Agenda

12:00 **Welcome and Context** (Department of Public Service)

12:30 **Overview of Modeling Effort & Scope** (Sustainable Energy Advantage)

- ❑Scope, Approach, and Deliverables
- ❑Policy & Market Context
- ❑How to use this model and interpret results
- ❑Question & Answer

1:15 Break

1:30 **Draft Results** (Sustainable Energy Advantage)

- ❑Scenario Definitions and Assumptions
- ❑Overview of results
- ❑Question & Answer

2:45 **What's next?** (Department of Public Service)

- ❑Next steps in Department review of renewable electricity policies & programs
- ❑November workshop

3:00 **Adjourn**

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All participants will be on **Mute** by default.

To ask a question, please either: (1) type your question in Q&A dialogue box or (2) use the 'raise hand' feature and we will unmute you.

- We may address your question immediately or wait until next logical stopping point.

Note: We will be recording today's webinar.

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Technical Analysis of a 100% Renewable or Clean Energy Standard: Draft Results Technical Workshop

October 10, 2023

Presented by: Sustainable Energy Advantage, LLC

Sustainable Energy Advantage, LLC

Overview of Modeling Effort & Scope

- ❑ Scope, Approach, and Deliverables
- ❑ Policy & Market Context
- ❑ How to use this model and interpret results
- ❑ Question & Answer

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Scope

- RES/CES Policy Objectives:
  - Support the deployment of new renewable energy resources
  - Explore issues and policy options associated with a 100% zero carbon standard
- Scope:
  - "Provide quantitative technical analysis for expanding Vermont's current Renewable Energy Standard to 100% renewable or clean"
- Purpose:
  - Support informed discussion and decision-making regarding potential revisions to Vermont's Renewable Energy Standard (RES)

Approach

- Conduct scenario and sensitivity analysis to explore a range of *RES policy designs* and outcomes
  - Other policy designs, while related, are not the focus of this analysis
- Each scenario is evaluated relative to the current RES policy
  - 75% by 2032, and associated targets, eligibility criteria, etc.
- Results are expressed as *incremental to* the current RES policy
- Scenarios reflect feedback from a Stakeholder Advisory Group
  - Includes representation from wide range of stakeholders
  - Provided detailed input for Scenario Definitions

Deliverables

- Stakeholder Advisory Group process

- Draft Results
  - Today's Presentation & Discussion
  - Draft Technical Analysis Model

- Final Results
  - November Workshop
  - Final Technical Analysis Model

Policy and Market Context

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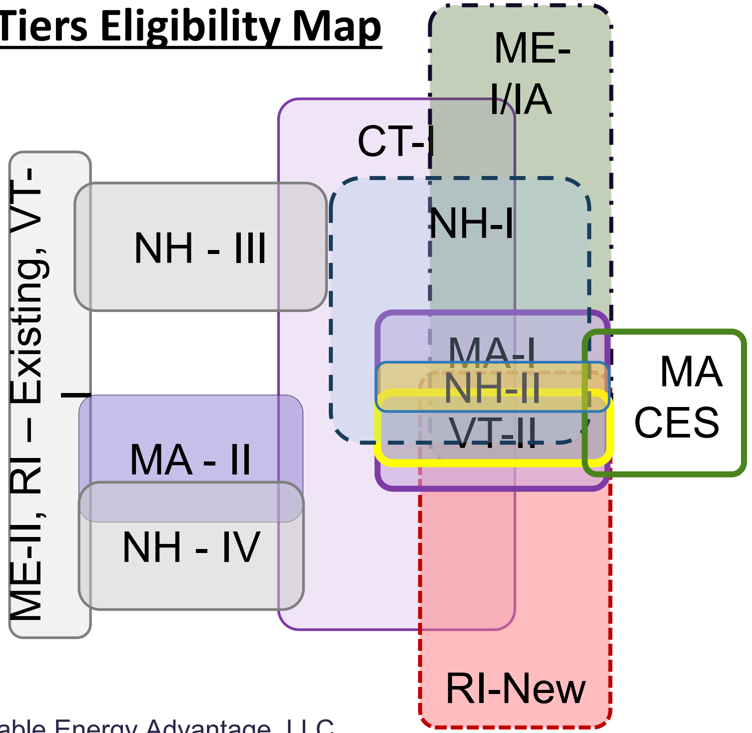
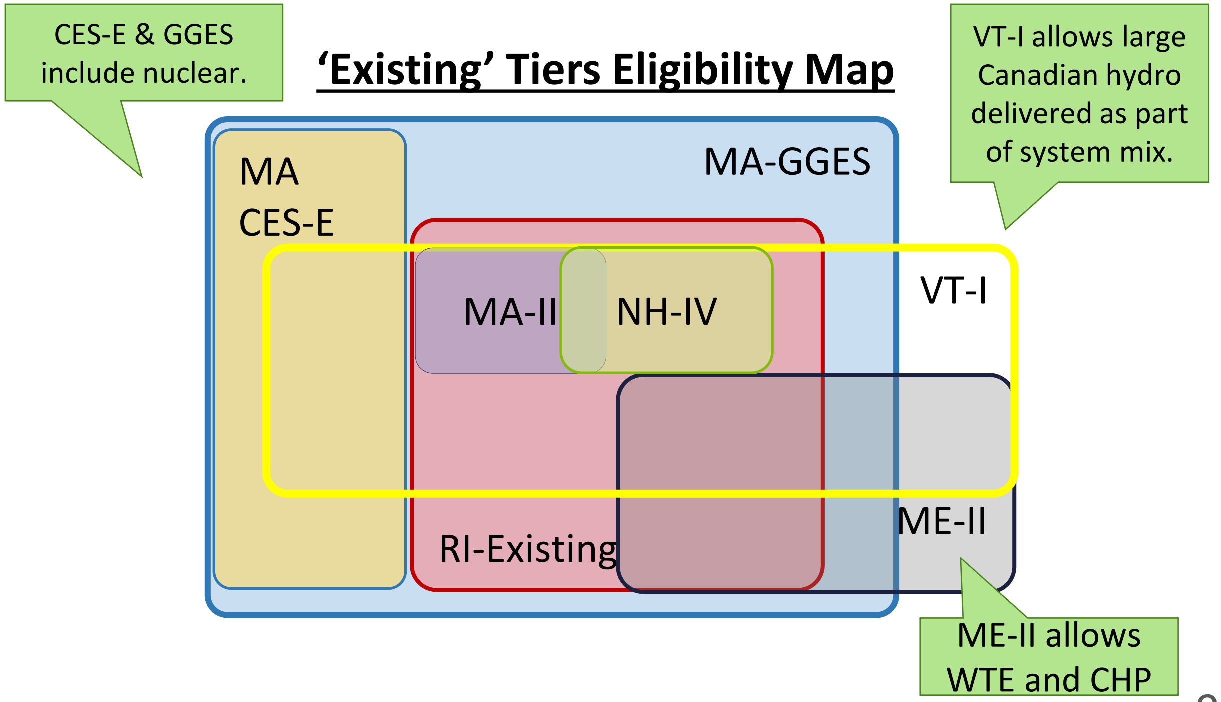
Regional Policy Interactions

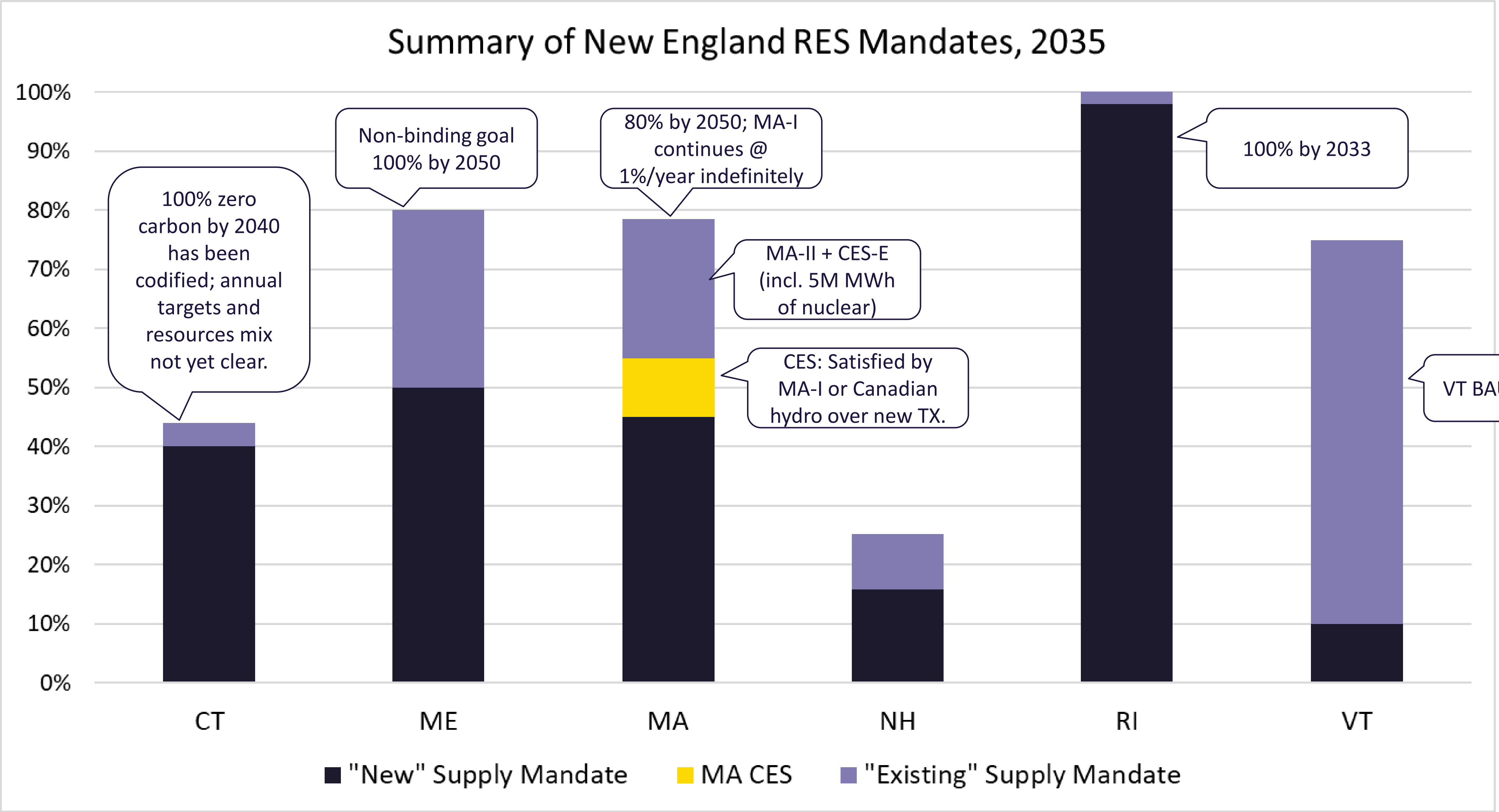
- **New England's renewable energy market is complex**
- **Each of the six states has its own RES/RPS, with multiple tiers/classes:**
  - Some focus on 'new' resources
  - Some focus on maintaining 'existing' resources
- **Eligibility differs, but with many overlaps**
- While not 'restructured' like the other five New England states, **Vermont must nonetheless consider fulfillment of its renewable and clean energy policy objectives in the context of the regional market**.

