

Public Service Department Technical Analysis of Renewable Energy Standard Options – Brief Overview of DRAFT Results

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BEFORE LEGISLATIVE RENEWABLE ENERGY STANDARD REFORM WORKING GROUP

10/25/2023



DRAFT Technical Analysis

Modeling Scenarios as determined by:

- Stakeholder input prior to Request for Proposals, and
- Stakeholder-nominated Stakeholder Advisory Group representing a variety of perspectives (including some overlap with Legislative Working Group).

Draft results presented Oct 10: Materials at: <https://publicservice.vermont.gov/renewables>

- [PSD Slides - Introduction & Next Steps](#)
- [SEA Slides - Model Context & Draft Results](#)
- [Meeting Recording](#)

Model itself is available (upon request due to file size)

Draft results have evolved since, based on questions/feedback provided during/after workshop

Further feedback due Oct 25. Continuing model edits; Final Results early November

Feedback Received

Appreciation for approach, transparency, and access to the model and analysis

Technical presentation of draft results – significant feedback on presentation style & emphasis, what might we show and how

Clarification of draft results meaning

Substantive questions, for example:

- Is price suppression always a benefit? For example, when a utility has more generation than load and sells excess into the market, and where higher levels of renewables have lowered market price, does that create a ratepayer cost?
- Why does the regional mix look the way it does?
- Certain results not intuitive (e.g., land use impacts)

Draft Results – How to Use the rest of today’s slides: DON’T!

The following slides are examples of the types of results that you can expect. They are slightly different than the Oct workshop slides and will change again. They are provided today as examples and should not be used, replicated, or referenced for anything other than illustrative outputs.

The substantive results will change

The format of presentation will change

Example: Draft results shown on October 10 showed a regional Tier met by mostly hydro. Assumptions on what resources might be eligible in a RES might change.

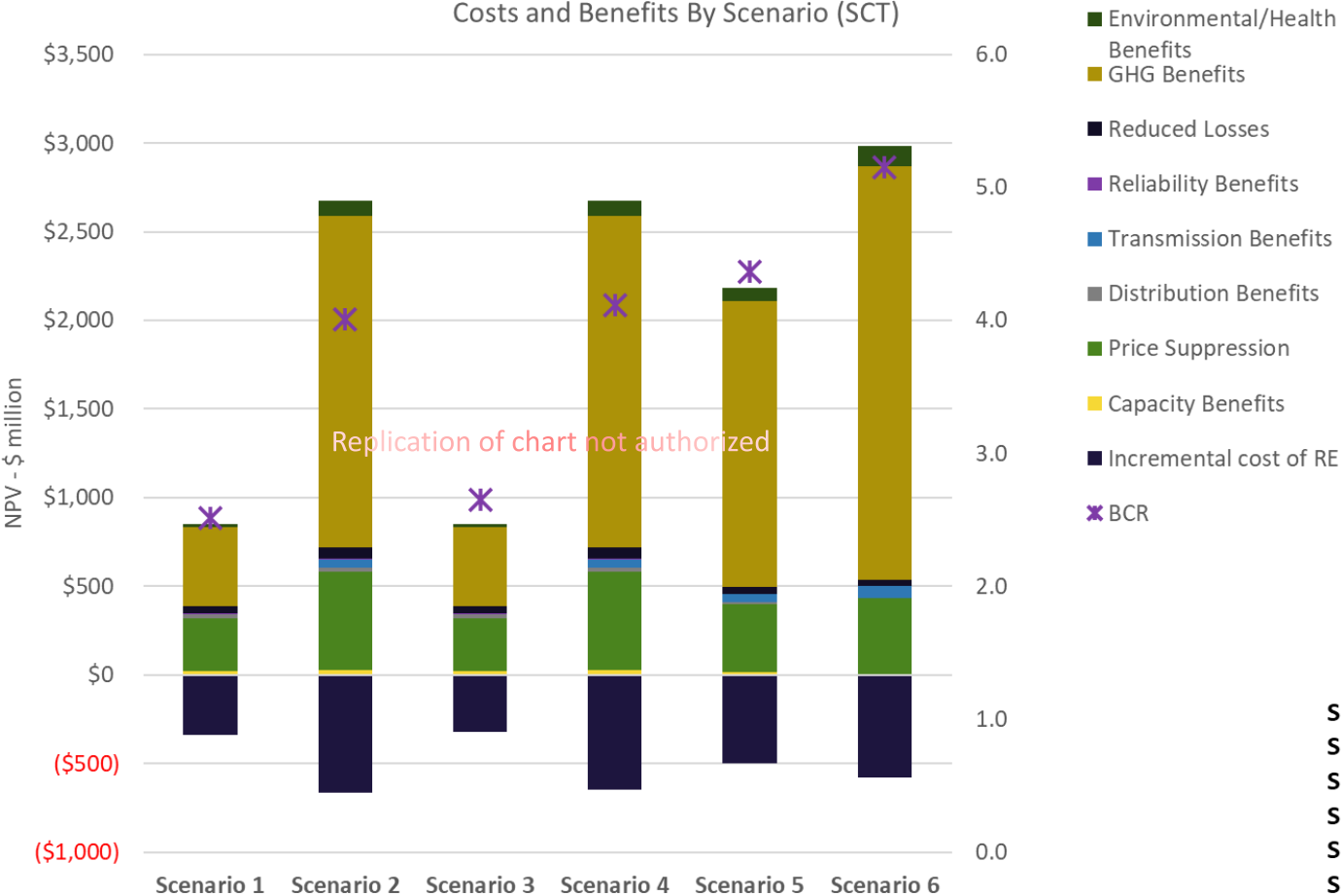
Example: All grid integration costs have not been completely estimated/analyzed yet.

