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Evaluation of Rhode Island Distributed Generation Policies

Final Benefit-Cost Analysis of Potential Expansions to the Net Metering, Virtual Net Metering, and Renewable Energy Growth (REG) Programs

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Sustainable Energy Advantage, LLC, on Behalf of the Rhode Island Office of Energy Resources

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Office of Energy Resources (OER) Introduction - Purpose of the Study

- There were significant changes and additions to the federal clean energy tax policies that were included in the Inflation Reduction Act signed by President Biden in August 2022 **– the most significant changes in federal clean energy tax policy ever.**

- There are ongoing federal tax credit eligibility/guidance being issued on different energy tax credits (ex: offshore wind, electric vehicles, bonus communities energy tax credits) by the U.S. Treasury. The Environmental Protection Agency will be releasing a competitive $7 billion Greenhouse Gas Emission Reductions Program for states to apply for solar funding for residential/community solar projects for low-income households.

- Over the past 15+ years, the federal clean energy tax incentives have been leveraged in the development of the state's renewable energy programs and used by residential and commercial renewable energy businesses when developing Net Metering, Renewable Energy Growth, and Virtual Net Metering projects. OER believes it is important to carry out different benefit and cost analyses to factor in the new federal clean energy tax credit incentives (available over the next decade) when examining potential modifications and/or expansions of existing state renewable energy programs/laws that are approaching (or exceeding) a decade since the state laws were originally enacted.

- OER wanted to have different benefit and cost analyses performed to factor in the new and updated federal clean energy tax incentives; evaluate the current state renewable energy programs; evaluate the solar programs/solar siting legislation; some alternative state renewable program scenarios; and energy storage paired with renewable systems.

- The purpose of this overall effort and public presentation on the different benefit and cost analyses is to provide the public, interested stakeholders, state agencies, and elected officials with information that may be helpful in developing solar legislation and possible new and/or updated laws during the 2023 legislative session.

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Relevant Federal Clean Energy Tax Credit Policies Factored into Analysis with State Renewable Energy Programs

- Key provisions of the IRA directly accounted for in this analysis (and applying to projects in the REG, VNM and NM programs alike) include:
  - **Investment Tax Credit (ITC), Existing § 48 Authority** (Projects Starting Construction by end of 2024)
  - **Successor Clean Energy Investment Credit (CEIC), New § 48E Authority** (Projects "Placed in Service" 2025 and Thereafter)
    - 10% Brownfield-Sited Project Bonus ITC/CEIC Value (where applicable)
    - 10% "Located in a Low Income Community" Bonus ITC/CEIC (where applicable)
    - 20% "Low Income Economic Benefit" Project Bonus ITC/CEIC (where applicable)
  - **Allowance for Inclusion of Cost of "Transmission and Distribution Interconnection Property"** in Project's ITC/CEIC Basis;
- For more details, please see Appendix D

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Overview

- Key Observations From Stakeholder Comments
- Modeling Implications Derived from Stakeholder Comments
- Benefit-Cost Analysis Case Descriptions/Modeling Structure
- Project Economics Analysis Results
- Project Capacity Allocation for Benefit-Cost Analysis
- Benefit-Cost Analysis Results
- Key Caveats/Limitations of The Analysis

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Key Observations From Stakeholder Comments

Renewable Program Expansion and Solar Siting

- Supportive of modeling an expansion of in-state Distributed Generation (DG) programs to contribute towards meeting the Act on Climate electric sector goals
  - Local economic benefits to Rhode Island from in-state DG deployment, and greater control over the deployment of DG vs. out-of-state Renewable Energy Credit (REC) purchases

- An expansion of in-state DG deployment should be pursued in a least-cost manner

- Challenges reaching universal consensus across stakeholder groups emerged regarding project siting
  - Solar can present land use challenges, but there were a range of opinions on how to address these challenges
  - There should be no hard-and-fast restrictions on DG siting, but monetary adders (and/or monetary disincentives) for beneficial siting should be implemented to encourage siting on "preferred sites"

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Prospective Compensation Structure of Programs

- Divergent views/opinions regarding compensation structure for eligible DG projects
  - Project compensation should be based upon the value of DG to the electric grid and society, similar to the New York Value of Distributed Resources (VDER) compensation approach
  - Compensation should remain directly tied to retail rate/billing determinant components, arguing the simplicity of billing determinant-derivative compensation is integral to the success of the industry as a whole
  - Recommended improvements to the structure of and inputs to the cost-based REG program, but did not object to the cost-based nature of the program
  - Arguing current retail rate compensation is too expensive for non-participating ratepayers to be sustainable.
    - Examine cost-based compensation in line with the Renewable Energy Growth (REG) program is the most cost-effective means to deploy DG while also permitting a reasonable risk-adjusted rate of return for developers.

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Other Key Observations of Stakeholder Comments

- **Solar Pairing with Energy Storage:** Several stakeholders agreed with the idea that the DG programs, if expanded, should at some stage include policy support for the deployment of energy storage
  - These stakeholders cited momentum towards energy storage programs in various other states, and argued that energy storage can increase the effective utilization of DG
- **Net Metering Solar Sizing to Load Rules:**
  - According to market participants, under the current state law, the three-year average sizing for behind-the-meter ground and roof mounted solar systems to load rules result in:
    - Approximately half of their customers being able to size to 80%-90% of their load; while
    - The other half of their customers can size to 100% of their load, but no greater

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Modeling Implications Derived from Stakeholder Comments

Modeling Implications: Renewable Energy Growth (REG) Program (1)

- Projects from 5-10 MW and 10-20 MW would be included (current program sets 5 MW maximum)

- In Alternative REG cases, offtaker and location-based compensation rate adders assumed to be offered to project types that, <u>with the adder</u>, have a demonstrated benefit-cost ratio (under the Rhode Island Test developed in Docket 4600) greater than or equal to 1.0

- Project siting on core forest assumed to be restricted in Alternative REG cases (and thus have higher leasing costs), but also offer siting adders for preferred sites

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Modeling Implications: REG Program (2)

- Alternative REG cases in which core forest siting is restricted assume all ground and roof-mounted projects (including previous “greenfield” projects) have substantially higher lease rates than under the current program
  - Project developer interviews suggested an expectation, if core forest siting restricted, that they would be required to compete with larger pool of entities (including better-capitalized major manufacturers and other large corporates) for a limited pool of C&I-zoned land

- Current Community Remote Distributed Generation (CRDG) compensation limited, by statute, to 115% of the comparable non-CRDG price ceiling – this would be replaced by offtaker-based compensation rate adders that could exceed this limit (since current level is objectively insufficient to incent substantial participation by non-commercial and industrial customers)

- An Alternative REG sensitivity is included in which all capacity is eligible for (and adopts) a <u>cost-based</u> pay-for-performance compensation option for paired energy storage systems sized to 25% of rated solar PV nameplate capacity with a four-hour duration

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Modeling Implications: Virtual Net Metering (VNM) Program (1)

- To balance the different stakeholder perspectives, the analysis assumes alternative VNM program compensation would be designed similarly (though not identically) to the Massachusetts Solar Massachusetts Renewable Target (SMART) program – the single largest programmatic source of DG capacity in New England*
  - **Like SMART (and the Alternative REG cases),** the alternative VNM case balances fixed-price, cost-based Base Compensation Rates (BCRs) with fixed-priced, cost-based offtaker- and location-based adders
  - **Also like SMART (and like Community Remote Distributed Generation (CRDG) projects under both Current <u>and</u> Alternative REG cases)**, the alternative VNM case would allow commercial and industrial customers and low-income/non-low-income residential customers alike to participate
  - **Unlike SMART (and more like the Shared Clean Energy Facilities (SCEF) Program in Connecticut),** the program would offer a fixed net bill credit value (intended to represent the net difference between the bill credit and the charge for the project owner's services)*
  - **Also unlike SMART,** BCRs in the alternative VNM case would be set based on the average value of accepted REG bids in the first open enrollment of each year, which would be available to projects on a trailing 12-month basis for any qualified project, and relevant offtaker-based adders rate adders would be as approved by the PUC for that REG Program Year

***NOTE:** SEA calculated the specific fixed bill credit values as intended to be equivalent to typical **10%-15%** discounts for non-low-income residential customers, **5%-10%** discounts for commercial and industrial customers, and **up to 25%** discounts for low-income customers (as will likely be the federal minimum for receipt of federal bonus investment tax credit values)

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Modeling Implications: VNM Program (2)

- Projects from 10-20 MW would be included in Alternative VNM cases (relative to current maximum 10 MW size)

- Siting rules, location and offtaker-based compensation, and allowance for a storage sensitivity in the Alternative VNM program cases are assumed to be the same as in Alternative REG program cases
  - Project siting on core forest assumed to be restricted in Alternative VNM cases, but also offer siting adders for preferred sites
  - Alternative VNM cases in which core forest siting is restricted assume all ground and roof-mounted projects (including previous "greenfield" projects) have substantially higher lease rates
  - Location- and offtaker-based and compensation rate adders assumed to be offered to project types that, with the adder, have a demonstrated benefit-cost ratio (under the Rhode Island Test developed in Docket 4600) greater than or equal to 1.0
  - An Alternative VNM sensitivity is included in which all capacity is eligible for (and adopts) a cost-based pay-for-performance compensation option for paired energy storage systems sized to 25% of rated solar PV nameplate capacity with a four-hour duration

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Disclaimer Regarding Alternative VNM Policy Design

- The specific case is intended mainly as a composite of other DG program types in the region that aim to balance DG's cost to ratepayers with its benefits to both ratepayers, renewable energy project development and meeting objectives for the Act on Climate

- **There are other valid and viable program designs both in the region (and nationwide) that can achieve a similar purpose, some of which fall within the range between the current VNM program and the Alternative VNM Policy case**

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Modeling Implications: Net Metering Program

- Though lifting the per-project sizing cap may help certain customers on the margin more than others, aggregate benefit/cost impact of this change is not detectable under our modeling approach. This is because:
  - The share of project output earning net metering credits vs. serving load at retail rates changes by very small amounts (from **92% to 88% serving on-site load**, vs. **8% to 12% earning net metering credits**)
  - Allowing 100% sizing to load without exception allows for an ~18% increase in system sizing (and production)
  - However, our analysis suggests **this increase in production is fully offset** by increase in project cost resulting form increase in system size
  - This results in no net change in project-level costs, or incentive/revenue requirements
- Since we model costs under the Rhode Island Test and Ratepayer Impact Measure (RIM) tests based on direct project compensation, resource cost differences are functionally driven by rate class, rather than actual cost differences
  - Therefore, the difference per type of net metering project is **effectively zero**

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Benefit-Cost Analysis Case Descriptions/Modeling Structure

Modeling Cases: A Key to Reading the Tables

- *Case #1: Extension of [REG/VNM/NM] Status Quo Policy Design* is intended to represent the extension of existing policy and program frameworks onto an amount of expanded DG capacity. **It is not a retrospective analysis of the performance of the current DG programs.**
- Changes or additions from Current to Alternative cases (or Alternative + Storage Sensitivity) are in **bold red text**
- Changes or additions from Alternative to Alternative + Storage Sensitivity are in **bold green text**
- The Alternative + Storage Sensitivity's "cost-based, event-based performance incentive" for each program is envisioned to be designed to provide an adequate rate of return for the average solar + storage project based upon the incremental storage costs but would be paid out based upon actual performance during certain events/windows

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Case Descriptions: Renewable Energy Growth (REG) Program

Policy Design Element Subject to Change	#1: Extension of REG Status Quo Policy Design Case ("Current REG Program")	#2 Alternative REG Policy Design Case ("Alternative REG Program")	#3: Alternative REG Program + Storage
Eligible Accounts and Associated Capacity	300 MW program annually (existing 40 MW + 260 MW incremental)	300 MW program annually (existing 40 MW + 260 MW incremental)	300 MW program annually (existing 40 MW + 260 MW incremental)
Compensation Term/ Useful Life	Existing 15- and 20-year terms for projects (post-tariff revenue at discounted NM value)	Existing 15- and 20-year terms for projects (post-tariff revenue at discounted NM value)	Existing 15- and 20-year terms for projects (post-tariff revenue at discounted NM value)
Accounts for All Inflation Reduction Act Base/Bonus Tax Credits for Typical Projects?	Yes	Yes	Yes
Capacity Allocation/ Project Sizing	Existing set of <=5 MW size categories and proportional shares of program capacity	**New 5-10 MW and 10-20 MW size categories, with sub-5 MW bin capacity allocations adjusted to account for them**	**Same as Alternative REG case, but with cost-based paired energy storage compensation mechanism**
Incremental Cost Allowance & Degree of Fit to Statewide Technical Potential	• 15% incremental cost limit for Community Remote Distributed Generation (CRDG) projects • Limited fit to statewide technical potential (Compensation levels only allow development of simplest/least complex, cheapest projects)	• **Offtaker adders allowed to exceed >15% incremental cost for LMI and non-LMI customers (equivalent to incremental CapEx/OpEx + typical offtaker discounts in other shared solar markets)** • **More tailored to statewide technical potential (targets mix of projects that can be sited on preferred sites – see below row)**	**Same as #2**
Project Siting Policy	No siting changes	**Siting prohibited on core forest (Compensation rate adders offered for projects on certain preferred sites)**	**Same as #2**

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Case Descriptions: Virtual Net Metering (VNM)

Policy Design Element Subject to Change	#1: Extension of Status Quo VNM Policy Design	#2: Alternative VNM Policy Design Scenario	#3: Alternative DG Policy Scenario + Energy Storage for All Projects
Eligible Accounts and Associated Capacity	500 MW of incremental capacity installed by 2033	500 MW of incremental capacity installed by 2033	500 MW of incremental capacity installed by 2033
Compensation Term/ Useful Life	No tariff time limitation (30-year project life assumed)	**20-year tariff term (assumes 30-year life, 10 years compensated at wholesale energy + RECs and QF status after tariff term)**	**Same as #2**
Attribute Transfer	Only attribute/commodity transferred to RI Energy and resold is ISO-NE wholesale energy	Energy **and RECs** transferred to Rhode Island Energy for resale	**Same as #2**
Compensation Mechanism	Bill credit components remain the same for all projects (LRS+T+T+D)	• 1 MW and under retain LRS+T+T+D • **>1-20 MW (or adjacent 10 MW sites compensated at >1-5 MW, >5-10 MW or 10-20 MW REG as-bid value for non-offtaker projects from prior year + offtaker adder**	**Same as Alternative REG case, but with cost-based paired energy storage compensation mechanism**
Accounts for All Inflation Reduction Act Base/Bonus Tax Credits for Typical Projects?	Yes	Yes	Yes
Eligible Accounts and Associated Capacity	Existing set of eligible public/institutional offtakers unchanged	**C&I customers able to participate (thus serving as anchor customers for enhanced LMI participation)**	**Same as #2**
Project Siting Policy	No siting-related changes	• **Siting prohibited on core forests (Greenfield leases assumed to be on C&I-zoned parcels)** • **Projects receive equivalent siting adders to those offered to 20-year REG projects**	**Same as #2**

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Case Descriptions: Net Metering (NM) (On-Site/Behind-The-Meter)

Policy Design Element Subject to Change	Case #1: Extension of Status Quo NM Policy Design	#2: Alternative NM Policy Design Scenario	Case #3: Alternative DG Policy Scenario + Energy Storage for All Cases
Bill Crediting/Compensation	Bill credit components remain the same (LRS+T+T+D) for all projects	Bill credit components remain the same (LRS+T+T+D) for all projects	Bill credit components remain the same (LRS+T+T+D) for all projects **Same as Alternative REG case, but with non-cost based paired energy storage compensation mechanism**
Accounts for All Inflation Reduction Act Base/Bonus Tax Credits for Typical Projects?	Yes	Yes	Yes
Sizing To Load Policy/Rules	3-year average sizing to load limit maintained	**No size to load limit, monthly excess over 100% of customer load compensated at ISO-NE wholesale energy rate**	**Same as #2**

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Project Types Analyzed

- SEA modeled a range of resources for each policy case, intended to present a representative array of project sizes, federal investment tax credit (ITC) bonus eligibilities, locations, and offtakers (if applicable), as follows:
  - **Current REG Design**: Resource types mirror resource classes under current policy (<=5 MW)
  - **Alternative REG Design**: Addition of resource classes for preferred siting options (e.g., gravel pit, landfill, brownfield) and addition of 10 MW and 20 MW resources
  - **Current VNM**: Resources between 1 and 10 MW, excluding preferred siting options
  - **Alternative VNM**: Resources between 1 and 20 MW, including preferred siting options
  - **Current and Alternative NM**: Resources between 7 kW-1 MW
- Energy Storage cases are identical to Alternative policy cases in terms of resources modeled
  - A complete account of resources modeled, by policy, is provided in Appendix A

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Project Economics Analysis Results

Reminder RE: What Does a DG Project's Revenue Requirement (or Levelized Cost of Energy) Consist Of? (From Presentation #2)

Net Present Value (NPV)/ Discounted Cash Flows Resulting From:

PV Total Capital and Operating Costs (Various)

Compounded/Grossed-Up by…

Risk-Adjusted Financing Costs & Taxes (Various Terms)

LESS…

Expected Federal Tax & Depreciation Benefits During and After Incentive Term

All Divided By…

PV Performance over Useful Life (MWh) derived from Degradation-Adjusted Capacity Factor

Put it all together and you get…

Revenue Requirement/ LCOE by Resource Block (Total Amount Necessary to Earn in Order to Justify Investment) ($/MWh)

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For REG/VNM Cases: Procured Value vs. Project Revenue Requirement

- The Current/Alternative REG and Alternative VNM cases assume that a competitive procurement would be used to set base compensation rates (exclusive of any offtaker- or location-based compensation rate adders)
  - Such a procured value would be directly the result of a procurement in the REG program, **but would be derivative of the REG procured value in the VNM program** (see “Modeling Implications” slides for more details on why)
- In the Rhode Island Renewable Energy Growth (REG) program, as-bid prices have historically been around **9.5% below the established ceiling price**
- Therefore, in order to represent the impact of competition under such an initial (or annual) procurement, the modeling results shown herein are equivalent to:
  - The (CREST-modeled) functional “ceiling price” value/MWh (modeled to be inclusive of “typical” total development costs on a regional basis); LESS
  - 9.5% (the as-bid RI REG historical average)

Overarching Observations (1)

- The Cost of Renewable Energy Spreadsheet Tool (CREST) results demonstrate that project revenue requirements can be significantly reduced by providing fixed compensation for value streams (as opposed to variable compensation offered in current VNM/NM programs) via reductions in financing costs

- As expected, 10 MW projects (permitted in the VNM program but not currently in REG) and 20 MW projects (not currently permitted in either REG or VNM) benefit from economies of scale, since these projects are generally cheaper on a $/MWh basis than projects sized 5 MW or less

