

POWER TO FUEL REPORT

*Briefing for the
Maine Legislature*

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PRESENTATION ROADMAP

Introduction

**What is
“Power to Fuel” (PTF)**

Potential Uses

Considerations

OVERVIEW OF LEGISLATIVE MANDATE

P.L. 2021, Ch. 298

“...shall consider the feasibility of a power-to-fuel pilot program that would result in the development of power-to-fuel projects utilizing renewable energy...shall also:

1. Evaluate whether a power-to-fuel project would benefit the electric grid;
2. Provide estimates of the ratepayer impact of a pilot program and how that compares with other types of energy storage technologies; and
3. Review what measures other states have taken to facilitate the development of energy storage and whether those measures were successful in promoting energy storage, minimized ratepayer impacts and promoted a diversification of energy storage technologies

DEFINITIONS

Statutory Definition of “power-to-fuel project”

“...a facility that converts renewable energy to hydrogen gas, methane or other fuel.”

For the purposes of *today’s* discussion

“Generator” or “Resource”

- A facility that produces electric energy (supply)

“Retailer”

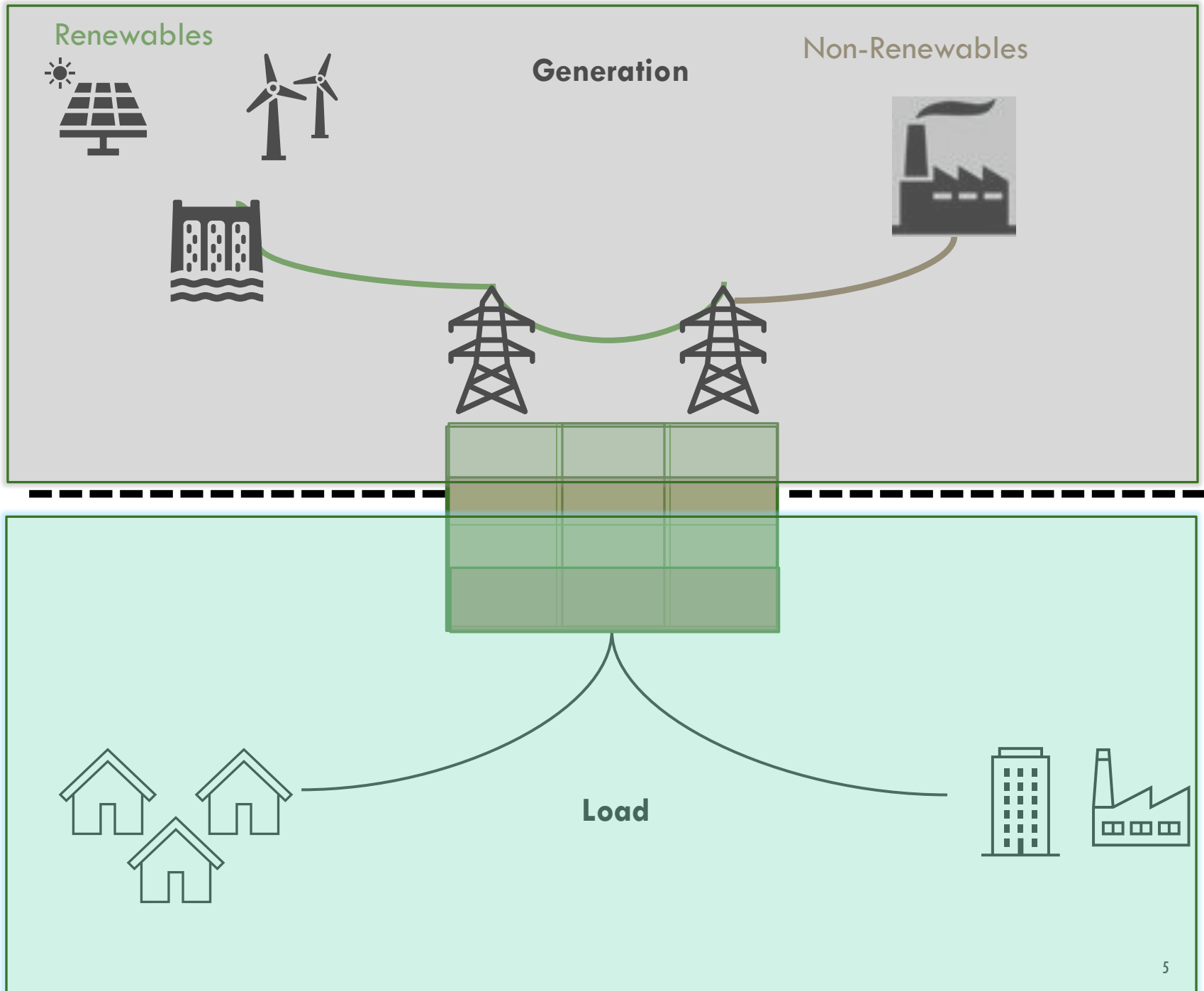
- “Competitive Energy Provider” or “Standard Offer Provider”
- Provides supply (electricity) to consumers and bills consumers (either through T&D or direct bill)

