



MAINE DEPARTMENT OF
Energy Resources

Front of the Meter Distributed Energy Resources Program Design

Pre-read Material for June Webinar



CURRENT ENERGY GROUP



Pre-read Objectives

1. Provide foundational information to lay the groundwork for productive stakeholder engagement in the development of a new FTM DER program in Maine.
2. Identify existing rules and requirements that are applicable to FTM DER program design from relevant jurisdictions (including State of Maine law, Maine PUC, FERC, and ISO-NE).
3. Identify DER programs administered in peer jurisdictions that can provide insight and key considerations for Maine.

Contents

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- II. Project Overview
- III. Maine Context
- IV. Peer Programs

Acronyms

Acronym	Term	Acronym	Term
BCA	Benefit-cost analysis	IOU	Investor-owned utility
BTM	Behind-the-meter	ISO-NE	Independent System Operator – New England
CMP	Central Maine Power	kV	Kilovolt
DER	Distributed energy resource	LD	Legislative Document
DERA	Distributed energy resource aggregation	MPUC	Maine Public Utilities Commission
DG	Distributed generation	MRS	Maine Revised Statutes
DGSG	Distributed Generation Stakeholder Group	MW	Megawatt
DOER	Maine Department of Energy Resources	OATT	Open Access Transmission Tariff
DRAA	Demand Response Resource Aggregation	OPA	Maine Office of the Public Advocate
DRDERA	Demand Response Distributed Energy Resource Aggregations	NEB	Net Energy Billing
DSO	Distribution system operator	NWA	Non-Wires Alternatives
EMT	Efficiency Maine Trust	NWAC	Non-Wires Alternatives Coordinator
FERC	Federal Energy Regulatory Commission	PL	Public Law
FTM	Front of the meter	REC	Renewable energy certificate
IGP	Integrated Grid Plan		

Project Overview

Assignment | LD.1777 assigns DOER to design a front-of-meter DER program & submit to MPUC by 9/30/2026

Summary of Statutory Assignment

The Governor's Energy Office (now DOER) shall design a program or programs to encourage the development of front of the meter distributed energy resources in the State[...]. If the [Public Utilities Commission] finds that the proposal provides **benefits to ratepayers in the State in excess of the costs to ratepayers**, the commission shall by rule implement the program or programs.*

The proposed program would “**succeed the net energy billing program.**”

* Source: Maine Statute 35-A M.R.S. [§3209-I \(2\)](#)

Front of Meter Definition

Electric generating facility that uses a renewable fuel or technology (...) is located in the service territory of a transmission and distribution utility in the State and is **interconnected to the distribution grid on the utility side of a customer's utility meter.***

Key Rules & Restrictions

Eligible renewable capacity resources⁺

- Fuel cells
- Tidal power
- Geothermal installations
- Hydroelectric
- Biomass generators
- Anaerobic digestion
- Solar installations
- Wind installations

+ Maine Statute 35-A M.R.S. [§3210 \(2\)](#), paragraph B-3

Assignment | LD.1777 assigns DOER to design a front-of-meter DER program & submit to MPUC by 9/30/2026

“In designing the program or programs, the office shall consider:

- 1 The marginal benefit to ratepayers in the State of the time value of generation & the location of generation;
- 2 Reasonable compensation rates specific to a distributed energy resource's size and generation type;
- 3 The development & use of a compensation model based on the value of distributed energy resources;
- 4 Opportunities for a load reducer program for commercial customers;
- 5 Incentivizing energy storage that provides benefits to ratepayers in the State; and
- 6 Necessary changes to utility rate structure, billing systems, data collection or metering to implement the program.

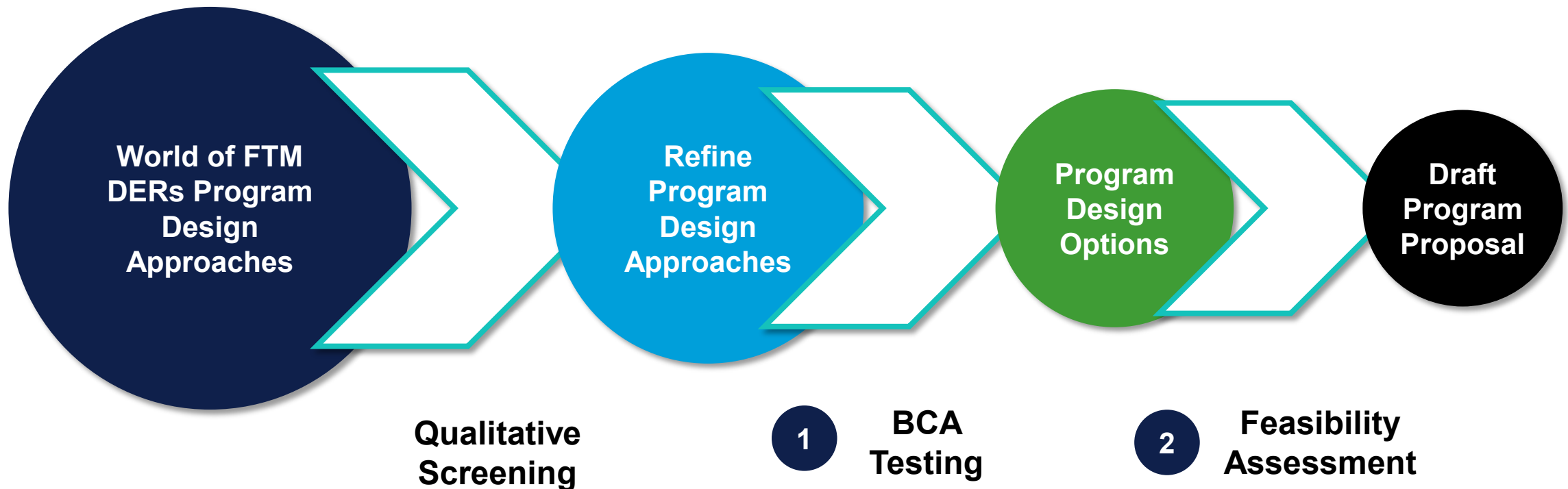
The office may consider other factors the office determines appropriate and shall solicit public input prior to the submission of a program design to the commission.”

