

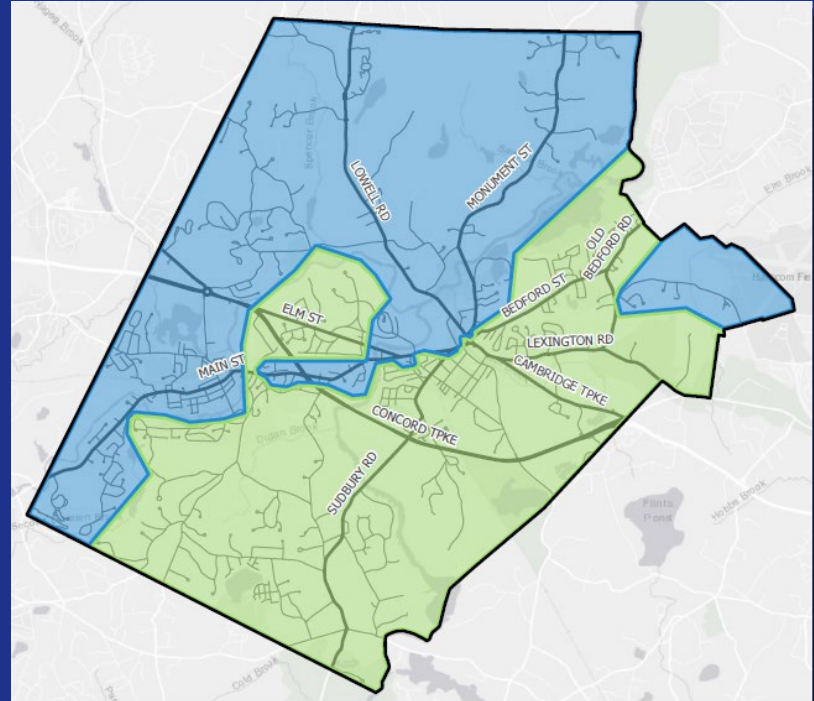
ARTICLE 1: In-town Utility Scale Battery

Mr. Foulds moves that the Town take affirmative action on Article 1 as printed in the Special Town Meeting Warrant.