“Consumer”

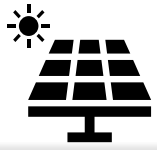
- A residential, commercial or industrial end-use customer of a T&D utility

“T&D Utility”

- Utility which provide transmission and distribution services, including billing

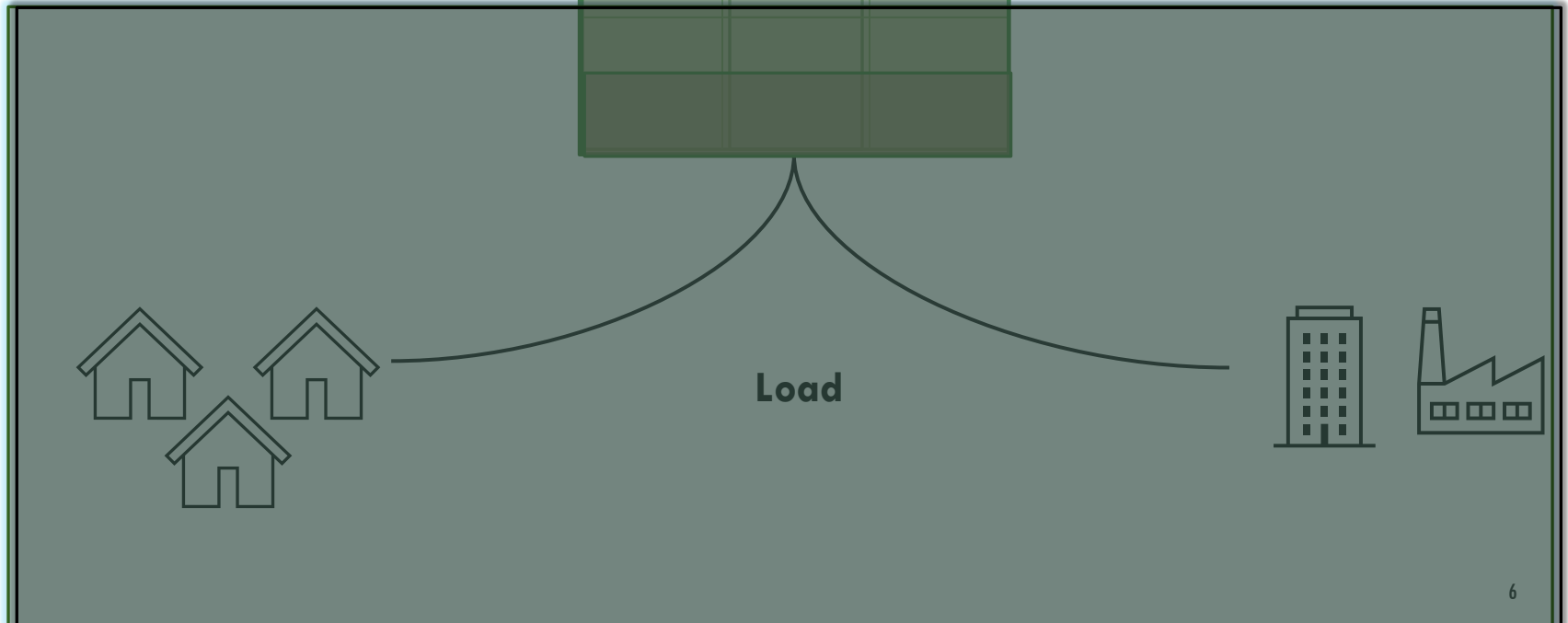
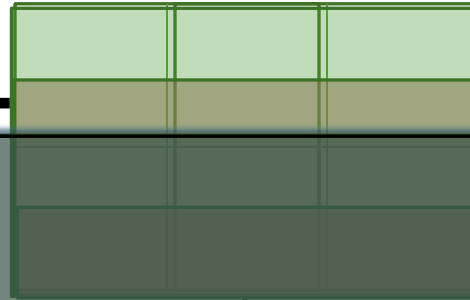
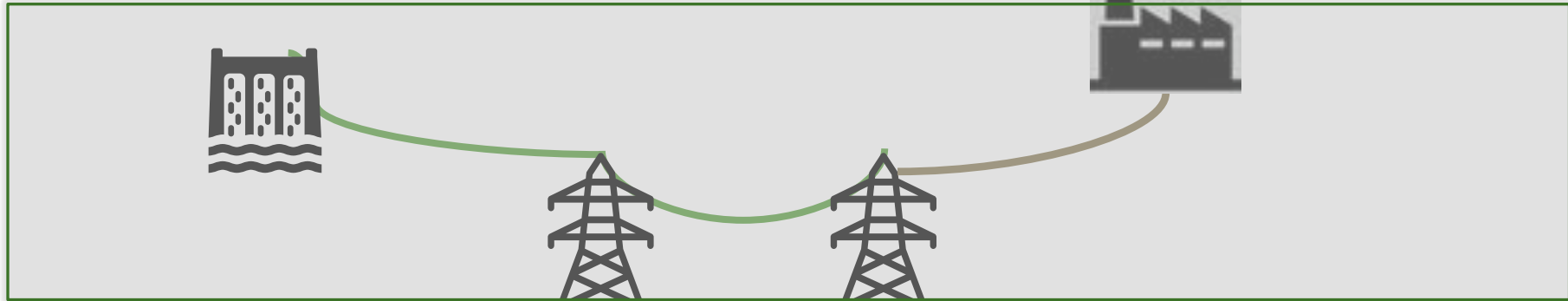