* Source” Maine P.L 2025 [Ch. 430 §14](#)

Process | DNV and Current Energy Group's approach to program design and development

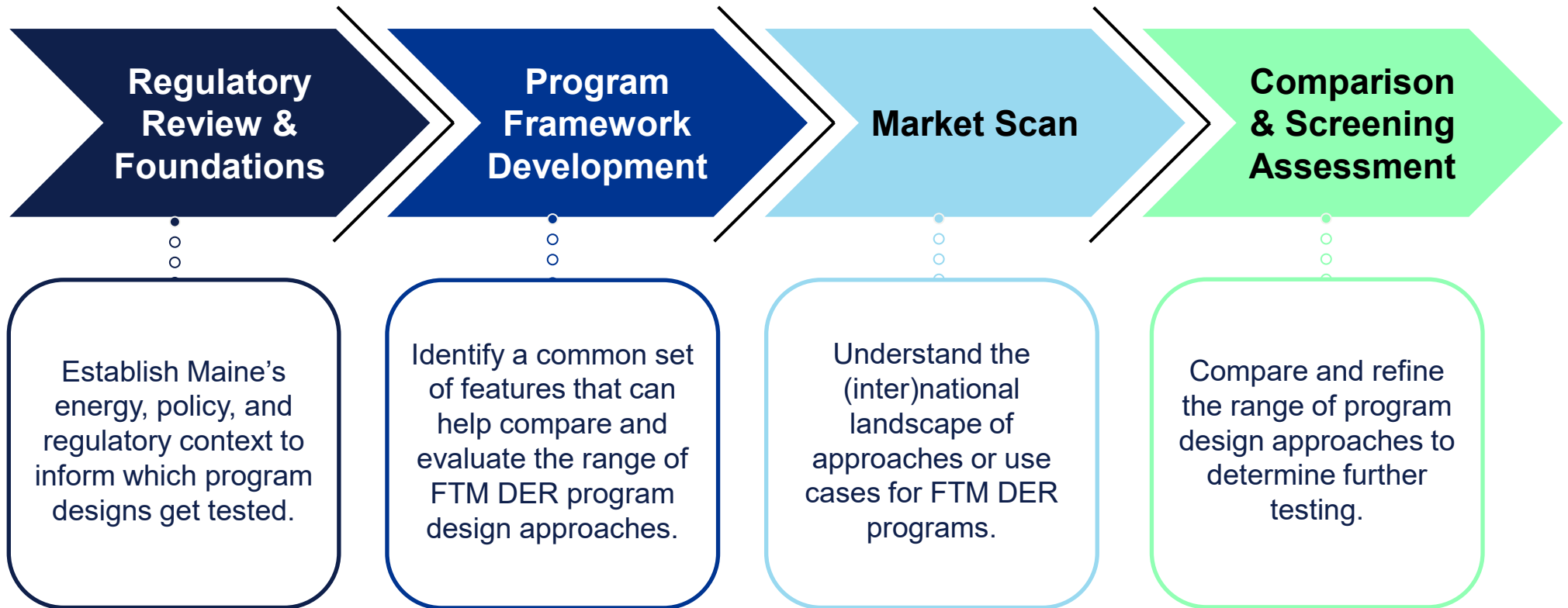
Objective

Develop a front-of-the-meter (FTM) distributed energy resource (DER) program that delivers benefits that exceed costs to Maine ratepayers while meeting requirements of 35-A M.R.S. §3209-I.



Process | Inputs to FTM DER program design

This pre-read provides key policy and regulatory context for Maine DER program design, including peer comparisons. The June 25th webinar will build upon this initial brief, discussing key program design options and analytic approach.