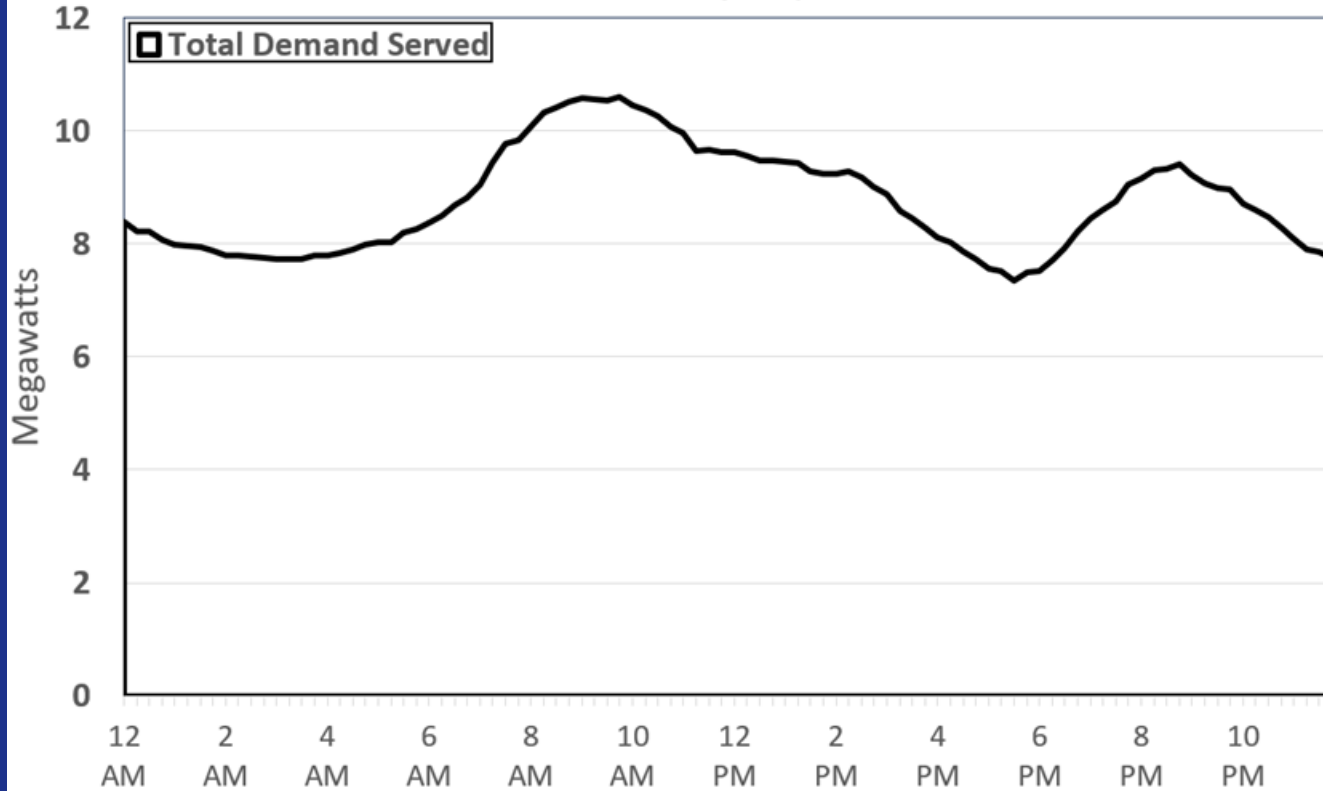
NOTE TO MODERATOR: 2/3 VOTE REQUIRED

Concord Circuits

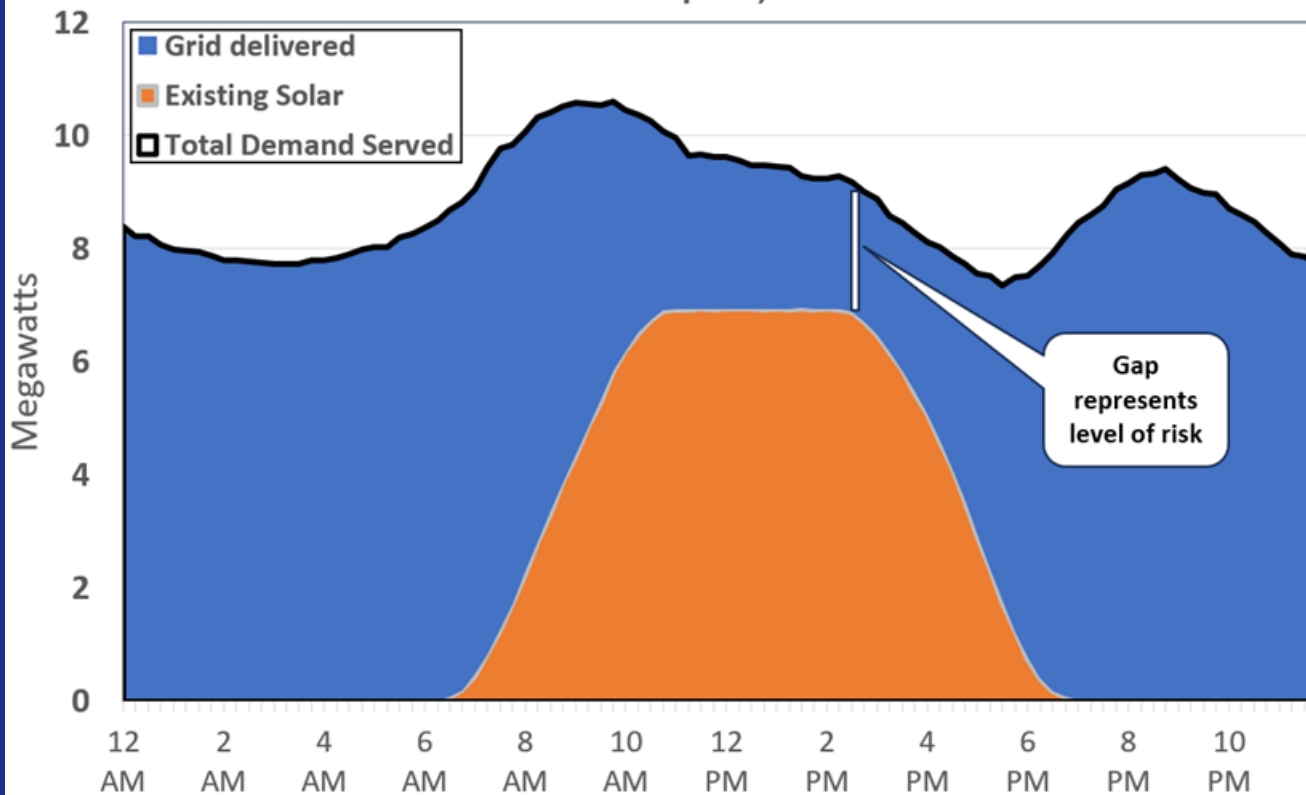
- Circuit 2 (blue) has 7 megawatts of solar (7,000 kilowatts).
- At times of the year, the demand for customers on that circuit drops extremely low.
- The circuits need a minimum load of 1.25 megawatts.