- Results demonstrate that the incremental cost of preferred siting and community solar offtake increases revenue requirements, but can be largely (if not fully) offset by taking advantage of ITC bonuses for certain projects (e.g., for brownfield siting or low-income benefits)
  - However, the premium for Community Remote Distributed Generation (CRDG) projects under the REG program is currently limited by statute to 15% relative to a comparable non-CRDG project, which would require a change to the Renewable Energy Growth Act for projects to benefit low-income customers and take advantage of related federal tax credits

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Overarching Observations (2)

- Assumed increases in interconnection costs for resources over 1 MW largely offset expected non-interconnection capital and operating cost declines
- Projects sited on preferred sites have marginally lower net benefits as assumed land use benefits do not quantitatively outweigh the incremental costs associated with preferred sites (except for brownfields)

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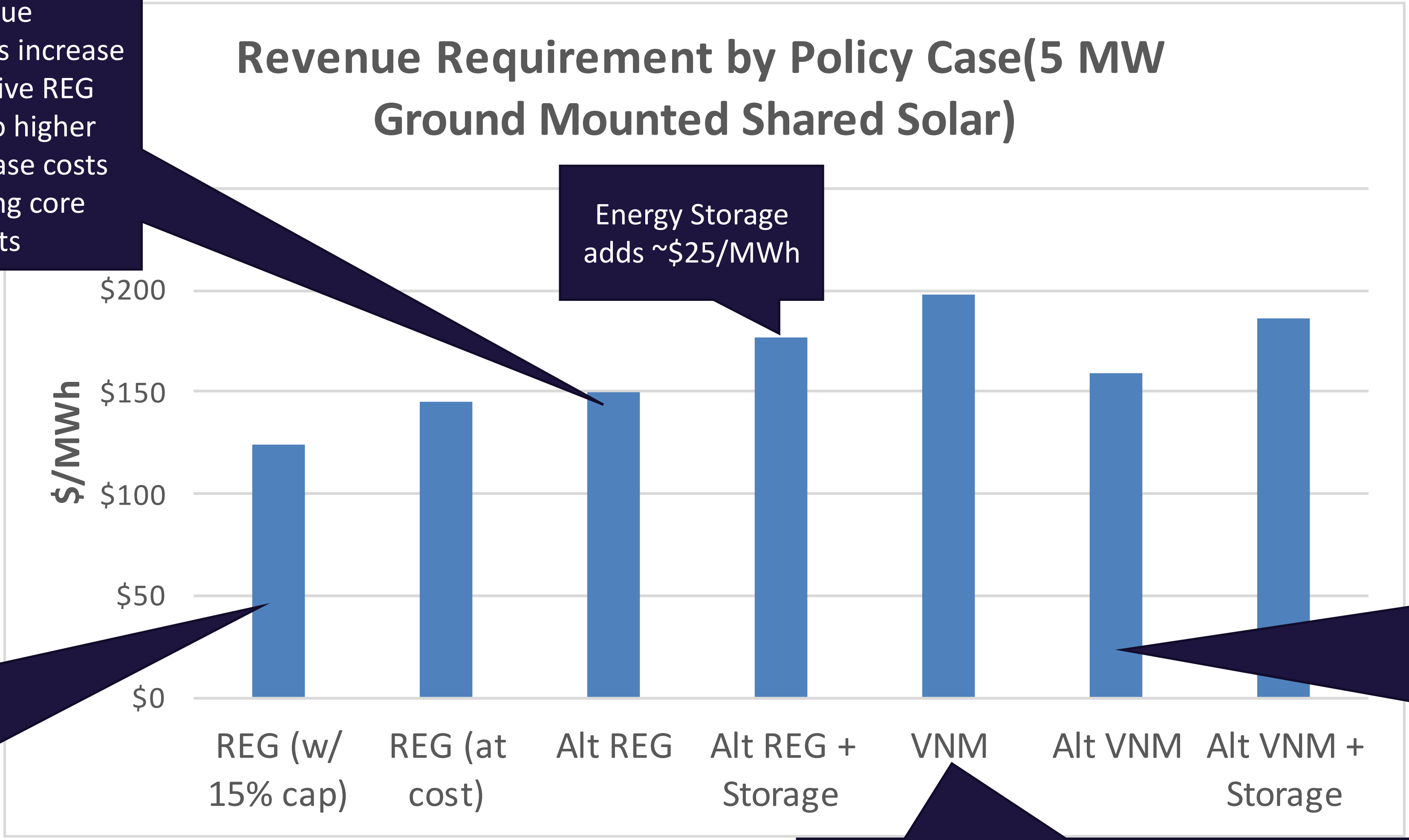
Results: 2030 Revenue Requirements by Policy Case

Revenue Requirements increase in Alternative REG case due to higher assumed lease costs for avoiding core forests



Energy Storage adds ~$25/MWh

Addition of fixed payments for energy/RECs in Alternative case significantly reduces financing costs – Partially offset by higher assumed lease costs for siting on non-core forests

15% cap on offtaker cost causes revenue requirement to appear artificially lower relative to actual cost of securing project offtake (including low income customers)

VNM's variable revenue streams result in increased financing costs relative to the REG case (if measured at actual offtake cost)

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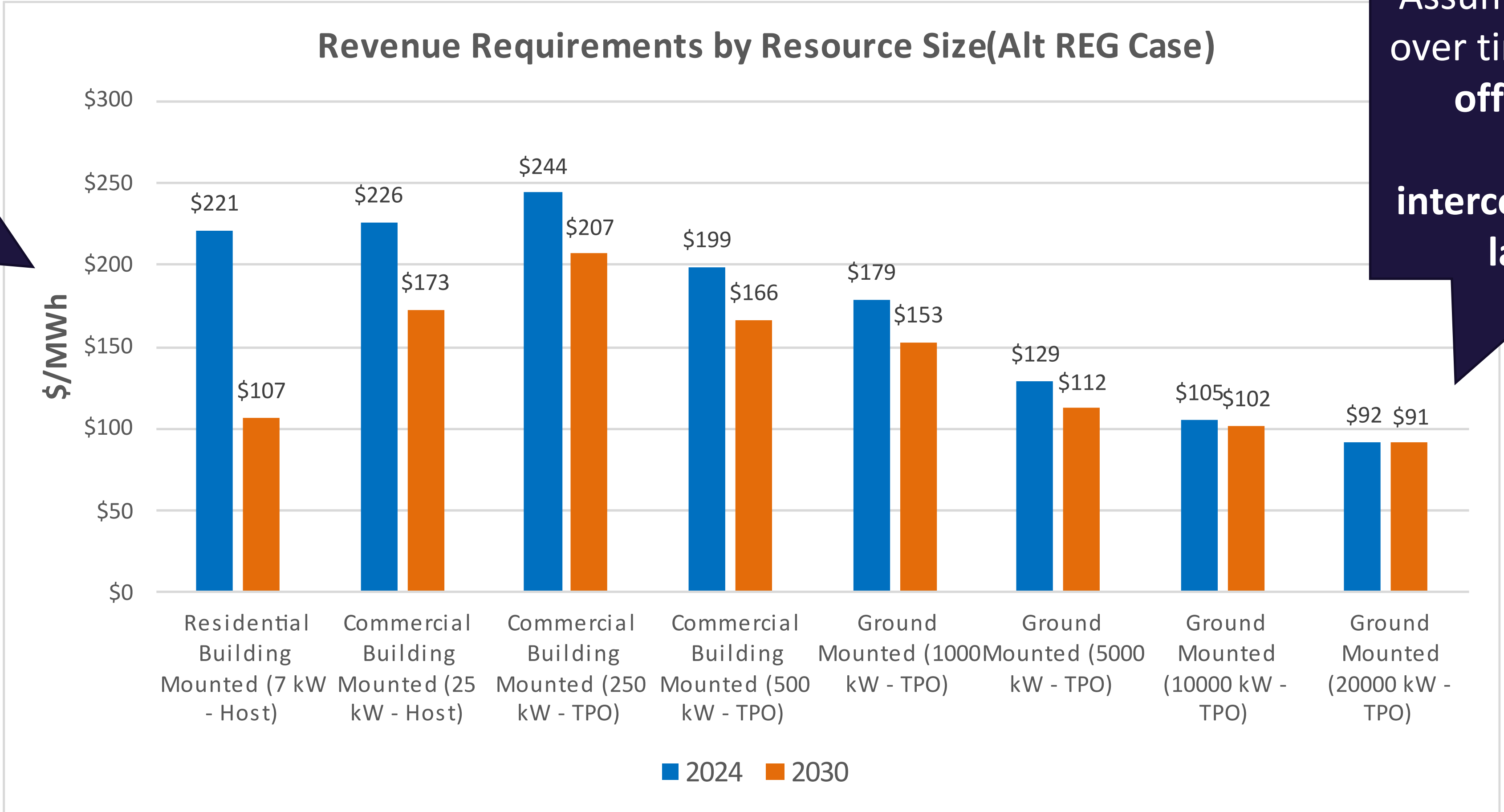
Results: Revenue Requirements by Project Size

As expected, per-MWh costs decline as resource size and year of financial close increases

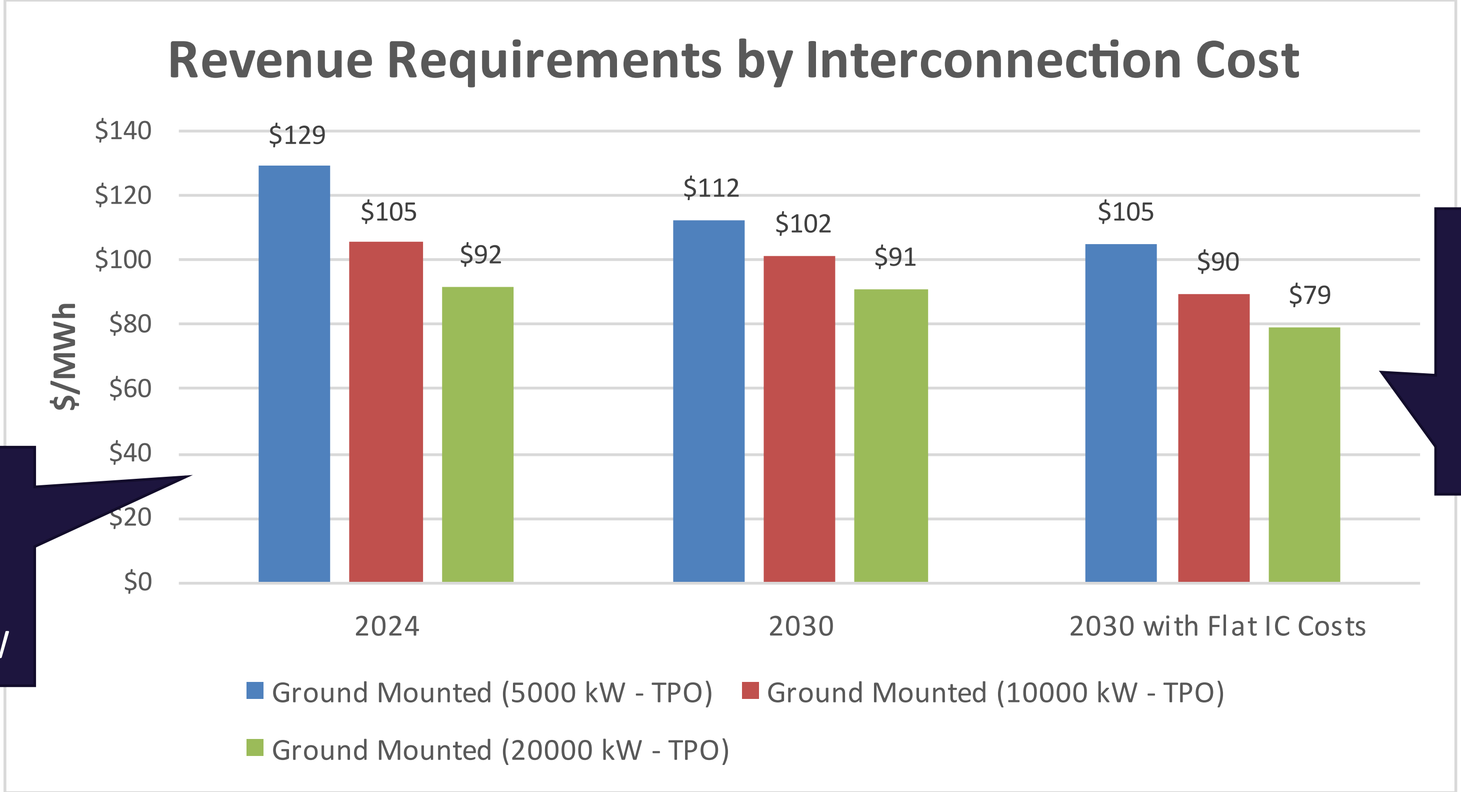


Assumed cost reductions over time **are almost fully offset by assumed increase in interconnection costs for larger projects**

NOTE: Cost declines over time adopt assumptions from the 2022 NREL Annual Technology Baseline (ATB) Report, based on a blend of the Moderate and Conservative cases. ***NREL's assumed longer-term cost reductions are much steeper for the residential sector relative to the commercial and utility sectors.***

Results: Impact of Rising Interconnection Costs

- As discussed in Presentation #4, Interconnection costs for greenfield projects >1 MW assumed to rise **from current observed levels (~$250/kW), up to $500/kW (based on costs quoted in Massachusetts Capital Investment Projects (CIPs))** for projects **closing financing in 2027**, and rise at forecasted **AEO 2023 chain-type CPI rates** thereafter
  - Interconnection costs for non-greenfield >1 MW projects that are typically closer to load assumed to rise at **one-half the rate of greenfield projects >1 MW**, and rise at forecasted AEO 2023 chain-type CPI rates thereafter



Cost declines over time almost fully negated by assumed increase in IC costs for projects >5 MW

Additional $12-$13/MWh reduction in direct cost to ratepayers possible absent IC Cost increases for 10-20 MW projects

Note: Above results assume the Alternative REG program (e.g., non-greenfield ground-mounted)

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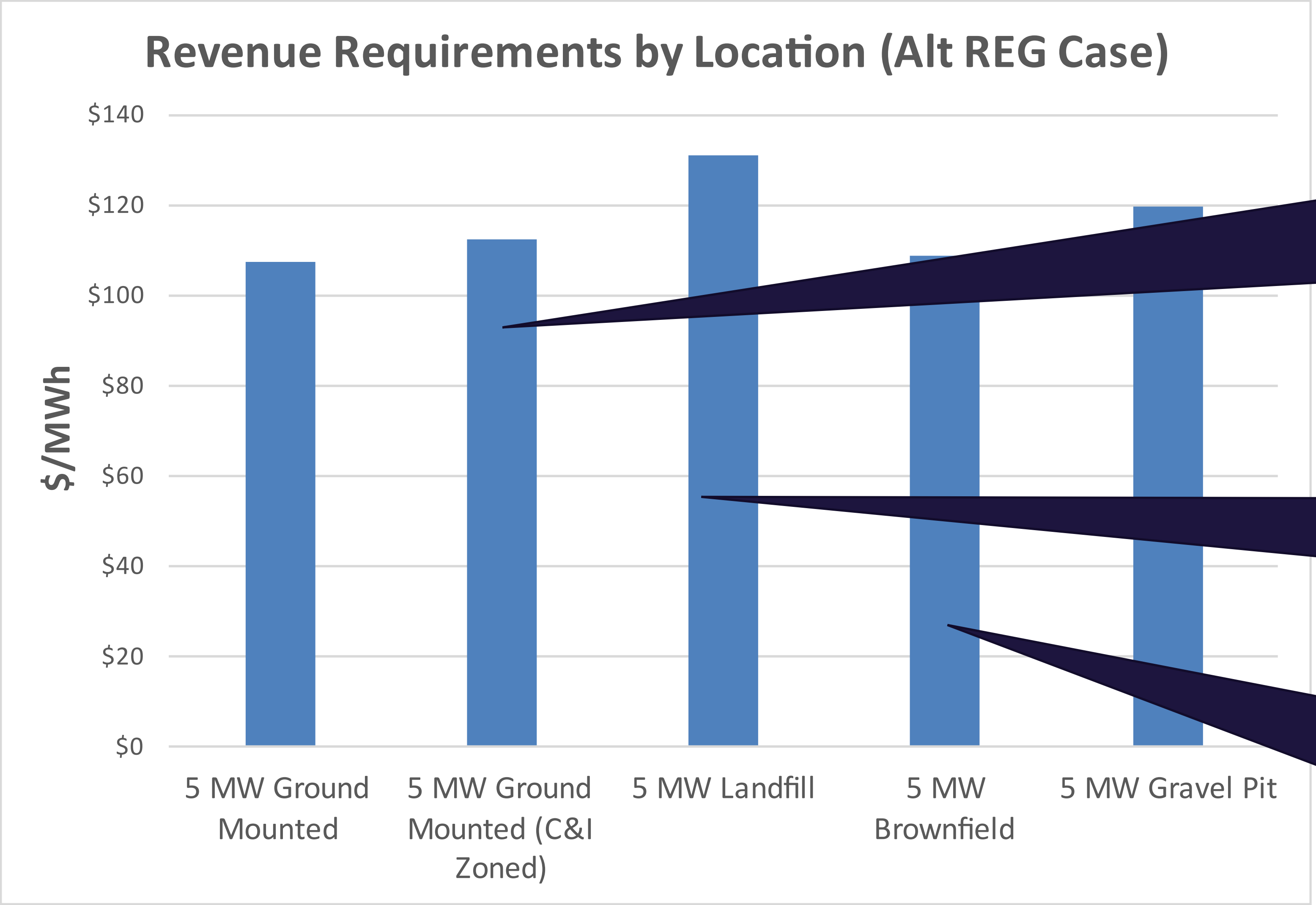
Results: 2030 Revenue Requirements by Location



Simply due to core forest restrictions, site leasing costs for Alternative REG & VNM projects expected to rise materially for PV projects on C&I-zoned land

Landfill-related permitting + capital costs result in largest cost premium for a given resource of this size

Addition of 10% "energy communities" ITC bonus for brownfield siting largely (but not completely) offsets brownfield-related costs