Project Timeline

Milestone	May	Jun	Jul	Aug	Sep
Regulatory Review & Framework					
Program Design & Development					
<i>Public Pre-Read: Project Background Deep Dive</i>					
<i>Public Webinar #1: Project Background, Framework Options, BCA Methods & Evaluation Scenarios</i>					
Draft Program Proposal & Report Released					
<i>30-day Public Comment Period</i>					
<i>Public Webinar #2: Review of Draft Program Proposal & Report</i>					
Final Program Proposal & Report					

Maine Context:

Policy goals, regulations & programs

Policy Context | State, federal, and regional regulations & programs will inform framework design

Rules and requirements across various jurisdictions (MPUC, FERC, State of Maine, and ISO-NE) provide critical context for the program framework.

State Laws

- Rate design
- Capacity resource adequacy
- Generator aggregation
- RPS

State Regulations

MPUC issues rulings that impact FTM projects, on topics like non-wires alternatives, cost-benefit analyses, small generator interconnection, etc.

Maine FTM Program Design

Federal Regulations

- FERC Order 2222 (DER participation in wholesale energy markets)
- FERC interconnection procedures

Wholesale Market Rules

ISO-NE sets rules for FTM project participation in competitive wholesale energy and ancillary service markets.

Energy Goals | Promote ratepayer affordability & system resilience, reduce carbon emissions

Grid-Wide Goals

- 1 **Reduce carbon emissions.** 100% clean electricity grid by 2040^{*+~}
- 2 **Enhance grid to manage challenges of the 21st century.** Invest in new technologies to enable the grid to better manage increased load and improving grid utilization while promoting resiliency & reliability^{*+~}
- 3 **Invest and deploy energy storage technology.** Integrate 400 MW of energy storage by 2030[~]

Reduce energy costs for Maine ratepayers

- 4 **Bring down ratepayer electricity expenses & energy burden.** Reduce utility bills and energy costs for Mainers. Ensure that lower-income customers are protected. ^{*+}

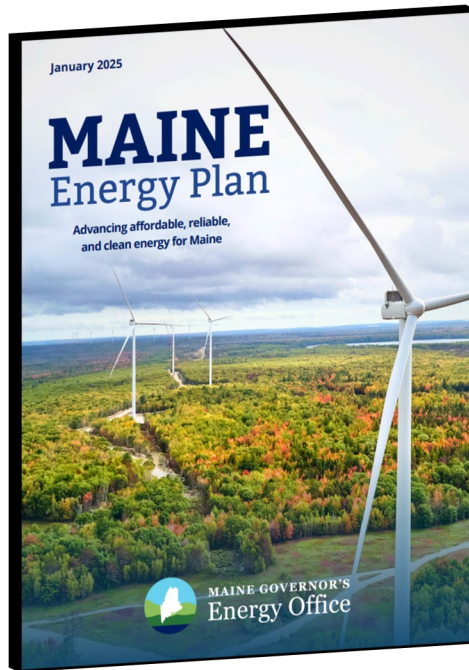
Sources:

* Maine Climate Action Plan
+ Maine Energy Plan
^ Renewable Resource Portfolio Requirements
~ Public Law 2021 Chapter 298 (LD 528 - An Act To Advance Energy Storage in Maine)

Energy Goals | Advance affordable, reliable, clean energy

The Maine Energy Plan describes the state's energy landscape and outlines ambitious plans and priorities to provide affordable, reliable, and clean energy.

Maine Energy Plan



Published by Maine Department of Energy Resources (DOER) in 2025, **Maine's Energy Plan** provides a **strategic energy roadmap** that must:

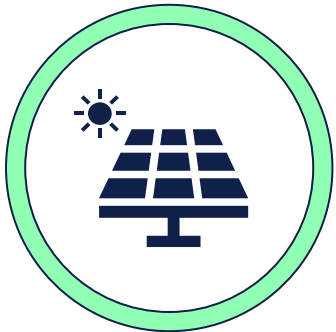
- "Identify **opportunities** to **lower** and to **maintain** reasonable total energy **costs** for consumers in the State..." and
- "Detail the State's **progress** toward meeting its **energy goals** for new renewable energy generation and energy storage, **including distributed energy resources**..."*

Distributed energy resources play a key role in several of the Plan's Objectives and Strategic Key Actions.

* Maine Statute 35-A M.R.S. [§10305 \(1\)](#)

DERs in Maine | Overview and opportunity (1/3)

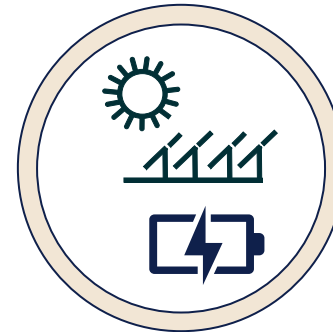
Maine's community solar program & energy storage targets have supported widespread deployment of front-of-meter DERs in the state. Recent rule changes have slowed development of new resources; however, Maine maintains a robust DER pipeline.