Example: An error was found in the calculation of Societal Test Benefits, using a higher Social Cost of Carbon than is currently recommended by the Vermont Climate Council. That value will be fixed.

Example: Land Use allocations regional vs. in-state, and potentially the amounts of acreage assigned to each resource, will change.

Draft Results – Incremental Societal Impacts (Do not use – these values have changed)

Costs and Benefits By Scenario (SCT)

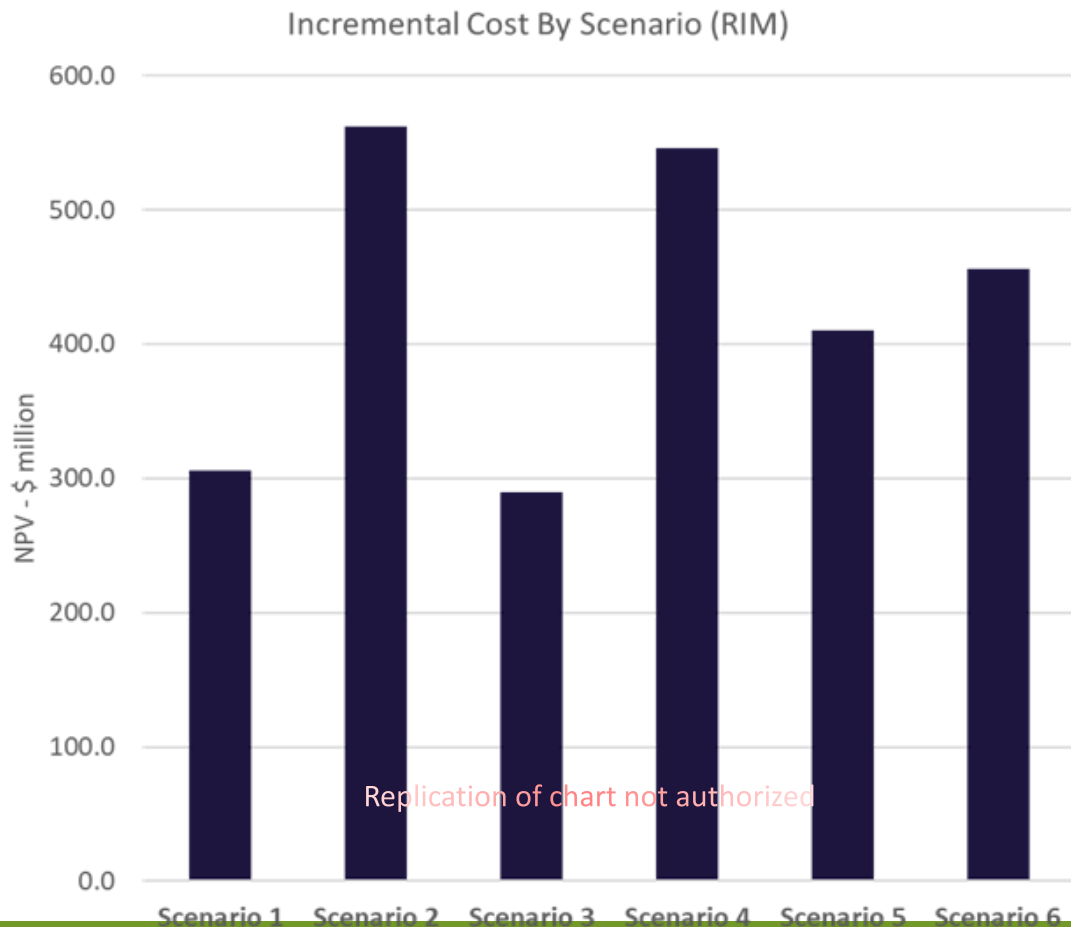


Expected Changes include (not limited to):

- Societal GHG Benefits lowered due to error in Social Cost of Carbon Calculation
- Costs for CES scenarios lowered as embedded nuclear contracts to be assumed
- Presentation Change to show Total as well as Incremental Impacts in one chart (if possible)
- Grid Integration Costs likely to change

	Regional Target	Tier II Target	Tier I Target	Target Date	Nuclear Tier I Eligible?	Biomass Tier I Eligible?
BAU	0%	10%	BAU	2032	No	Yes
Scenario 1	0%	30%	100% by 2030	2035	No	Yes
Scenario 2	30%	30%	100% by 2030	2035	No	Yes
Scenario 3	0%	30%	100% by 2030	2035	Yes	Yes
Scenario 4	30%	30%	100% by 2030	2035	Yes	Yes
Scenario 5	30%	20%	100% by 2030	2035	No	No
Scenario 6	50%	10%	100% by 2030	2035	Yes	No

