Local Energy Showcase

Stories from six Upper Valley Energy Committees showcasing interesting and inspiring projects
Local Energy Showcase

1. Plainfield and Cornish
2. Lebanon Energy Advisory Committee
3. Claremont Energy Committee
4. Strafford and Thetford Energy Committees
5. New London Energy Committee
6. Hartford Energy Commission
LEBANON COMMUNITY POWER

Developing
A Local Transactive Energy Platform with Real Time Pricing

May 8, 2018

by City Councilor Clifton Below,
Chair, Lebanon Energy Advisory Committee & Lebanon Electric Aggregation Committee (LEAC)
Lebanon Community Power: Purpose

• Primary purpose is to accelerate development & cost-effective integration of local renewable energy and other Distributed Energy Resources, including storage, demand response (D.R., such as when electric vehicles charge) & targeted energy efficiency.

• Help our community accelerate carbon reduction, innovate, & rely “upon as much local renewable energy as possible” (City of Lebanon policy).

• Replicable model for other NH communities, like Community Choice Aggregation (CCA).
Lebanon Community Power: Origins

• **NH PUC endorsed in 6/17** Order as a pilot in its case to develop new Net Metering tariffs (rates).

• **NH RSA 374-F**: NH Restructuring Statute calls for more customer choice & development of retail elec. markets to drive innovation & efficiency.

• **NH RSA 53-E**: enables municipal aggregation law.

• Liberty Utilities agreed to work with the City & PUC Staff to develop a new tariff option for LED street lighting conversion.

• Growing importance of **time-varying rates (TVR)** e.g. time-of-use (TOU) and **real-time pricing (RTP)** to cost-effectively integrate solar & other variable renewables at scale w/o +natural gas generation.
Lebanon Community Power: Need for TVR

Illustrative Winter Impact of Solar at Different Levels of Dev. (from ISO-NE)

**New England’s Duck Curve**

- Shift flexible loads (D.R.) off-peak (Elec. Vehicles, HWH, TES for A.C. etc.)
- Discharge STORAGE
- Charge STORAGE
- + Flex. Load + Charge STORAGE

![New England’s Duck Curve Diagram](image-url)
Liberty Utilities:
$650,000 capacity upgrade needed on one circuit to meet peak demand of just a few hours per year (load duration curve at right) – instead: a Non-Wires Alternative (NWA)

All hours of July & Aug. sorted from highest demand to lowest for Craft Hill 11L1 Circuit (old W. Lebanon to downtown along US RT 4)

Extended Peak, 11 am – 5pm
Ideal for Solar + Storage
Lebanon Community Power: Need for TVR

• Real Time Pricing as an exchange medium reflects supply & demand & other RT conditions.

• LU proposed TOU rates for Battery Pilot – reflect marginal costs.

• Opportunity for $$$ savings for all with cleaner energy.
LCP: SMART LED STREET LIGHTING

• LEAC Street Lighting Subcommittee considering Smart Street Lighting (a.k.a. as adaptive, networked, or connected street lighting).
• Dimmable communicating network – potential for lower energy use & costs over the long term.
• Night Sky friendly, 3000 K or warmer.
• May help LCP and Liberty find the best metering solution.
• Other potential future ‘smart city’ uses/apps.

From Navigant Webinar “From Connected Street Lights to Smart Cities”
Community Solar Enabled by LCP

- Direct Producer to Consumer Sales (e.g. PPAs)
- Fixed price PPAs can work with RTP on the margin to incent Solar + Storage & D.R.
- Direct consumer investment in off-site solar (on City or other sites) w/tax credit available
- Possible consumer investment in cooperatives
- On-bill net metering credits to min. tax issues.
- Avoided Transmission Cost Credit for Large Systems (no T credit now >100 kW systems; Liberty has agreed to pilot a T credit based on RT avoided costs w/City).
Request for Information (RFI) for the Provision of Services to Support 3 Related Electrical Projects

RFI for: 1) Smart LED Street Lighting Conversion, 2) Interval Metering for the City’s Electric Pilot (in collaboration with Liberty Utilities), & 3) Services to Support Lebanon Community Power
Claremont’s Energy Story
Claremont’s Energy Story

RECENT PROJECTS
- Zoning and Land Use Regulations
- Municipal Building Audits
- Weatherization
- School District – Renovations & Performance Contracting

PENDING PROJECTS
- Zoning and Land Use Regulations (ONGOING)
- Facilities Management
- Energy Use Tracking
- Water & Wastewater Infrastructure
- Transportation
Claremont’s Energy Story

- CDFA Grant, Clean Energy Fund
- 1,000 Streetlights, Completed 2017
- 60% Reduced Energy Demand
- 1-2 yr Return on Investment

- 151kW DC, “behind the meter”
- 24% Reduced Energy Demand
- 10-11 yr Return on Investment
CLAREMONT ENERGY ADVISORY COMMITTEE

The newly formed Claremont Energy Advisory Committee is in need of five members and two alternate members. Term of service is 2 years. Members must be residents of the City. Council is recommending these openings be filled with those with experience in energy issues and efficiency, education and training, and/or an engineering background. Any resident is welcome to apply. If you are interested in serving on the Committee, please complete an application form and return it.

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PENDING PROJECTS
- Zoning and Land Use Regulations (ONGOING)
- Facilities Management
- Energy Use Tracking
- Water & Wastewater Infrastructure
- Transportation (CMAQ)
Strafford and Thetford
Energy Committees

Elizabeth Mine Superfund Solar Site
Thetford Strafford Community Solar!

ROUND TABLE
TSCS Site for the 120 kW AC Solar Array
How Does It Work?

120 kW AC Array

About 185,000 kW/hours per year

Green Mountain Power Net Metering Credits

Annual Lease Payment to Landowner & Maintenance

Member Investment
About $1900 per share
(Add $2750 minus 30% Federal Tax Credit)

Member Credit
About $200 value per share each year

Town pays 90% normal electric rate

85%

15%
You Can Do This

- Find right landowner/land
- Form an LLC
- Find a solar contractor
- Recruit shareholders / members
- Find non-profit off-taker
- Develop budget and collect deposit for fees
- Sign Engineering Procurement and Construction Agreement
Thetford Energy Committee
Bob Walker
802.785.4126
bobwalkervt@gmail.com

Strafford Energy Committee
Janet Cavanagh
802.765.9961
jclainc1@gmail.com
New London Energy Committee
Kearsarge Region

ENERGY & ENVIRONMENT EXPO

Saturday, April 7  10 am - 3 pm
Mercer Gym, Colby-Sawyer College
New London, NH

* Renewable Energy
* Energy Efficiency
* Earth-Friendly Living
FREE Admission

Hosted by:
Kearsarge COA Climate Action Group
New London Energy Committee
Andover Energy Group
Vital Communities

For information:
Joe Kubit, 603-748-4404
gkubit70@gmail.com
Jamie Hess, 802-291-3339
nordicskate@gmail.com

Free energy-efficient LED light bulbs to the first 25 participants through the door!