'New' Tiers Eligibility Map





Regional Context: RES/RPS Targets, 2035



State of the Market
Regional Supply, Demand, and Pricing Dynamics

Existing Tiers:
Other than Large Hydro / Nuclear

- Demand targets are stable: either fixed, or reactive to load.
- Supply is static (except for eligibility changes)
- Supply historically > demand, yielding low incremental RES compliance costs
- Supply expected to be sufficient through early 2030s; thereafter, depends on revised policy targets (i.e., will all New England states adopt 100% targets?)

Existing Tiers:
Large Hydro / Nuclear

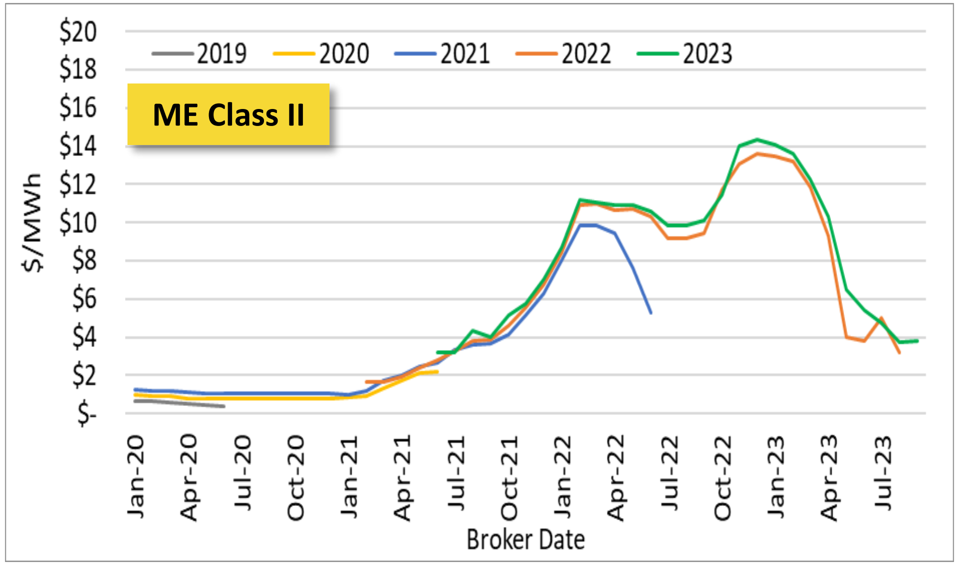
- As 100% renewable, clean, or zero-carbon targets emerge, states are reconsidering the role of large hydroelectric and nuclear.
- MA CES-E: Allows pre-2011 hydro >30 MW and has resulted in material increase in imports from Canada since 2021.
- MA GGES (begins in 2030): Large hydro and nuclear are eligible.
- CT Class I: If market is short, allows 2.5% of CT load to be served by large hydro.
- Supply currently > demand.

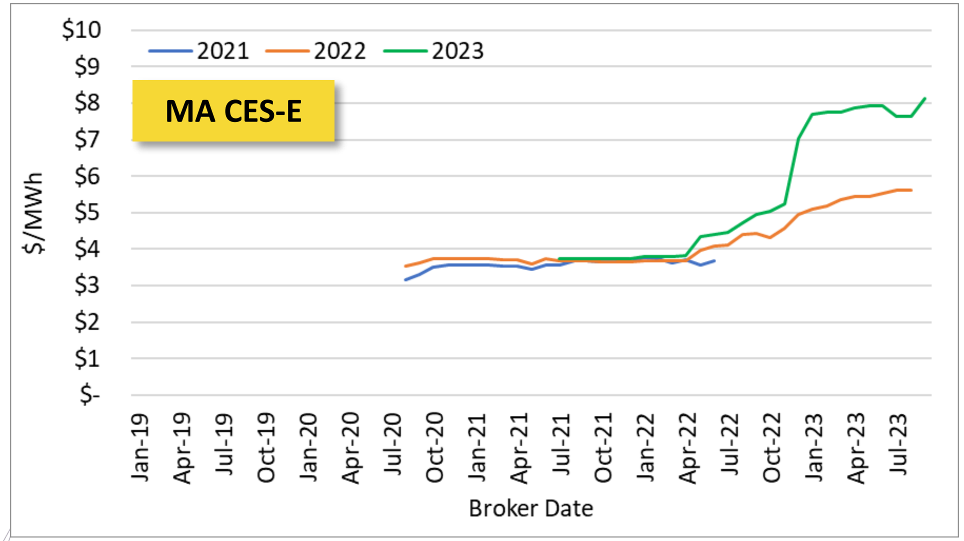
New Tiers:
i.e., Regional Class I

- Demand targets increase annually, intending to spur new supply
- New supply comes on-line as permitting, financing, and construction timelines allow (not as smooth as demand increases)
- Supply and demand currently in approximate equilibrium – with RES compliance costs just under MA/CT $40/MWh ACP.

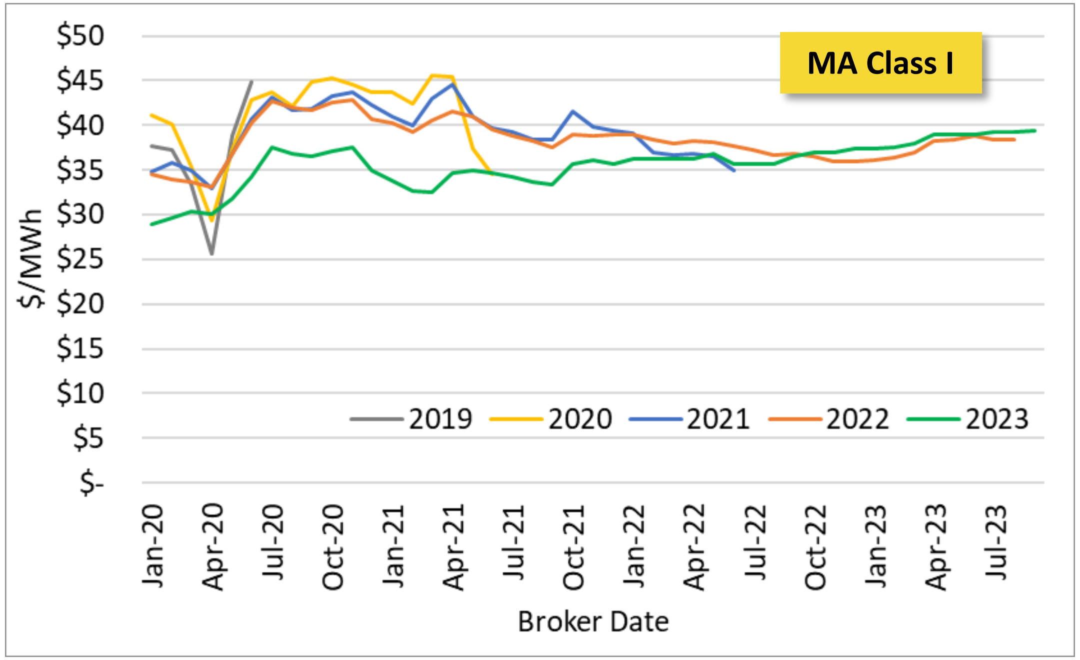
State of the Market
Recent Cost of RES/RPS Compliance (REC Prices)

Existing Market Examples: ME-II and MA CES-E





New Market Example: MA Class I



State of the Market
Other Dynamics and Considerations

- Distributed Generation: Form of policy support…
  - In VT via demand-side policy (i.e., as % of load, Tier II)
  - In all other states via supply-side policy (i.e., MW target and $ incentives), with resulting production counted with all other new supply toward Class I

- Imports:
  - Energy and Certificates always imported 1 to 1.
  - Imports seeking to claim technology-specific characteristics must be unit-specific
  - Outside of VT, system power imports may only be claimed as system power and may never be used to demonstrate RPS compliance.

- Demonstrating RES/RPS Compliance
  - Universal verification mechanism = NEPOOL Generation Information System (GIS)
  - Re-bundles 100% of energy and certificates on a quarterly basis → creating functional equivalent of bundled contracts, where every MWh of energy has an associated attribute, nothing is double counted (or not counted) and all load-serving entities can clearly demonstrate their consumption portfolios.

Using the model and interpreting results

- ❑ First ask: "*What are we trying to accomplish*?"
- ❑ Modeling capability and scope

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RES Policy Modeling: Issues & Options

- The model is a tool to help explore possible policy design changes and potential outcomes, but the most important question is: *What are we trying to accomplish?*
  - Common renewable energy policy objectives:
    - Achieve targets at least cost,
    - Incentivize in-state development for job/economic development benefits,
    - Build new resources throughout the region,
    - Achieve greenhouse gas emissions targets, and
    - All combinations thereof
- RES Policy Design issues/options include (but are not limited to):
  1. Total target: 100% or other (relationship to progress in other sectors)
  2. Tier allocation and annual targets for each Tier (new v. existing, and pace of deployment)
  3. RES or CES (i.e., should nuclear be eligible for Tier I? If yes, in what quantity?)
  4. Long-term role of existing resources
  5. Role of new, regional resources
  6. RES Exemptions, near-term and long-term
- **Interpreting Results:** Do the policy design and modeling choices help inform the discussion? How do the results align with what we are trying to accomplish?