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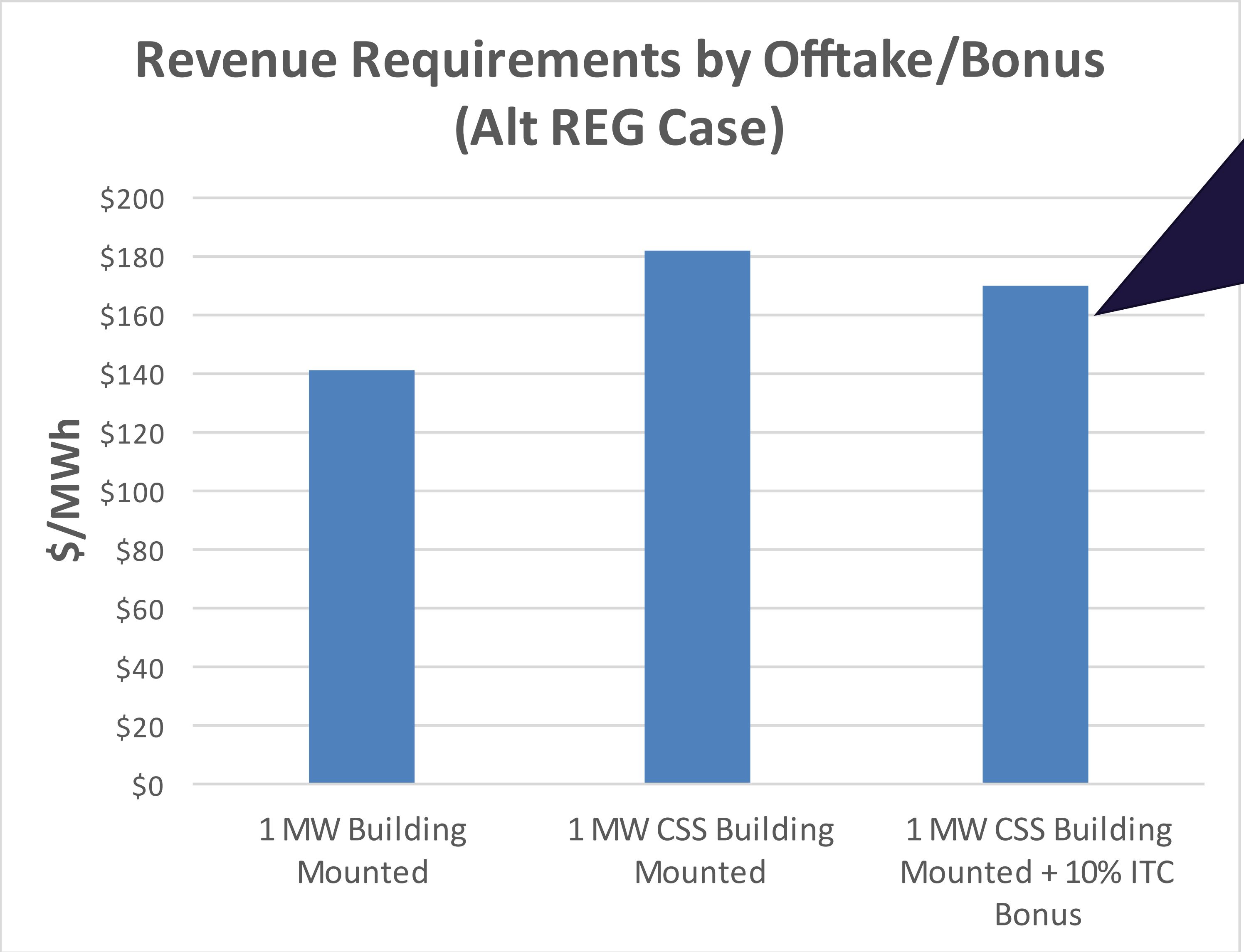
Results: 2030 Revenue Requirements by Offtake/Bonus



- Addition of 10% “located in low-income community” ITC bonus partially offsets shared solar-related costs.
- 20% “low-income economic benefit” ITC bonus would put costs closer (though not equal to) to non-shared solar projects

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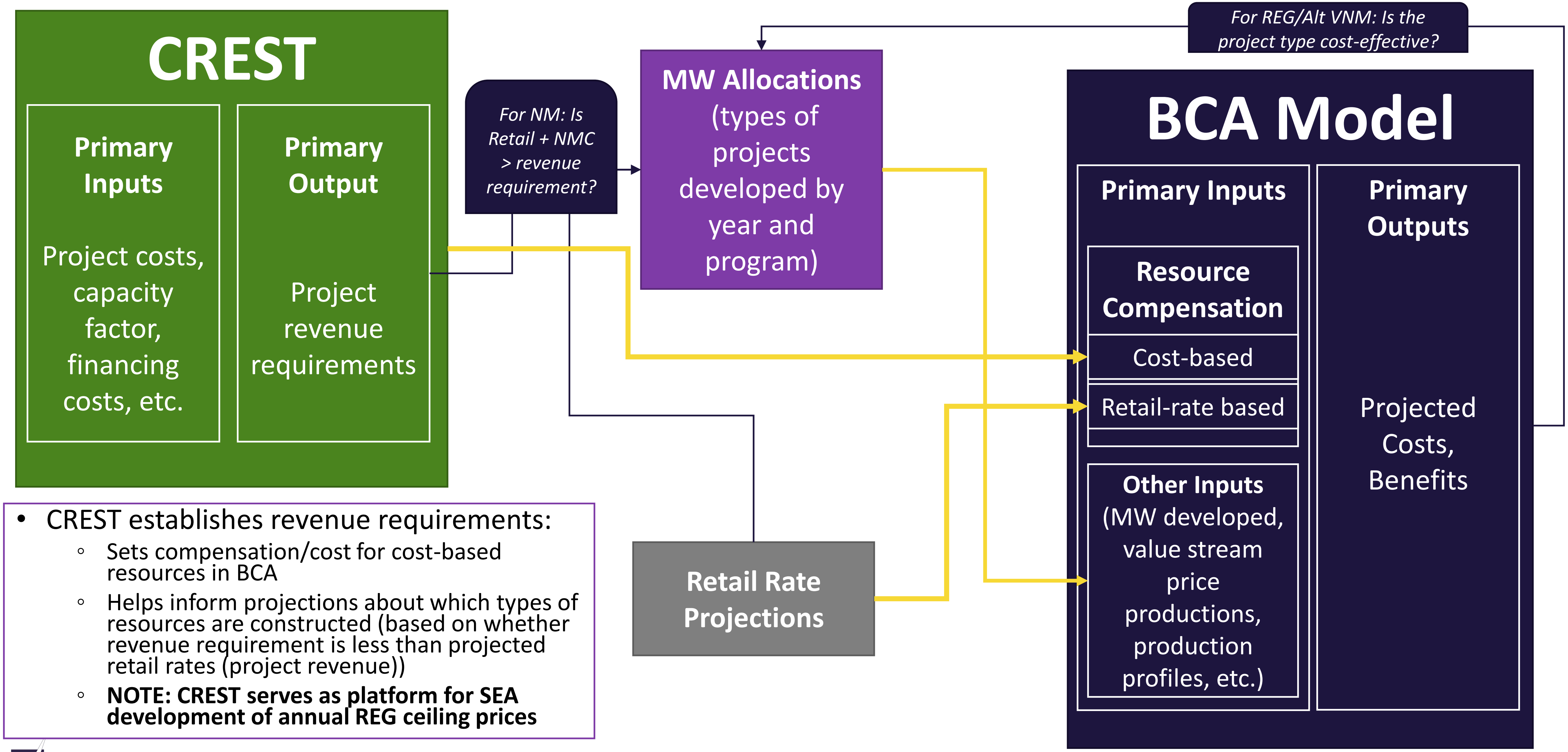
How Benefit-Cost Analysis (BCA) and Cost of Renewable Energy Spreadsheet Tool (CREST) Models Work Together



- CREST establishes revenue requirements:
  - Sets compensation/cost for cost-based resources in BCA
  - Helps inform projections about which types of resources are constructed (based on whether revenue requirement is less than projected retail rates (project revenue))
  - **NOTE: CREST serves as platform for SEA development of annual REG ceiling prices**

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Project Capacity Allocation for Benefit/Cost Analysis

Project Economics Implications for Assumed Project Deployment

- **NM:** Cost of Renewable Energy Spreadsheet (CREST) results reveal that *most* resources can meet minimum returns required to be economical under the forecasted net metering rates
  - Notably, net metered Carport projects under 1 MW and the third-party owned 500 kW commercial roof mounted project require additional incentive to be economical, and were removed from the modeled capacity allocation (for the purposes of modeling program-wide benefits and costs)
    - Detailed results regarding the modeled incentive gap for NM projects can be found in Appendix B
- **VNM:** CREST results reveal that *all* VNM resources can meet minimum returns required to be economical under the forecasted virtual net metering rates
  - ➔ Did not exclude any resource types from program-wide VNM analysis
- **REG:** Under current program laws, shared solar projects may not receive compensation over 15% higher than comparable non-shared solar resources
  - CREST results demonstrate that, in all cases, incremental revenue requirements for shared solar projects exceed 15% of the comparable non-shared resource's revenue requirement
  - (As discussed later) most have a B/C ratio above 1

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Capacity Allocation and Solar Technical Potential Assumptions

- Program-wide BCA results assume the following megawatt (MW) capacities per program:
  - REG: 1,560 MW
  - VNM: 500 MW
  - NM: 239 MW
- "Current policy" cases assume allocation of capacity across resource blocks according to historic deployment, by size bin
- Alternative policy cases (in which development on core forests is restricted) allocate capacity across resource blocks according shares of land parcel types based on the findings in Synapse Energy Economics' Solar Siting Opportunities for Rhode Island technical potential analysis by land parcel type (conducted for OER)
- For all policy cases, resource deployment by year is weighted more heavily to the end of the term of the analysis (closer to 2033) to reflect improving solar economics and interconnection delays

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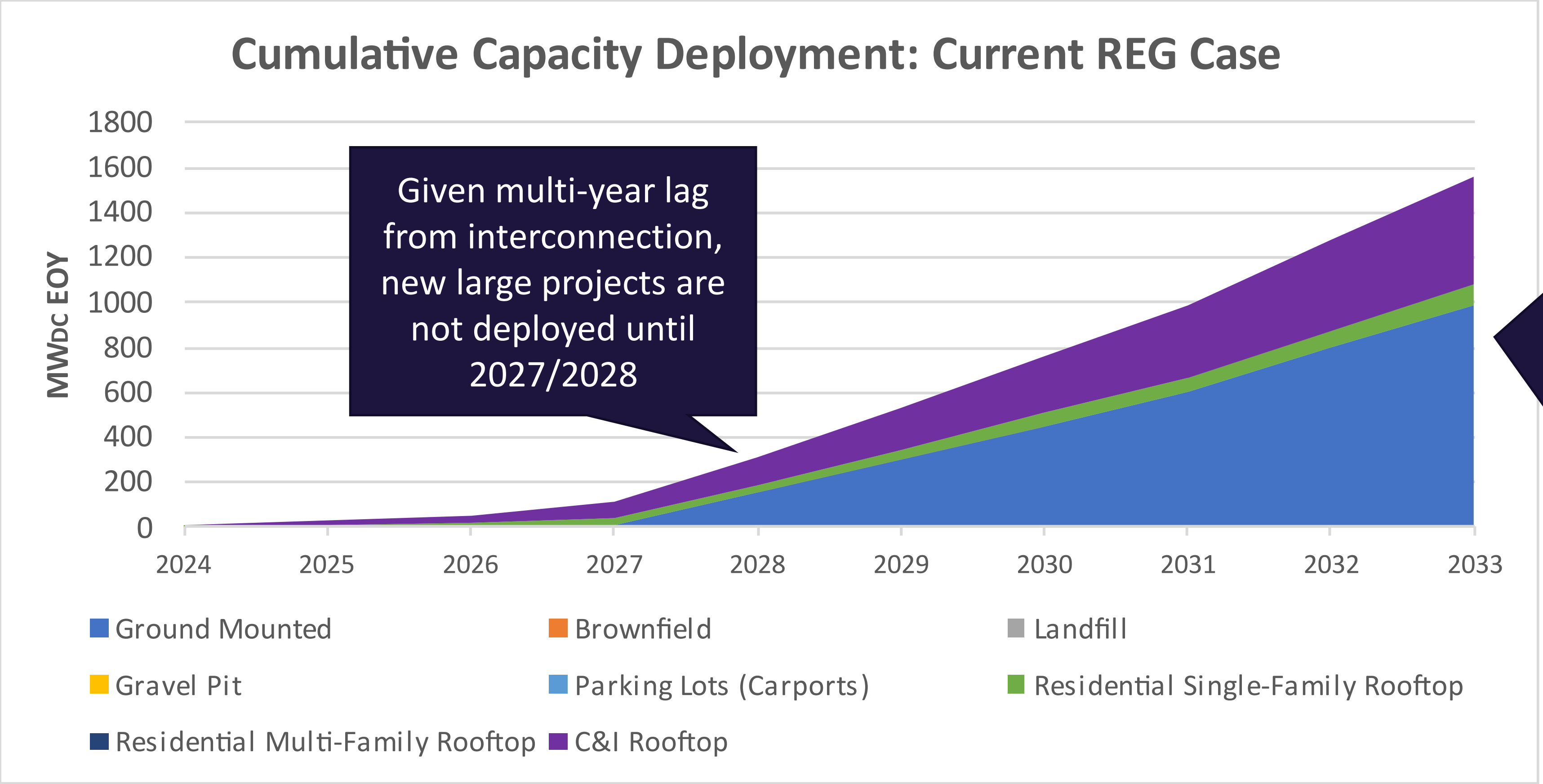
Capacity Allocation: Expanded Capacity Under Current REG Design



Term of analysis is through 2033 – however, continued deployment of clean resources is necessary beyond this term to keep pace with expected electrification

NOTE: Pipeline projects already qualified under current program are not considered in analysis, but would be layered onto above deployment pathway in the near-term

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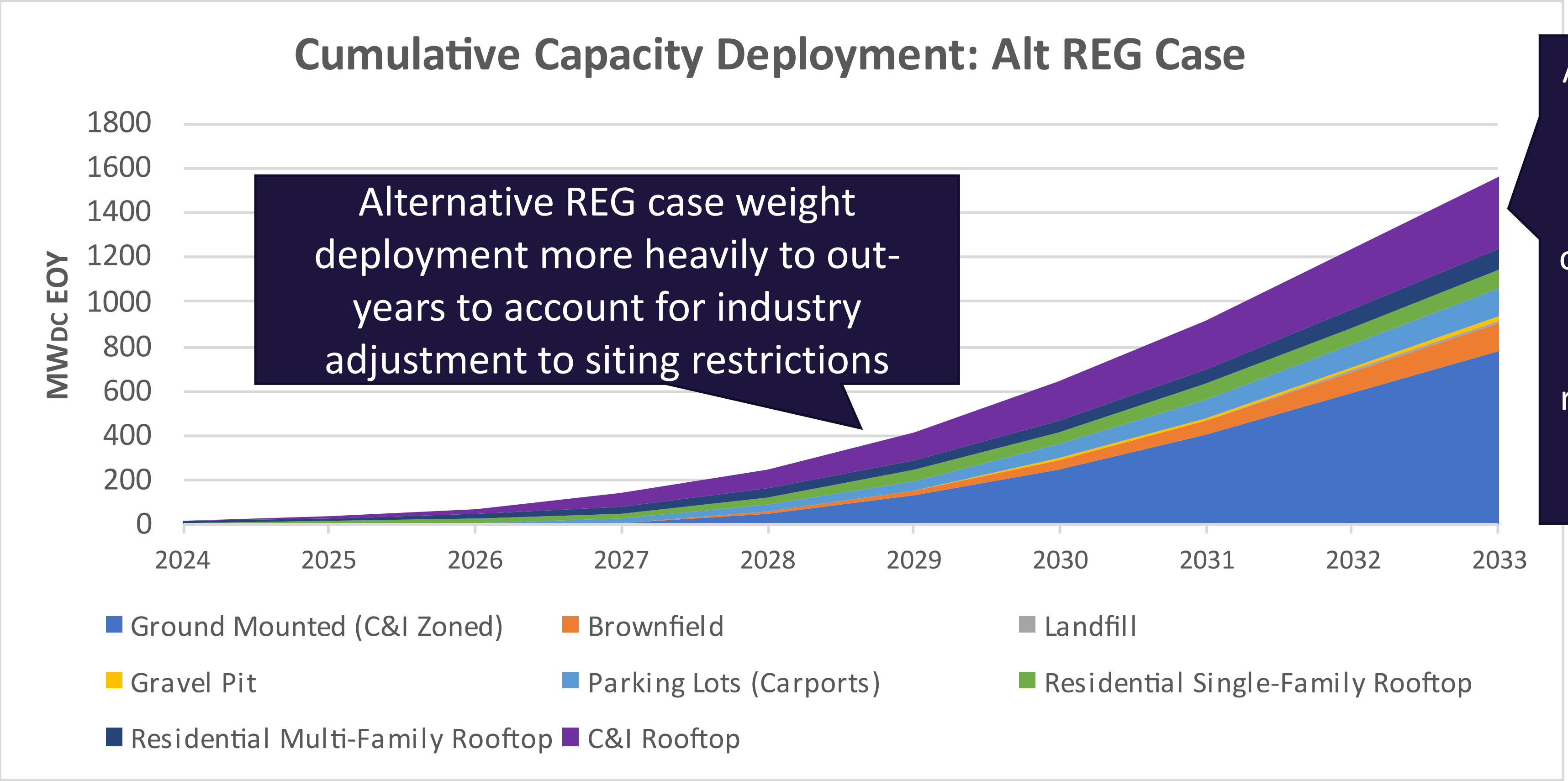
Capacity Allocation: Expansion Under Alternative REG Design



Alternative REG case features greater reliance on a diversity of siting options, but addition of 10 and 20 MW resource classes results in slightly less program allocation for C&I rooftops

