Enel X Recommendations to the Commission To Study the Economic, Environmental and Energy Benefits of Energy Storage to the Maine Electricity Industry

11/19/19

The Enel Group

A multinational power company and leading integrated player in the world's power and gas markets

Publicly Committed to UN Sustainable Development Goals

$85 B
Annual Revenue

69,000
Employees

31
Countries in 5 continents

43 GW
Renewable Capacity

50+ Yrs
Experience

No. 20
Fortune's Change the World List

We are a leader in the new energy world

1st **network** operator[1]

World's largest private player[2] in **renewables**

Largest retail **customer** base worldwide[1]

73 M customers[1]

43 GW capacity[2]

46.5 GW capacity[3]

6.2 GW Demand Response

34 Countries, 5 continents, 69,000 Employees[4]

1. By number of customers. Publicly owned operators not included
2. By installed capacity. Includes managed capacity for 4.2 GW
3. It includes nuclear
4. Includes customers of free and regulated power and gas markets

Only Utility on Fortunes top 50 "Companies Changing the World"

Flexibility Solutions Platform

Connecting any asset to any value-stream globally

Connect all types of distributed energy assets…

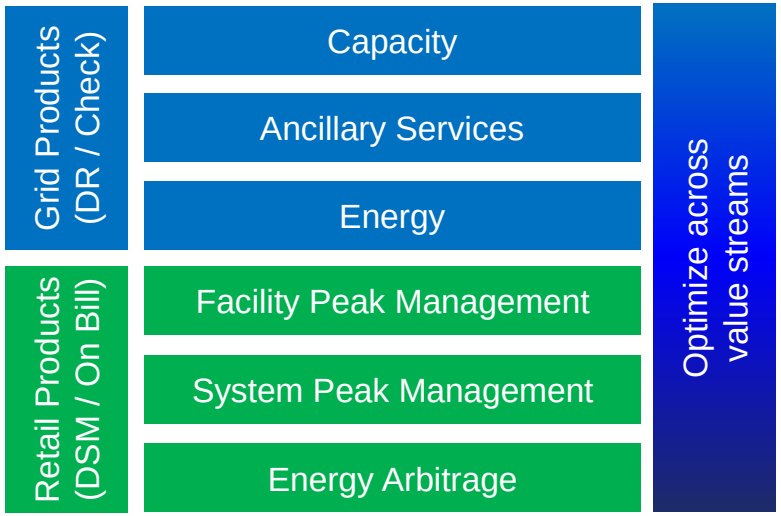
Real-time Variable Loads

PV & Other Distributed Generation

Energy Storage

EV Charging

… and optimize across all available grid and retail value streams



… using a flexible and scalable global "flexibility platform"

Example of Enel X Projects in New England

Environment + Energy LEADER

E+E CONFERENCE E+E100 E+E AWARDS RESOURCE HUB SUPPLIER DIRECTORY

UMass Boston Taps Enel X for Solar Plus Storage Project

SEPTEMBER 25, 2019 BY ALYSSA DANIGELIS

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Storage can reduce customer's demand charges, participate in Eversource's peak shaving program, MA SMART, and the ISO-NE demand response program; these revenue streams are all necessary