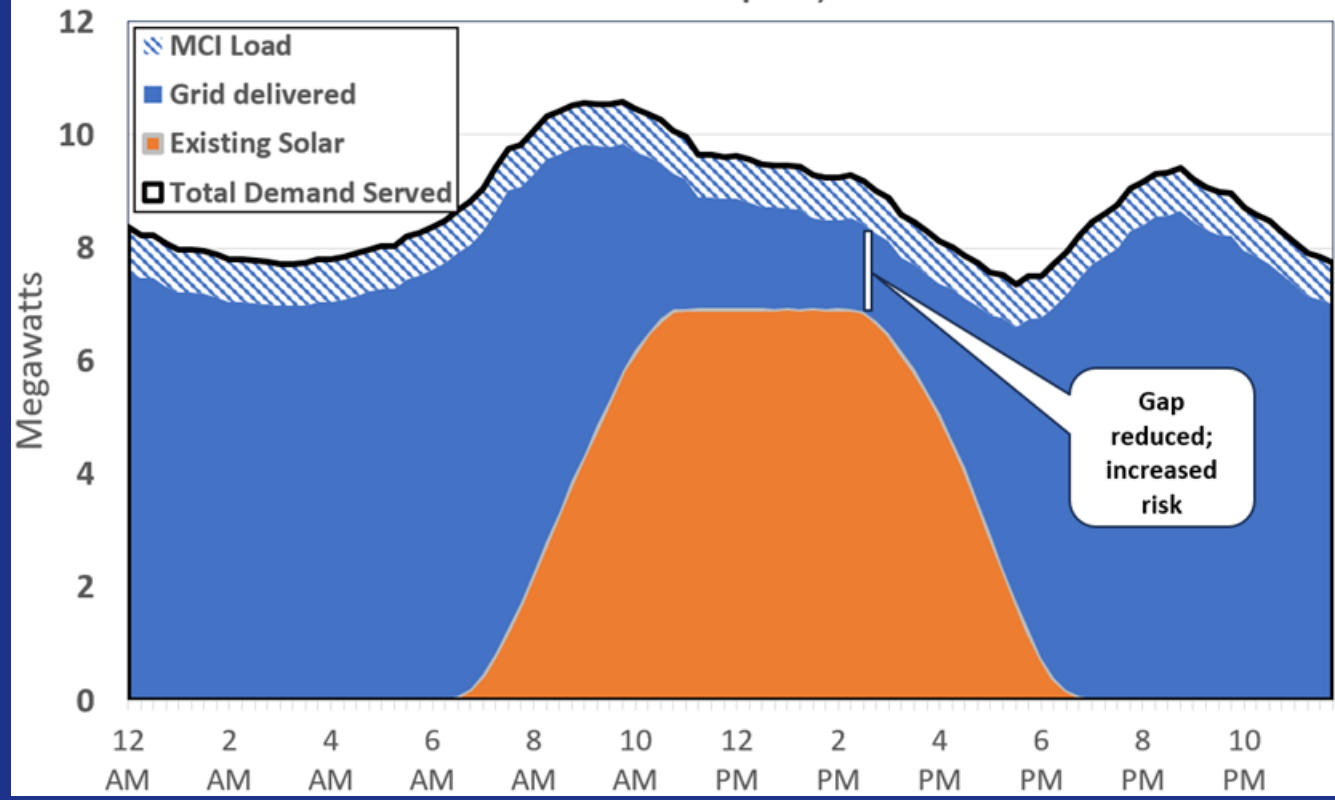
Electricity Delivered to Solar Saturated Service Area April 9, 2023