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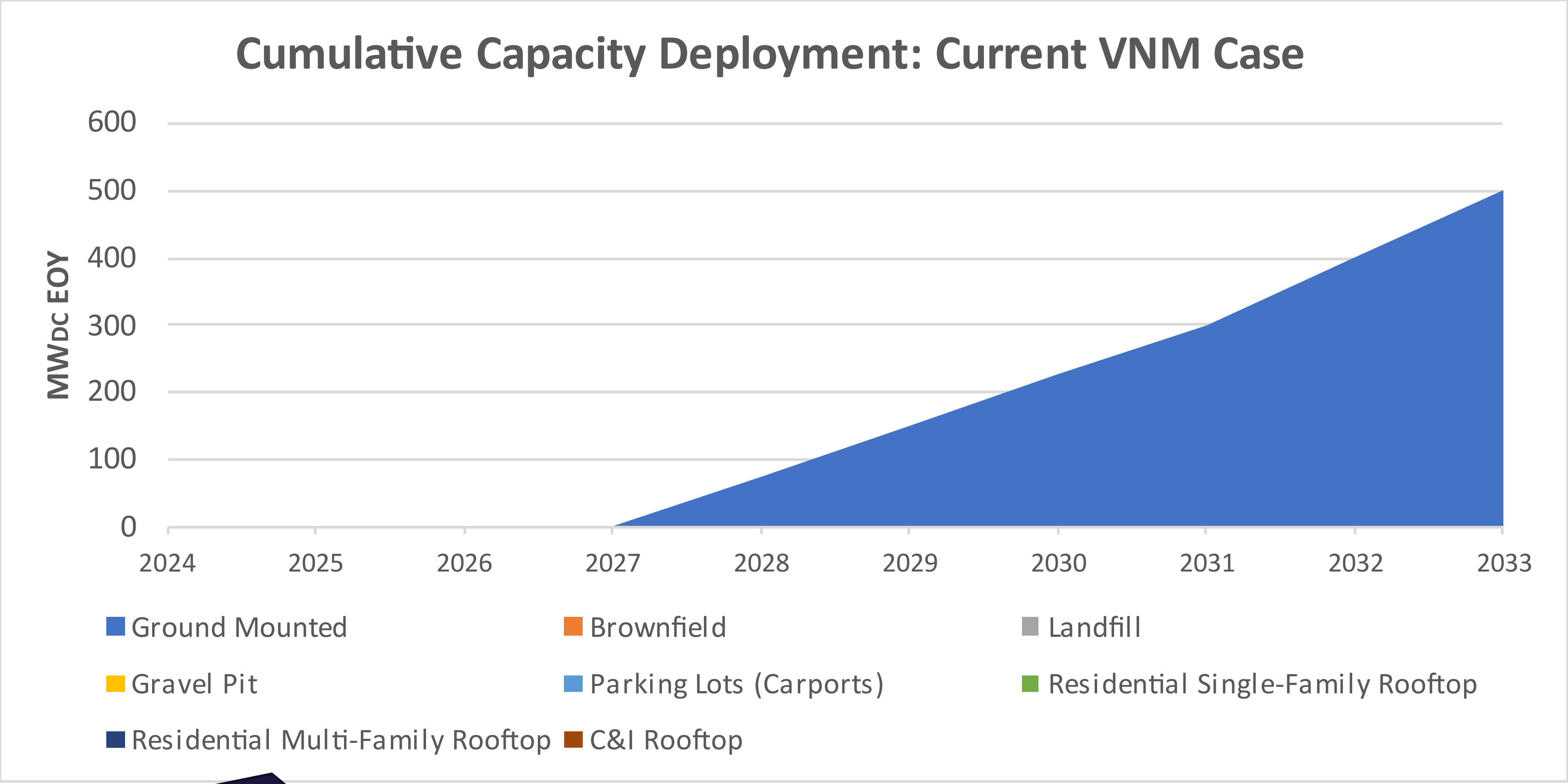
Capacity Allocation: Expansion Under Current VNM Design



Although CREST analysis suggests a variety of resources can be financed under the current VNM program, historic development trends, least-cost deployment and lack of significant siting regulations suggests current program will be dominated by large ground mounted projects

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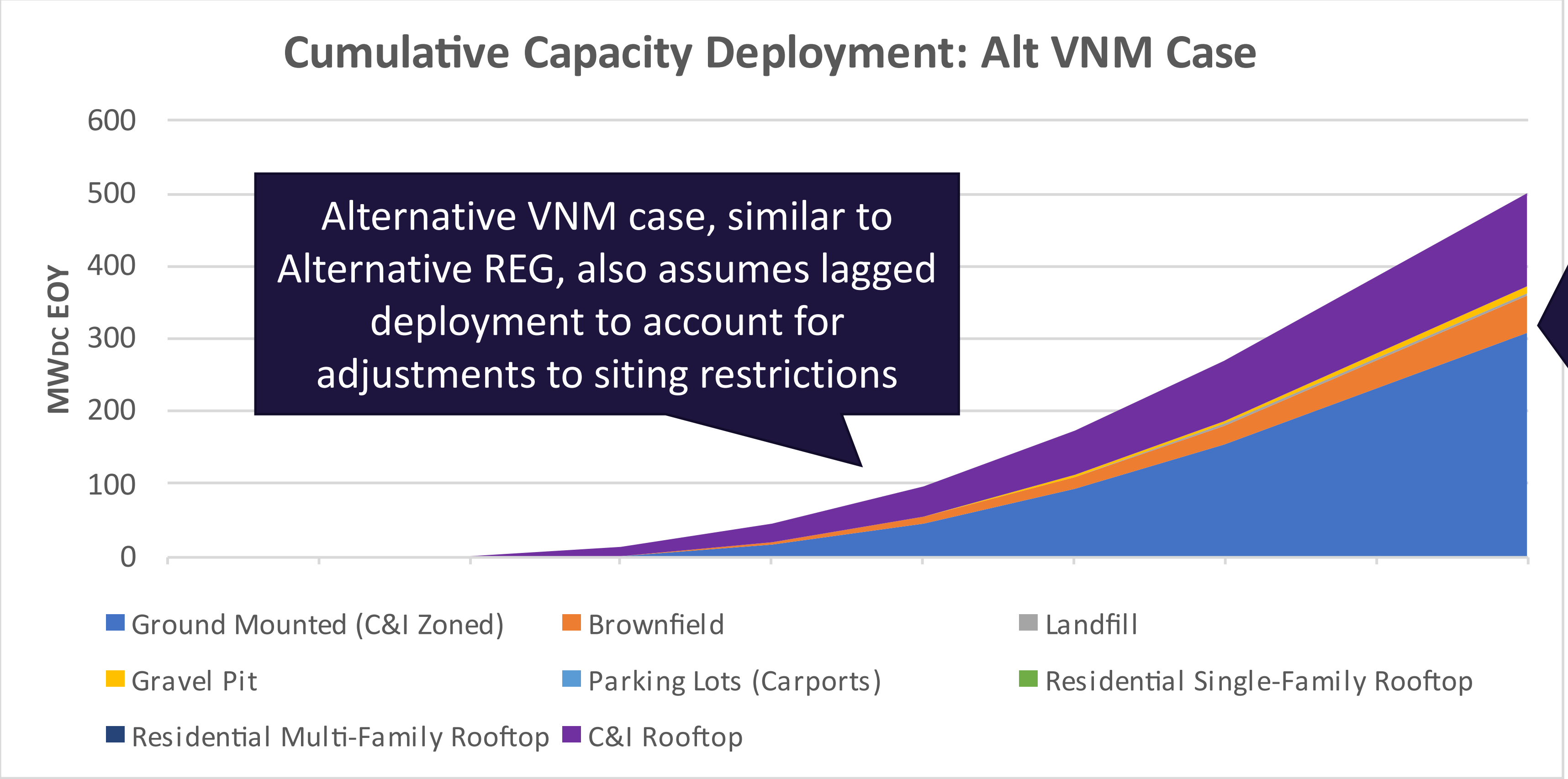
Capacity Allocation: Expansion Under Alternative VNM Design



Brownfields make up most preferred siting options deployed, based on their reduced costs and large technical potential relative to other preferred siting options

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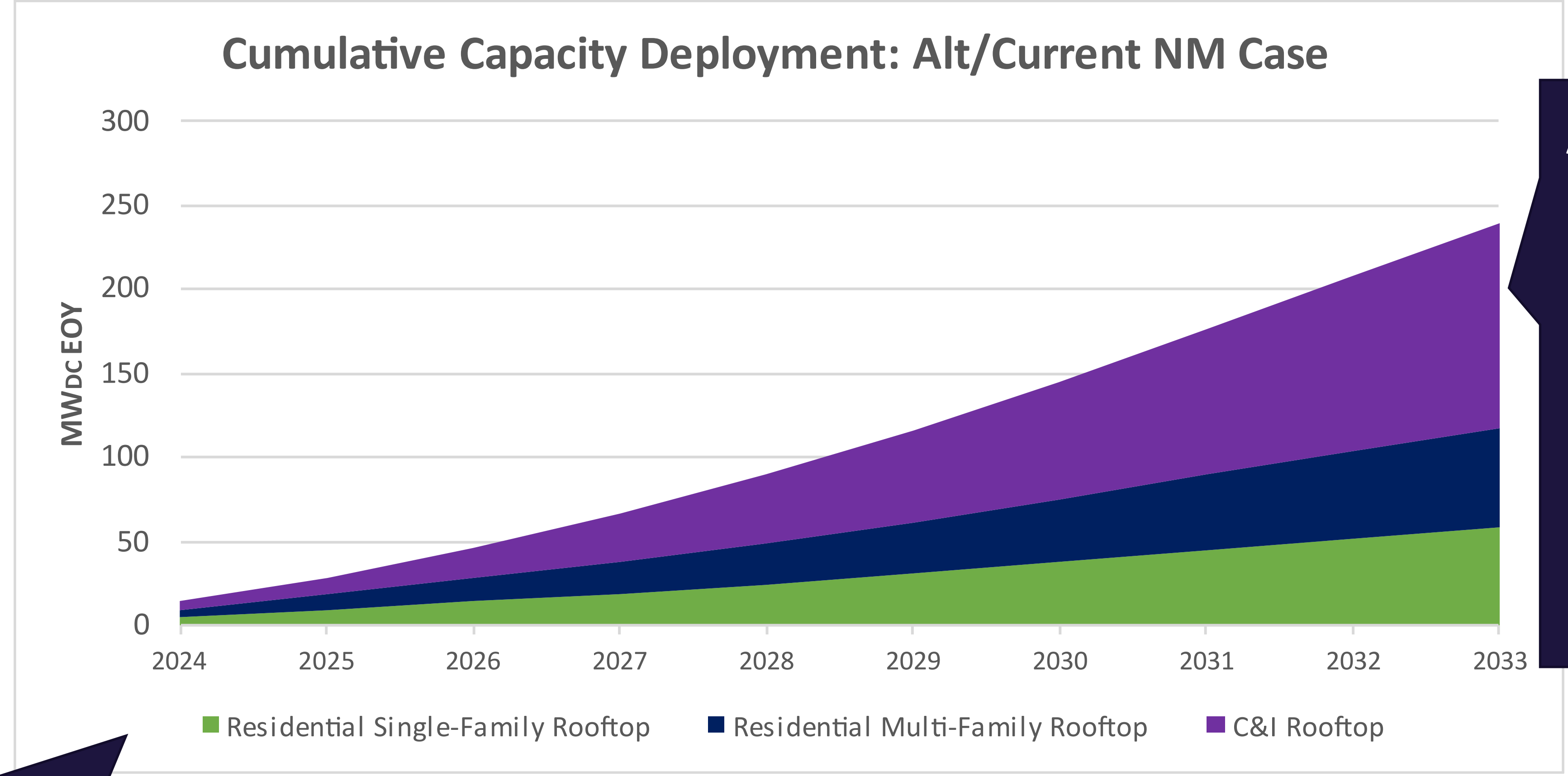
Capacity Allocation: Expansion Under Current (and Alternative) Net Metering Design



Assumed capacity allocation places slightly heavier weight to deployment in later years to reflect projected improvements in small solar economics

Deployment is assumed to follow the average historic distribution by size category (<=25 kW, >25-250 kW, >250-500 kW, and >500 kW-1 MW)

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Benefit-Cost Analysis Results

Notes on BCA Results and Graphs

- Most slides represent aggregate BCA results for given policy design (e.g., current REG design, alternative REG design, etc.) – this includes assumptions about MW assigned to different types of projects (e.g., residential vs. commercial building-mounted, etc.)
- Some slides presented on a "per MW of solar basis" to enable easier comparison across technologies;
  - Note, however, that these figures do not include program administration costs
- Unless otherwise noted, figures represent the Rhode Island (RI) Test (as opposed to the Ratepayer Impact Measure (RIM), discussed in a separate section)
- Dollars are in nominal 2023 net present value

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BCA Results - Summary

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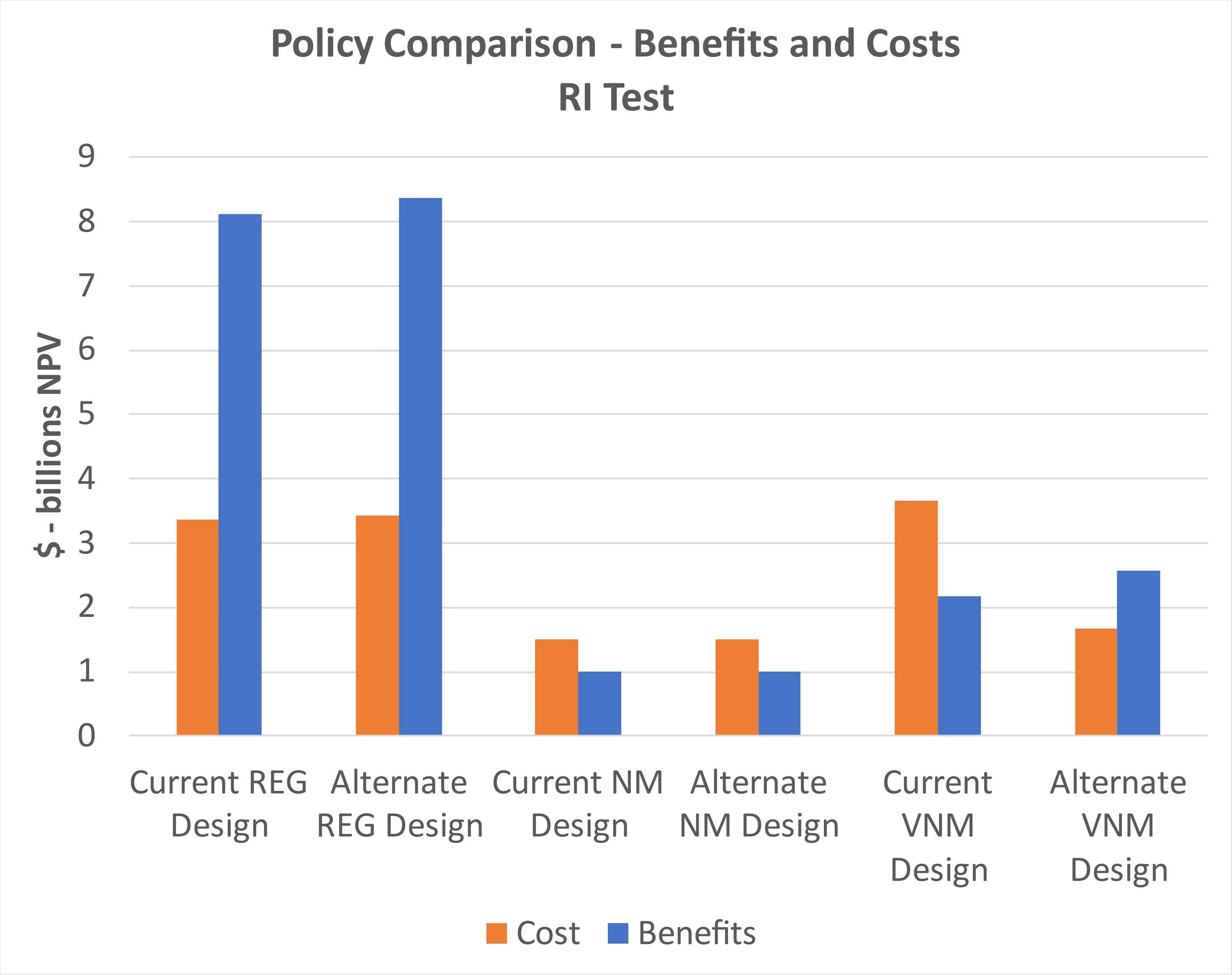
Benefits and Costs Under Rhode Island Test (Solar Only)



- Assumed MWs of resources participating in different programs primary driver between differences across programs (NM vs. VNM vs. REG)

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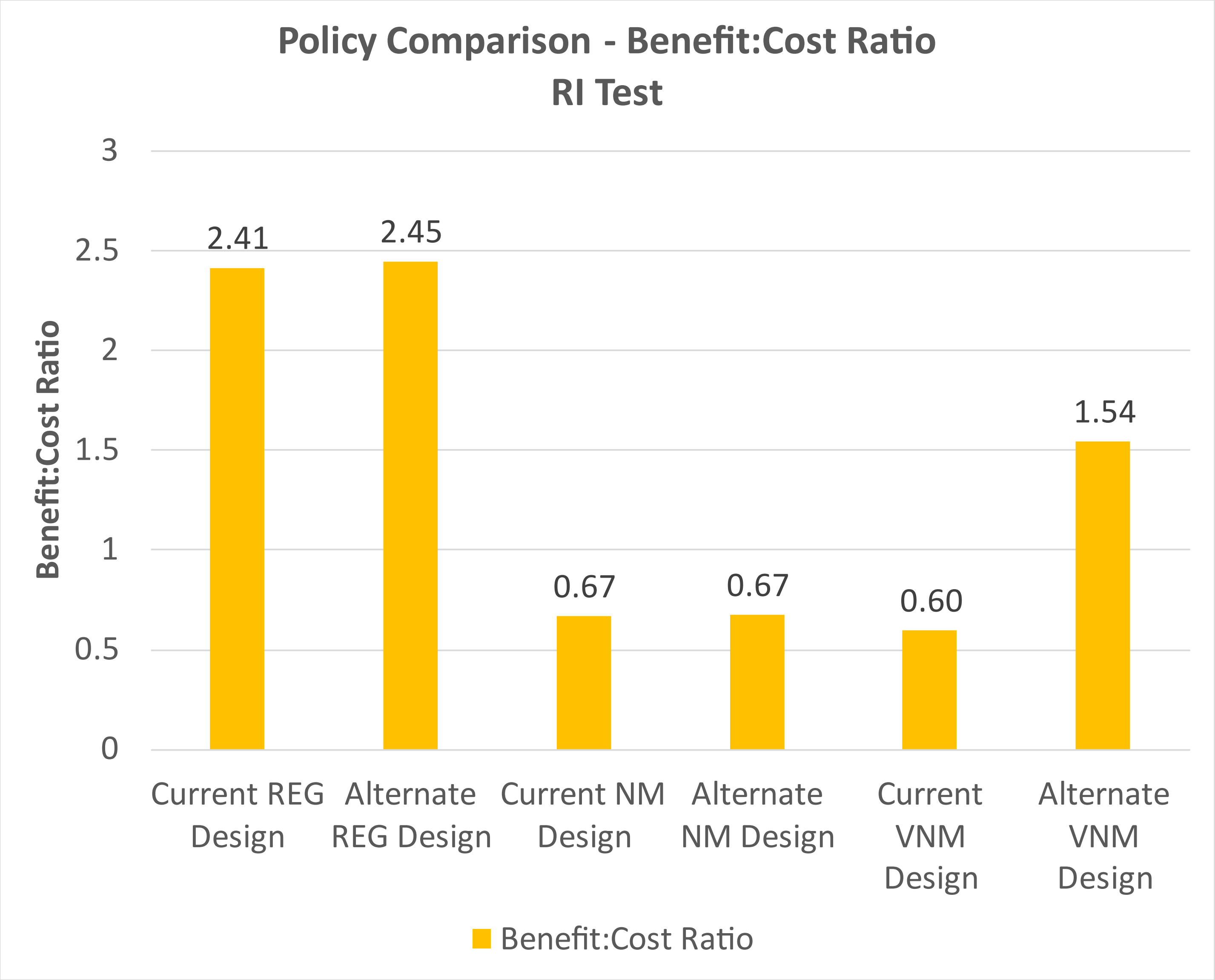
Benefit:Cost Ratios Under Rhode Island Test (Solar Only)



