GOVERNOR'S
Energy Office

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Deputy Director

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The Maine Governor's Energy Office (GEO) is the state's designated energy office charged with carrying out responsibilities of the state relating to energy resources, planning and development.

www.maine.gov/energy

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Maine's Climate and Clean Energy Targets:

REDUCE GREENHOUSE GAS EMISSIONS	TRANSITION TO CLEAN ENERGY	ACHIEVE CARBON NEUTRALITY	CREATE CLEAN ENERGY JOBS
45% BELOW 1990 LEVELS **BY 2030**	**80%** **RENEWABLE BY 2030**	**2045**	**30,000** **BY 2030**
80% BELOW 1990 LEVELS **BY 2050**	**100%** **CLEAN BY 2040**		

Maine Energy Policy Requirements

- **Renewable Portfolio Standard**
  - 80% of electricity delivered in Maine to be renewable by 2030
  - Supports hydroelectric, biomass, tidal, waste-to-energy, wind, and solar
  - Targeted support for new and existing resources including solar, wind, biomass, hydro, and wood-fired CHP
- **Offshore Wind**
  - Goal of 3,000 megawatts from the Gulf of Maine by 2040
  - GEO to implement procurement law with stakeholder input
- **Energy Storage**
  - Goal of 400 megawatts by 2030
  - GEO to develop procurement program for up to 200 megawatts
- **Solar**
  - Goal of 750 megawatts of distributed generation
  - GEO to implement distributed solar and storage program
  - Targeted procurement for solar on contaminated lands
- **Electrification**
  - Oil dependence reduction
  - Electrification of heating and transportation to achieve emissions reduction requirements

Thank You

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Maine RPS Impacts Study: Scope, Methodology, & Schedule

Sustainable Energy Advantage, LLC
In collaboration with the Maine Governor's Energy Office and Public Utilities Commission

Stakeholder Webinar: January 24, 2024

Today's Agenda

I. Introduction to Study Team & Roles

II. Scope

III. Methodology

IV. Project Schedule & Opportunity for Comment

Scope

Scope: A retrospective report on the "**status and impacts of the RPS**"

1. Provide background on Maine RPS and regional context.
2. Consider the impacts of the RPS on energy prices, Greenhouse Gas (GHG) emissions, and the economy of the state, as applicable.
3. Assess these costs and impacts in the context of the RPS' Class I, Class IA, Class II, and Thermal REC requirements.
4. An assessment of options for evolving Maine's **large-scale RE procurement programs and policies**
5. Based on current initiatives and regional market dynamics, **where is ME RPS supply likely to come from in the future** and what does this mean (qualitatively) for potential investments in Maine?

Approach: Overview

SEA and EBP will…

1. **Research, analyze, and summarize RPS policy fulfillment to date:**
   - RPS obligations (demands) and compliance methods (supplies and ACPs)
   - Cost of RPS compliance (RECs, self-reported)
   - Other impacts on ratepayer bills (e.g., energy/capacity price suppression)
   - Emissions benefits ($ and tons)
   - Economic Impacts Study (a different perspective, not necessarily additive)
2. **Evaluate impacts of procurement policies to date**
   - Quantify impacts of long-term contracts as an energy hedge.
3. **Evaluate options for evolving Maine's large-scale RE procurement programs and policies**
4. **Consider role of RPS in future RE investment/development in Maine**

- *This is not a benefit-cost analysis. It is an assessment and estimation of policy impacts using the metrics above.*

Methodology: Historical RPS Compliance (1)

- Assess the marginal impact of the RPS by considering…
  - Impacts: Ratepayers
    - Compliance costs: REC costs (including assessment of retail LSE's REC cost reporting)
    - Direct Benefits: energy/capacity price suppression
    - Indirect Benefits: avoided marginal emissions
  - Impacts: Economy of the State (a different perspective, not necessarily additive)
    - Investments, jobs, tax payments, and other community payments (in and out of state, based on actual sources of compliance)
- Assess regional RPS market dynamics, including RPS eligibility criteria specific to Maine.
    - Qualifying technologies and fuels, Interactions with regional markets, Refurbishing

Methodology: Historical RPS Compliance (2)

- Additional consideration and discussions will include…
  - Potential role of attribute contracting in procurement outcomes
  - Potential role of Class II in continued viability/operation of legacy generation
  - Potential role of Class I/IA in refurbishment of legacy generation