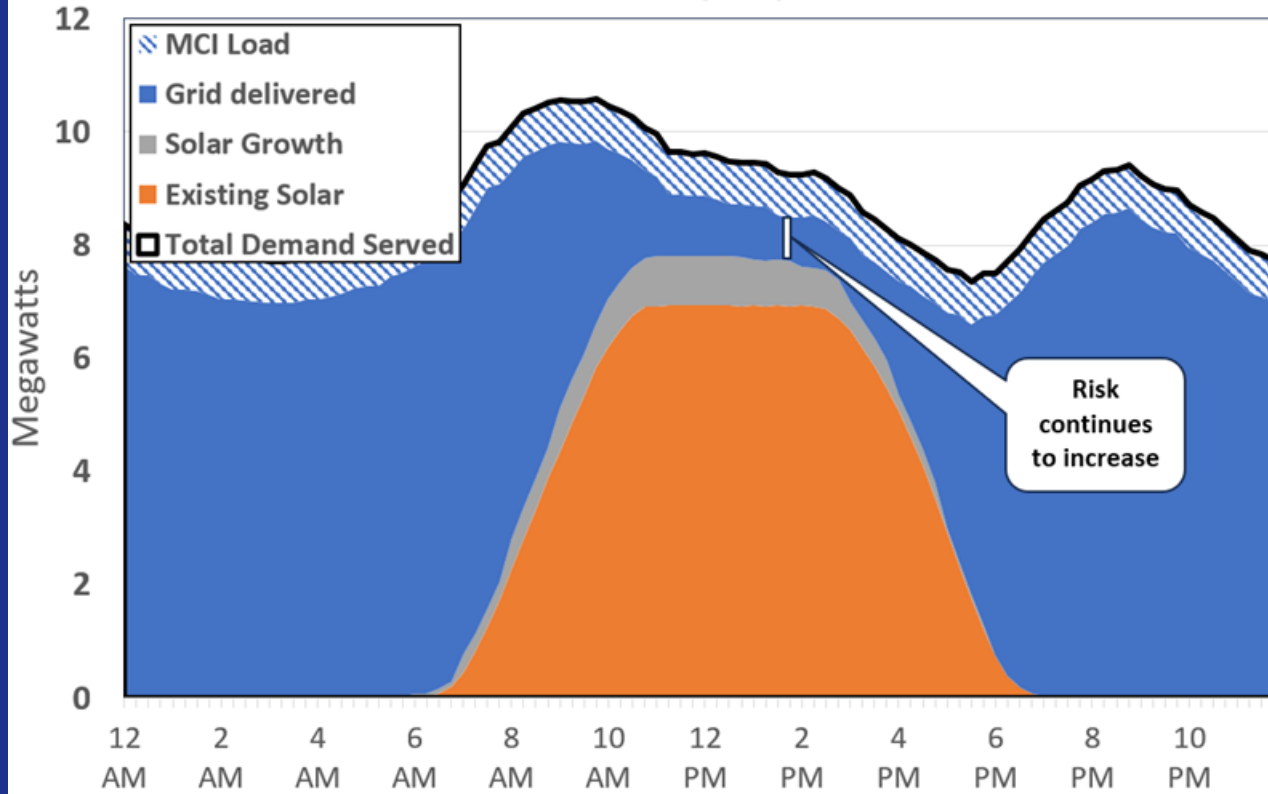
Current Energy Elements, Solar Saturated Area April 9, 2023



