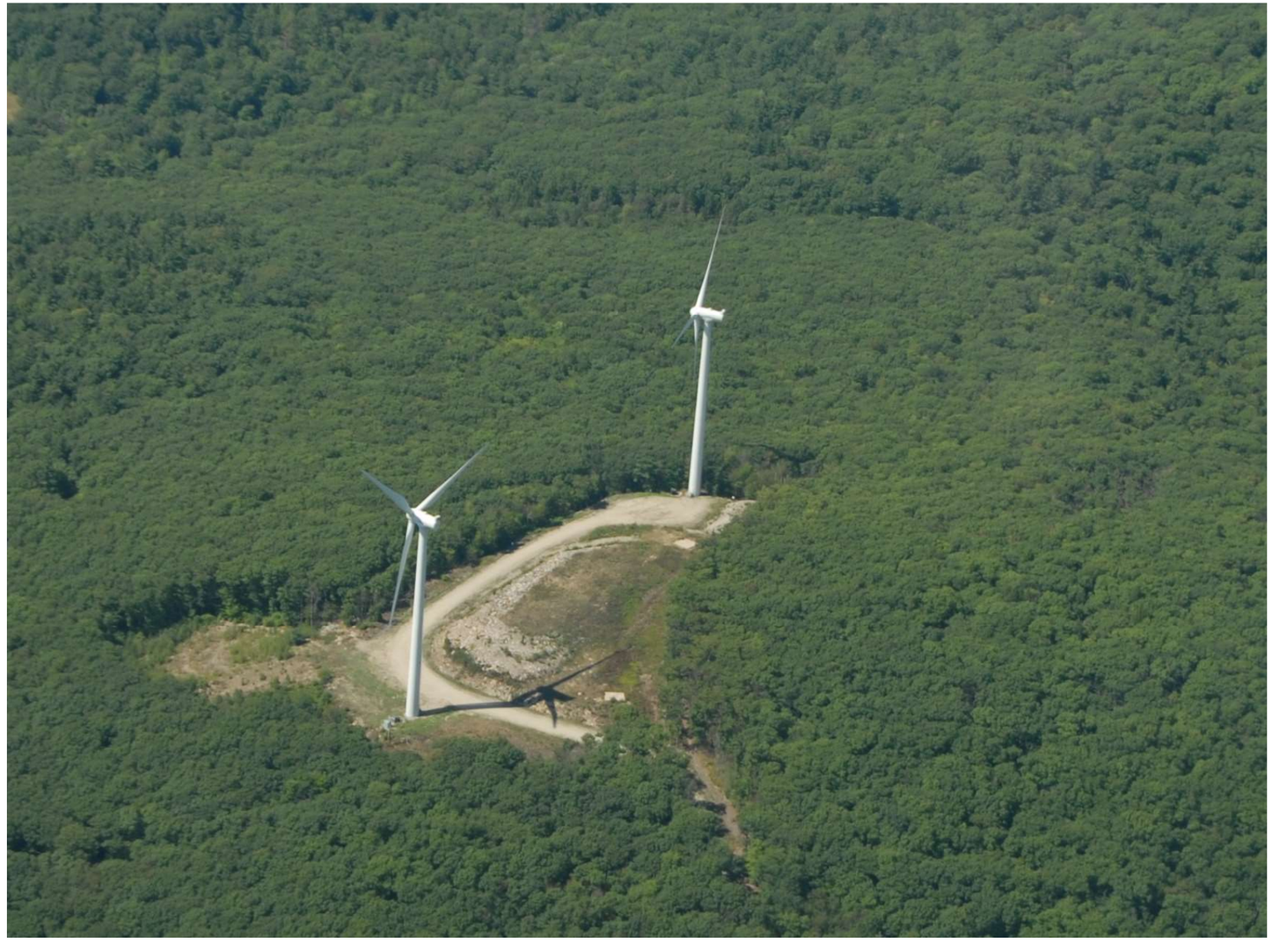
Battery Location 2025



1984 –eight 40kW Enertech on 100-foot towers (until 2004)

Met tower and construction 2009

Two 1.5 MW Furlander installed 2009 – running today



7-acre (+15 acres with DCR land swap) solar farm? ~1-4 MW

DCR
15 Acre

Landfill
7 Acre

2MW – 8MWh (4 containers) To be installed in 2024

Summary

- Connection with Sterling opens opportunities to collaborate
- Wind Site nearing end of life (replace turbines)
- New Solar PV has obstacles
- Battery replaces diesel rentals for reducing transmission and capacity tariffs computed from power used during peak hour each month.
- Will adjust PPA's to meet 50% non-carbon, with hydro, wind, nuclear, solar, batteries, retiring wind RECs, purchasing other RECs if needed
- Long term we need Transmission to Quebec Hydro and offshore wind (with capacity factors over 50%). Smart Meters with AMI to implement demand response using VPP or other programs.
- PMLD prefers EaaS – I.e. private firm own and operate assets

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Thank You.

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