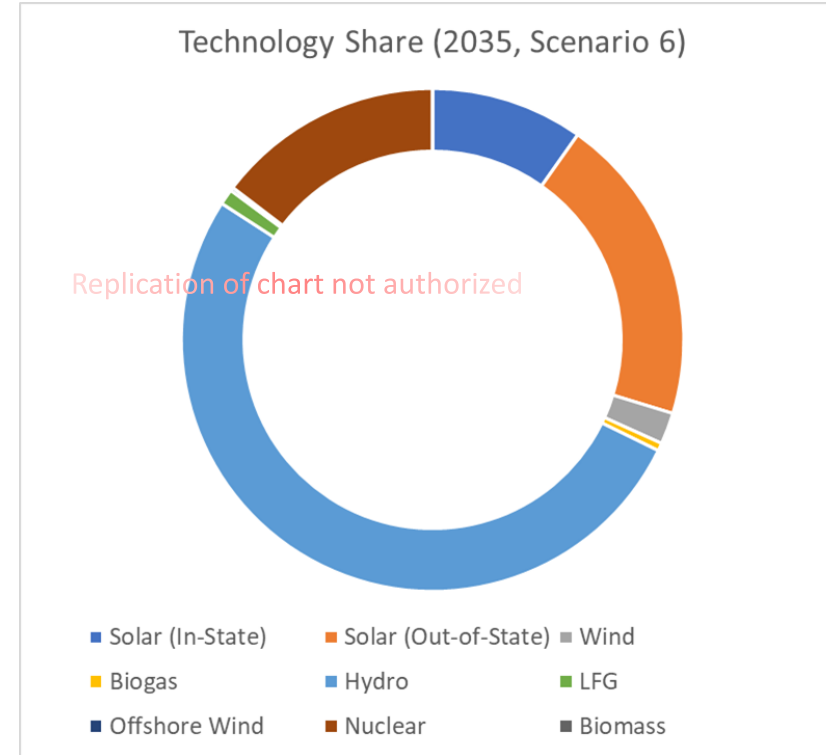
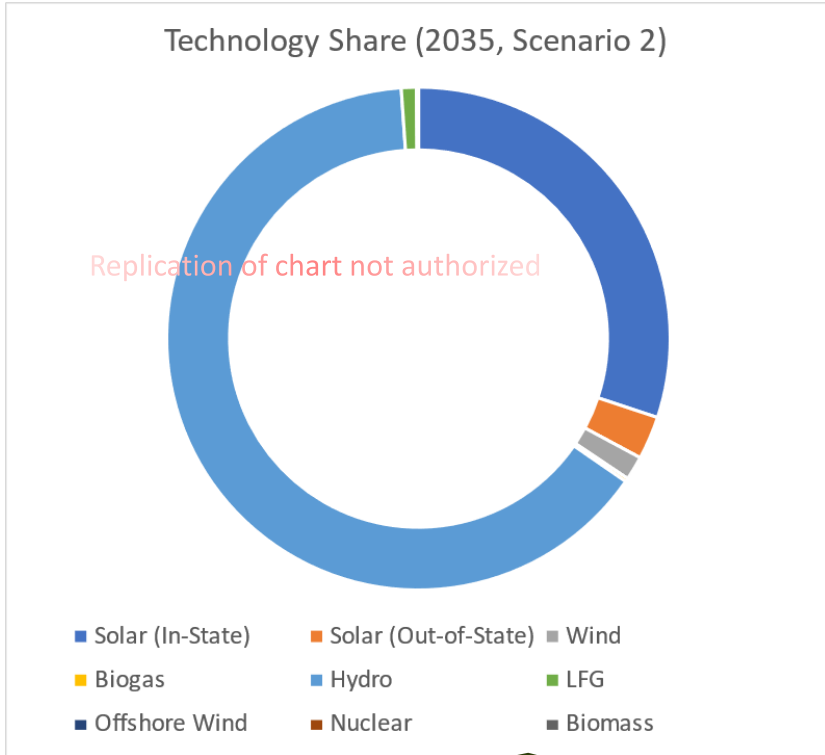
Draft Results – Incremental Ratepayer Costs (Do not use – these values have changed)



Expected Changes include (not limited to):

- Costs for CES scenarios lowered as embedded nuclear contracts to be assumed
- Presentation Change to show Total as well as Incremental Impacts in one chart (if possible)
- Grid Integration Costs likely to change

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Draft Scenario 2 involved significant in-state Solar to meet Tier II and most Regional Tier met with Hydro