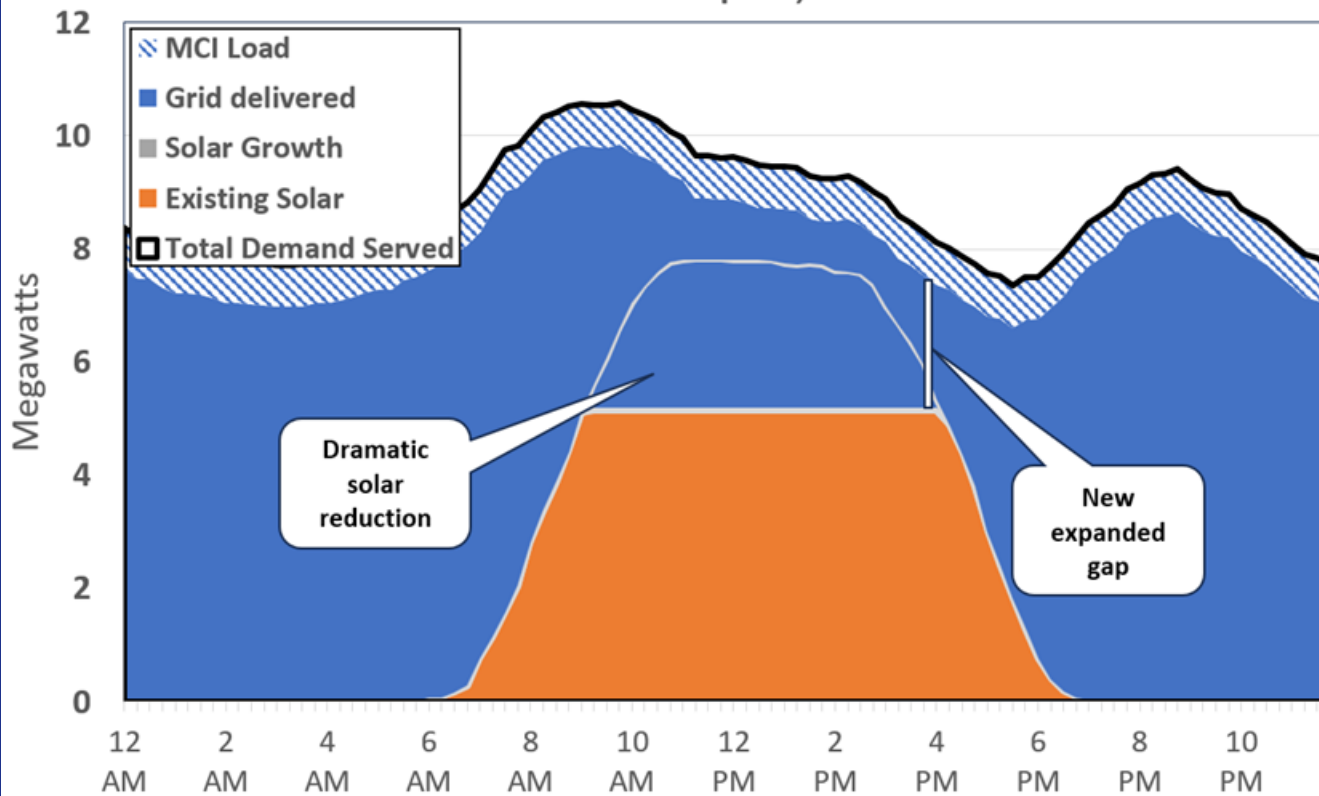
Reduced Demand, Loss of MCI in Solar Saturated Area April 9, 2023