Established in **2019**, Maine's **community solar program**, "Net Energy Billing," promoted **widespread development** of FTM solar in the state. Additional legislation in **2021** set **energy storage installation** goals.



Between **2019 and 2023**, **+500 MW** of community solar was installed in Maine. Installations peaked in **2024** with **450 MW** of new community solar. NEB rule changes in 2025 stalled development and new **capacity dropped 87%** year-over-year.



Through May 2026, **+1,000 total MW-AC of community solar** and **+250 total MW of energy storage** projects have been installed in Maine.



As of February 2026, over **240 MW of additional battery storage** projects are installed and operational.

Source: [Maine DOER: Solar](#); [Maine DOER: Energy Storage](#)

DERs in Maine | Overview and opportunity (2/3)

Maine's investor-owned utilities' long-term Integrated Grid Plans must prepare for high DER deployment scenarios. Latest plans indicate considerable existing and proposed DER capacity.

Maine's investor-owned utilities are **required** to submit **10-year integrated grid plans (IGPs)** every five years to MPUC that detail planning scenarios for...

*"[improving] system reliability and resiliency and enable the cost-effective achievement of the greenhouse gas reduction obligations and climate policies..."**

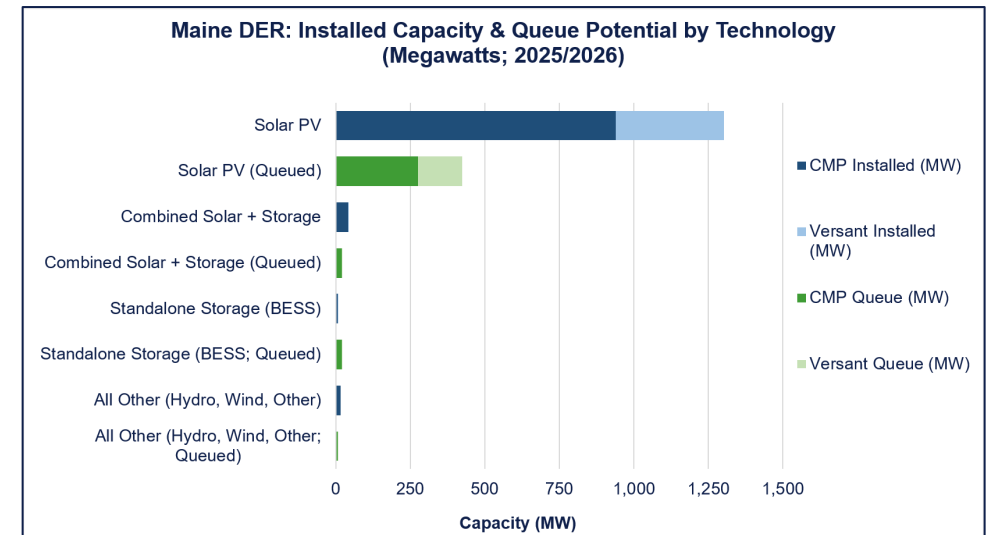
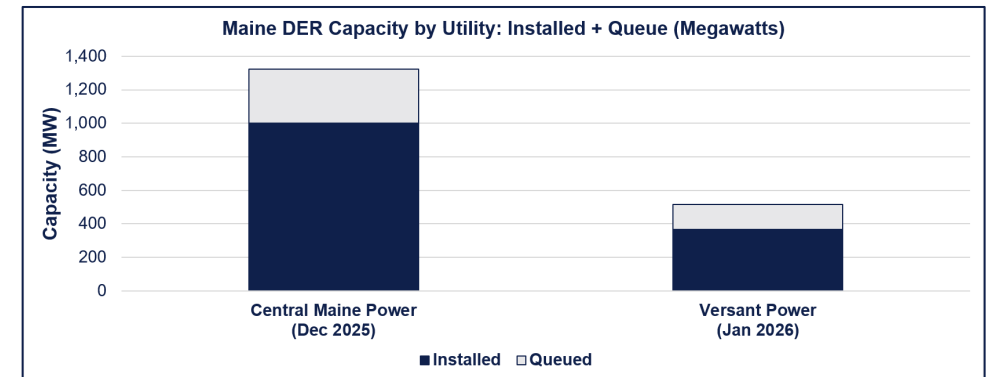
...in high societal electrification and high DER deployment scenarios.

*Source: Maine Statute 35-A M.R.S. §3147(1)(C); Versant Power IGP Report; CMP Integrated Grid Plan

Central Maine Power and Versant Power's IGPs indicate that there are nearly **1,400 MW of installed DER capacity** on the grid, in addition to **480 MW** of distributed resources in the **queue**.

Solar projects **dominate** the **existing** and **proposed** DER technology stack, with **combined solar + storage** a distant second place.

- Solar: 1,300 MW existing + 400 MW proposed
- Combined Solar + Storage: 42 MW existing + 20 MW proposed



DERs in Maine | Overview and opportunity (3/3)

Long-term scenarios presented in utility IGPs indicate significant growth potential for front-of-meter DERs by 2033 and 2034, with solar development playing a large role in future pathways.