- Comparing ratio provides for more direct comparison of cost effectiveness, ignoring that some programs will have more MW of resources participating that others
- Given RI's climate and GHG requirements, BC ratio above or below 1 may be less relevant than comparisons across programs
- There are hypothetical benefits to pursuing multiple strategies (e.g., portfolio diversification benefit – benefit of not having all your eggs in one policy basket) that are not captured in the BCA

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Benefit:Cost Ratios and Allocated Megawatts

DG Program Analyzed	*Modeled Expanded DG Capacity Per Program by Case (All Capacity Expected Online by 2033)*	*Policy Design Case for Modeled DG Capacity Expansion*	*Benefit:Cost Ratio (RIPUC "Rhode Island Test") of Capacity Expansion by Case*	*Benefit:Cost Ratio (Ratepayer Impact Measure/ "RIM" Test) of Capacity Expansion by Case*
Renewable Energy Growth (REG) Program	1,560 MW	Current Renewable Energy Growth (REG) Program Design	2.41	0.94
		Alternative REG Program Design	2.45	0.92
		Alternative REG Program Design + Energy Storage	3.16	1.05
Virtual Net Metering (VNM) Program	500 MW	Current Virtual Net Metering (VNM) Program Design	0.60	0.15
		Alternative VNM Program Design	1.54	0.50
		Alternative VNM Program Design + Energy Storage	2.22	0.53
Net Metering (NM) Program	239 MW	Current Net Metering (NM) Program Design	0.67	0.14
		Alternative NM Program Design	0.67	0.14
		Alternative NM Program Design + Energy Storage	0.98	0.18

Note: *The total REG capacity in this analysis would technically fall somewhat short of the amount authorized by the Sub A to SB 684, given that our analysis' maximum horizon for projects reaching commercial operation is the end of 2033 (the first full year of the 100% RES)*

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Overarching Observations

- Substantial differences in cost effectiveness and total cost and benefits across NM, VNM, and REG in their existing forms
- As modeled, Alternative designs of these policies either improve (REG and VNM) or have little impact (NM) on cost effectiveness
- Primary drivers of changes in cost effectiveness between Current and Alternative Designs:
  - VNM projects >1 MW – reduction in compensation costs rate by moving to cost-based approach
  - VNM projects – shifting ownership of RECs from project owner to RIE increases benefits that accrue to RIE customers
- Changes with marginal impact on cost effectiveness:
  - Change in treatment of net excess production in NM – modeled results generally don't support sizing to generate kWh in excess of load under either Current or Alternative designs
  - Siting restrictions and adders increase costs, but incremental costs roughly commensurate with modeled benefits of not developing on core forests

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BCA Results – Additional Details

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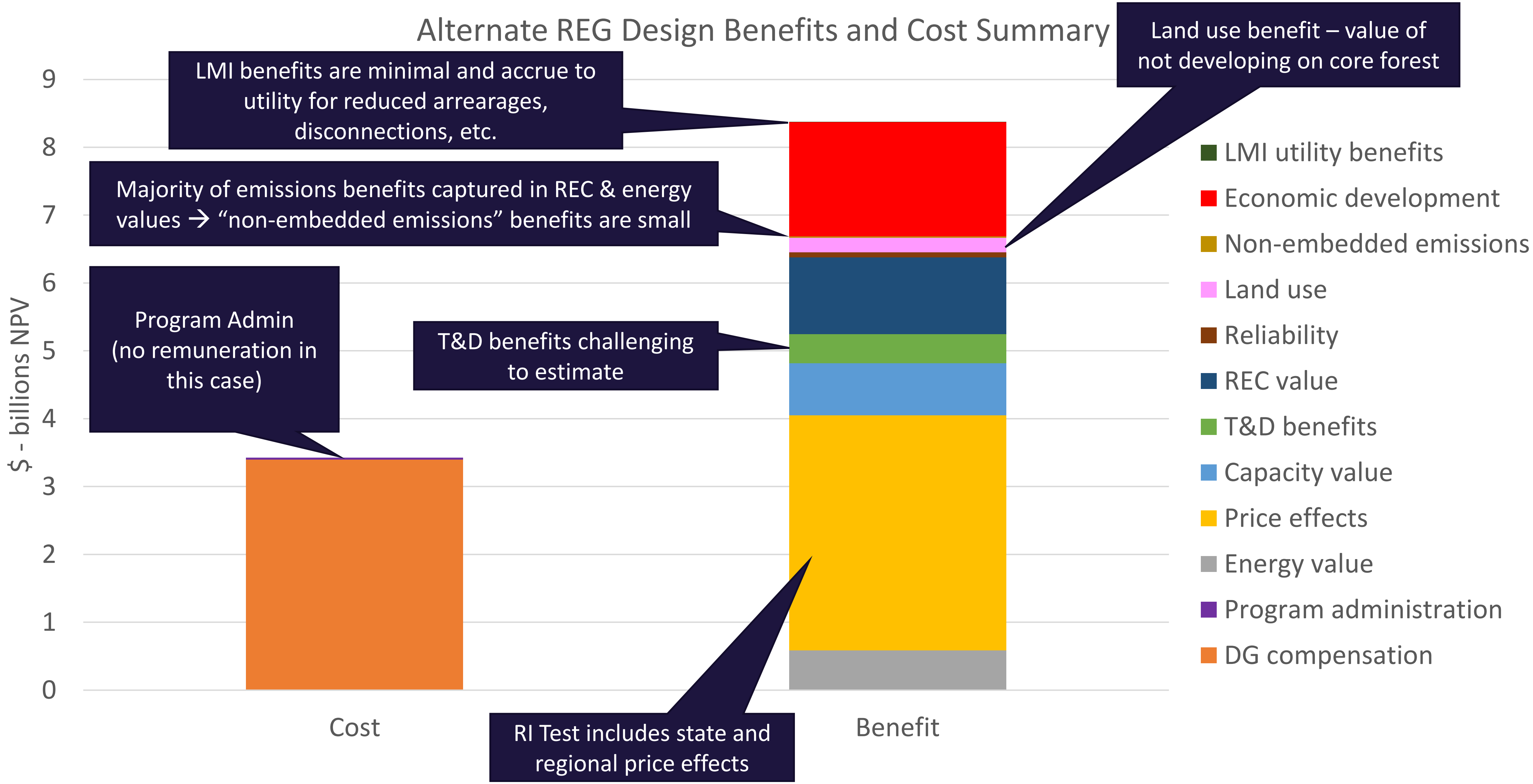
Primary Benefits and Costs



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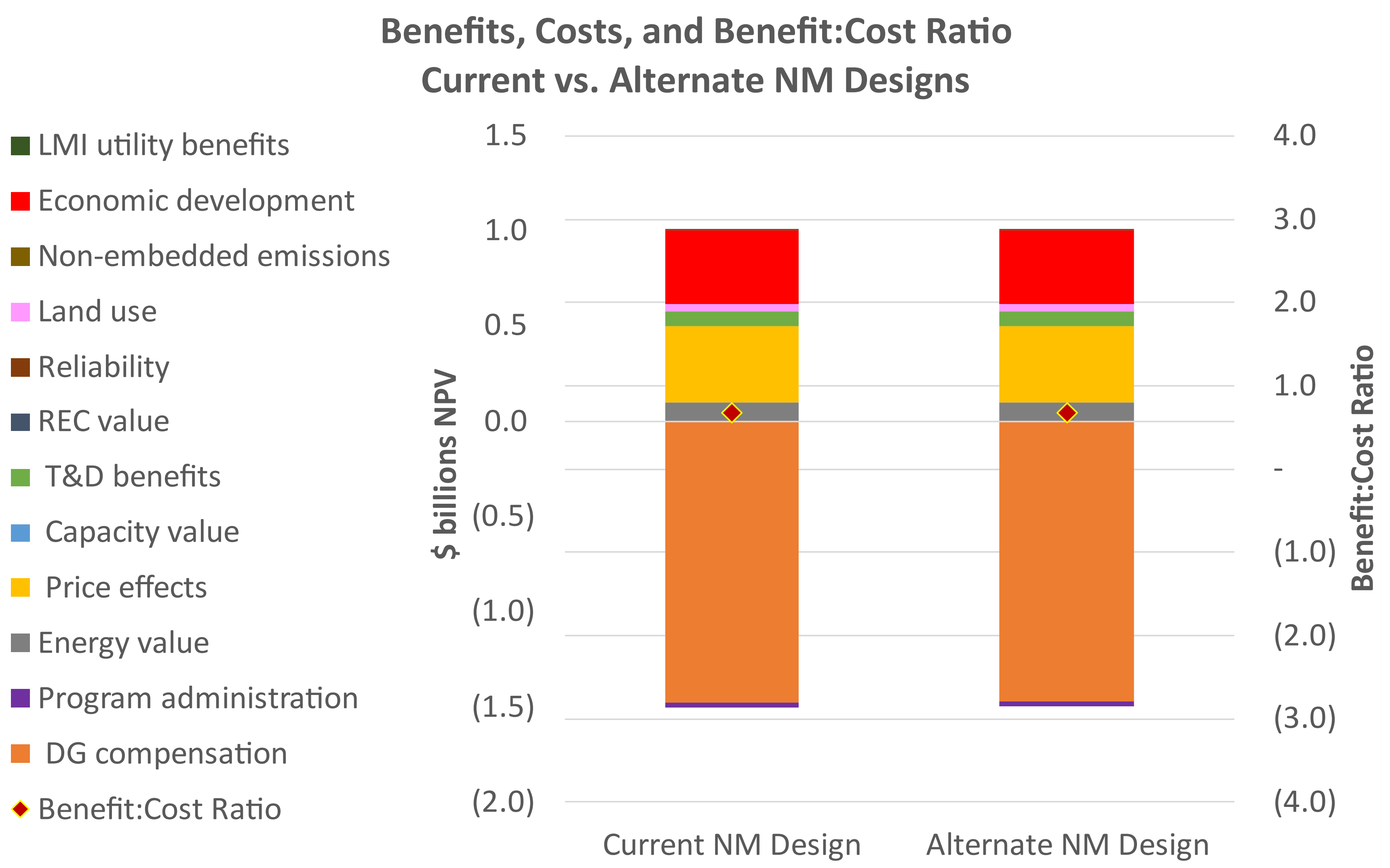
Net Metering: Current and Alternative Cases



- Minimal differences between Current and Alt. designs
- Economics in both Current and Alt. designs encourage sizing generation to load

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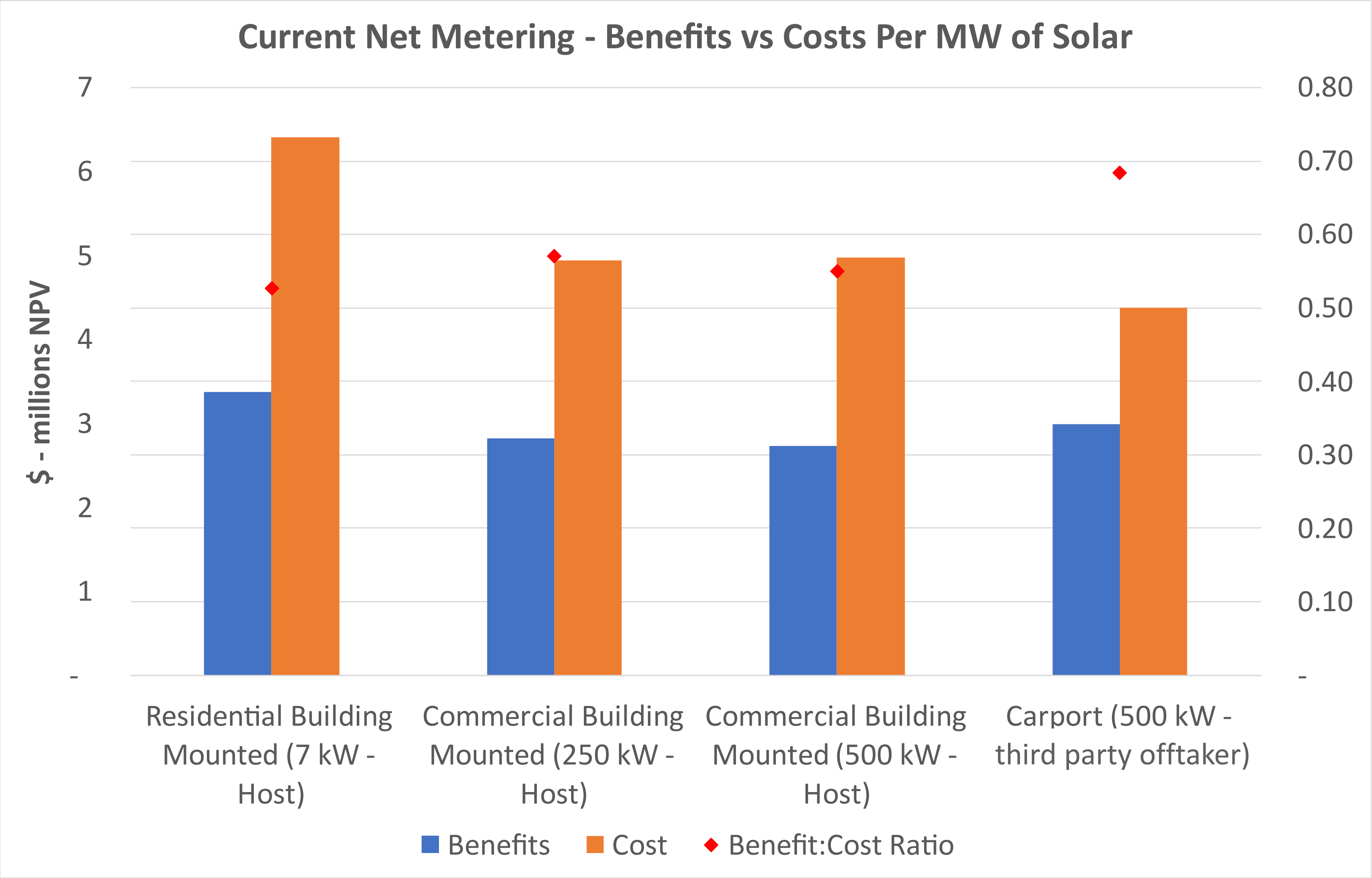
Net Metering: Resource View



- All compensation based on retail rates
- Thus, difference in cost primarily a function of rate class
- Difference in benefits driven primarily by different macroeconomic benefits resulting from different costs to construct and operate

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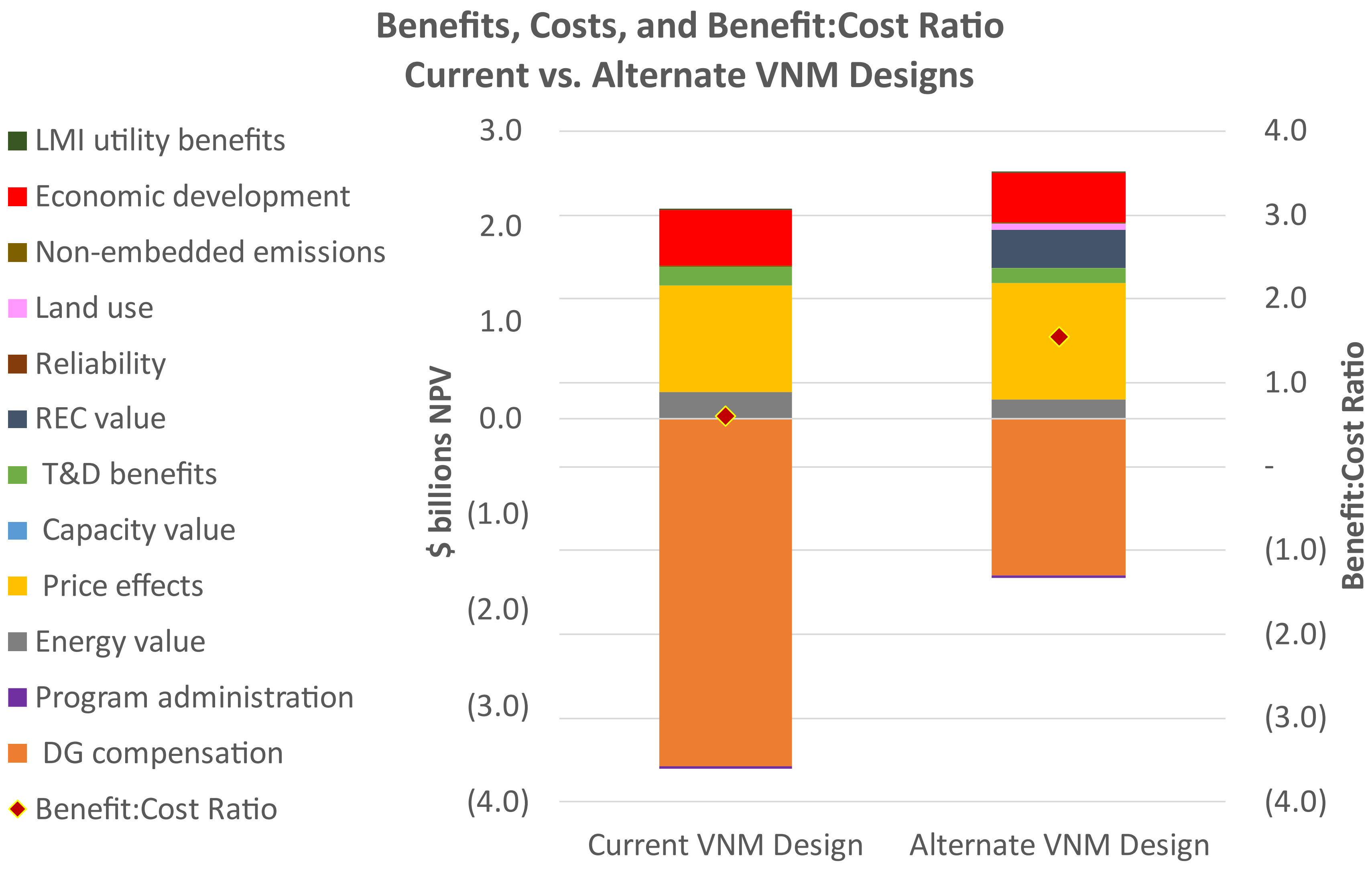
Virtual Net Metering: Current and Alternative Designs



- Change to cost-based compensation approach for projects >1 MW reduces costs in Alternative design
- Increase in land-use benefits in Alternative design
- Alternative VNM program design achieves B:C ratio >1 (even without economic development benefits)

