Maine Distribution System Operator (DSO) Feasibility Study

Webinar| June 20, 2024

Agenda

+ Background & Study Overview
+ DSO 101
+ Study Approach
+ Timeline & Milestones
+ Stakeholder Engagement
+ Q&A

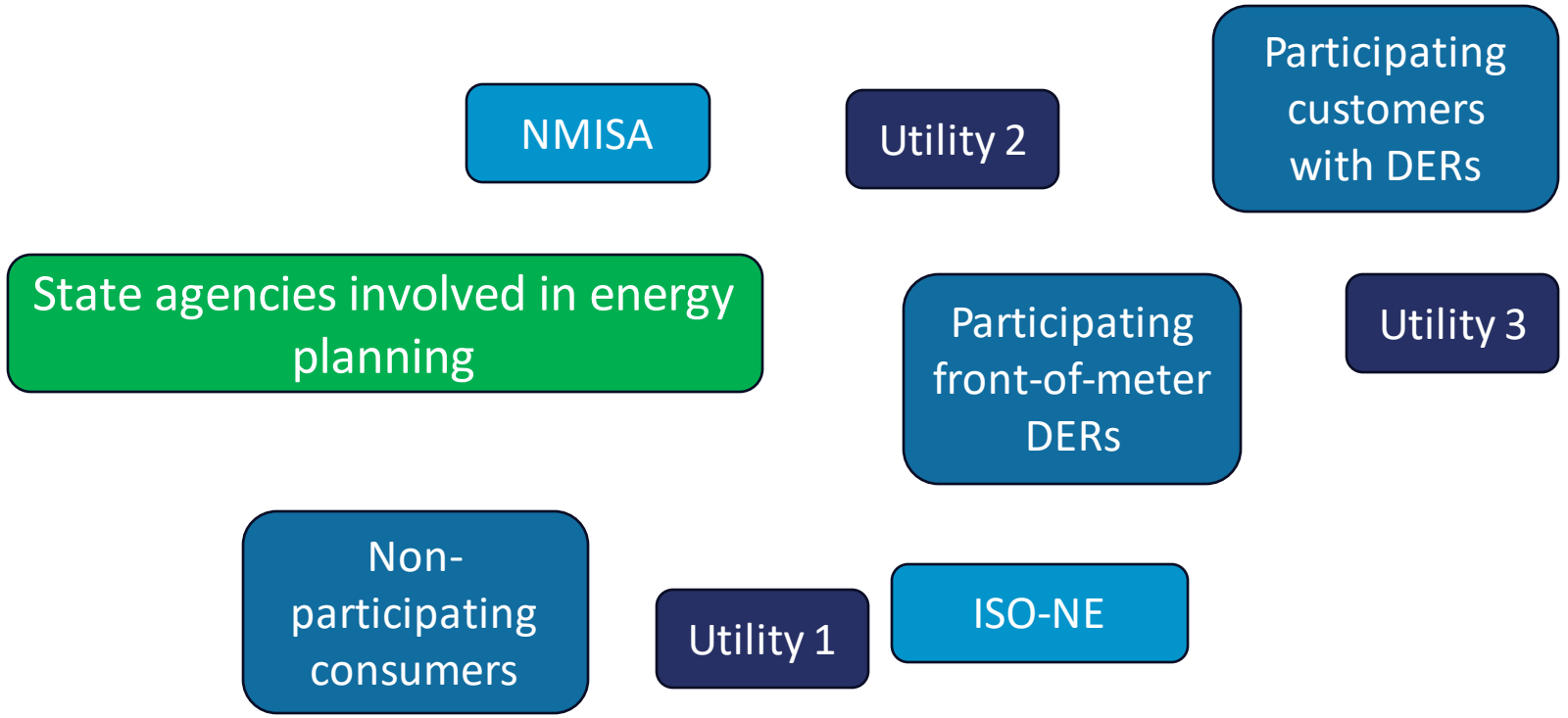
Background & Study Overview

- Pursuant to Resolve Chapter 67, enacted in 2023, the Governor's Energy Office (GEO) is leading a study to determine whether a Distribution System Operator (DSO) could be established in Maine to achieve:
  - Cost savings for customers
  - Improved system reliability and performance
  - Accelerated achievement of the State's climate goals and growth of distributed energy resources.
- Part I of the study will evaluate whether a DSO could be designed to achieve those objectives, compared to Maine's existing system.
- If the GEO concludes, based on Part I of the study, that a DSO can be designed to achieve the stated objectives, the GEO and its consultants shall undertake Part II of the study to develop a design proposal and identify the scope and characteristics of the DSO

Overview of Distribution System Operators (DSOs)