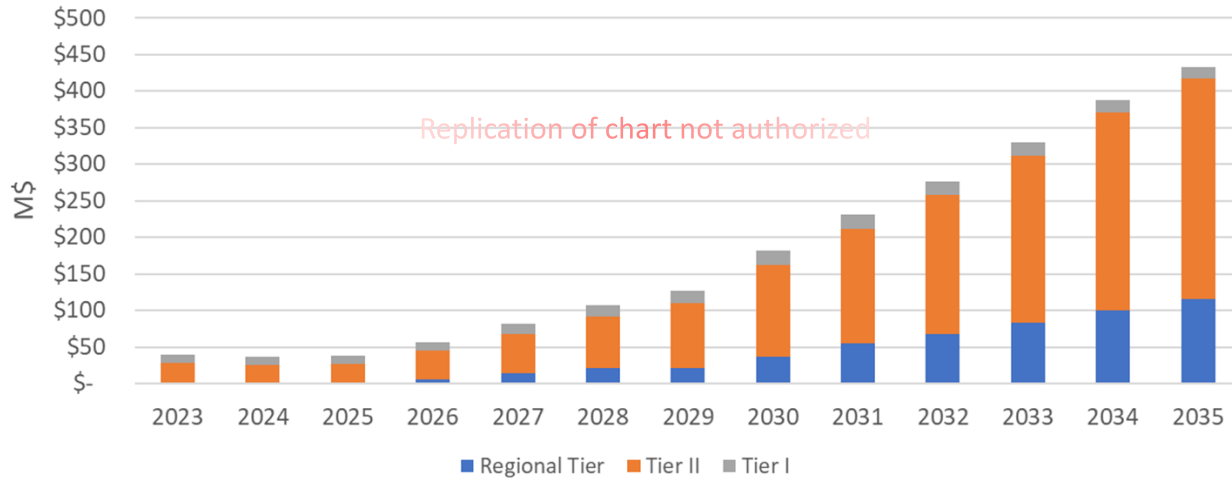
Draft Scenario 6 provided maximum contribution from regional Tier → More diverse resource mix to fill larger obligation

Draft Results – Example portfolio mix (Do not use – these values have changed)

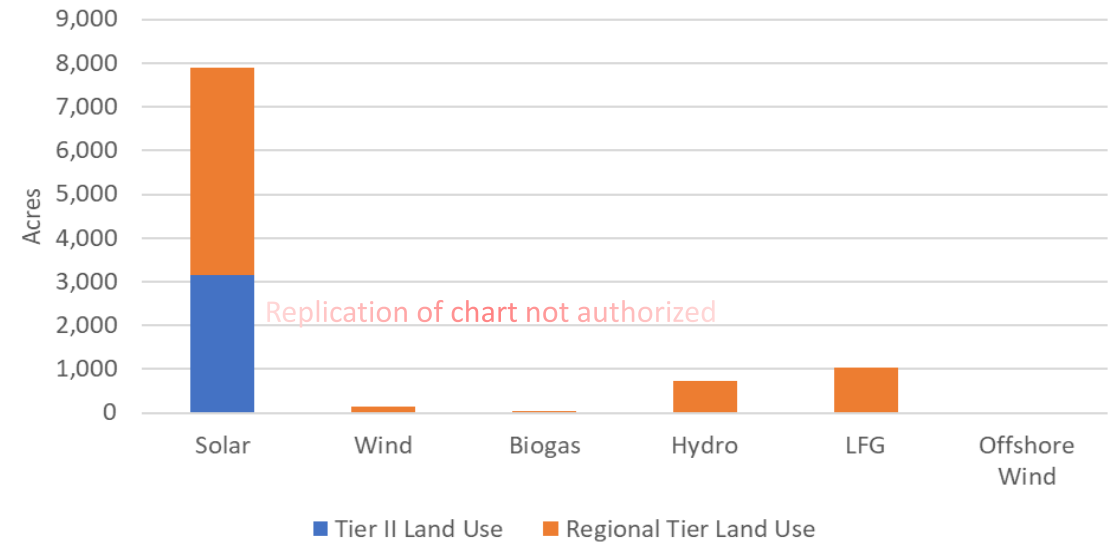
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Other types of results