Modeling Scope and Capability

- Model architecture characterized by scenario and sensitivity needs
  - Objective = maximum flexibility for combining policy design options
- Modeling outcomes consider both costs and benefits
  - Incremental Costs
    - Tier I, II and Regional Tier → varying combinations
    - Rate impact
  - Benefits (and Costs) by…
    - Scenario (societal perspective)
    - Tier
    - Technology
    - Siting
- Methodology and Results discussed later in this presentation.
- What is *not* included?
  - Localized optimization of supply, flexibility mechanisms (e.g., storage, price-responsive demand, etc.), and grid infrastructure

Q&A

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Break

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Draft Results

- ❑ Scenario Definitions and Assumptions
- ❑ Overview of results
- ❑ Question & Answer

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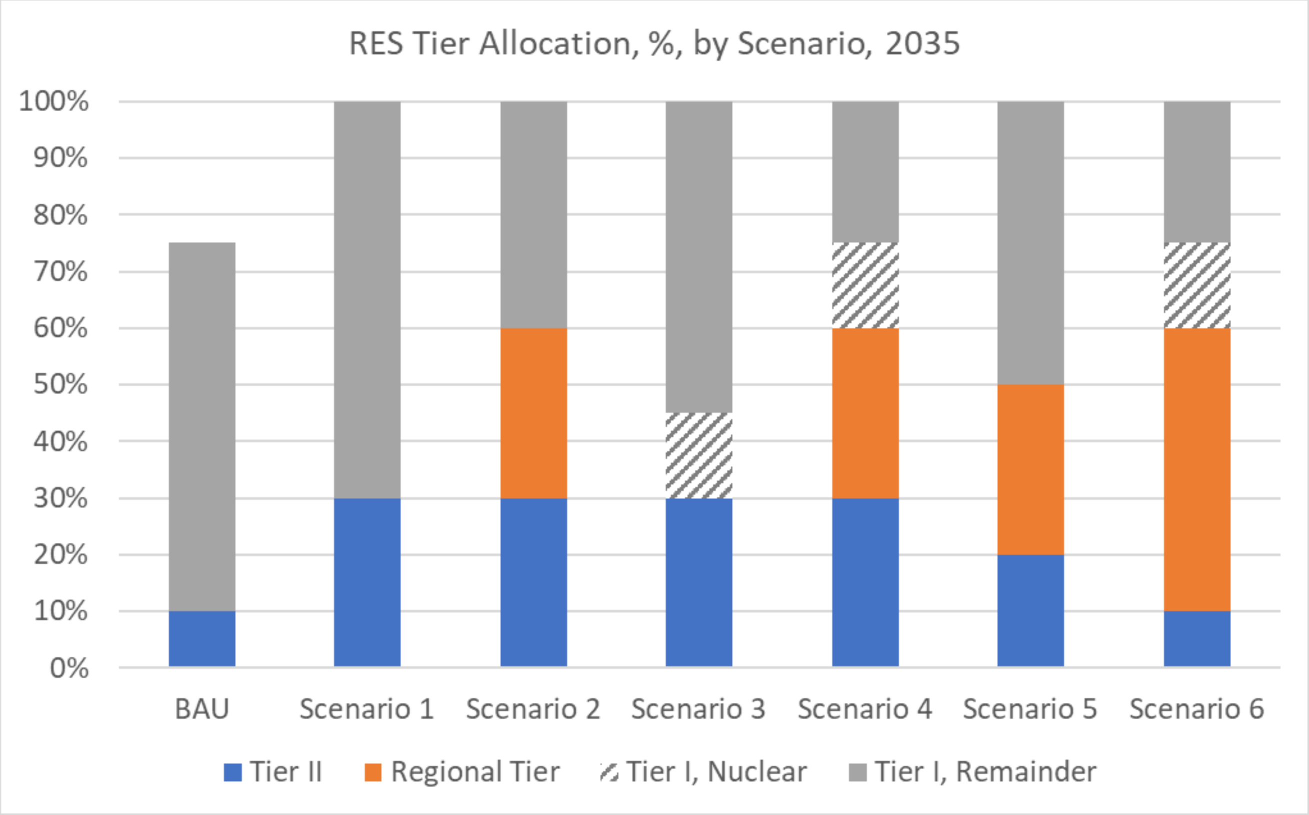
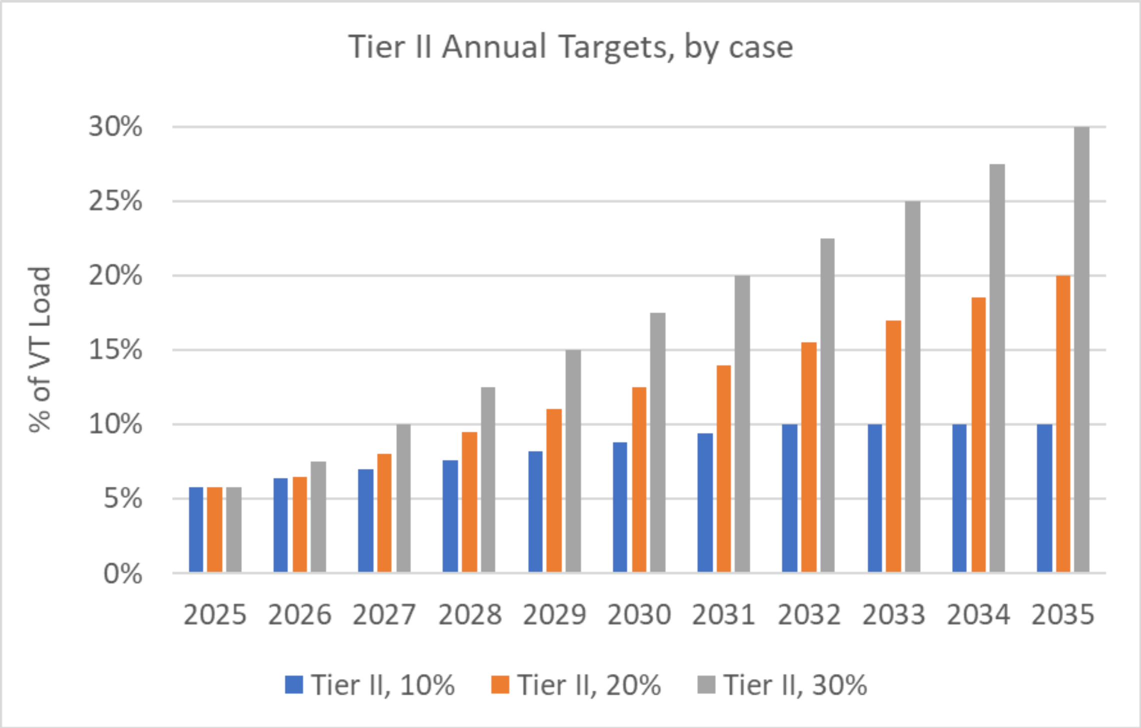
Scenario Definitions
Department and Stakeholder Feedback Yields 68 Cases

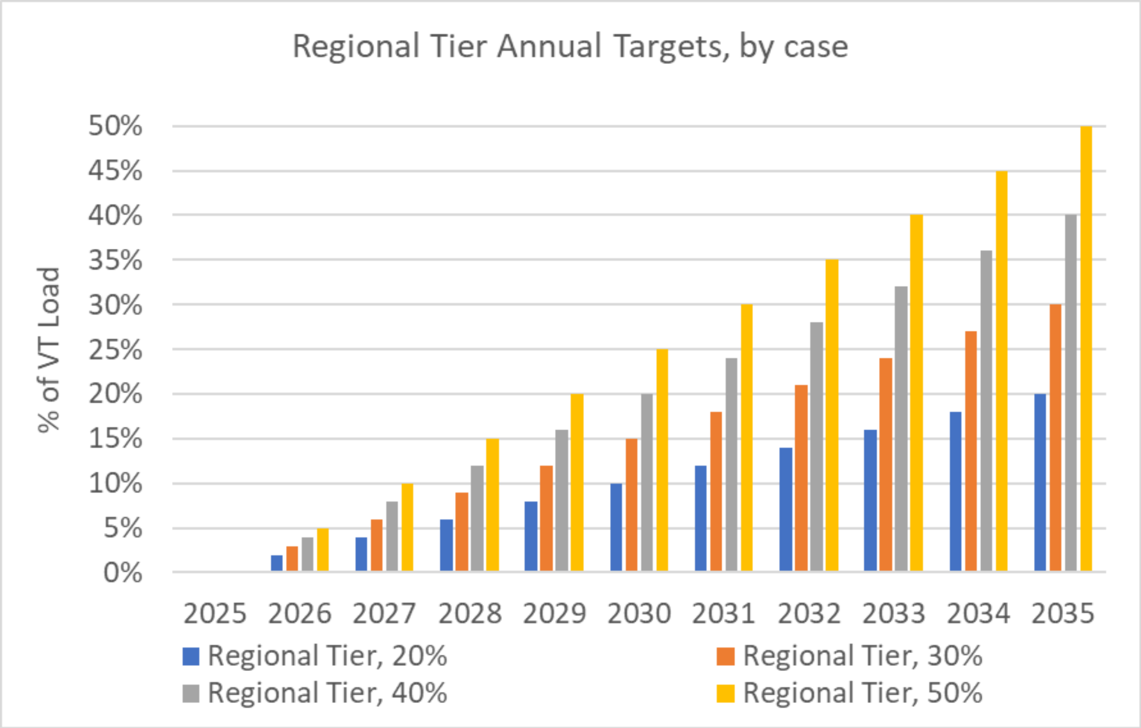
- BAU (Business as Usual): 75% by 2032
  - 10% Tier II
  - 65% Tier I
- Six core scenarios, varying:
  - Tier II: 10%, 20%, 30%
  - Regional Tier: 0%, 20%, 30%, 40%, 50%*
    - * Scenario 6 only, when combined with Tier I
  - Tier I, Net: Fills 'gap' to 100%... By 2030, with *reallocation of supply through 2035* as other Tiers increase
  - Tier I Eligibility:
    - With and without biomass
    - With and without nuclear
  - Load Forecasts
    - Base Case
    - Higher Electrification
- Result = BAU + 68 scenario variants



Scenario Definitions:
Annual Tier II and Regional Tier Targets

- Analysis requires assumption of annual targets, by Tier.
- Tier I fills the gap to 100% by 2030, and to maintain 100% thereafter





Assumptions Applied to All Scenarios/Sensitivities (1)

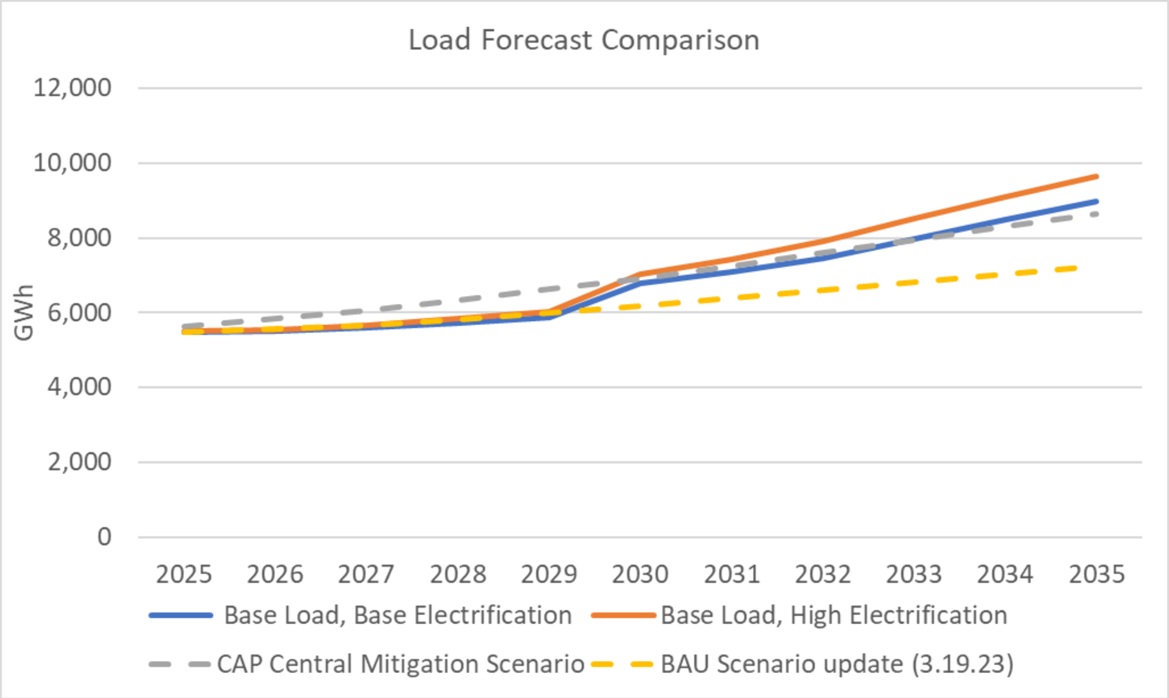
- All targets reached by 2035
- RES-obligated load to include losses (required for a 100% target)
- CES defined as "Tier I with Nuclear eligible up to 15% of VT load" → intended to approximate current purchase volume *and* allow to additional purchases (to remain at 15% of load)
  - SEA has assessed nuclear production, existing contractual commitments, license expirations, and other state policies (e.g., MA CES-E and GGES) to arrive at conclusion that this assumption is feasible from an 'availability of supply' perspective.
- For '100% renewable utilities,' Tier I, Tier II, and Regional Tier RES requirements will be applied to load above 2019 "baseline"
- Assumes import transactions are facility-specific and create NEPOOL GIS Certificates reflecting descriptive characteristics of applicable facilities (i.e., not system power)
- Alternative Compliance Payments
  - Tier I and Tier II: methodology unchanged
  - Regional Tier: same as Tier II