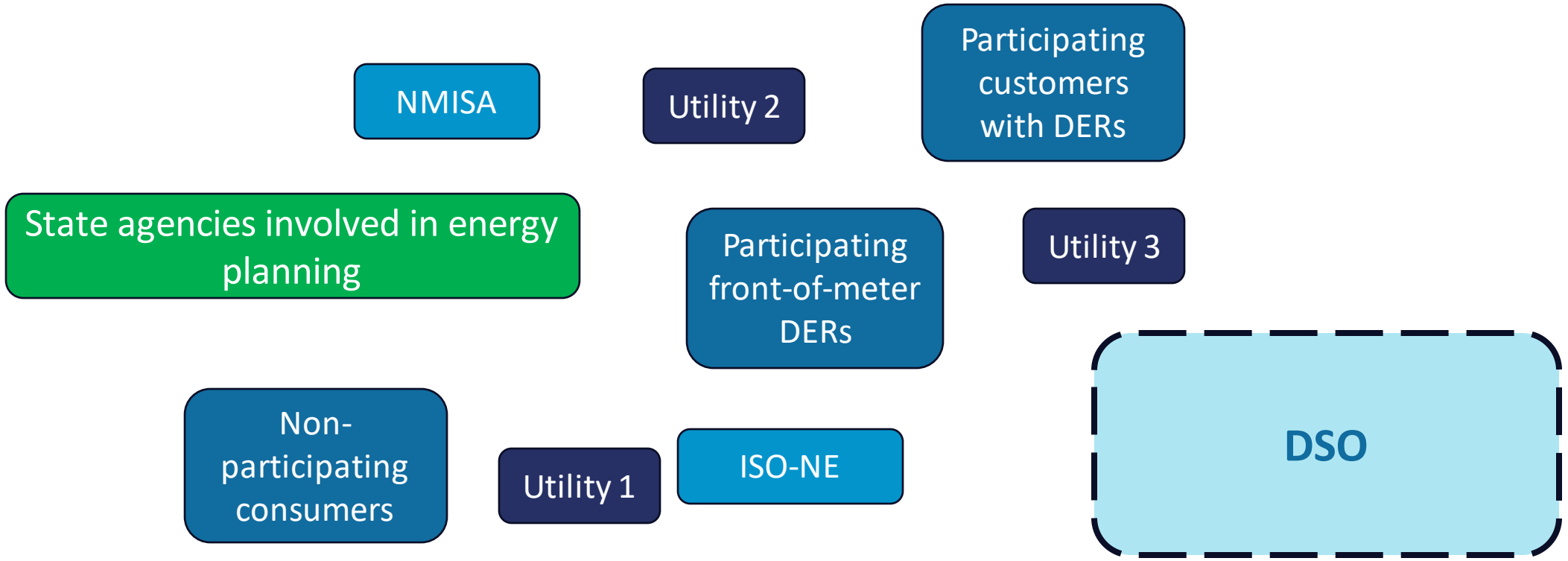
- Increasing prevalence of distribution-connected energy resources (DERs) will require utility functions and capabilities that were not required of traditional distribution utilities
  - E.g., energy export from customer sites; DER participation in wholesale markets; reverse flows over distribution facilities; novel load behaviors (flexibility services; EV charging)
- Although at present there is no industry consensus on DSO design, the functional roles specified in the Resolve comprise the essential core set of DSO activities
  - Integrated system planning
  - Distribution grid operation
  - Operation of an open and transparent market for DERs
  - Interfacing with ISO-NE
- No jurisdiction in the United States has established a DSO entity, although such entities exist in other jurisdictions, including Europe.

