Bill H.423: Achieving a Town Plan's Energy Goals Through Municipal Group Net-Metering Projects

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Shoreham in a Nutshell

- Rural community, on Lake Champlain shore
- 1,247 people live in Shoreham
- 453 households, about a dozen dairy farms and fruit orchards
- Significant fraction of households are “cost burdened”, unable to invest in energy efficiency projects or other cost reduction options
  - U.S. Census: 22.4% of the 339 family households are earning less than $35,000 per year
- Planning Commission has been developing a *Shoreham Town Energy Plan* (STEP)
  - Long-term goal: 90% or more renewable electricity by 2050
  - Goal: shelter qualified low-income households from burden of financing their zero emissions energy
  - Evaluating the feasibility of an emergency power micro-grid for energy security against multi-week black outs
  - Survey result: 17% of households are commuting more than 45 miles per day, anticipate in the future that Electric Vehicle recharge loads will increase annual load by 50% by 2050
  - Fairly strong solar resource (by Vermont’s measure)
  - Weak class 2 wind resource

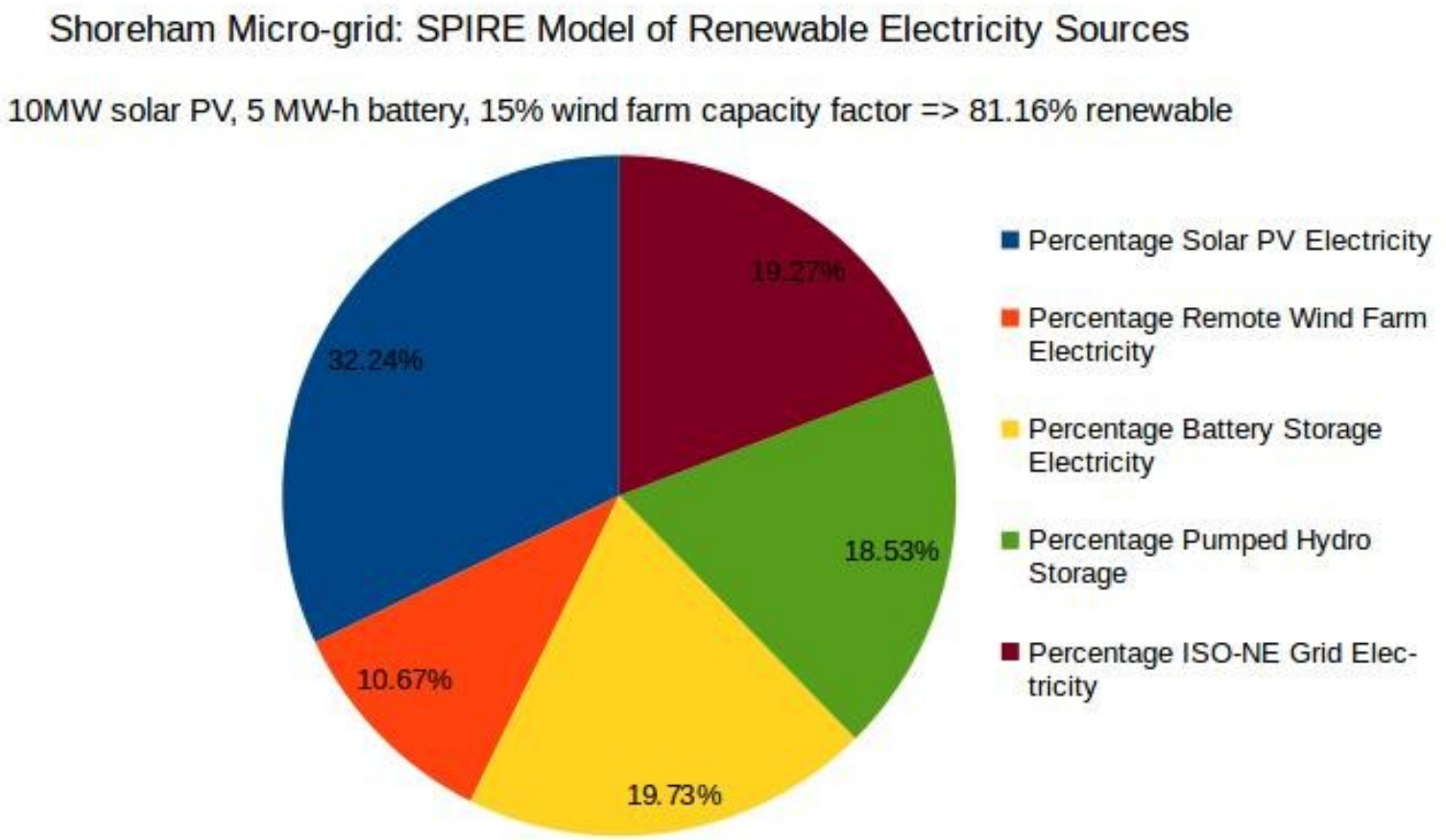
ACORN Community Solar Project

- Proposed group net-metering project to be sited in Shoreham:
  - 150 peak KW, will occupy approximately 1.5 acres
  - case currently pending before PUC
- Town of Shoreham has voted to authorize the purchase of up to 100 solar panels in the proposed ACORN Energy Solar project
- Once online, this solar project is expected to reduce municipal electric utility bills over 90%
  - About 9 years to pay back initial investment

SPIRE Modeling Tool

- *Stored Power Integrated Renewable Energy* tool is a configurable spreadsheet developed to model a Shoreham micro-grid utility
  - Hourly ISO-NE data, NREL solar data, NREL wind data
- Assumes a large-scale solar array could be built on town's Farnham property (use about 80 acres of 300+)
- Also models: battery storage, remote wind farm, pumped hydroelectric storage at lake shore, electric vehicle fleet recharging loads, heat pump loads

SPIRE Micro-grid Utility Modeling Results



Shoreham Planning Commission Supports Bill H.423

- Town is already investing in group net-metering as a public benefit to all of Shoreham's citizens
- Energy security requires a solar/battery storage facility as cornerstone of Shoreham's micro-grid
- SPIRE modeling forecasts about 52% of Shoreham's future electricity demand could be met by the new group net-metering generated by this solar/battery storage facility
- Enacting bill H.423 would enable Shoreham to meet its STEP energy goals with municipal owned assets generating group net-metering kilowatt-hours
  - Outcome: energy cost reduction benefit for those Shoreham households in lower income quintiles