Estimate for Residential Growth in Solar Saturated Service Area April 9, 2023



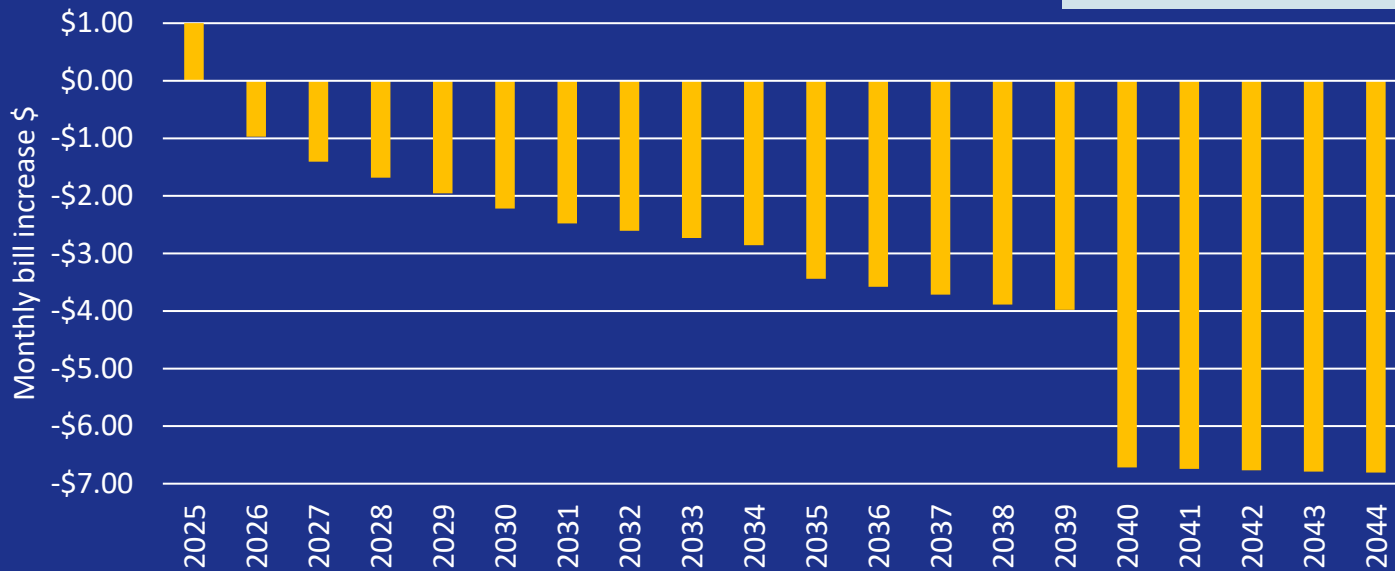
5MW/15MWh Battery Benefit to Solar Saturated Service Area April 9, 2023