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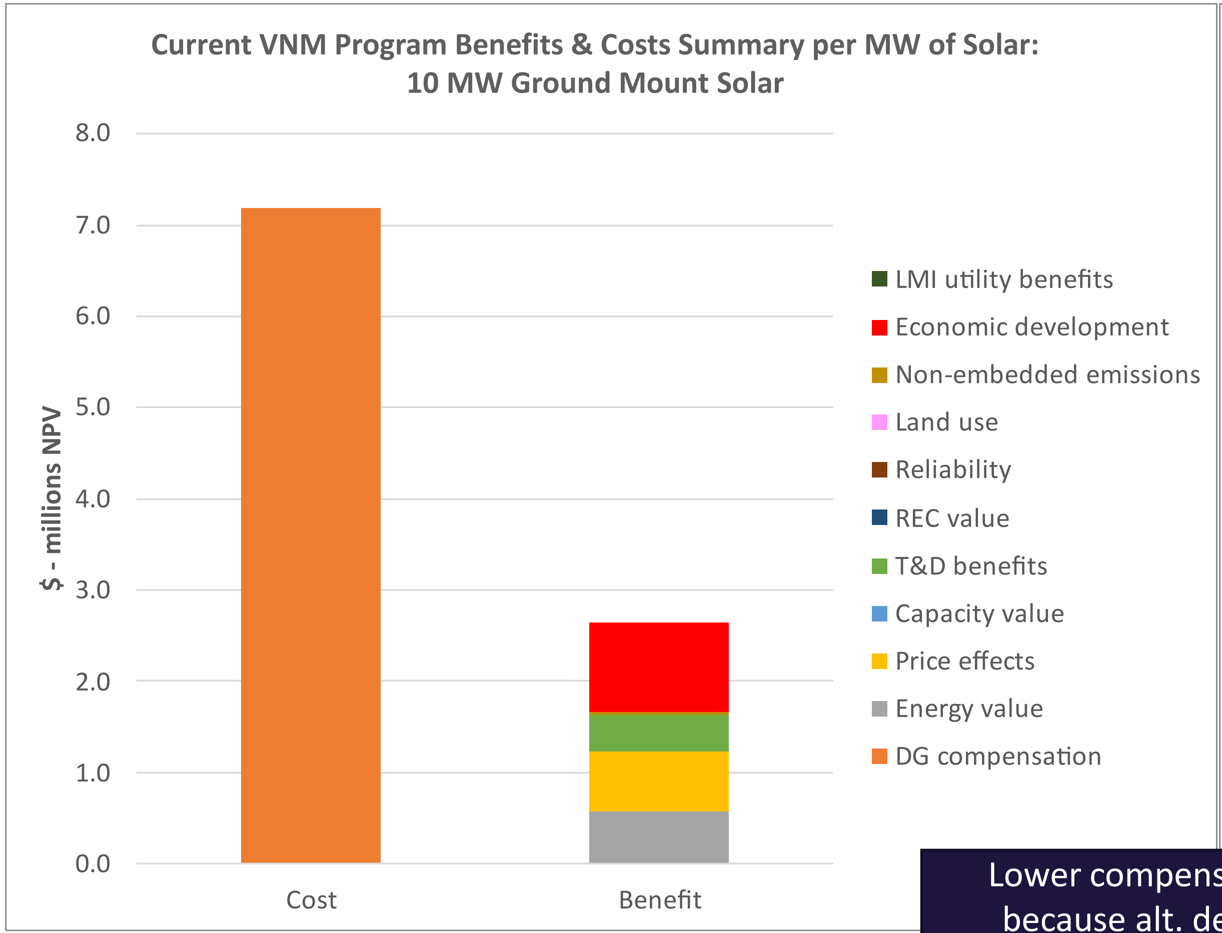
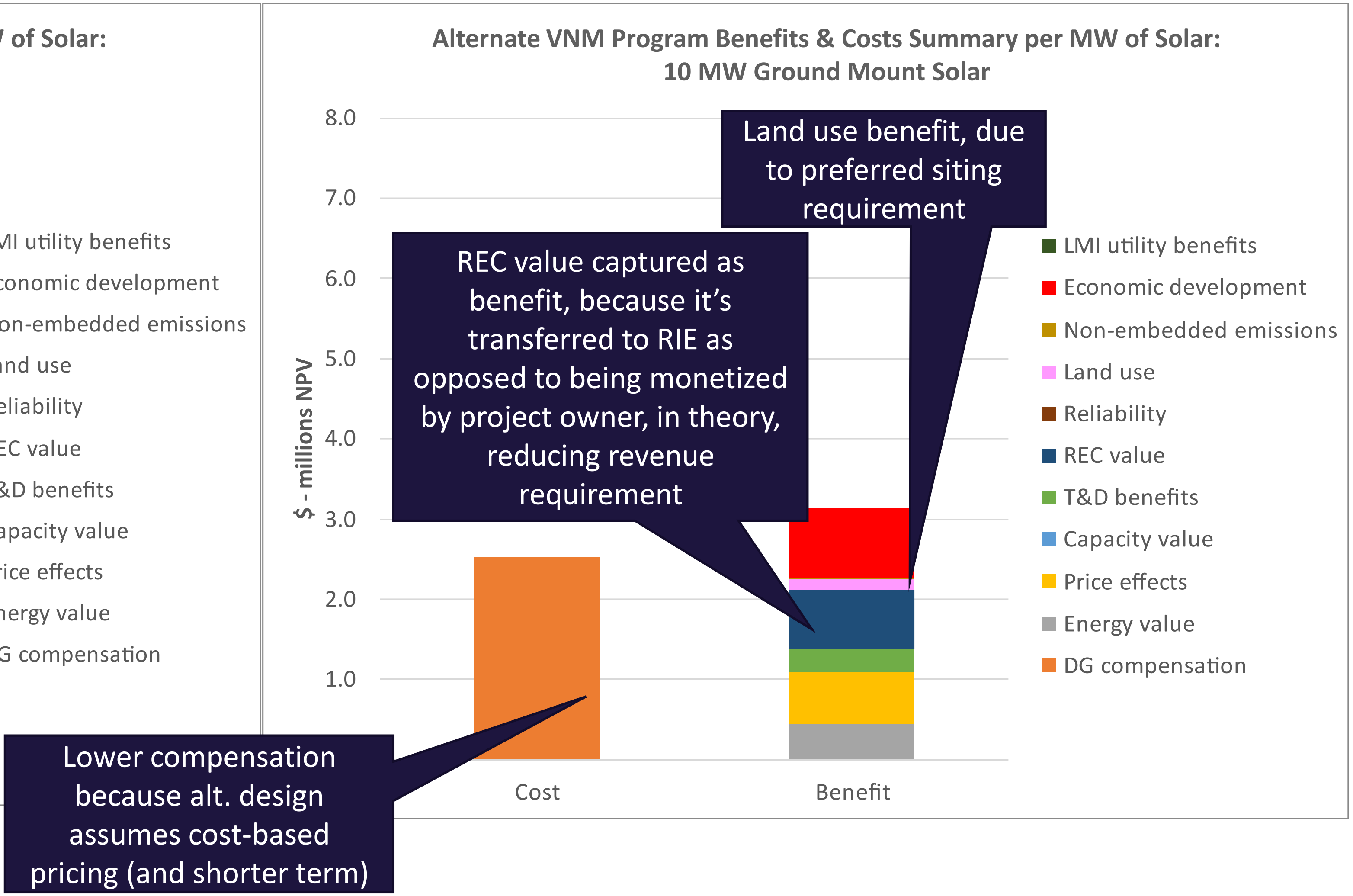
VNM: Current vs. Alternate Design (Per MW of Solar)

VNM alternate design lowers costs and increases benefits





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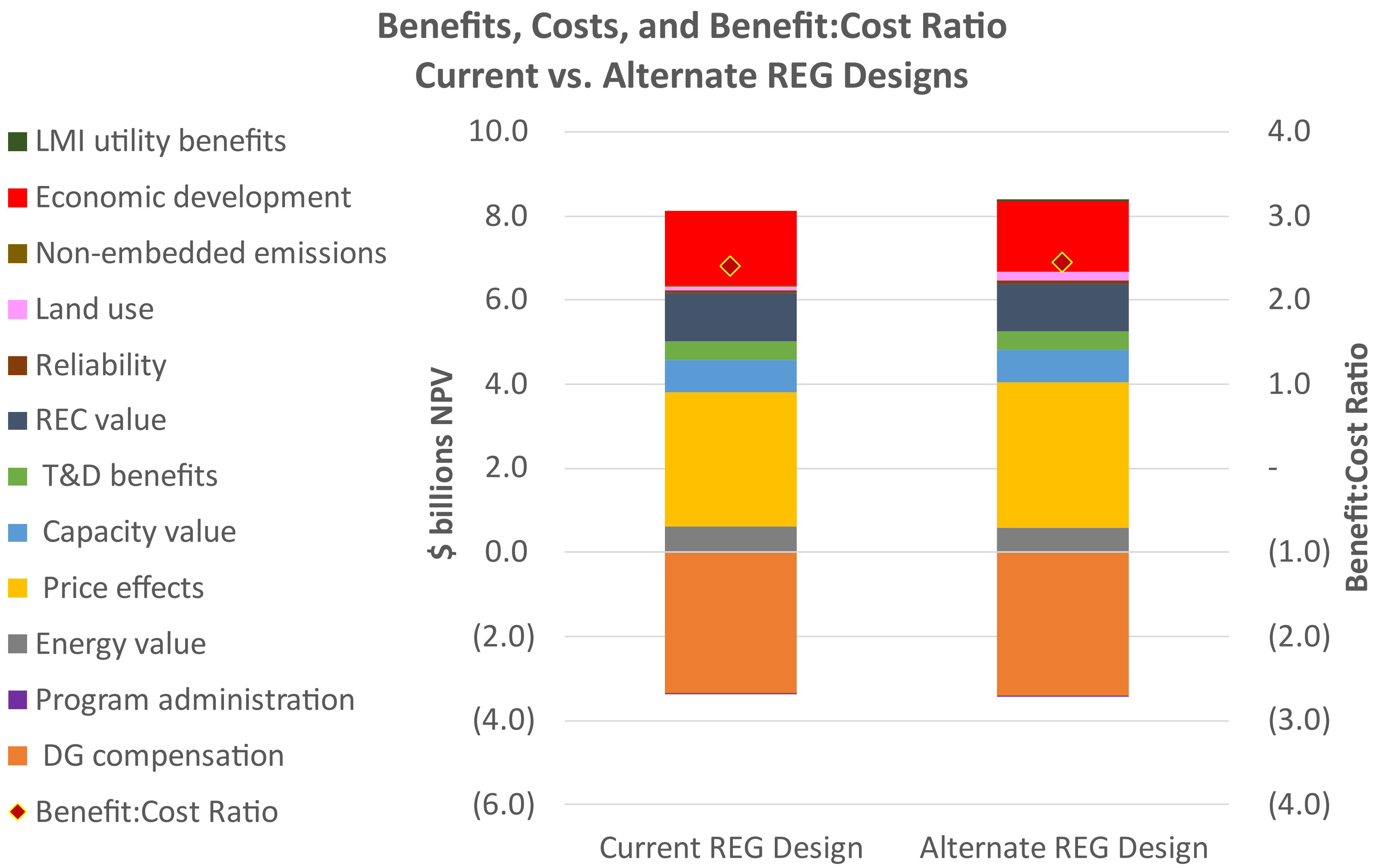
REG: Current and Alternate Designs



- Costs effectively the same
- Economies of scale from larger allowed project size offset by increased cost of developing on preferred sites
- Even without economic development, still has benefit:cost ratio >1
- Similarly, benefits very similar
- Larger land-use benefit; also, timing of CODs of projects in Alt. case lines up with some higher projected capacity prices

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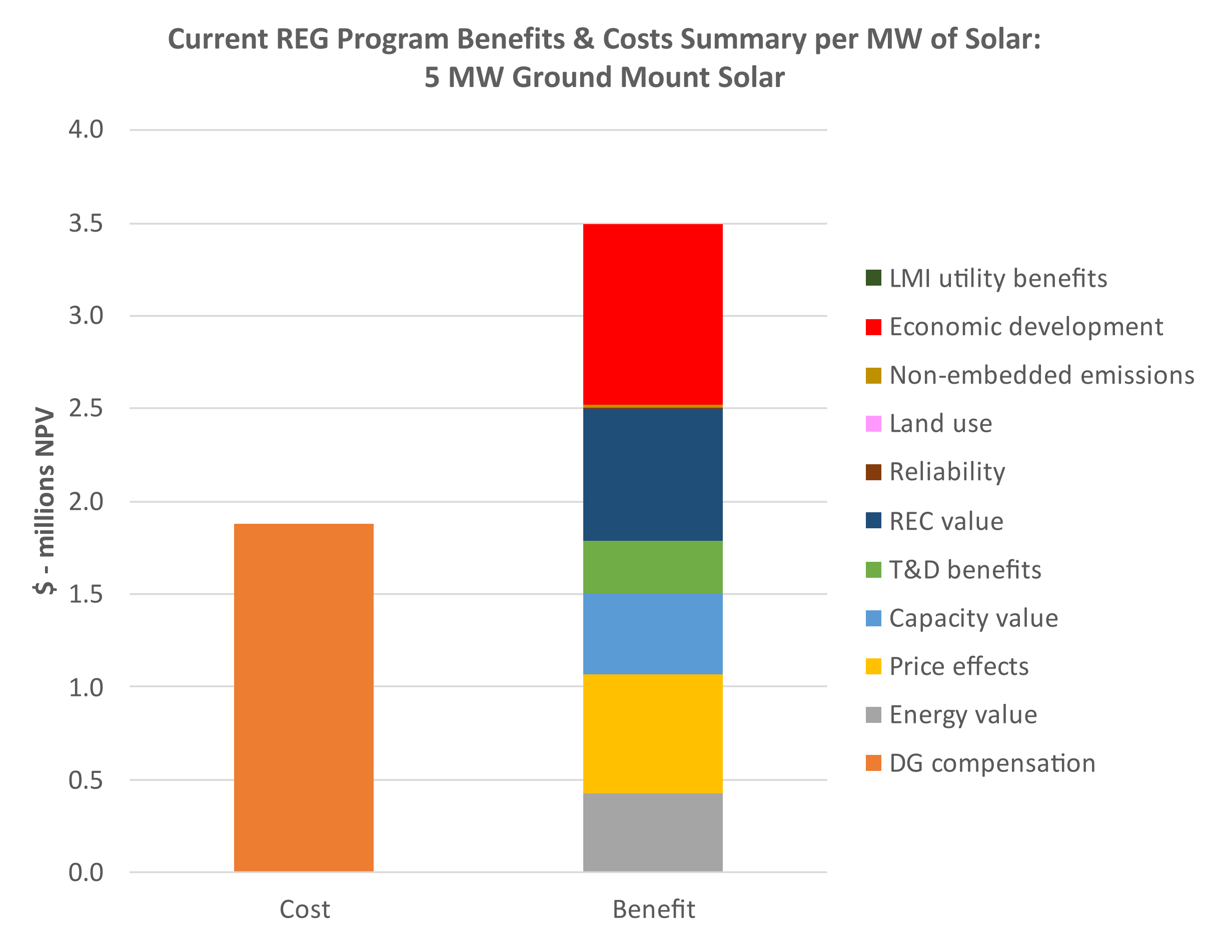
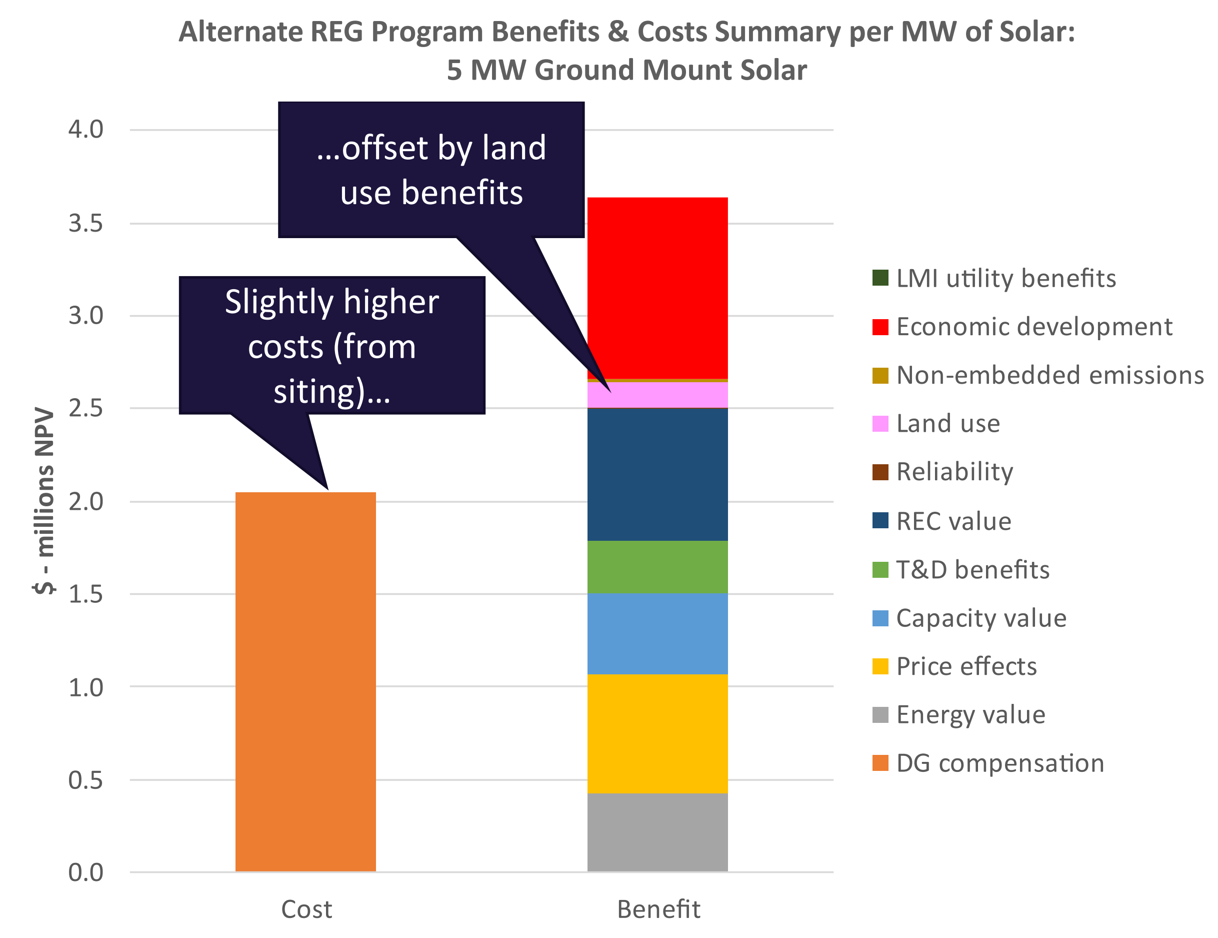
REG: Current vs. Alternate Design (Per MW of Solar)