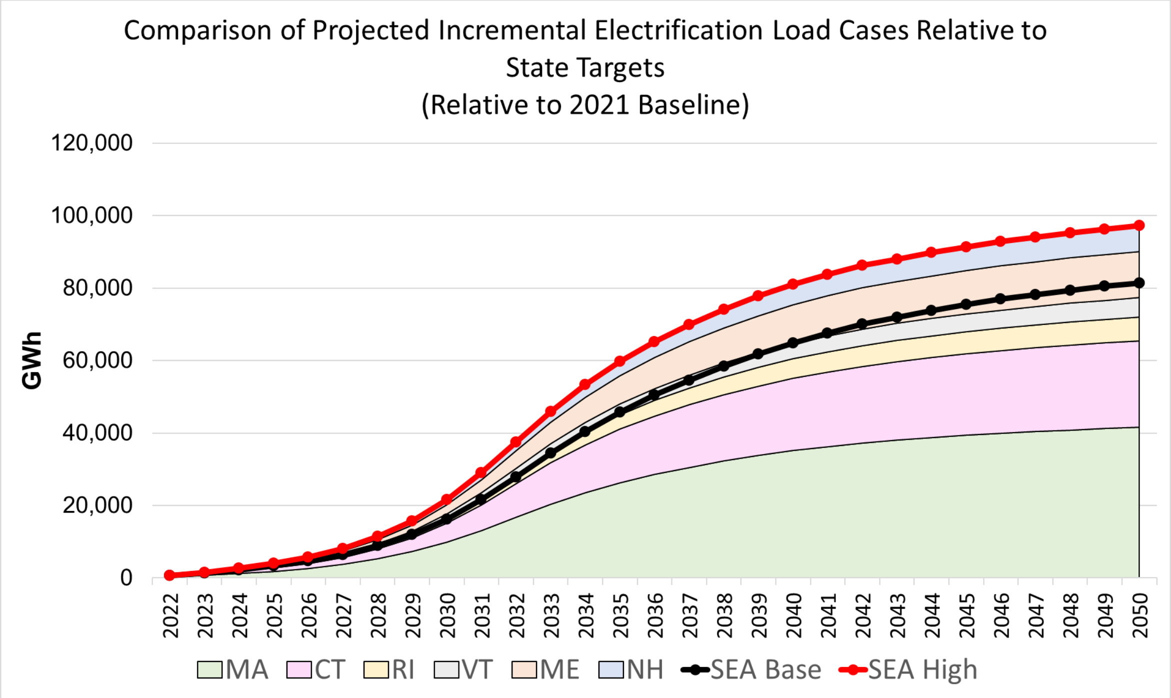
Assumptions Applied to All Scenarios/Sensitivities (2)

- Regional Tier Supply-Demand Modeling Approach
  - Modeling simulates scenario-specific interaction between VT and all other New England RES/CES programs → results in Regional Tier supply/demand balance and price formation.
  - Results in assumed contracting/attribution of supply to Vermont based on facility-specific characteristics and state-by-state eligibility requirements
- Regional Tier Assumed Eligibility
  - All post-2010 solar and wind
  - Hydro currently certified in *any* regional Class I market
  - Biomass assumed ineligible

Assumptions: Load

- Baseline: 2023 CELT
    - But CELT electrification forecast is conservative relative to state goals, so replaced by outlook relative to state targets
- Electrification: Reflects SEA forecasted impact of transportation and heating sector electrification





Benefit Cost Analysis Inputs and Methodology

- Overall approach modeled largely on NREL benefit cost analyses (BCA) of RPS
- Where practical, draw on publicly available inputs
- Costs and benefits levelized – smooths "lumpy" costs and benefits over life of resource, enabling year by year evaluation of RES scenarios
- Outputs – benefits, costs, projected rate impacts, etc.

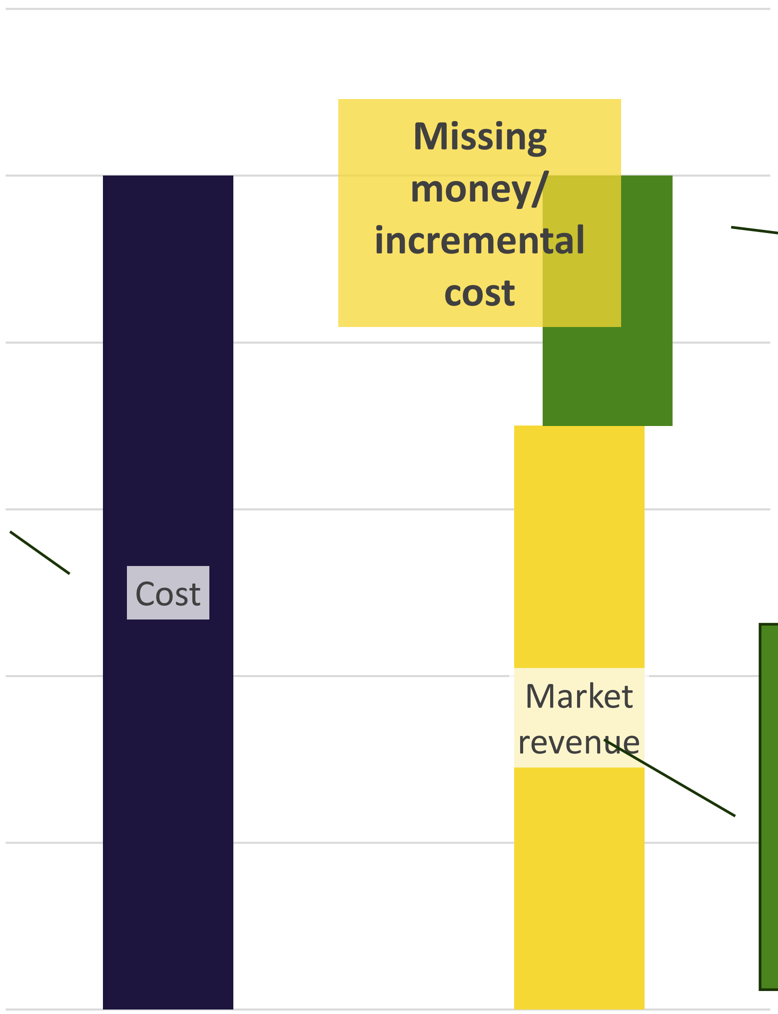
Note – unless otherwise specified, benefits and costs are evaluated as *change* from business as usual (BAU) case, based on current policy

2021 Avoided Energy Supply Component (AESC) Study

- *What is it?* Study performed to help New England States evaluate cost effectiveness of policies and programs (initially and primarily energy efficiency programs)
- *Who conducts it?* Conducted by a team of consultants (for current and most previous iterations, including SEA)
- *Who oversees it?* Study process overseen by New England regulators, state energy offices, and other consultants
- *How is it used in this analysis?* Provides many useful inputs – most are from AESC's "All-in Climate Policy" sensitivity, while GHG and NO_x from a counterfactual

Approach to Modeling Costs

Modeling Project Economics



Includes capital cost, development, O&M, financing, etc.

Difference between levelized costs and levelized market revenues

This is the primary cost we include in our modeling – the net cost of the evaluated RES resource, which also represents the incremental cost to add this resources to the RES (above ISO-NE system mix).

Energy (based on production profile), capacity, ancillaries.

Non-RES resources generally have costs/revenue requirements covered by these market revenues.

Approach to Establishing Incremental Costs

The approach to calculating incremental cost of RES is customized by tier

Tier I / CES	Tier II	Regional Tier
• Market is illiquid but compliance costs (from DUs) and incremental cost from 'existing' regional tiers provide starting point • RES/CES revisions (toward 100%) region-wide will increase demand tension through 2035, increasing incremental cost over time • But capped at alternative compliance payment (ACP) rate	• Driven by policy and project economics • Assume net metering deployment trajectory based on recent history and projected phase-down → and incremental cost based on forecast of net metering rates minus expected value of wholesale energy • Remaining supply from facilities up to 5 MW, using cost-based / missing money analysis → levelized project cost minus levelized market value of energy (accounting for production profile)	• Short-term: driven by regional REC supply/demand dynamics • Long-term: projections converge towards missing money (project cost minus levelized market value) • ACP: Assume same as Tier II

Because energy and capacity value (including capacity accreditation and consideration of 8760 production profile) are netted out of cost of RES resources, they do not show up as a separate benefit in analysis