- Data Sources
  - RPS compliance reports
  - Independent System Operator – New England (ISO-NE) market data
  - Northern Maine Independent System Administrator (NMISA) market data
  - Avoided Energy Supply Component Study (AESC)
  - Lawrence Berkeley National Laboratory (LBNL)
  - National Renewable Energy Laboratory (NREL)

- Study Period: Targeting 2000 – 2022 (but dependent on data availability)

Methodology: Economic Impacts Study

- This study will evaluate costs, employment, and supplier purchases associated with different energy generation technologies
  - based on data from US DOE Berkeley Lab and NREL
- These data will be applied to Maine RPS purchases to quantify total direct effects on the Maine economy.
- The results will be benchmarked against Dept. of Commerce data on actual Maine employment in those energy related industries.
- We then apply the Maine Economic Model from IMPLAN and further calibrate it to reflect evolving technologies. This enables us to evaluate:
  a. how renewable and other power generation facilities in Maine directly create jobs for Maine residents,
  b. how operation of those facilities also generates further purchases of parts, materials, supplies, and services that are provided by other Maine businesses, and
  c. how cost effects of RPS impact residents and their spending power, as well as various sectors of the Maine economy and their productivity.

Methodology: Future RPS Supply

- What are the likely sources of ME RPS supply in the future?
- Consider regional market targets, eligibility, and other dynamics
- Consider ME contracting policy options, including REC retention
- Discuss range of potential outcomes for incremental Maine-based renewables
- Data Sources: SEA research and analyses of regional market

Methodology: Procurement Policy, Retrospective

- Assess the marginal impact of Maine's large-scale clean energy procurement policies by considering…
  - Comparison of energy and capacity hedges to actual historical energy and capacity prices
  - Discuss causal link between energy/capacity hedges and macro-economic impacts attribution associated with new resource development

- Data Sources
  - Outcomes of Maine's large-scale RE procurements to date

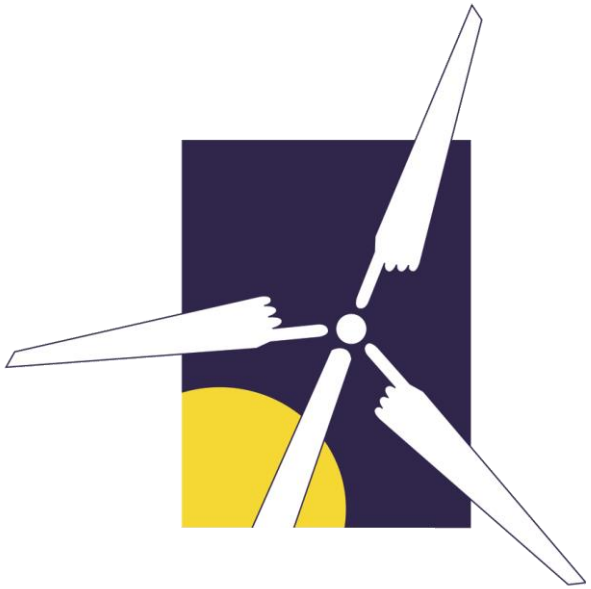
Methodology: Procurement Policy, Prospective

- Options for evolving large-scale RE procurement policies
  - Identify Maine's large-scale clean energy procurement objectives
  - Assess Maine's large-scale clean energy procurement policies to date
  - Consider regional and national approaches to identify best practices (which depend on identification of policy objectives) program design options, and associated participant/ratepayer implications

- Data Sources
  - National and international studies regarding procurement best practices – including several reports authored by SEA
  - Outcomes of regional, large-scale RE procurements to date

Schedule, Deliverable, & Opportunity for Comment

- **Schedule**
  - Kick-off: 1/5/2024
  - Discuss scope & approach with stakeholders [today's call]
  - Engage stakeholders regarding draft results in early March
  - Final report to the legislature by 3/31/2024
- **Receive updates by…**
  - Signing up for GEO's Newsletter, and
  - Visiting GEO's RPS Website .



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Acronyms

- AESC: Avoided Energy Supply Component Study
- DOE: Department of Energy
- EBP: EBP US, Inc.
- EUT: Energy, Utilities, and Technology Committee
- GEO: Governor's Energy Office
- GHG: Greenhouse Gas
- ISO-NE: Independent System Operator – New England
- LBNL: Lawrence Berkeley National Laboratory
- LSE: Load-serving entity
- NMISA: Northern Maine Independent System Administrator
- NREL: National Renewable Energy Laboratory
- PUC: Public Utilities Commission
- RE: Renewable Energy
- REC: Renewable Energy Certificate
- RPS: Renewable Portfolio Standard
- SEA: Sustainable Energy Advantage, LLC