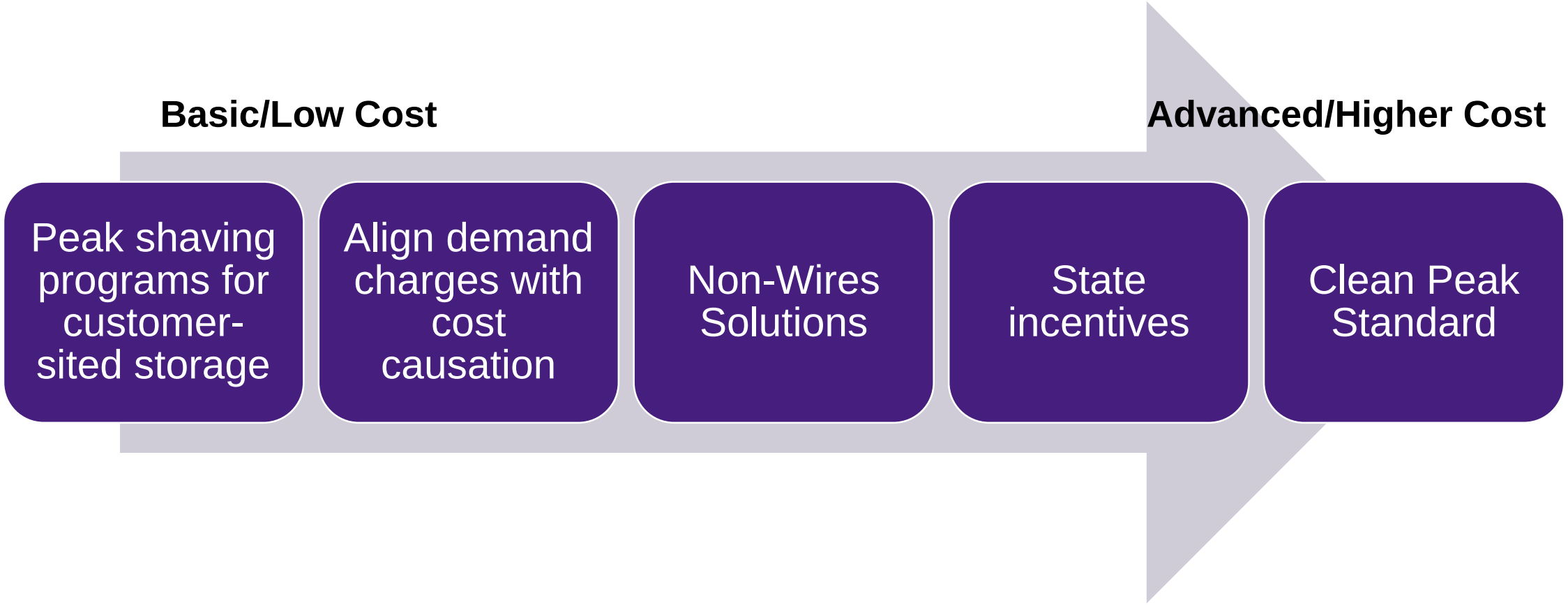
Project also received a grant from MA Clean Energy Center

Problem Statement

How do we stimulate storage in Maine in a way that results in all ratepayers saving money, provides large energy users (job creators) the opportunity to reduce their overall energy spend, and clean the grid?

Animating Storage in Maine

All programs can deliver net benefits if properly designed



Menu of Options

Create programs that compensate customer-sited storage for dispatching during the 1% of peak hours that drive 8% of costs

- Determine value of peak-time dispatch (e.g. top 100 hours)
- Compensate storage based on performance
- Similar to programs in MA, RI, CT; five-year payment reduces financing costs
- Benefits: Cost-effective, makes local businesses more competitive, reduces utility bill for cities/towns, lowers emissions

Menu of Options

Demand charges

- Demand charges can comprise ~30% of a customer bill; align these charges with cost causation

Non-Wires Solutions Programs

- Require distribution utilities to consider and procure NWS before making significant distribution/transmission upgrades; comprehensive consideration of benefits

State incentive programs

- Provide $ for storage that meets operational requirements, both solar paired and standalone