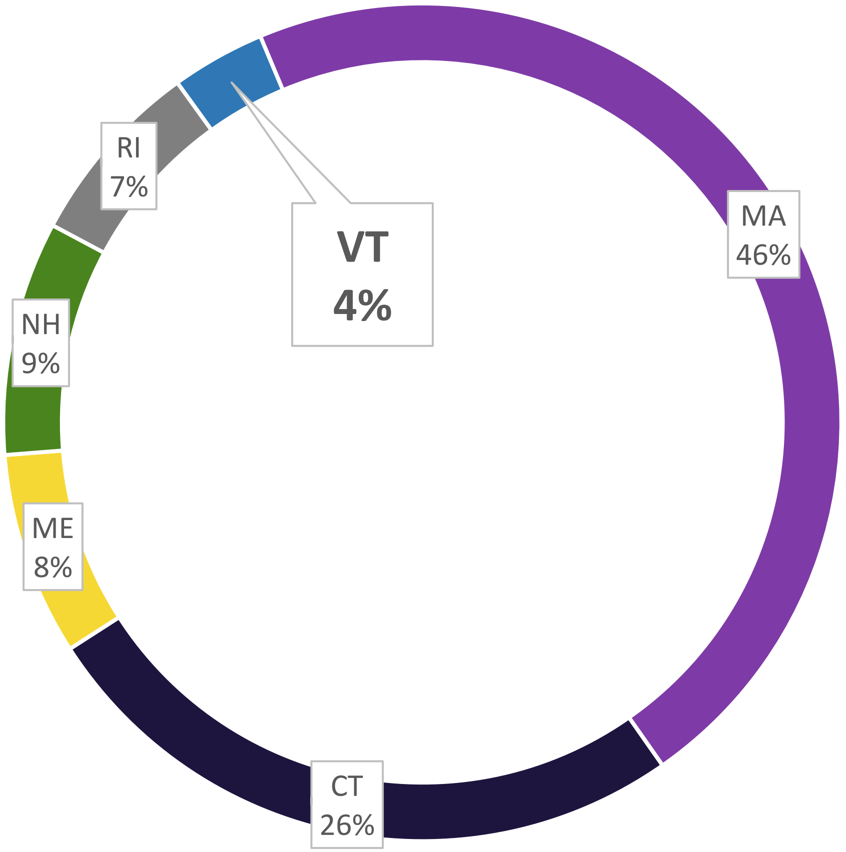
Modeled Benefits and Costs

Value Stream	Cost or Benefit	Primary Data Source	Impact	Description
Incremental cost of resource	Cost	SEA calculations	High	Cost for resource incremental to generic, residual grid mix
Transmission integration costs	Cost	NREL	Low	Socialized transmission investments driven by shift to variable resources
Interconnection distribution system upgrades	Benefit	SEA estimates; MA Capital Investment Project (CIP) filings	Low	Of distribution interconnection costs paid for by interconnecting customer, a portion is assumed to be a benefit to load customers
Uncleared capacity value	Benefit	2021 Avoided Energy Supply Component (AESC) study	Low	VT-sited, distribution-connected projects are assumed to not bid their capacity into the FCM, instead, acting as load reducers
Reduced *share* of capacity costs	Benefit	2021 AESC	Moderate	VT-sited, distribution-connected projects that produce during the New England annual peak can reduce the portion of capacity costs paid for by Vermont
Price suppression	Benefit	2021 AESC	Moderate	Renewable resources with low marginal costs tend to drive down prices by shifting the supply curve to the right; applies to capacity, energy, and natural gas (through reduced demand for gas-generated electricity) prices
Reduced transmission costs	Benefit	2021 AESC; VT precedent	Low	Distribution-connected resources that generate energy during periods of high demand could reduce future needed transmission investments
Reduced *share* of transmission costs	Benefit	ISO-NE	Low	VT-sited, distribution-connected resources that generate energy during VT's monthly peak hours can reduce the *share* of regional transmission costs paid for by VT (cost shift to other New England ratepayers)
Reduced distribution costs	Benefit	2021 AESC; VT precedent	Low	VT-sited, distribution-connected resources that generate energy during periods of high demand may reduce future needed distribution investments
Reduced transmission and distribution losses	Benefit	2021 AESC	Moderate	Reduction in losses on T&D system
Improved generation reliability	Benefit	2021 AESC	Low	Improvements in generation due to additional capacity purchased in capacity market
Non-embedded GHG emissions	Benefit	2021 AESC	High	Value (based on social cost of carbon) of avoided GHG emissions not already captured RGGI embedded in energy prices
NOx emissions	Benefit	2021 AESC	Low	Value of avoided Nox emissions
Local pollutants	Benefit	EPA's AVERT/COBRA	Moderate	Value of avoided additional pollutants
RE development land use	Cost (not monetized)	Various		Acres of land associated with resources in RES portfolio
Fossil fuel water use	Benefit (not monetized)	Various		Gallons of water consumption and withdrawal reduced through RES portfolio

Regional Benefits

- New England's regional electric power system means that many benefits of new renewable generation are shared by all New England ratepayers
- Specific methodology for assigning costs varies by specific cost (e.g., transmission costs vs. capacity costs), but, in general proportional to consumption
- Depending on measure, Vermont ~3-4% of New England load
- For modeled benefits that are shared across New England, ~3-4% of those benefits accrue to Vermont
- Conversely, Vermont benefits from resources driven by programs and investments originating from other New England states
- Still, for the Ratepayer Impact Measure (see next slide) and rate impact calculations, only the 3-4% of benefits accruing to Vermont are counted
- Classic example of positive externality (resource paid for by one party, has great benefits, but those benefits are shared widely, and benefits specific to the party paying are lower than the cost, risking under investment)

Percent of Forecasted 2025 Gross Summer Peak Load



ISO-NE 2023 CELT Report

BCA Perspectives

- BCA was performed using two perspectives, which include different costs and benefits:
  - Societal Cost Test (SCT) – includes all monetized costs and benefits
  - Ratepayer Impact Measure (RIM) – only includes costs and benefits that would affect Vermont electric bills

Value Stream	Societal Cost Test (SCT)	Ratepayer Impact Measure (RIM)
Incremental cost of resource	Cost	Cost
Transmission integration costs	Cost	Cost (VT only)
Intercxn distribution system upgrades	Benefit	Benefit
Uncleared capacity value	Benefit	Benefit (VT only)
Reduced share of capacity costs	N/A	Benefit
Price suppression	Benefit	Benefit (VT only)
Avoided transmission costs	Benefit	Benefit (VT only)
Reduced share of transmission costs	N/A	Benefit
Reduced distribution costs	Benefit	Benefit
Reduced transmission losses	Benefit	Benefit (VT only)
Reduced distribution losses	Benefit	Benefit
Improved generation reliability	Benefit	Benefit (VT only)
Non-embedded GHG emissions	Benefit	N/A
NOx emissions	Benefit	N/A
Local pollutants	Benefit	N/A
RE development land use	Cost (not monetized)	N/A
Fossil fuel water use	Benefit (not monetized)	N/A

These are *transfers* of costs from VT to other New England states; thus not counted as benefit in SCT

Only the portion of this benefit flowing to VT ratepayers (as opposed to New England as a whole) counted

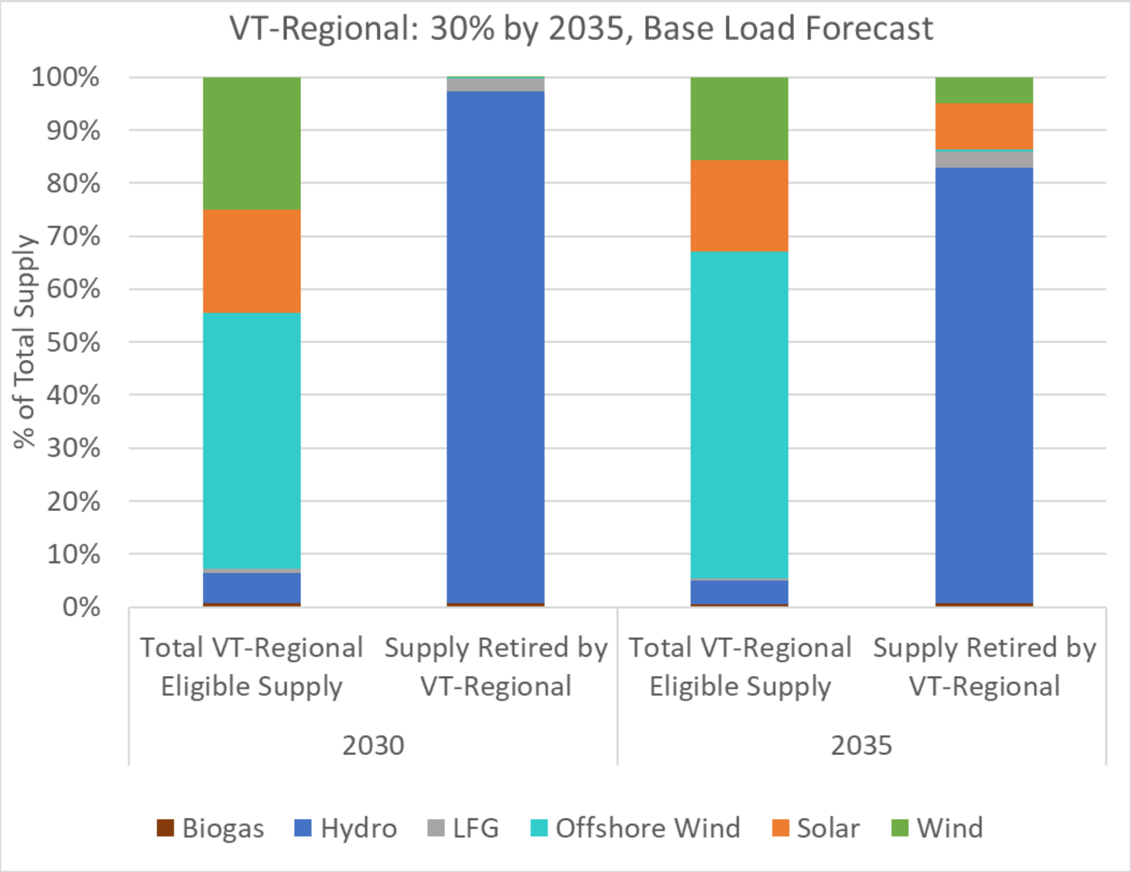
How Benefits Vary by Resource

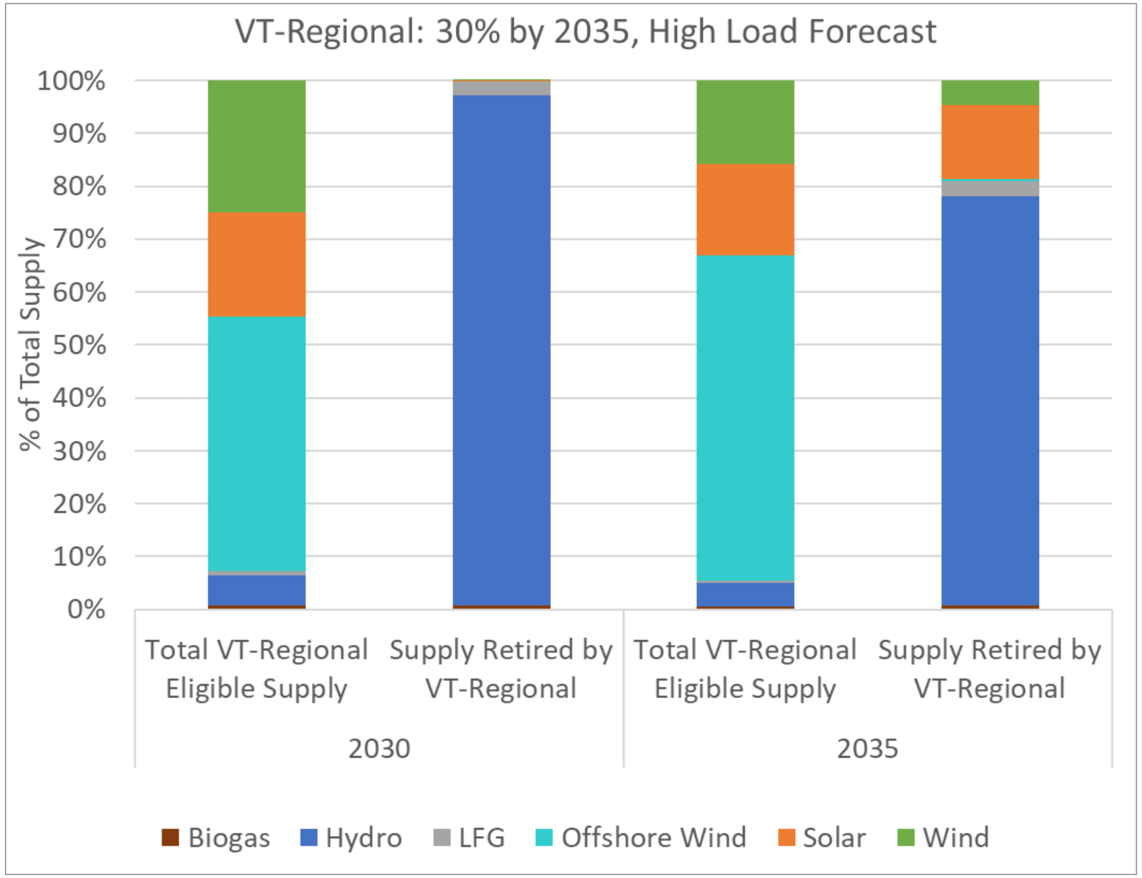
Primary resource attributes that affect benefit calculations