A Distribution System Operator (DSO) for the Maine Power System



Illustrative Representation of Maine's Electricity Ecosystem + Key Grid Actors

A Distribution System Operator (DSO) for the Maine Power System



Illustrative Representation of Maine's Electricity Ecosystem + Key Grid Actors

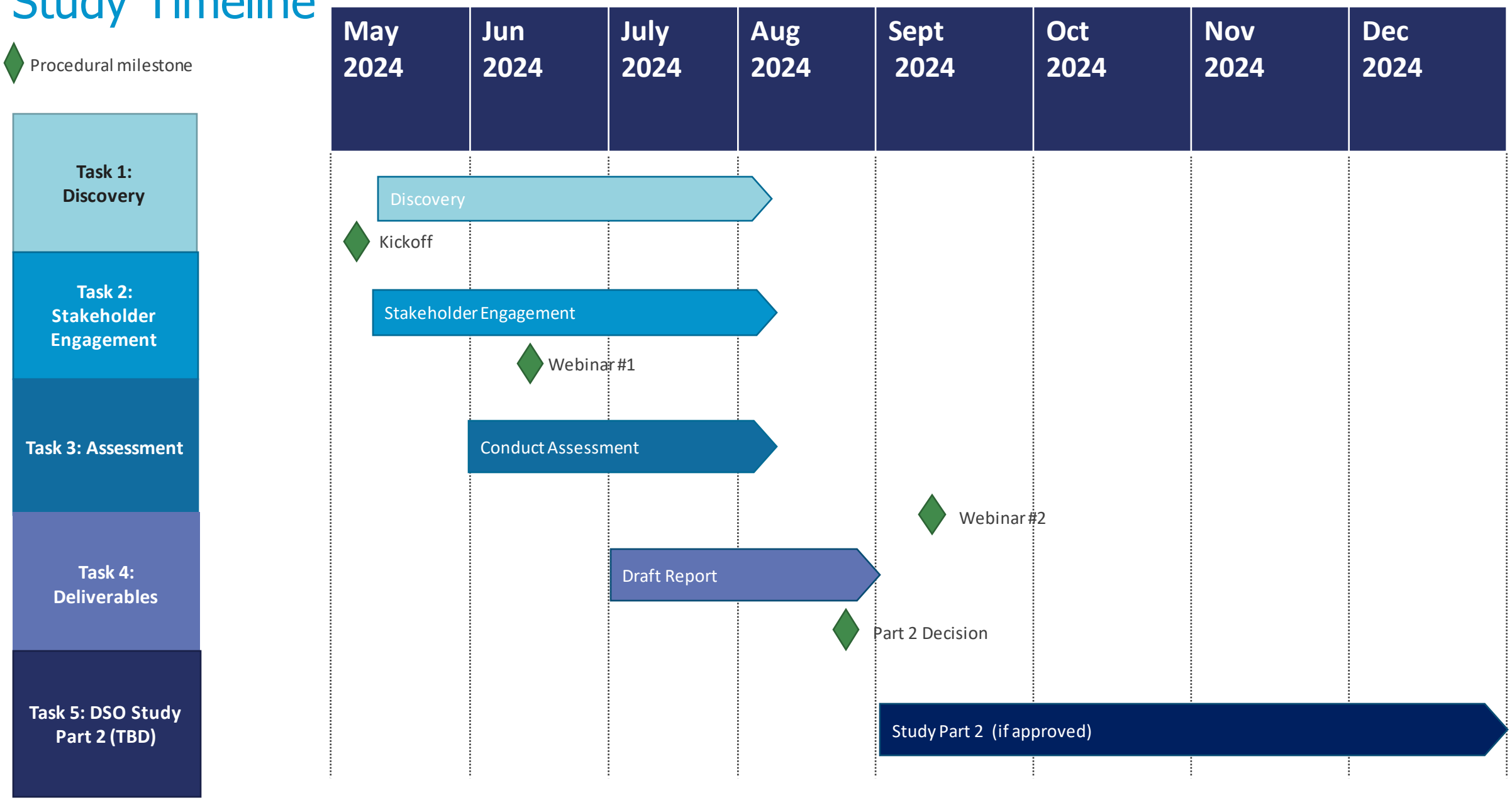
Maine DSO Definition

- As defined by the legislation, a Distribution System Operator (DSO) is an entity designed to serve the following roles for the State (Resolve Sec. 1):
  - Oversee integrated system planning for all electric grids in the State, including coordinating energy planning efforts across state agencies;
  - Operate all electric grids in the State to ensure optimum operations, efficiency, equity, affordability, reliability and customer service;
  - Administer an open and transparent market for distributed energy resources; and
  - Facilitate the achievement of the greenhouse gas reduction obligations and climate policies.
  - Act as the primary interface between ISO-NE and electricity transmission grids in the State (Resolve Sec. 3.1.A)
  - Reside within a State Agency (Resolve Sec. 4.6.A)

Study Approach

- **Define current DSO models & existing implementations internationally**
  - Interviews with domestic and international experts
- **Define current Maine regulatory structure**
  - Interviews with Maine and New England stakeholders
- **Compare current Maine structure to DSO Model(s) in their abilities to achieve Resolve objectives, including the following factors:**
  - Governance & Incentive structure
  - DSO Functions (e.g. system planning, network operation, ISO-NE interface coordination)
  - Other factors (TBD)
- **Deliverables:** Assessment and recommendations will be communicated via a final report and webinar.
- The GEO will determine whether a DSO model can be designed to achieve the objectives set forth in the Resolve, and, if so, Part 2 of the Study will identify the scope and characteristics of a Maine DSO

Study Timeline



Stakeholder Engagement

- During the study, stakeholders will only be interviewed to inform the study based on whether they can help answer questions including:
  - What are the different DSO models that have been considered or exist today?
  - How do do different DSO models vary in terms of governance, incentive structures, key grid functions etc.?
  - What are the current roles and responsibilities for the electricity system in Maine?
  - What are the governance, incentive structures and state of grid functions in Maine today?
- Post-study
  - The draft report will be released for public comment on late summer
  - A follow-up webinar will be held once the final report is released

Q&A Session

- Questions from the Strategen Team:
  - What forecasts of DER adoption are currently in use in IRP or infrastructure planning processes, other than ISO-NE CELT and NMISA's 7 Year Outlook?
  - What is the current status of the provision of energy and services from DER to NMISA and ISO-NE systems?
  - How best to validate the number of Transmission-Distribution interfaces with ISO-NE and NMISA?
  - Suggestions of Maine-specific entities for stakeholder engagement and outreach?

Thank You!

Please reach out to Claire Swingle with any follow-up questions:

Claire.Swingle@maine.gov