Versant Power

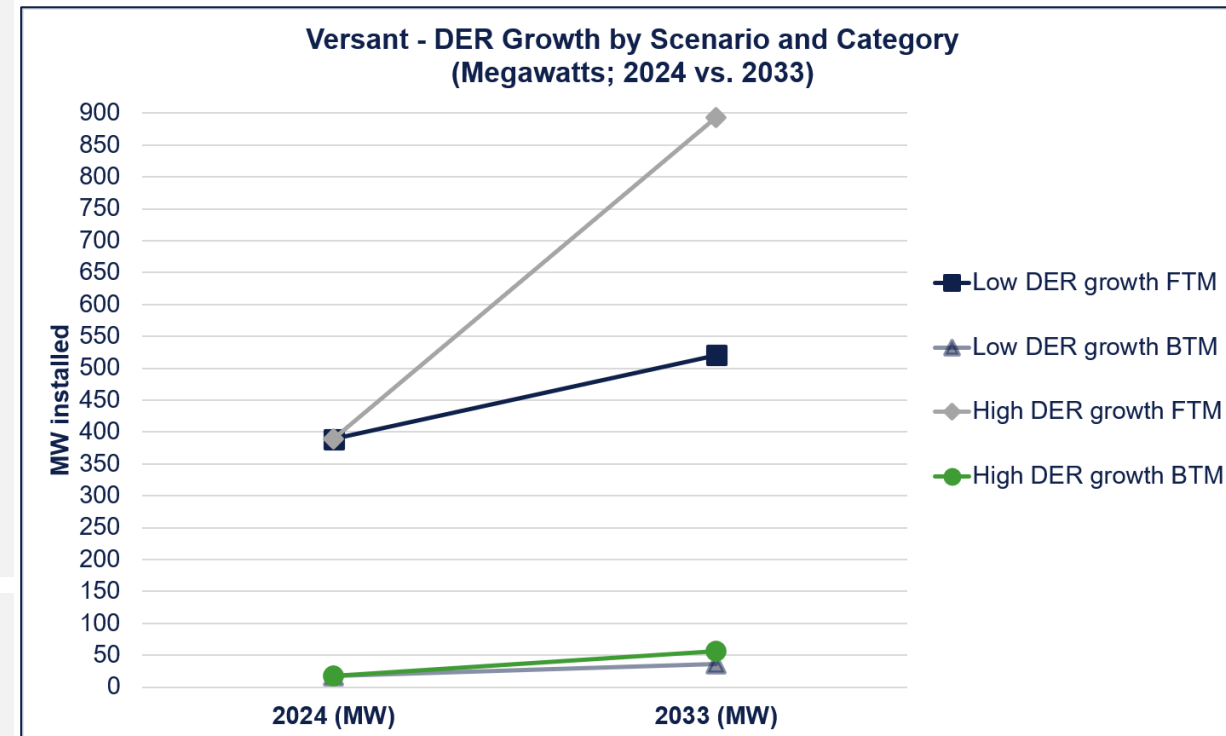
“Under the **low DER growth scenario**, the capacity of **BTM DERs** across the Versant service territory **increases... 116%**. The capacity of **FTM DERs increases... 33.89%...**”

“Under the **high DER growth scenario**, the capacity of **BTM DERs... increases... 235.4%**. The capacity of **FTM DERs increases... 129.55%...**”

“The main **disconnection** between the **high** and **low** DER growth scenarios is whether the **surge** in **large-scale** solar project development, which began after 2023, can be sustained **beyond 2026.**”

Central Maine Power

“**Distributed generation** is projected in the 2034 [capacity, energy, loads, and transmission] forecast to [continue] growing and is forecasted to reach approximately **1,600 MW** within **CMP's** service area **by 2034.**”



[Versant Power IGP Report](#); [CMP Integrated Grid Plan](#)

Policy Context | Interconnection

When seeking required grid interconnection, a project may elect to connect to the distribution or transmission network. That choice dictates the interconnection approval path, other required approvals, and compensation opportunities—and must be reflected in FTM program design.

Maine Public Utilities Commission (MPUC) Jurisdiction (MPUC Rules, Chapter 324)

Small projects (<10MW)
connecting to the **local distribution system**.
A project may elect to **participate in wholesale** energy markets.



Application process designed around four levels of interconnected facilities, correlated to project size and technical parameters.



Level 2 and Level 4 exporting projects
Under 2MW and greater than 2MW, respectively.



State "interconnection ombudsman" assists MPUC with technical requirements and resolves complaints for projects seeking interconnection.

Federal Energy Regulatory Commission (FERC) Jurisdiction

Applicable to projects seeking interconnection to the transmission system (usually >69kV) and/or participation in wholesale electricity markets.



Interconnection is primarily governed by ISO-NE's Open Access Transmission Tariff (OATT) procedure.