Rate Impact

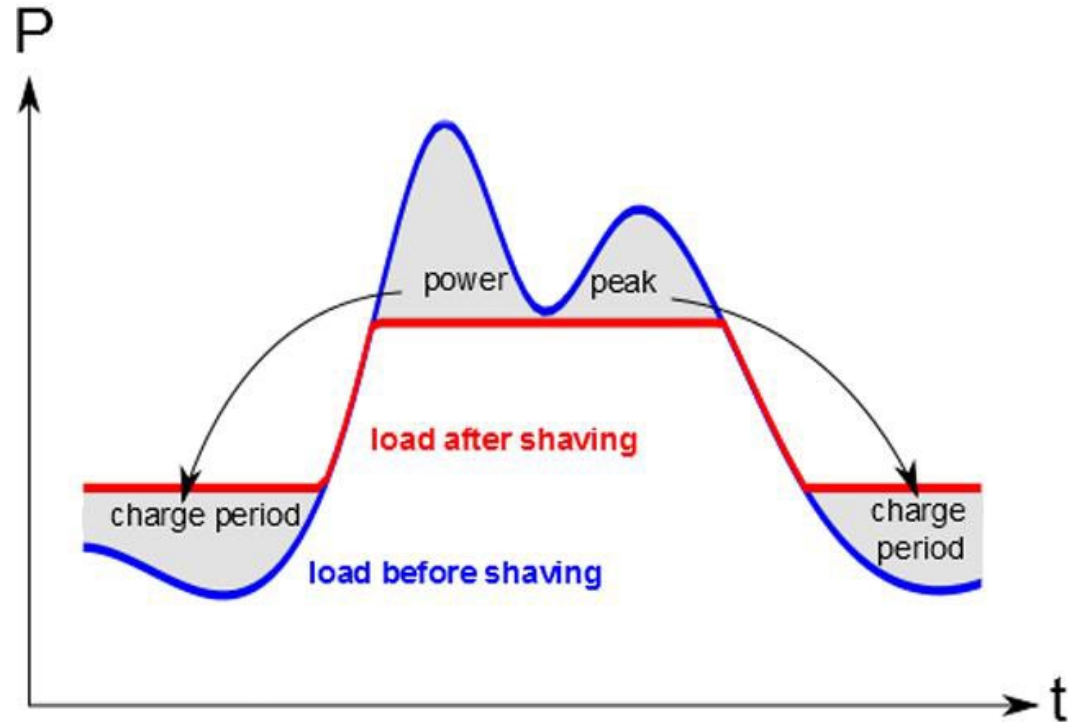
4.99MW / 14.97MWh

Million \$	
Capital Cost	\$10.4
IRA Credit	\$2.6
20-yr NPV	\$3.1



Average customer 883 kWh/mo.

Peak Shaving



Battery size

Recommended size:
4.9MW / 14.97MWh

A bigger battery:

- Better manages solar saturation.
- Allows rate payers to invest in more solar capacity
- More progress towards Town's 60MWh storage goal
- Lower capital cost per MW due to economies of scale
- Takes advantage of more dollars of the IRA credit
- Higher cashflow in dollars; more savings to ratepayers

2017

CMLP's Strategic Initiatives

	Initiative	Calendar Year Projection	Dependencies
1	NISC	2017 - 2018	none
2	Advanced Metering System	2018 - 2019	1
3	Non-Emitting PPAs and RECs	2017 - 2025	none
4	Rate Design	2020	1,2
5	Fuel Switching	2019	none
6	Electric Vehicles	2018	none
7	Utility Scale Storage	2019	2
8	Smart Thermostats	2020	2
9	Energy Efficiency Programs	2020	none
10	Distributed Solar	2017 - 2025	none

Alternatives we have explored:

- Curtailment – reduce or shut off the solar
 - Illegal or unsafe
- Connect or reconfigure the circuits
 - Short-term emergency only; you lose power protection and resilience. Changes are time-consuming and costly.
- Third-party battery construction
 - Their priority on peak shaving does not solve our resilience issue or allow for future solar expansion.
- Adding load
 - Early stages; requires capital investment dependent on certainty

Utility-Scale Battery Storage

1. Protects the distribution system to ensure there is no downtime or damage.
2. Allows for continued expansion of in-town solar.
3. Saves emissions and money by shaving the peak.

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