Alternate REG design increases costs and benefits proportionally





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REG: Rhode Island Energy Remuneration (Utility Shareholder Incentive) Sensitivity

- Results presented above assume that remuneration for the EDC is removed from the REG program, as is the case in the Senate Sub A for **SB 684 – An Act Relating To Public Utilities And Carries – Net Metering**
  - However, as the House version of the bill (**HB 5853 – An Act Relating To Public Utilities And Carries — Net Metering**) does still contain remuneration, it is uncertain what the ultimate result will be
- The graph in the next slide shows the costs of a 1.75% remuneration (utility shareholder incentive) rate (in orange) on top of DG compensation
  - If adopted, such a rate reduces the BCR from 2.45 → 2.40

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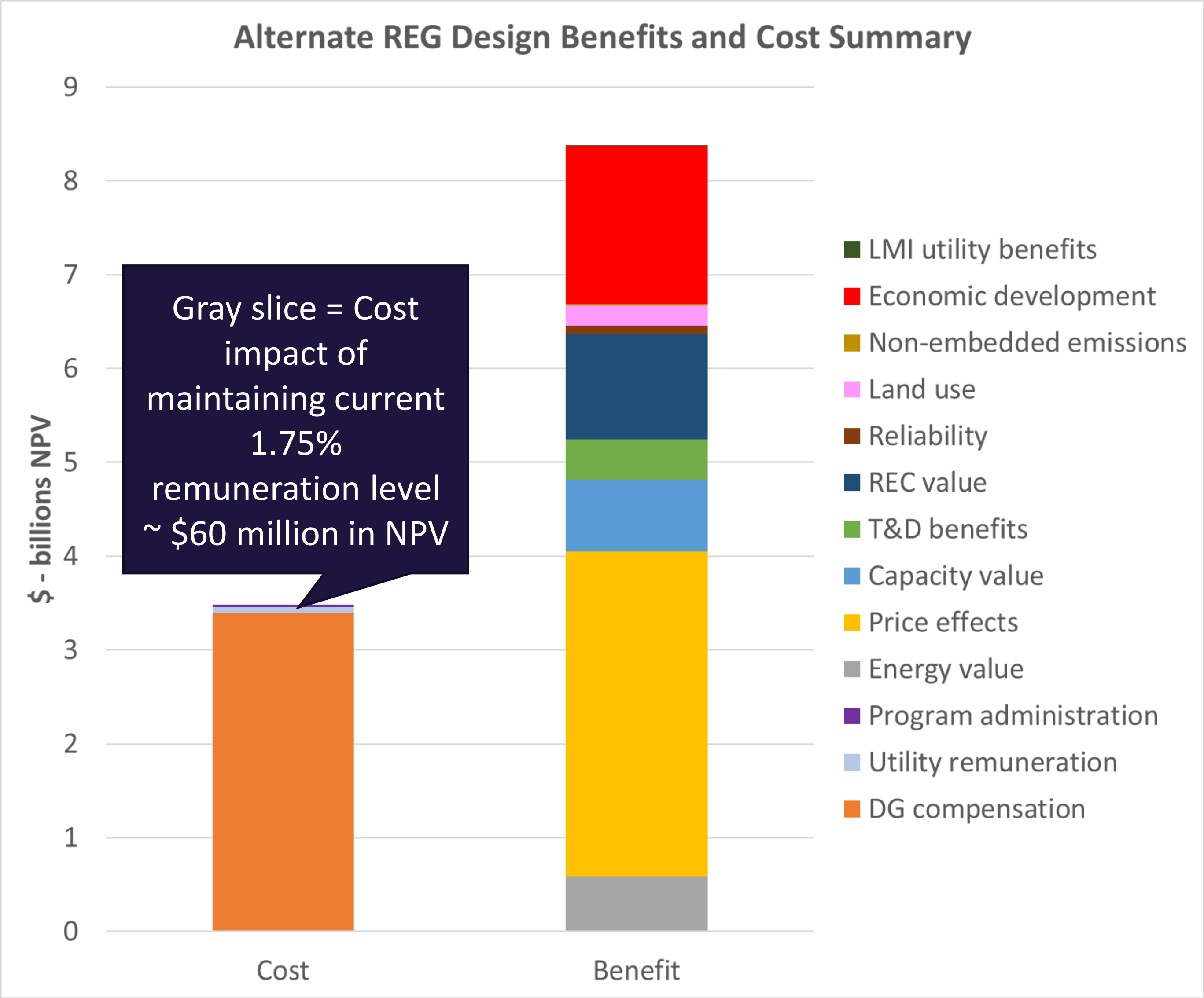
REG: Rhode Island Energy Remuneration (Utility Shareholder Incentive) Sensitivity



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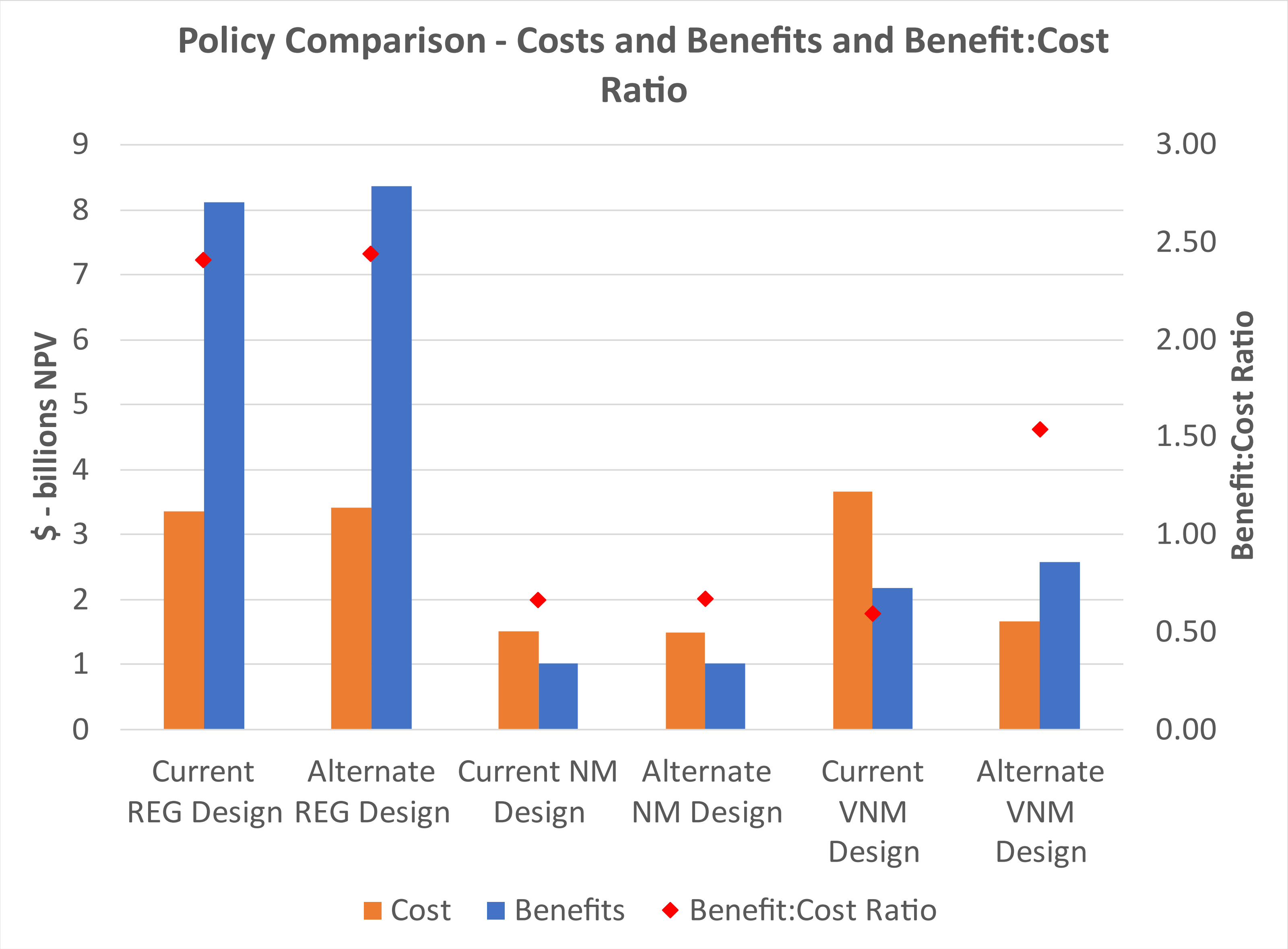
BCA and B/C Ratio Comparison Across Policies



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BCA Results – Energy Storage

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Paired Energy Storage System Analysis

- Design of storage policies/incentives, modeling resulting dispatch behavior, and estimating resulting benefits is complex
- High-level analysis of storage included in this work is to provide directional feedback on impact of adding storage to future programs
- Approach taken assumes compensation is sufficient to cover incremental costs of adding storage (four-hour duration) and a policy (design of which is unspecified) that leads to modeled dispatch behavior
- Simplified dispatch charges over night and discharges during fixed high-load, summer hours
- Large portion of storage benefits are from capacity and transmission and distribution system savings – our modeling assumes benefits are equal to:
    - *[nameplate capacity of storage * value * nameplate adjustment]*
    - For capacity value, adjustment represents % of nameplate that can accredited in forward capacity market; for transmission and distribution, effectively represents coincidence of nameplate w/ peak load of portion of transmission or distribution system on which the resource is located
- See Appendices to Meeting #4 presentation for additional details

Value stream	Storage nameplate adjustment
Capacity value	90%
Transmission system benefits	20%
Distribution system benefits	10%

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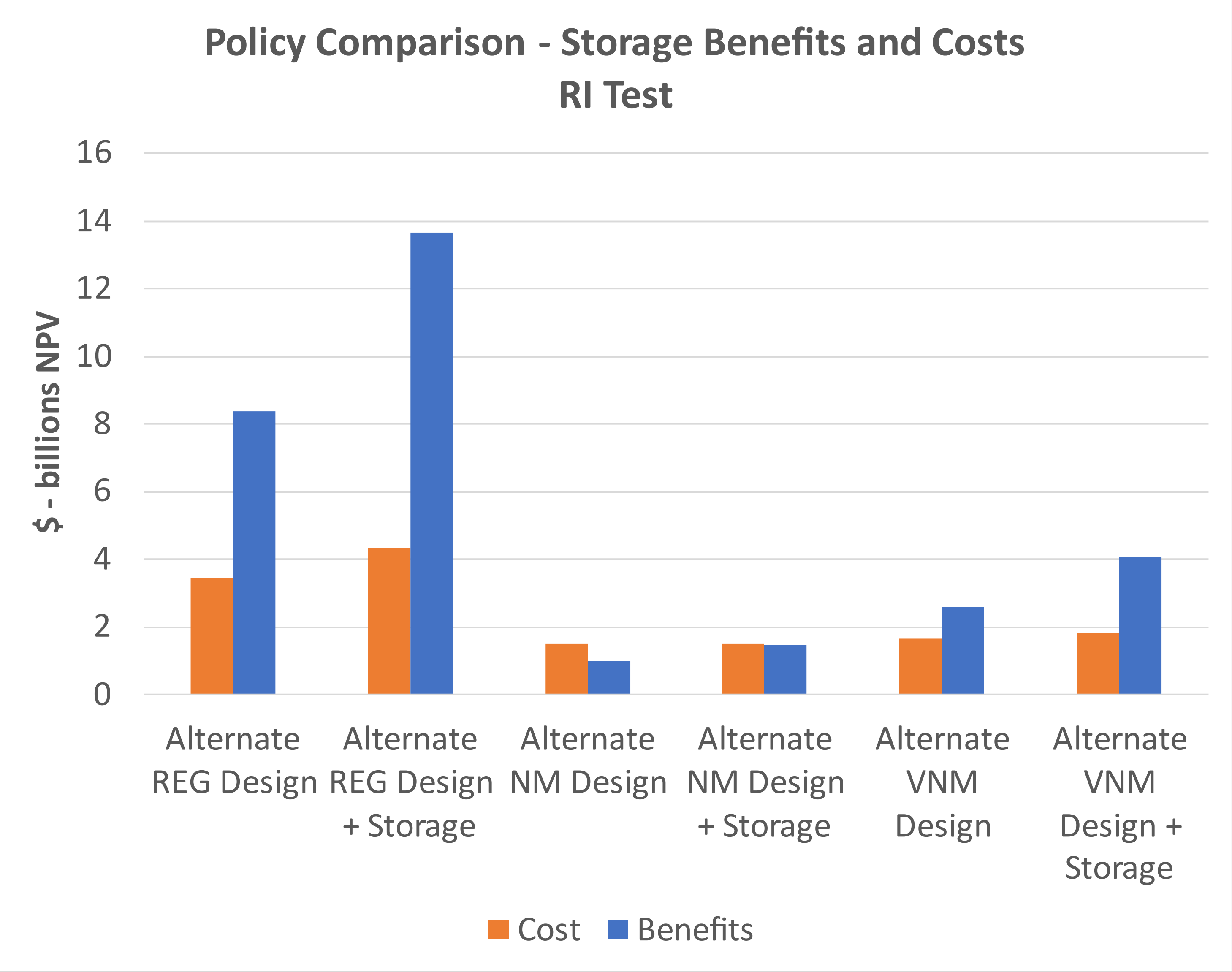
Policy Comparison: Paired Energy Storage



- Energy storage increases costs, but benefits increase more
- In short, energy storage makes programs more cost effective
- Alternative net metering design nears benefit:cost ratio of 1 when energy storage is included

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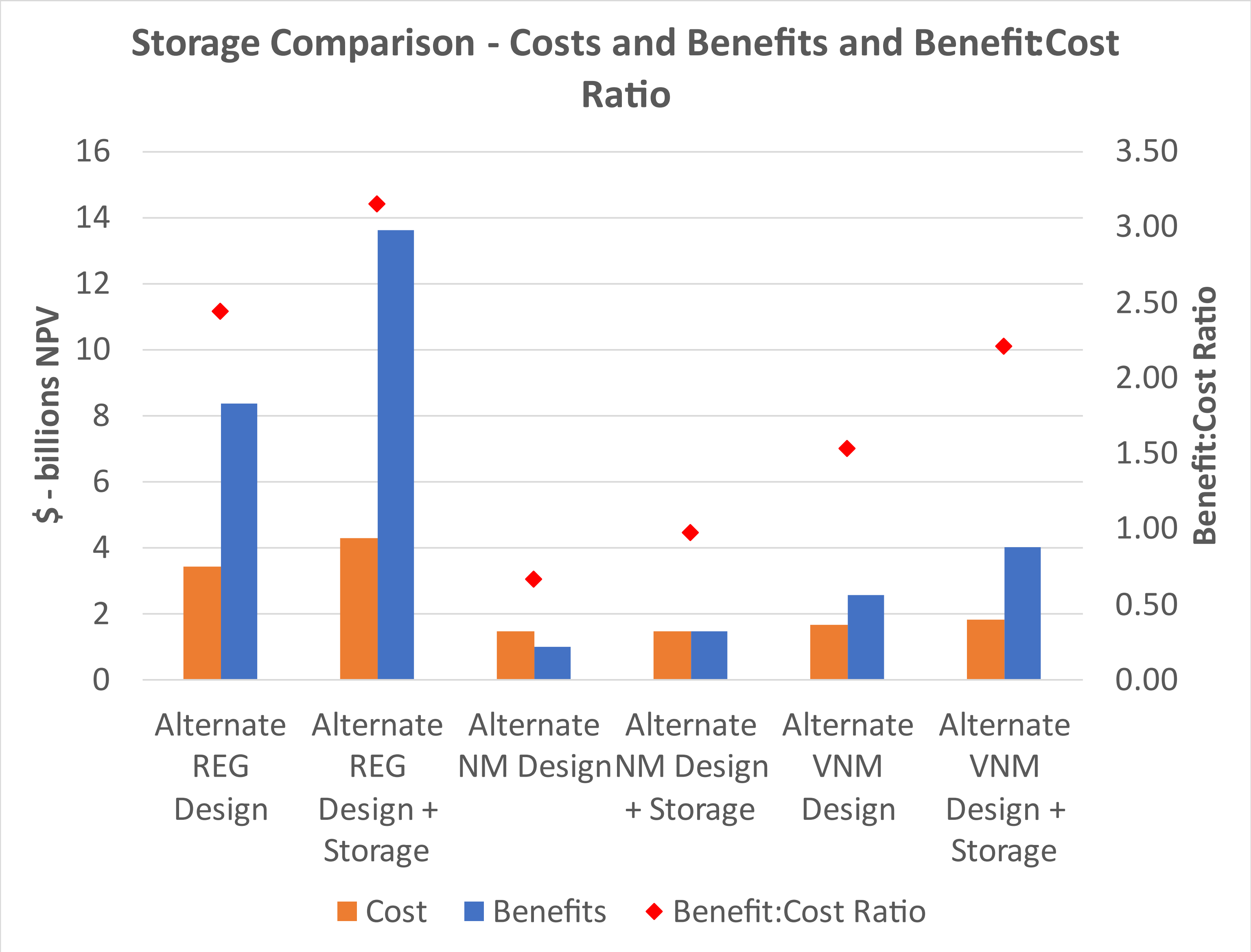
Impact of Energy Storage on Benefits and Costs



Adding energy storage to policy uniformly increases benefit:cost ratio under the Rhode Island Test