A request to connect may only be submitted in time-sensitive "cluster" windows, with ISO-NE sequentially studying projects in clusters.

Policy Context | Cluster studies

Cluster studies aggregate review of new DER + storage installations and grid interconnections. However, program design must account for lessons from previous cluster study backlogs.

Goals and Requirements: State and federal requirements shape study process

Two-level regulatory framework

- **ISO-New England:** I.3.9 cluster studies required for all Level 4 projects (>2 MW) before commercial operation¹
- **Maine Public Utility Commission:** Distribution-level studies group DERs on common circuits²

FERC Order 2023 aimed to expedite review timeline via cohort model

- ISO-NE launched first formal transitional cluster study cohort Oct. 2025, replacing prior first-come-first-served approach.³
- **CMP territory:** Two requests in first ISO-NE cohort; further clusters contingent on Maine Resource Interconnection Study completion³

Current Status: Learning from previous backlogs & adjustments to NEB program

- Interconnection study processes can be lengthy and costly due to identified upgrade needs and queue delays.⁴
- In previous process, Level 2 bypassed queued Level 4 projects, meaning larger installations faced repeated delays.⁵
- Prior study of NEB interconnections found that grid upgrade costs funded by projects also provided some benefits to ratepayers.⁴



Policy Context | Non-Wire Alternatives

Although Maine has not yet implemented a competitive NWA solution, more than \$25 million of ratepayer savings have been identified through deferral and verification of proposed projects.

Goals and Requirements

State law requires **NWAs** be formally **investigated** for eligible grid projects, including:

1. A **benefit-cost analysis**,
2. **Comparison** against the **traditional wires** solution,
3. **Coordination** with **Efficiency Maine Trust (EMT)** and Non-Wires Alternatives Coordinator (NWAC).*

In 2020, an independent third-party, situated under the Office of the Public Advocate (OPA) **developed a BCA framework** and **reviewed** IOU's proposed **transmission** and **distribution projects** for **cost-effective alternatives**.

Current Status

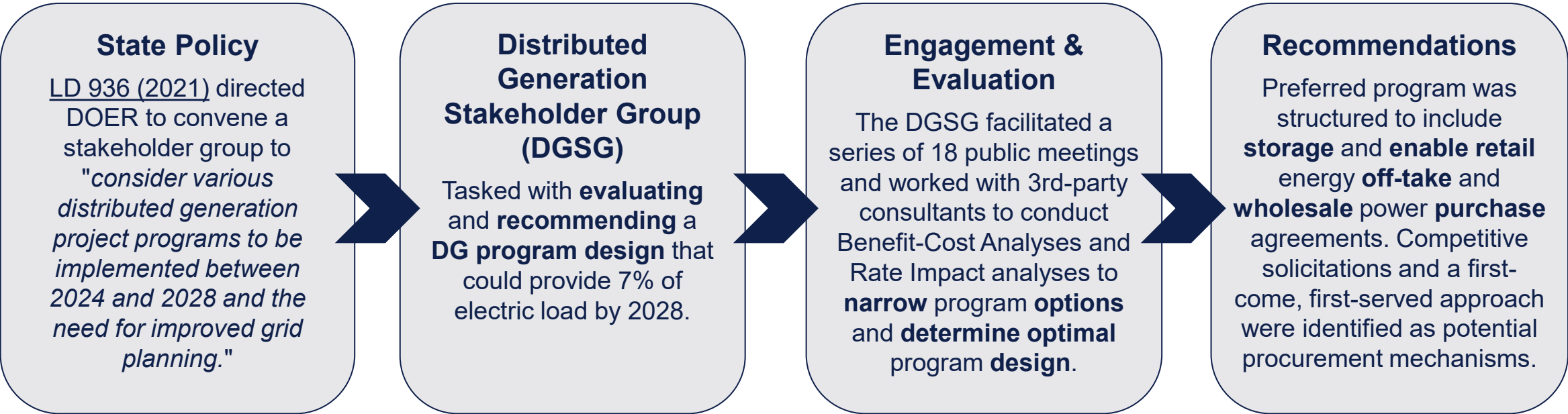
Docket 2025-00307 was opened by MPUC in 2025 to review the **goals, objectives**, and **efficiency** of the **NWA** process in Maine. In February 2026, the Legislature received a report from MPUC detailing potential statutory changes to support transparency and improve the NWA process.

NWA Process: NWAC must identify cost-effective NWA solutions and coordinate with EMT to identify potential behind-the-meter solutions. EMT is responsible for procuring proposed BTM solutions and the utilities or MPUC will be responsible for procuring FTM solutions.

To date, an **NWA requiring competitive procurement of resources has not been implemented**, so the market has not been engaged to provide solutions.