Dimension	Primary Variants Considered	Impact on Benefits
Technology	Solar, hydro, off-shore wind, land-based wind, hydro, biomass	Production profile, capacity accreditation, and coincidence with peaks impact calculation of benefits including price effects and avoided T&D costs
Commercial operation date (COD)	Evaluate projects with 2010-2035 CODs	Most benefit values change over time
Location	New England and imports (though primary distinction is in VT or outside of VT)	Some benefits (e.g., reduced share of transmission costs) only apply to VT-sited resources
Interconnection type	Behind-the-meter (BTM or customer sited), distribution-connected front of the meter (FTM), and transmission-connected	Some benefits (e.g., avoided distribution costs) apply to only BTM resources; some benefits (e.g., reduced share of transmission costs) only apply distribution-connected (BTM and FTM) resources

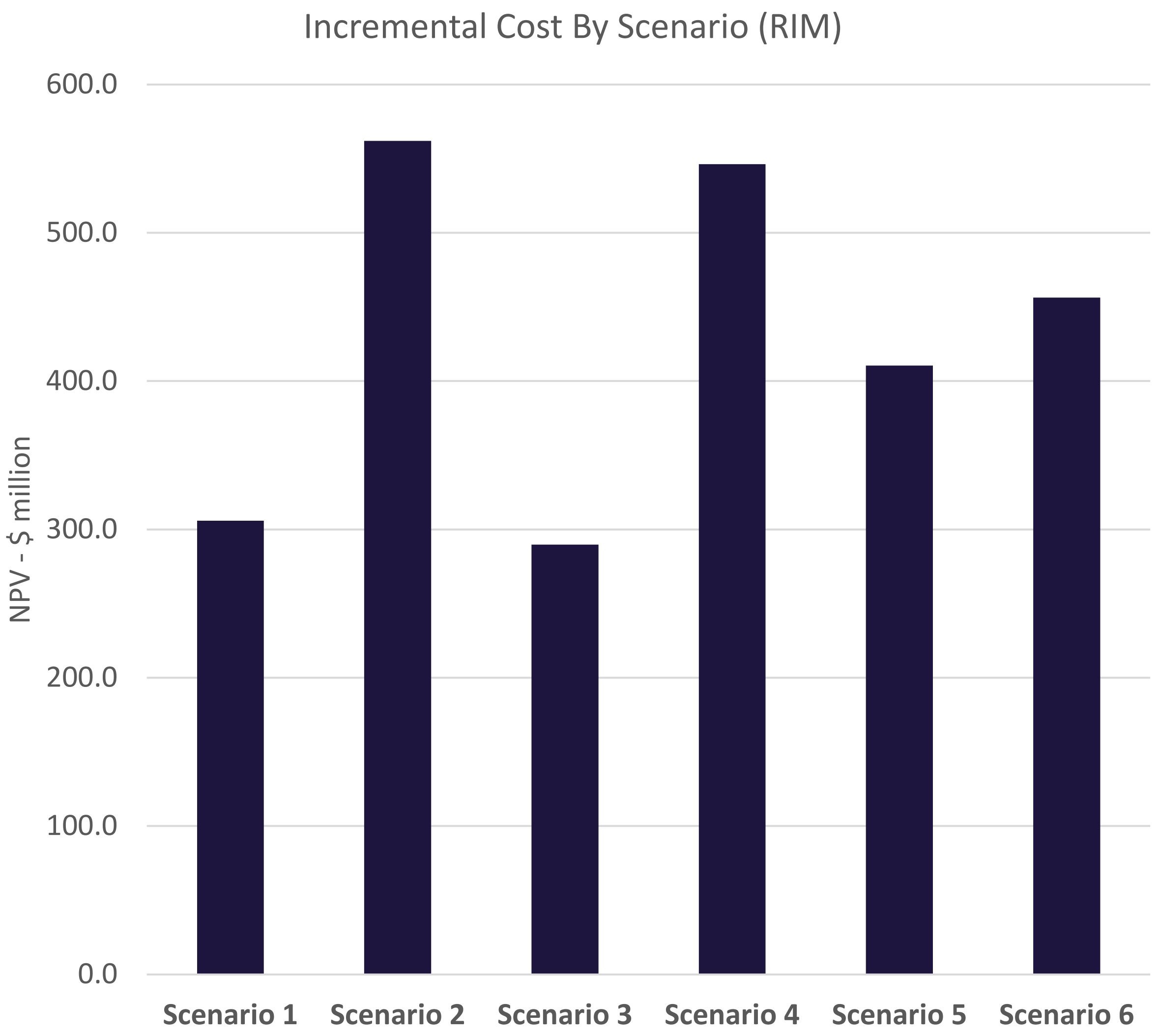
Contribution to Regional Tier, by Technology

- Supply assumed to allocate and settle based on state-specific eligibility criteria and rational economics (i.e., value to buyer)





Costs – Ratepayer Impact Measure (RIM)



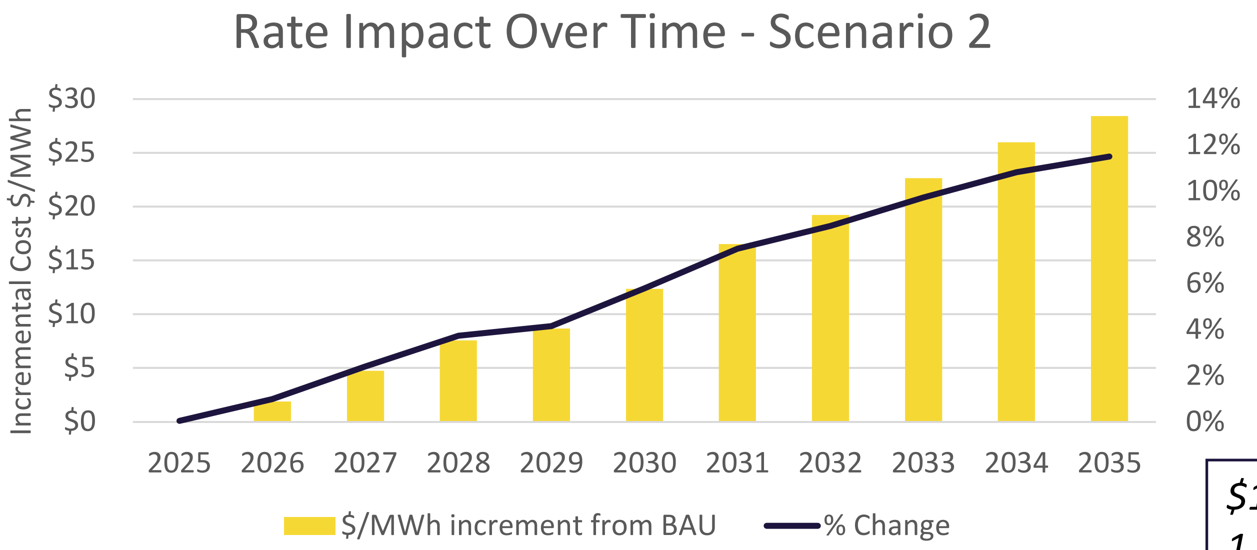
Reminder that:

- Costs are incremental costs specific to the resources modeled (e.g., not all-in cost for underlying resource)
- Shown as relative to BAU

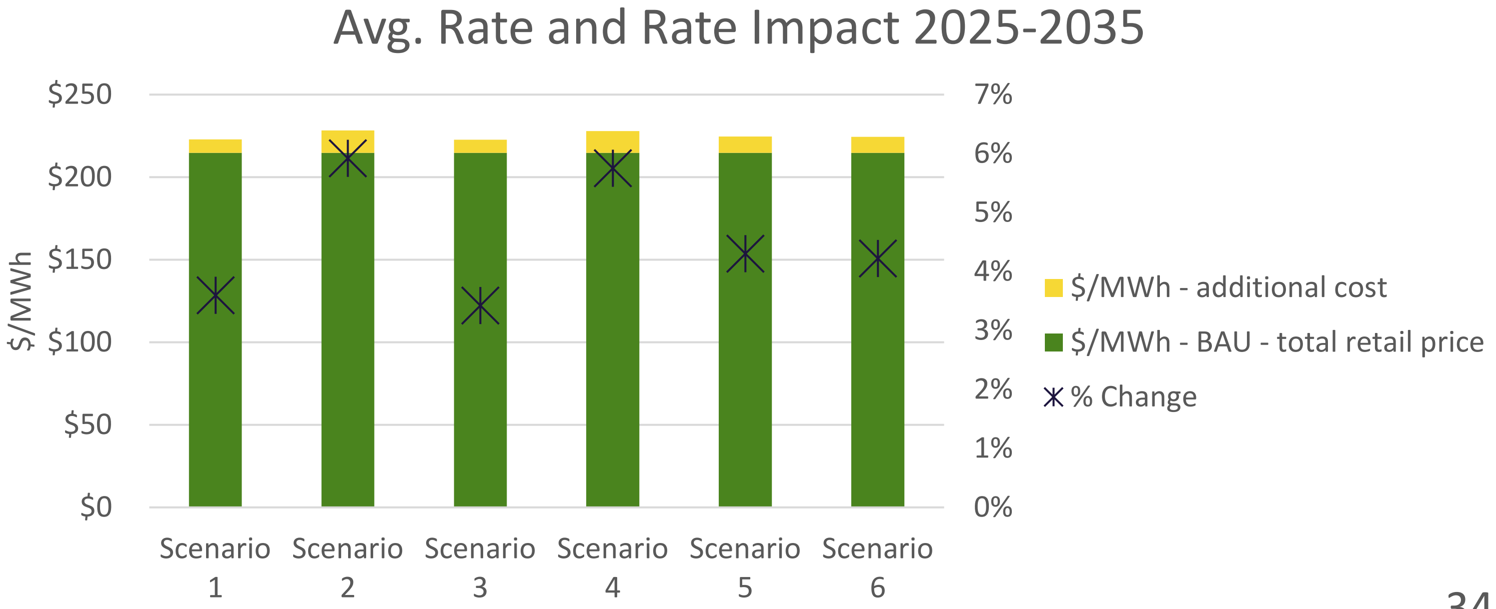
	Regional Tier Target	Tier II Target	Tier I Target	Target Date	Nuclear Tier I Eligible?	Biomass Tier I Eligible?
BAU	0%	10%	BAU	2032	No	Yes
Scenario 1	0%	30%	100% by 2030	2035	No	Yes
Scenario 2	30%	30%	100% by 2030	2035	No	Yes
Scenario 3	0%	30%	100% by 2030	2035	Yes	Yes
Scenario 4	30%	30%	100% by 2030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