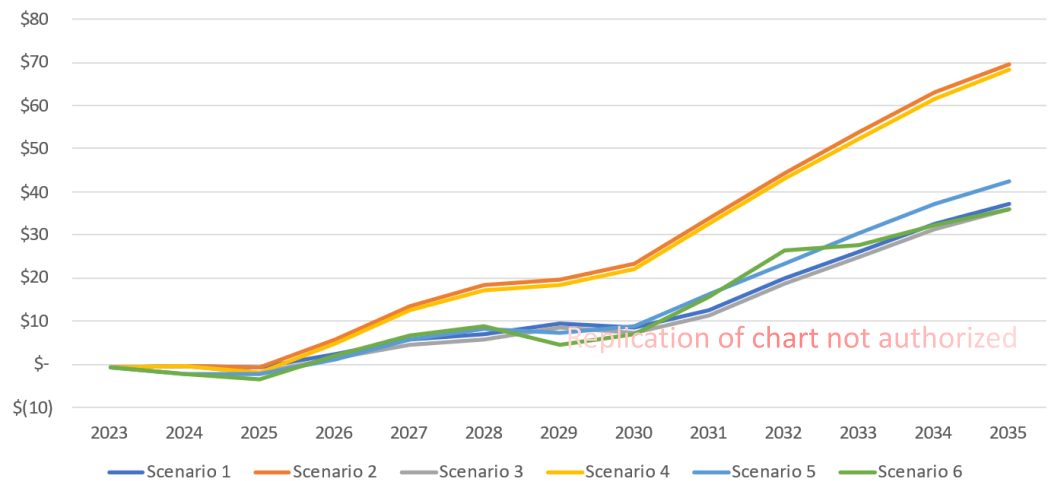
Incremental Cost of RE by Year and Tier (SCT, Scenario 2)



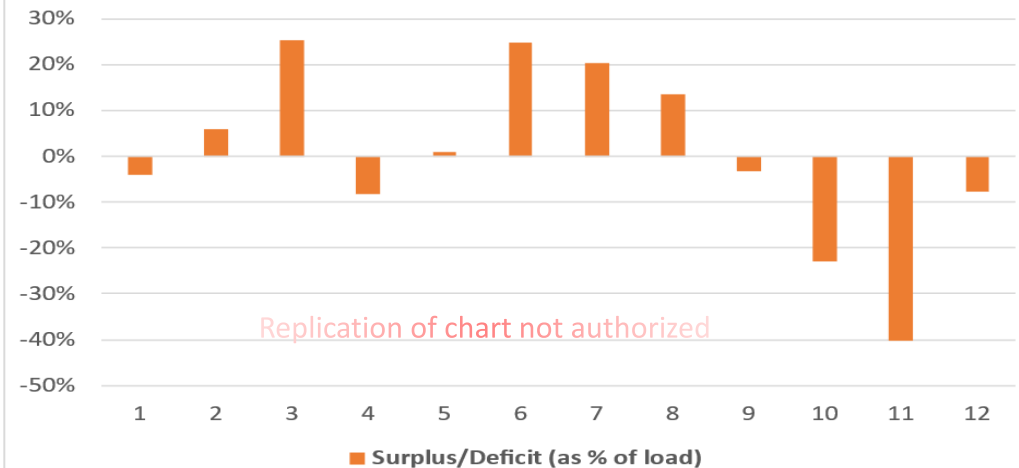
Land Use by Tier and Technology (2035, Scenario 6)



\$/Ton CO2 Abatement Across Scenarios - Relative to BAU



Monthly Surplus/Deficit: Scenario 2 (2035)



When will results be available?

Results presented today and in workshops are part of an evolving model and should not yet be used as a basis for decision making.

JFO and their consultant, Brattle Group, received the draft model on 10/13 to familiarize themselves with the model and format of outputs to be used in their follow-on macroeconomic analysis scope

Final Results will be available early-mid November

Final Stakeholder Advisory Group meeting early-mid November.

Webinar re: Statewide Polling Results November 8, 12:00pm-1:00pm: [***Register to attend!***](#)

[Read the Full Report](#)

[Review the Summary Presentation](#)

Public workshop pulling in the results of Statewide polling and focus groups, the Regional Planning Commission engagement, and technical analysis – late November

Public Comment period Mid-Nov → Mid-Dec.

Thank you

All info regarding the research and analysis conducted by the PSD is available at:

<https://publicservice.vermont.gov/renewables>

Join our Stakeholder List using the QR Code here or by emailing PSD.REPrograms@vermont.gov