Policy Context | 2022-23 Distributed Generation Stakeholder Group

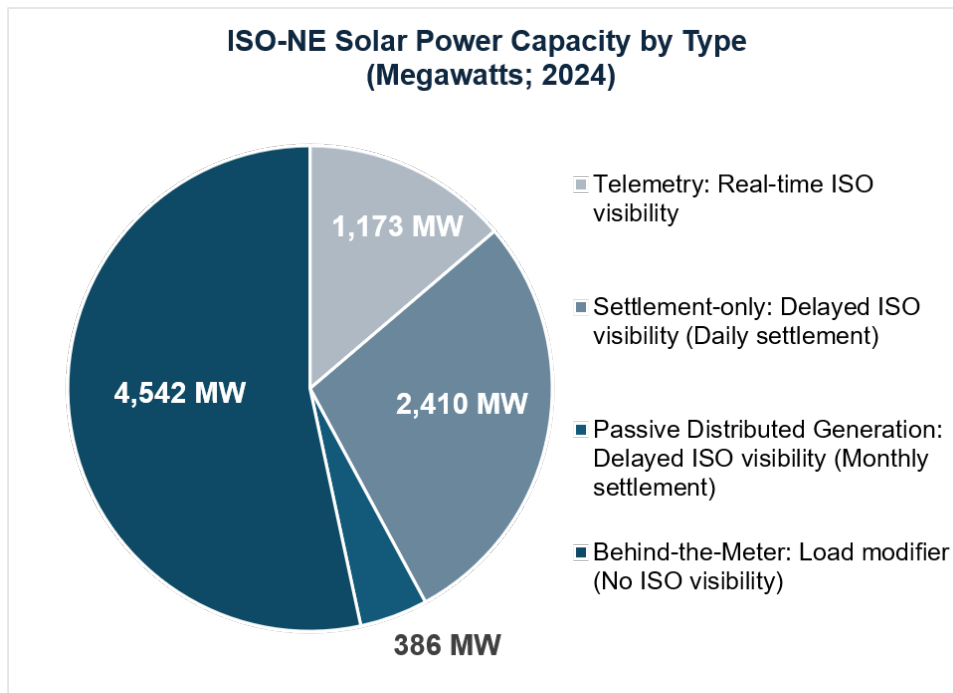
Prior efforts to study and establish a NEB successor identified a foundational set of inputs, objectives, and parameters for a new program design.



Status: Report submitted to Maine Legislature in January 2023.

Policy Context | ISO-New England

Distributed generation projects can support transmission grid reliability through participation in ISO-New England energy, capacity, and ancillary markets. However, challenges around affordability, load growth, supply availability have triggered proposals to alter market rules—potential changes for which program design must account.



[Explainer: How ISO-NE tracks production from 'behind-the-meter' and other solar resources - ISO Newswire](#)

- ISO-NE administers several markets to **procure** and **deliver** grid **reliability**, including energy (day-ahead and real-time), capacity, ancillary services, transmission, and other grid supporting services.
 - Distinct from Northern Maine Independent System Administrator (NMISA), which is **in scope** for this work, but has limited wholesale market transactions and DER value creation varies from ISO-NE.
- A DG's role in supporting the bulk grid is **dictated** by its technical **ability to interact** with ISO-NE's **control systems** and **markets**.
 - An asset that is "**highly visible**" to ISO-NE can be dispatched **real-time** and **participate** in a number of markets, whereas an "invisible" asset typically only **modifies** a customer's load and does not provide any direct assistance to the grid.
- Presently, **significant reforms** to each market are underway that will **impact** front-of-meter DG **business case proposition** and **grid service value** streams.

Policy Context | ISO-New England & FERC 2222

Among the market reforms ISO-NE has been contemplating, proposals are underway to create a stronger market for smaller DERs.

FERC 2222 Compliance



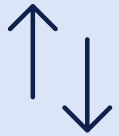
- FERC Order 2222 required ISO-NE to permit DER to provide wholesale services through resource aggregation.
- Three Maine-specific Demand Response Resource Aggregation (DRAA) zones: Central Maine (5), Bangor Hydro (6), Portland (7).



Demand Response Distributed Energy Resource Aggregations

(DRDERAs) must conform to following rules:

1. Be located within a single DRAA
2. Any single resource >5 MW must be registered as its own aggregation



- DER Aggregations (DERAs) can be “settlement only” or directly participate in markets.
- Energy and Ancillary Services market rules go live November 1, 2026.



Peer Programs:

Reviewing other jurisdictions to inform program design

Market Scan | Identify which features have been most important and effective to inform design of Maine program options

Policy-context questions

Scan must consider the unique context (historic, regulatory) of a design feature and how we should weigh its potential in this program.

- What policy and regulatory goals does it support?
- What is a common approach across jurisdictions?
- What is an outlier approach and why?
- What are the trade-offs?
- How did the regulatory environment inform the program design?
- What is the maturity of the offering?
- What is the evolution of the offering?

Feature-specific questions

Scan should consider features according to thematic groupings. Each will be considered from a program and rate design perspective (e.g., tariff, market-based).