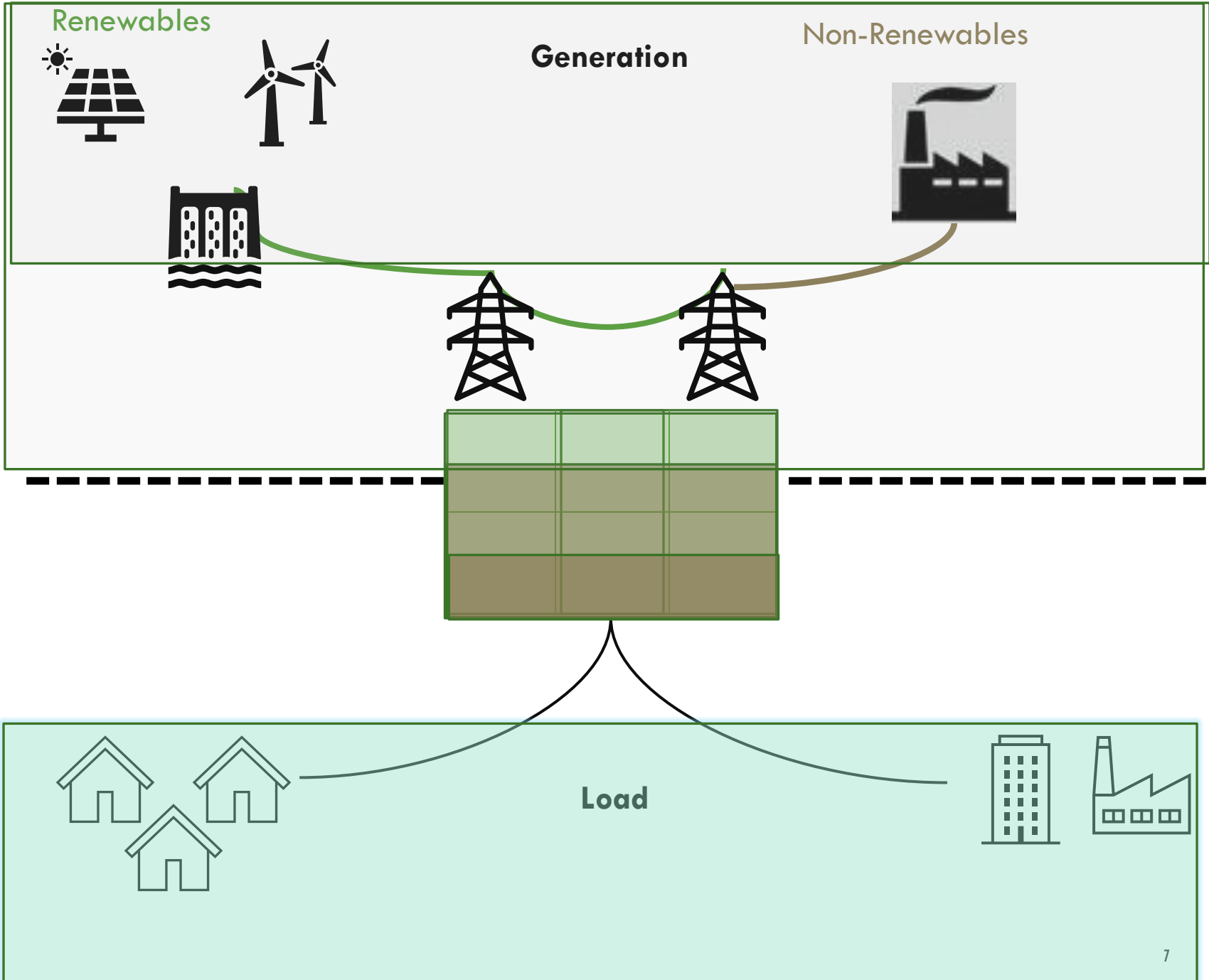
Renewables



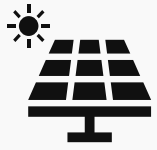
Generation

Non-Renewables



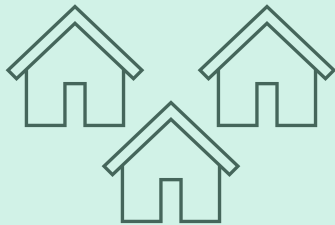
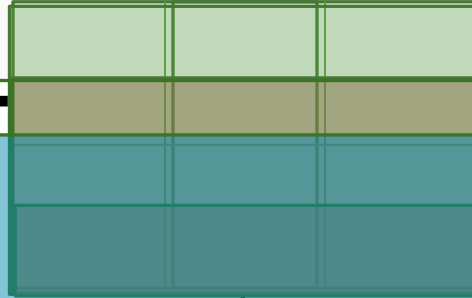
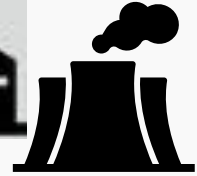


Renewables



Generation

Non-Renewables



Load



PTF PROJECTS (EXAMPLES)

To replace natural gas

New Jersey Resources will use electricity from an adjacent solar facility to power electrolyzers, then blend into gas distribution system.

To act as a battery

Vermont has a project which uses electrical power to essentially compress air into liquid state then use that compressed air to operate a turbine.

HIGHLIGHTING ENERGY STORAGE PROJECTS

In New England States

- Variety of retail battery incentive programs in RI, MA, CT, and VT