Rate Impact

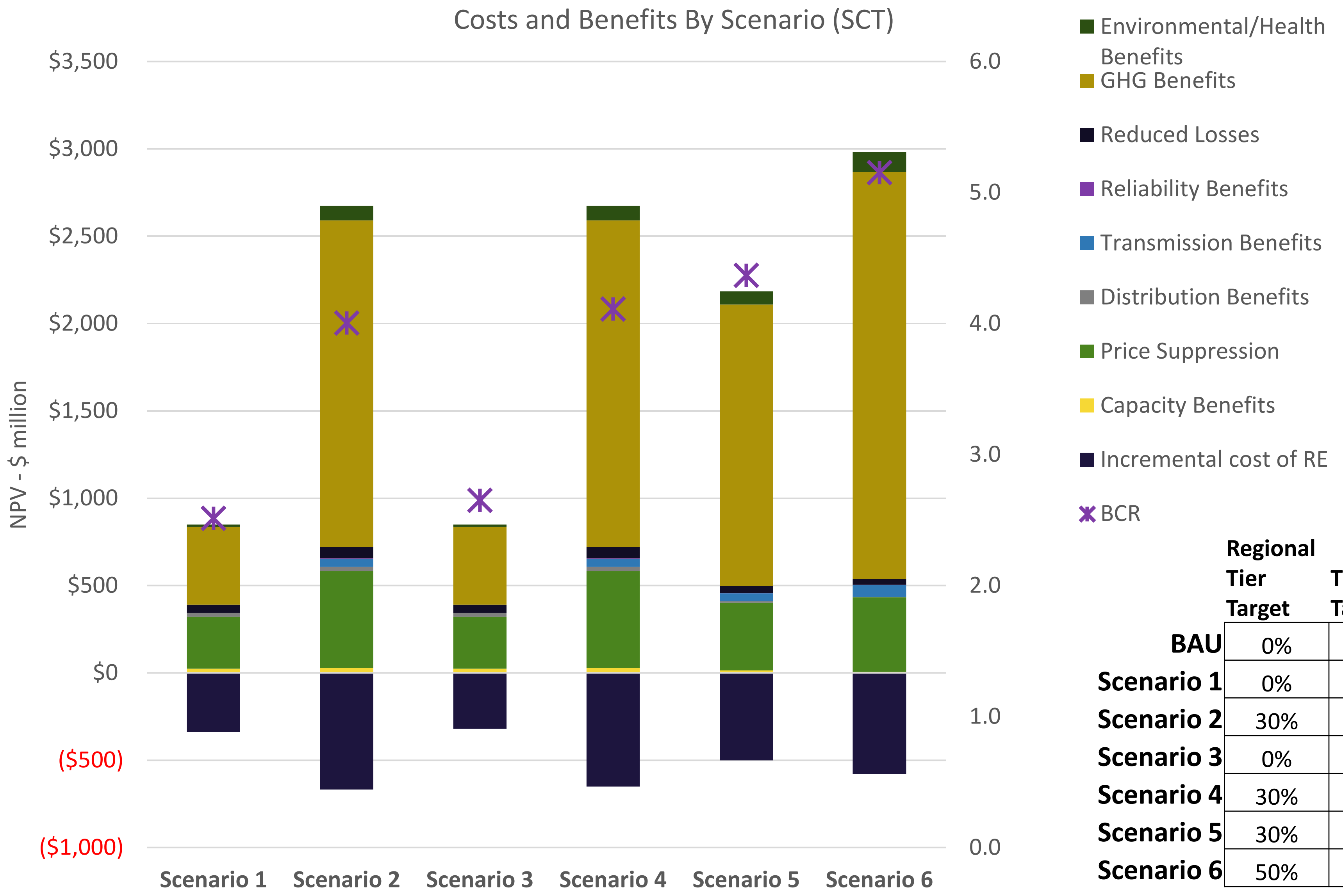
- Rate calculated as change from BAU scenario; includes both incremental costs and benefits/savings that would impact bill
- Impact increases over time as RES target increases
- Still, relatively small % of total rate (Scenario 2, with highest net costs, reaches ~12% increase from BAU by 2035)



$10/MWh = 1 cent/kWh



Costs and Benefits by Scenario – Total (SCT)



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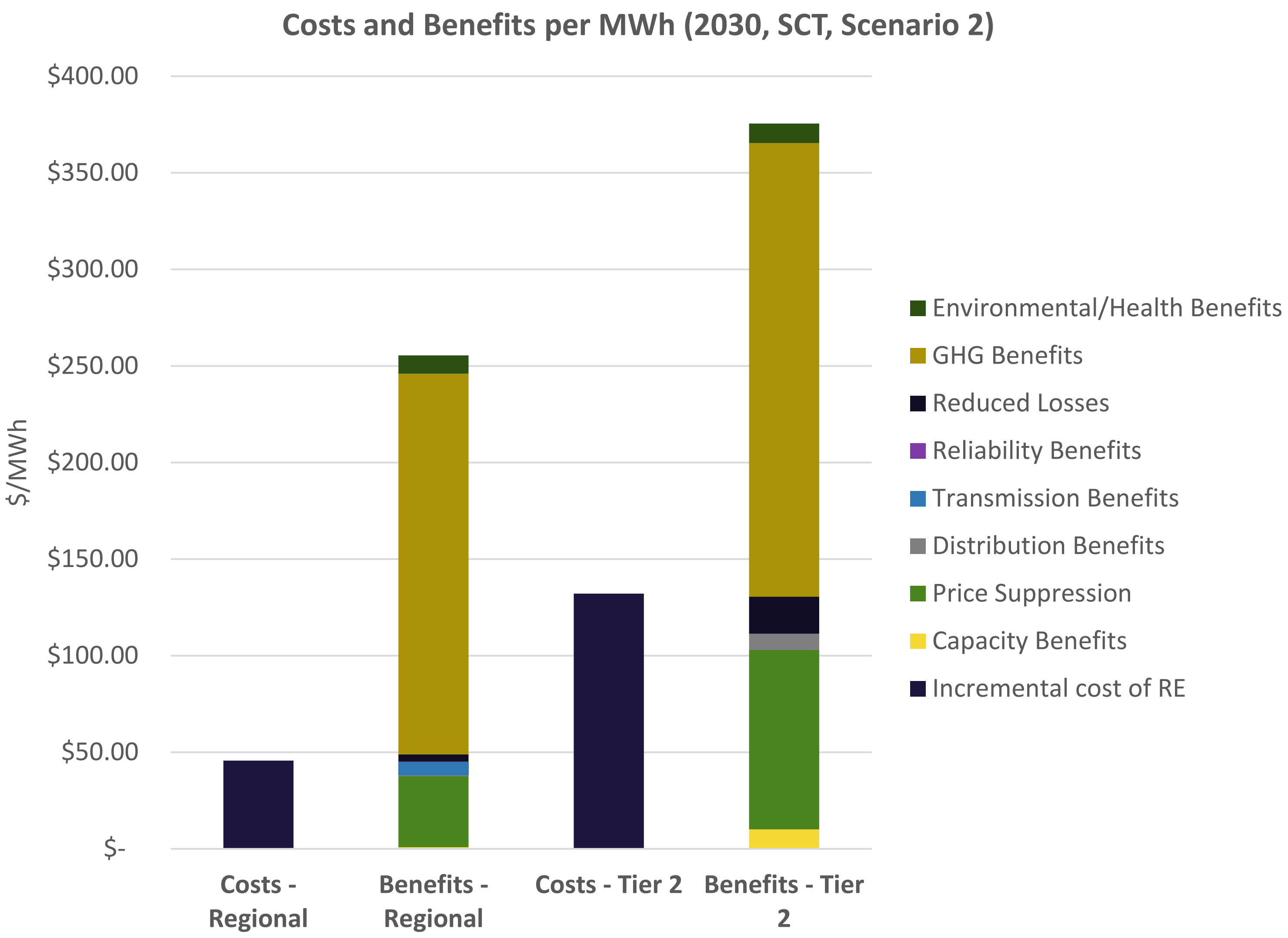
Scenario 2	30%	30%	100% by 2030	2035	No	Yes
Scenario 3	0%	30%	100% by 2030	2035	Yes	Yes
Scenario 4	30%	30%	100% by 2030	2035	Yes	Yes
Scenario 5	30%	20%	100% by 2030	2035	No	No
Scenario 6	50%	10%	100% by 2030	2035	Yes	No