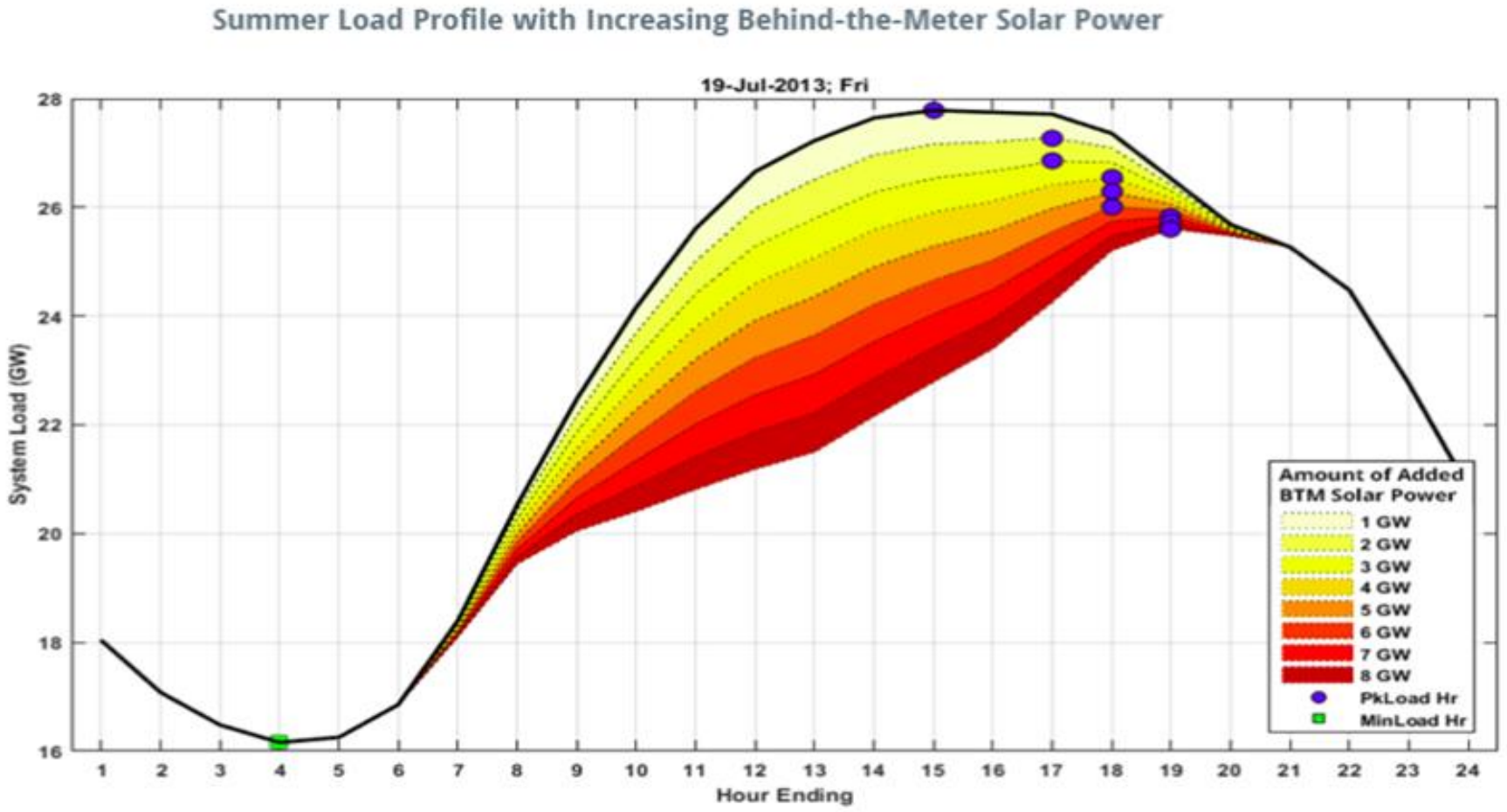
Clean Peak Standard

- Reduces high costs incurred during peak hours and emissions

Storage well-positioned to address peak issues

Summer

Summer comprises the highest electricity use in New England, largely because of air conditioning. PV clearly helps "shave the peak" when the peak falls during daylight hours. Because greater amounts of PV will shift the timing of peak demand for grid electricity to later in the afternoon or evening, PV's ability to reduce peak demand will diminish over time.



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