In Maine

Efficiency Maine Trust:

- Load Shifting Initiative
- Load Management Innovation Pilot
- Isle au Haut: Load Management Pilot

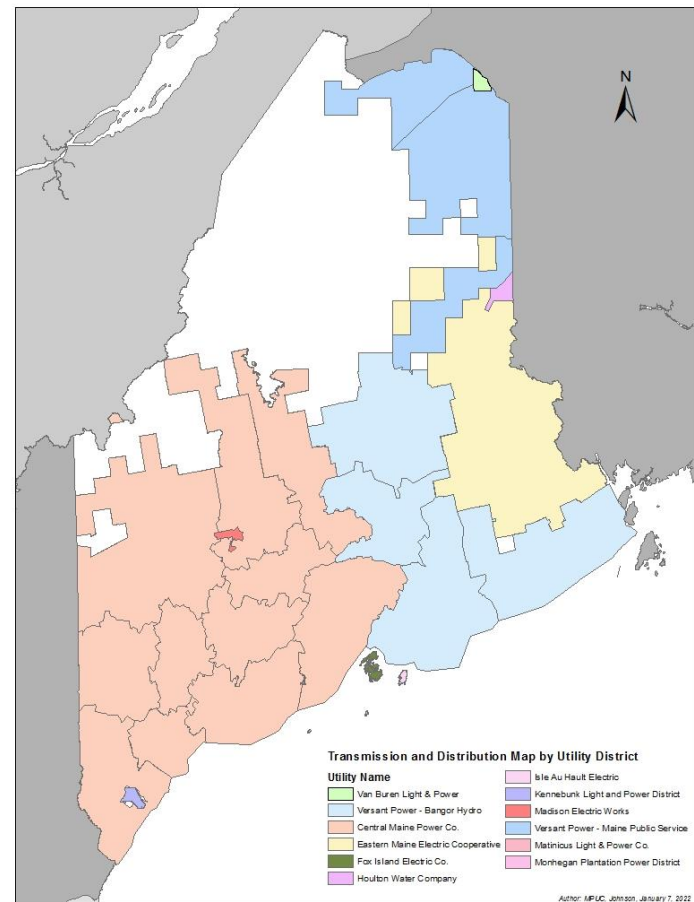
Gridscale

- approximately 600 MW from last Forward Capacity Auction at ISO

POTENTIAL OF PTF IN MAINE

PTF Projects could *potentially*:

- Complement renewables generation
- Defer T & D upgrades
- Encourage renewables development in areas with low or negative prices
- Provide benefits to natural gas consumers
- Provide industrial feedstocks



POINTS TO PONDER

- Highly operations and location specific
- Commercialization is in early stages
- Many different ways to approach learning about PTF benefits
- Potentially multiple forms of funding available

THANK YOU!

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