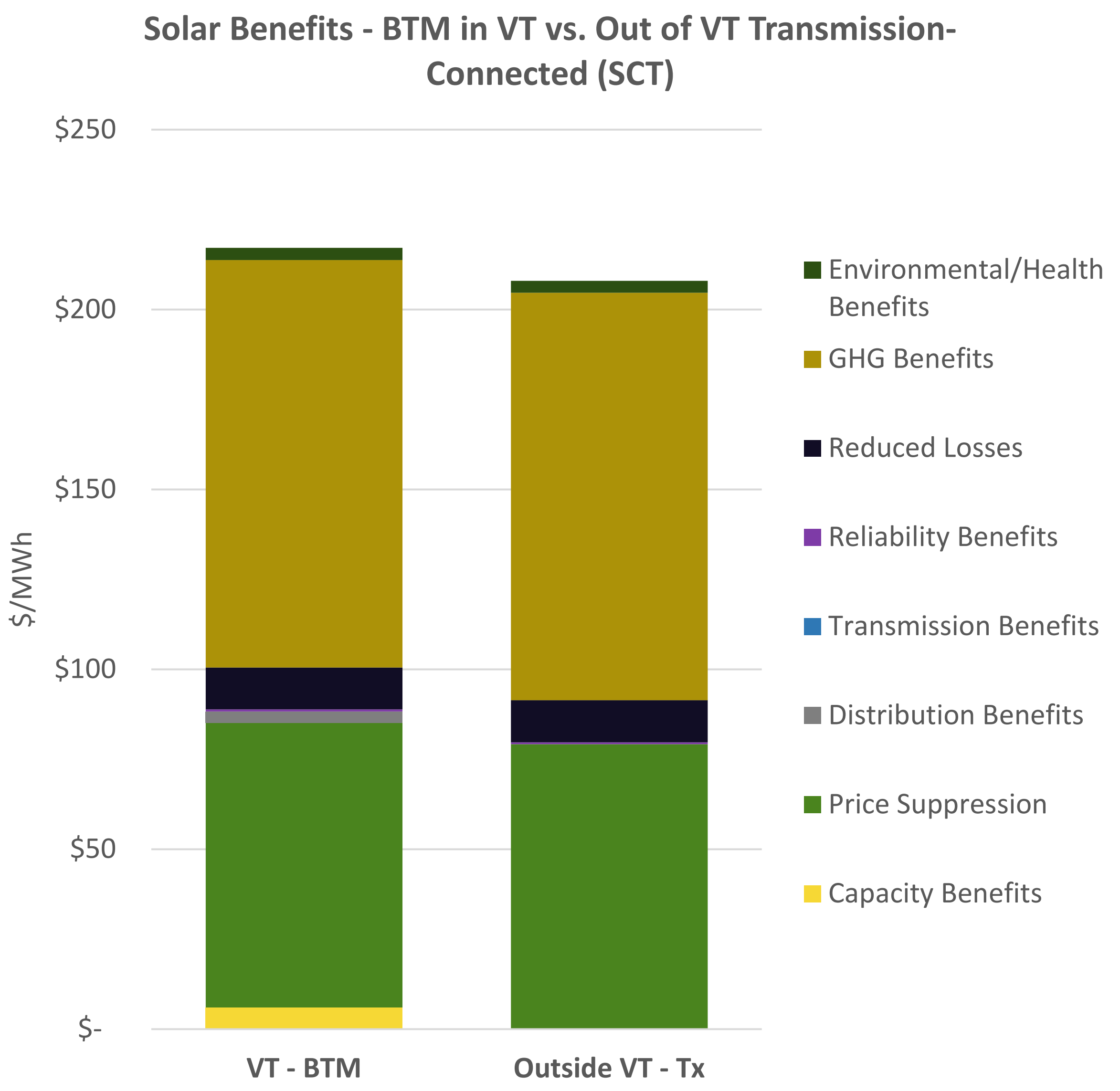
Costs and Benefits by Tier – per MWh (SCT)



- Shows benefits per MWh purchased
- On this per MWh basis:
  - Tier 2 benefits are higher, but so are costs
  - Proportionally, regional tier has higher benefit to cost ratio than Tier 2
- Interpreting capacity-denominated benefits on per MWh basis can be slightly counterintuitive:
  - Lower resource capacity factor (e.g., Tier 2 solar has lower capacity factor than regional hydro) means there are more MW per MWh purchased, increasing the number of MWs on which benefits are calculated

Benefits and Costs by VT-sited vs. Others per MWh (SCT)

- Many benefits similar (e.g., price suppression GHG)
- Some benefits unique to BTM in VT:
  - Uncleared capacity (BTM solar in Vermont acts as load reducer, while transmission-connected would not, although, transmission-connected solar would monetize capacity, reducing cost)
  - Benefits to the distribution system



VT System Peaks

- Combination of load profile and solar projected to come online in BAU has already shifted Vermont's peak hours
- Peak hours tend to occur before (occasionally) or after (most frequently) hours of solar production
- Suggests additional solar (by itself) in Vermont has reduced benefit to the grid relative to earlier solar development

Time (Hour Beginning) of Vermont's Monthly Peaks
(VELCO Forecast)

		Year										
		2025	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Month	**1**	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00
	2	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00
	3	9:00	18:00	9:00	19:00	19:00	18:00	18:00	19:00	19:00	19:00	19:00
	4	20:00	20:00	19:00	20:00	20:00	20:00	20:00	20:00	19:00	19:00	19:00
	5	20:00	20:00	20:00	20:00	20:00	20:00	20:00	20:00	20:00	20:00	20:00
	6	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00
	7	18:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00
	8	19:00	19:00	18:00	19:00	19:00	19:00	19:00	19:00	20:00	19:00	19:00
	9	19:00	19:00	19:00	19:00	19:00	18:00	19:00	19:00	19:00	19:00	19:00
	10	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00	19:00
	11	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00
	12	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00

Alignment of Load and Generation Associated with RES Portfolio

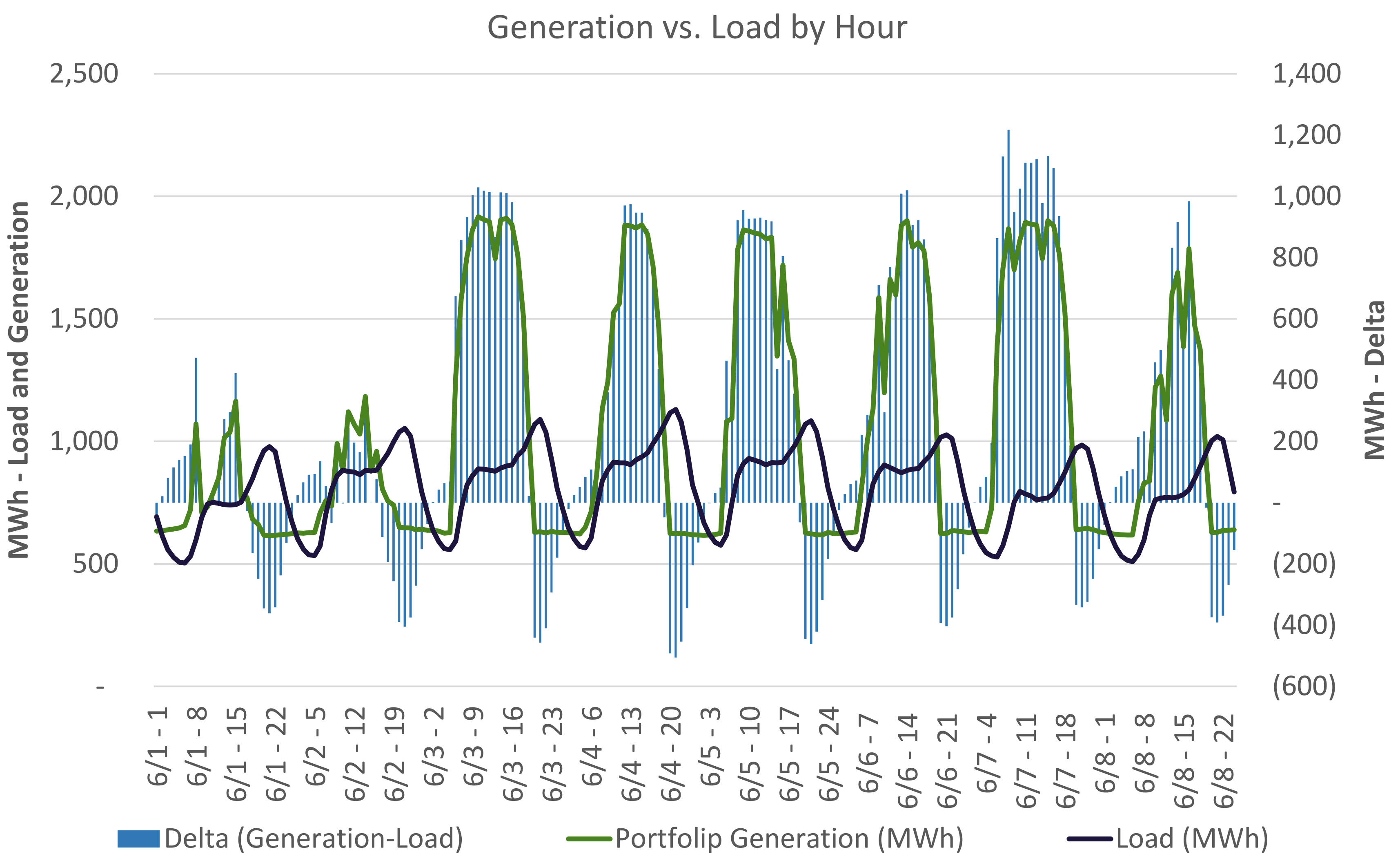
- Using representative production profiles, SEA calculated hourly production associated with resources included in modeled RES scenarios
- Allows comparison of output of these resources with projected load
- Helps shed light on magnitude of load flexibility, storage, other solutions VT might consider
- This simple analysis, however, does not account for:
  - Resources contributing to RES compliance may not be equal to generation resources available to serve VT
  - Regional electric system – ability to import and export to balance variability of resources
  - Need for reserve margins for reliability
  - Optimized system planning (e.g., overbuilding renewable resources and accepting clipped energy may be more cost effective than building renewable resources that just meet annual load, and sizing storage accordingly)
- Note – this and following slide focus on year 2035

Renewability Metrics, by Month, Scenario 2

Month	Total Surplus or (Deficit) (MWh)	Max hourly surplus (MW)	Surplus/ load during max surplus	Max hourly deficit (MW)	Deficit/ load during max deficit
1	(35,014)	801	69%	(695)	-43%
2	45,736	1,038	91%	(665)	-42%
3	194,457	1,310	144%	(552)	-37%
4	(53,216)	949	128%	(864)	-67%
5	6,826	1,073	171%	(756)	-64%
6	151,807	1,217	187%	(590)	-48%
7	136,158	1,158	185%	(655)	-51%
8	91,284	1,144	176%	(693)	-53%
9	(18,445)	874	130%	(816)	-66%
10	(151,666)	693	90%	(882)	-67%
11	(300,349)	484	55%	(1,069)	-72%
12	(67,578)	670	65%	(741)	-44%

Generation vs. Load by Hour – Scenario 2

- Shows June, 2035
- Solar peaks visible – create substantial, regular surplus
- Substantial volume of hydro reduces overnight deficits



Initial Observations on Results

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Initial Observations on Results

- Results should always be considered relative to "what we are trying to accomplish"
  - New vs. Existing: To *what degree* is the goal to cause or contribute to the development of new resources vs. to take title to existing zero-carbon resources before others do?
  - Zero carbon vs. low carbon (drives eligibility considerations)
  - In-state vs. regional (drives Tier II and Regional Tier choices)
- Average (2025-2035) rate impact in the 3% to 6% range for draft analysis of Scenarios 1-6.
- Based on societal cost test, benefit-cost ratios in the 2.5 to 5.0 range for draft analysis of Scenarios 1-6.
  - Positive benefit-cost ratios for both Tier II and Regional Tier (higher)
- Note: Significant portion of benefits are *capacity* (as opposed to energy) denominated – means capacity accreditation and coincidence of generation with peaks is important
  - Will be impacted by how peak hours of the day shift over time

Q&A

Sustainable
Energy
Advantage, LLC

Sustainable Energy Advantage, LLC
161 Worcester Road, Suite 503
Framingham, MA 01701
http://www.seadvantage.com

Contacts:

Jason Gifford
☎ 802-846-7627
✉ jgifford@seadvantage.com

Stephan Wollenburg
☎ 508-834-3050
✉ swollenberg@seadvantage.com

Po-Yu Yuen
☎ 508-665-5861
✉ pyuen@seadvantage.com

Tobin Armstrong
☎ 508-665-5864
✉ tarmstrong@seadvantage.com