- What is the procurement mechanism?
- What value streams are recognized or compensated?
- Compensation structure (e.g., owner/developer, end-use customer)
- How are prices determined?
- How is it integrated into the market?
- What are the technology requirements?
- What is the partner ecosystem?

Market Scan | Example DER programs under review

DNV & CEG are evaluating program structures in peer jurisdictions, including the following:

Northeast State Program Designs

Maine | Non-Wires Alternative (NWA) Authority

Process managed by the Office of Public Advocate to review infrastructure upgrades, followed by design alternatives where lower-cost alternatives are possible.

Massachusetts | MA Clean Peak Standard

Provides incentives to clean energy technologies that can supply electricity or reduce demand during seasonal peak demand periods established by MA DOER. Several IOU procurements completed and underway for solar, wind, and FTM storage.

Massachusetts | Solar MA Renewable Target (SMART) Program

Replaced SREC 2 program, currently in SMART Version 3. Blocks of capacity procured by MA DOER from 3rd-party owned FTM or BTM solar systems <5MW. Additional incentives for qualifying features.

New York | Retail Energy Storage Incentives

Geography-tiered \$/kWh incentive blocks targeting 1,500 MW, with VDER Value Stack and NYISO market access as revenue pathways.

Rhode Island | Distribution-Connected Energy Storage Tariff

Legislatively mandated open-access wholesale distribution tariff with T&D deferral as primary design objective; model tariff still in development.

Other State and International Designs

Australia | DER Integration Model

Technology-neutral, market-based DER integration strategies for bulk and distribution systems. Include bidirectional tariff structures, cost recovery, and flexible interconnection.

California | Wholesale Distribution Access

FTM storage interconnects under FERC open-access rules; all revenues settle through CAISO, no IOU payment.

Hawaii | Renewable Dispatchable Generation

Utility purchases power from utility-scale dispatchable renewables via a competitive RFP.

Maryland | Proposed FTM Distribution-Connected Storage

Legislatively mandated 150 MW FTM target driving a new open-enrollment distribution tariff due November 2026.

Minnesota | Xcel Energy's Capacity*Connect

Distributed capacity procurement framework recently approved by MN PUC.

Texas | Oncor Wholesale Distribution Service

Open-access FTM distribution tariff in ERCOT with no state storage mandate; ERCOT markets are sole value stream.

United Kingdom | DSO Flex Markets

Tariffs governing DER interconnection and performance evolved alongside innovative flexibility services market. Market procures grid services across varying time frames.

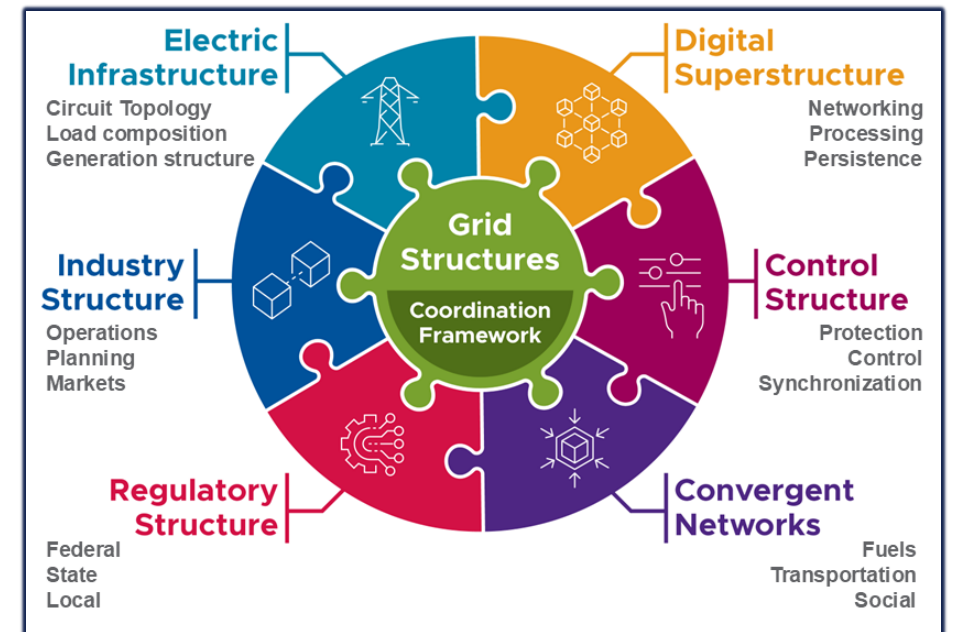
A *reference coordination architecture* is provided by the US DOE's Grid Modernization Laboratory Consortium (GMLC)

GMLC identifies **six (6) primary grid services from DERs**, upon which grid operations and compensation structures can be built.

– GMLC Terms and Definitions Report, July 2023



Related grid structures combine to provide a connected architecture for co-evolution of the grid.



"The reference coordination architecture aims to address [emerging] capabilities in a way that can evolve with power system needs and market opportunities."

– PNNL Reference Coordination Architecture report, June 2025

Thank You



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