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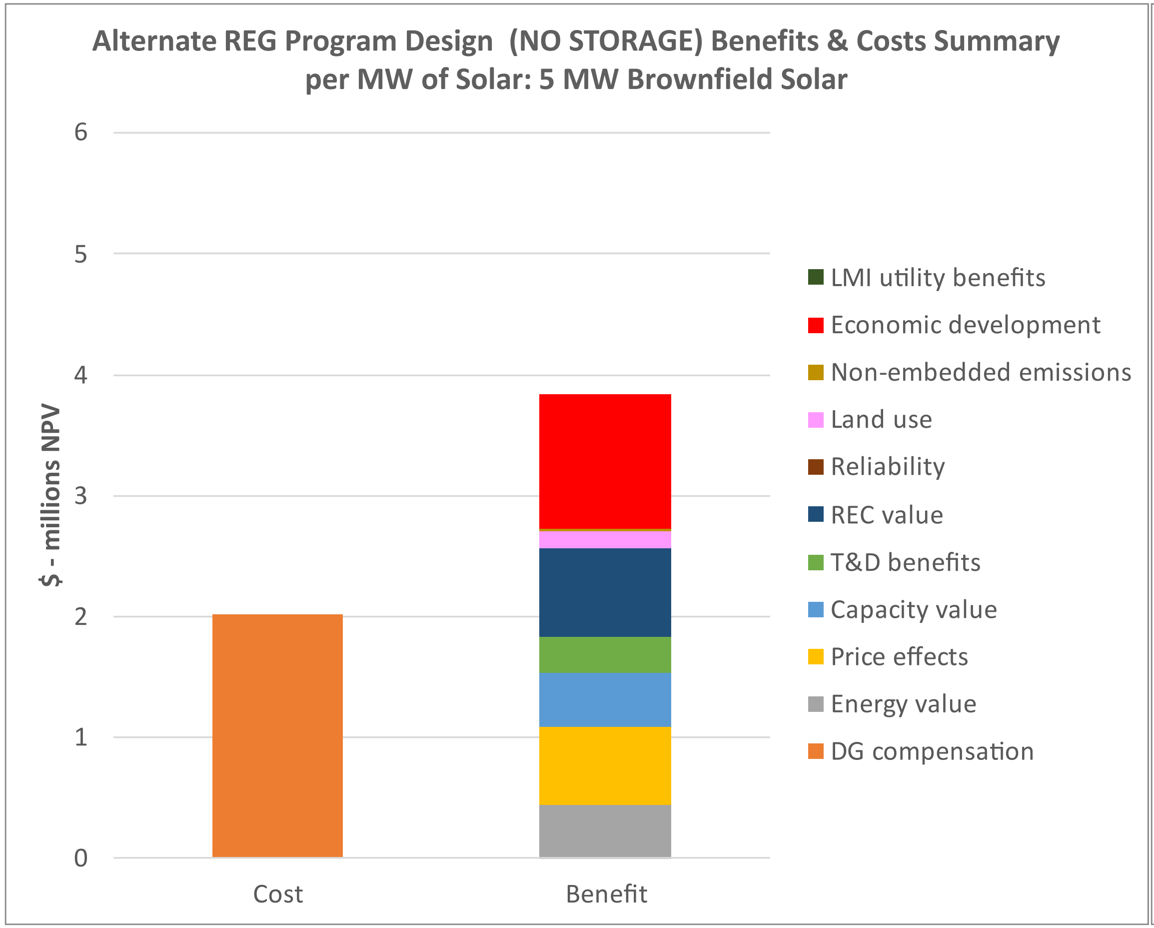
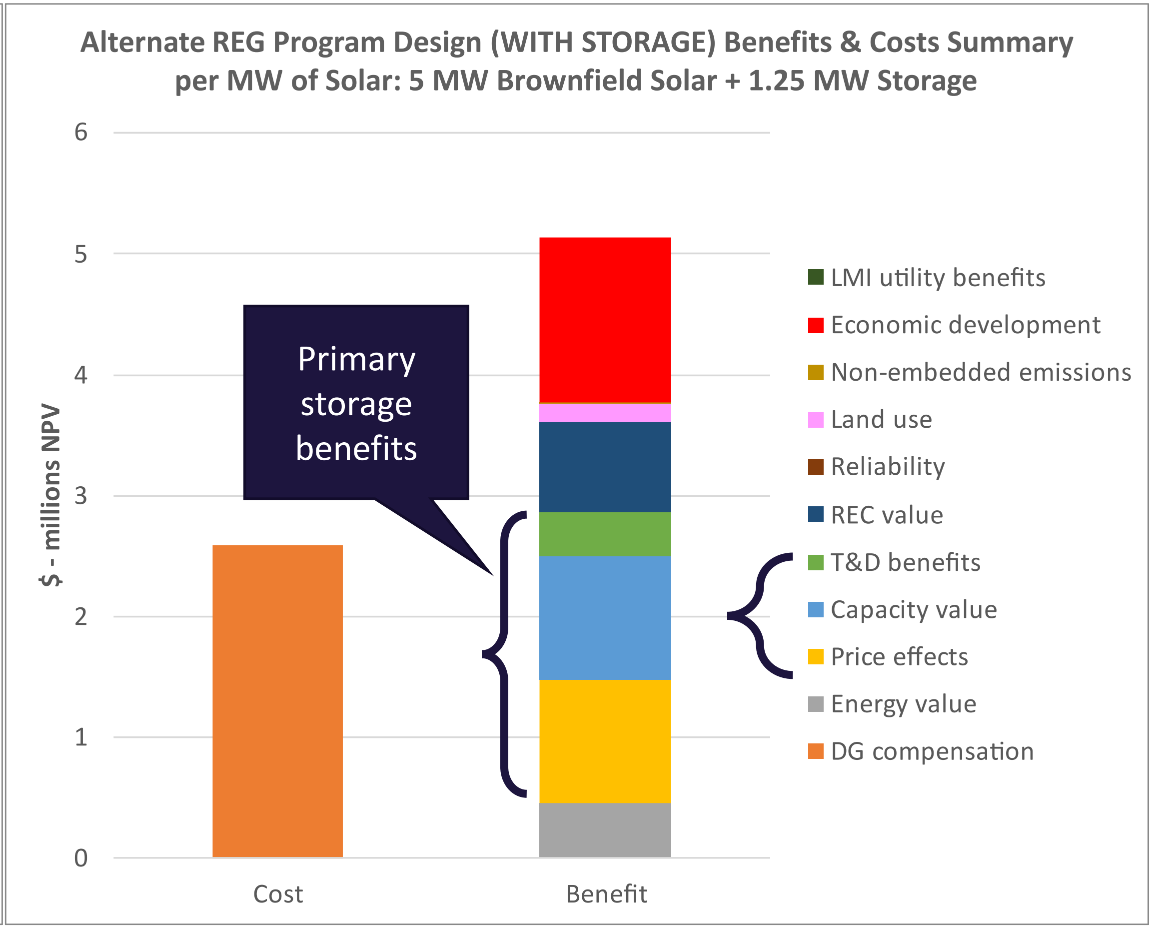
Paired Energy Storage: Resource-Level Comparison

Majority of energy storage benefits are capacity-denominated





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RI Test vs. Ratepayer Impact Measure

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RI Test vs. Ratepayer Impact Measure (RIM) Test

- BCA modeling requires the identification of a "perspective" or test
- Different perspectives include or exclude different costs and benefits
- Docket 4600 established framework for the Rhode Island Test, which is fairly inclusive in the benefits it considers
  - Developed through a PUC-led process and is the required BCA test in PUC dockets
  - Docket 4600 guidance documents propose additional benefit categories for consideration – SEA reviewed these categories and did not include categories that we could not quantify, had no value, or were not applicable to the policies evaluated
- Another test, the "Ratepayer Impact Measure" or RIM takes a narrower view, focusing on costs and benefits likely to impact the electric bill of RIE ratepayers
  - Developed initially in CA by the California Public Utilities Commission; also used in CT by the Public Utilities Regulatory Authority
- The RIM test is not intended to replace rate impact analysis, but instead to better help gauge how a program is likely to influence bills, on average

**** Federal tax incentives are netted out of DG compensation – that is, they lower compensation for resources with a cost-based compensation methodology***

	RI Test	RIM
DG compensation*	Cost	Cost
Utility remuneration	Cost	Cost
Program administration	Cost	Cost
Energy value	Benefit	Benefit
Energy price effects - intrastate	Benefit	Benefit
Energy price effects – Other NE States	Benefit	N/A
Capacity value	Benefit	Benefit
Capacity price effects - intrastate	Benefit	Benefit
Capacity price effects – Other NE States	Benefit	N/A
Reduced transmission costs	Benefit	Benefit
Reduced distribution costs	Benefit	Benefit
REC value	Benefit	Benefit
Improved reliability	Benefit	N/A
Land use benefits	Benefit	N/A
Non-embedded GHG emissions	Benefit	N/A
Non-embedded NOx emissions	Benefit	N/A
Economic development/macroeconomic	Benefit	N/A
Electric-Gas price effects - intrastate	Benefit	Benefit
E-G price effects - ROP	Benefit	N/A
E-G-E price effects - intrastate	Benefit	Benefit
E-G-E price effects - ROP	Benefit	N/A
LMI utility benefits	Benefit	Benefit

Largest sources of difference between RI Test and RIM

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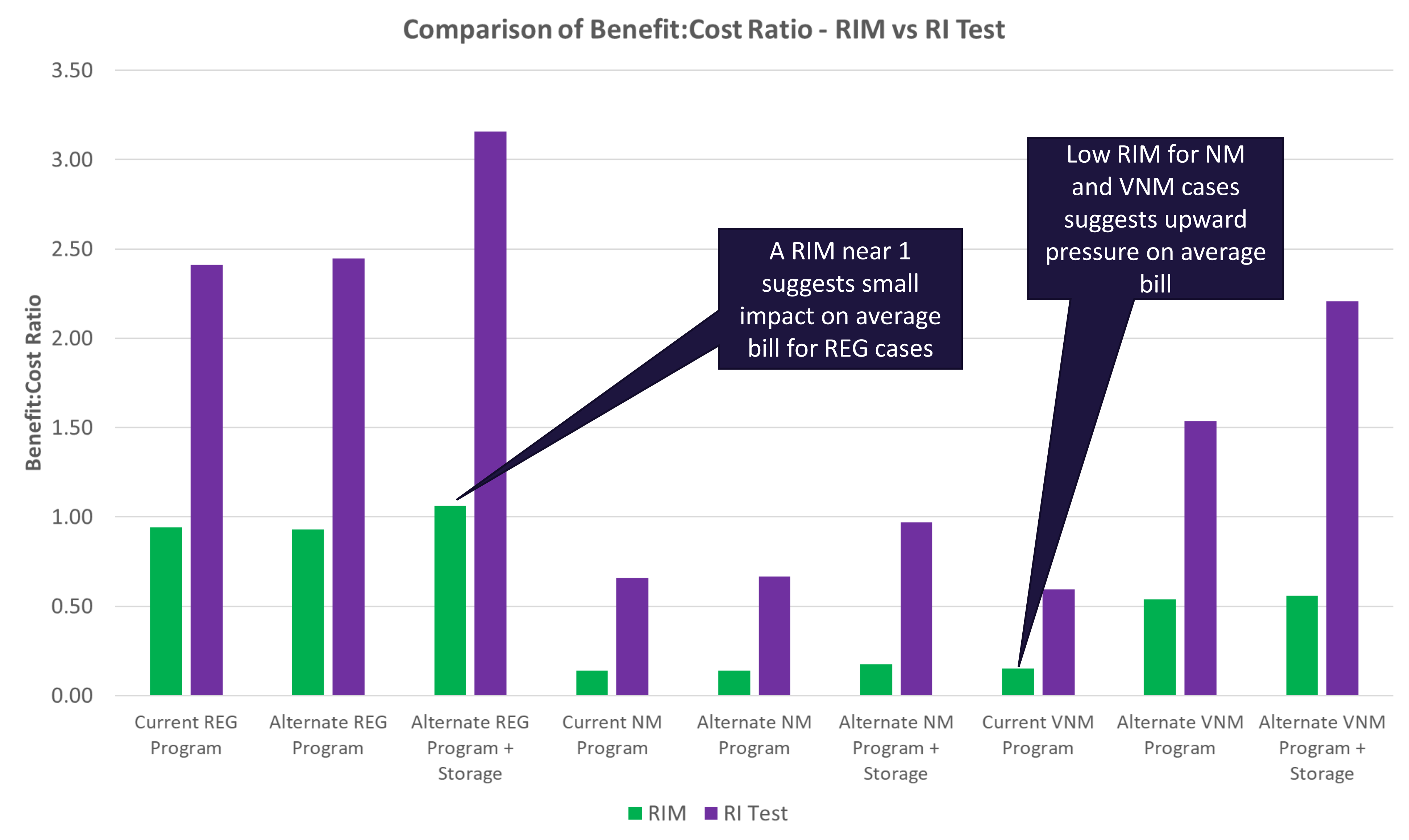
Benefit:Cost Ratio Comparison - RIM vs. RI Test

RIM yields lower benefits than RI Test, primarily because of exclusion of macroeconomic impacts (e.g., economic development from construction and operations) and price effects that accrue to non-RIE retail electric customers in the ISO-NE footprint



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Key Caveats/Limitations of The Analysis

Technical Potential ≠ Economic Potential

- Rhode Island's economically developable solar potential is likely to be substantially less than technical potential due to site-specific considerations
- Such granular and site-specific potential can only be firmly established using Geographic Information Systems (GIS) analysis, a substantial and separate task beyond the immediate scope of this analysis
- Since it was from ~3 years ago, the previously-mentioned Synapse technical potential analysis did not explicitly consider the impact of a broad restriction on siting in core forests (as potentially required by SB 684/HB 5853)
- It was (at the time) beyond the scope of Synapse's analysis to clarify how a broad restriction on core forest PV project siting aligns with available distribution and/or transmission system hosting capacity
  - Such information is critical for determining market-scale interconnection/project cost feasibility)

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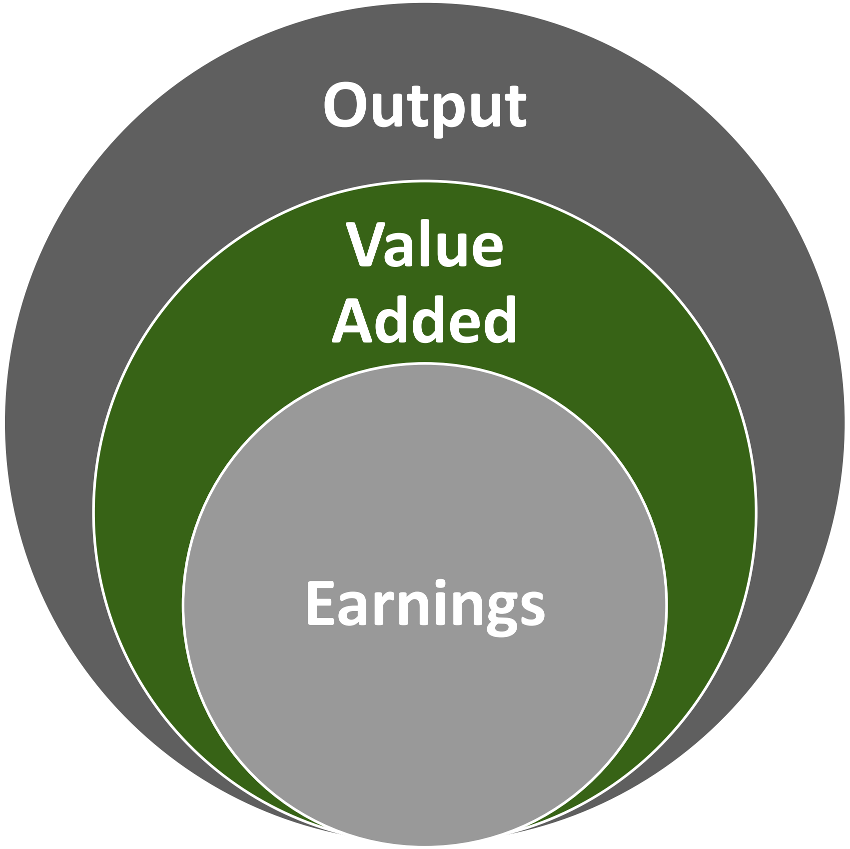
Macroeconomic Analysis (1)

- Analysis conducted using NREL's Jobs and Economic Development Impact (JEDI) model
- JEDI estimates number of jobs and state-level economic impacts of constructing & operating projects
  - **Economic impacts** summarized by indicators:
    - **Output** – sum of all goods and services at all stages of production (i.e., as a raw material and as a finished product)
    - **Value Added** (analogous to GDP) – equal to Output minus the cost of intermediate inputs
    - **Earnings** – wage and salary compensation paid to workers and benefits
    - **Jobs** – full-time equivalent (FTE) employment for one year



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Macroeconomic Analysis (2)

- ***Value Added*** used as primary economic indicator with "Induced Impacts" subtracted out
  - Each summary indicator includes a subcomponent **Induced Impacts:**

> **Induced Impacts:** "The changes that occur in household spending as household income increases or decreases as a result of the direct and indirect effects from final demand (i.e., purchases of goods and services) changes" (JEDI in-model definition)

- Potential for double counting between Induced Impacts and customer savings in other benefit streams within BCA
  - Excluding Induced Impacts aims to mitigate any concerns of double counting
- Resulting values included in BCA (only under RI Test, not Ratepayer Impact Measure)

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Appendices

Appendix A: Resources Modeled by Policy

This table provides a breakdown of which resource types were assumed to be included under each policy case, for the purposes of computing program-wide benefits and costs. The allocation of capacity within included blocks is described on slide 29.

Resource Block	Current REG	Alt. REG	Current VNM	Alt. VNM	Current NM	Alt. NM
Residential Building Mounted (7 kW - TPO)	No	No	No	No	Yes	Yes
Residential Building Mounted (7 kW - Host)	Yes	Yes	No	No	Yes	Yes
Residential Building Mounted (LI) (7 kW - TPO)	No	No	No	No	Yes	Yes
Residential Building Mounted (LI) (7 kW - Host)	No	Yes	No	No	Yes	Yes
Commercial Building Mounted (25 kW - TPO)	No	Yes	No	No	Yes	Yes
Commercial Building Mounted (25 kW - Host)	Yes	Yes	No	No	Yes	Yes
Commercial Building Mounted (250 kW - TPO)	Yes	Yes	No	No	Yes	Yes
Commercial Building Mounted (250 kW - Host)	Yes	Yes	No	No	Yes	Yes
Carport (250 kW - TPO)	No	Yes	No	No	Yes	Yes
Commercial Building Mounted (500 kW - TPO)	Yes	Yes	No	No	Yes	Yes
Commercial Building Mounted (500 kW - Host)	Yes	Yes	No	No	Yes	Yes
Carport (500 kW - TPO)	No	Yes	No	No	Yes	Yes
Commercial Building Mounted (1000 kW - TPO)	Yes	Yes	No	No	Yes	Yes
Building Mounted Shared Solar (1000 kW - TPO)	Yes	Yes	No	Yes	No	No
Building Mounted Shared Solar (Located in LI Community) (1000 kW - TPO)	No	Yes	No	Yes	No	No
Ground Mounted (1000 kW - TPO)	Yes	Yes	No	No	No	No
Landfill (1000 kW - TPO)	No	Yes	No	No	No	No
Brownfield (1000 kW - TPO)	No	Yes	No	No	No	No
Gravel Pit (1000 kW - TPO)	No	Yes	No	No	No	No
Carport (1000 kW - TPO)	No	Yes	No	No	No	No
Ground Mounted (5000 kW - TPO)	Yes	Yes	No	No	No	No
Landfill (5000 kW - TPO)	No	Yes	No	No	No	No
Brownfield (5000 kW - TPO)	No	Yes	No	No	No	No
Gravel Pit (5000 kW - TPO)	No	Yes	No	No	No	No
Ground Mounted Shared Solar (5000 kW - TPO)	Yes	Yes	Yes	Yes	No	No
Ground Mounted Shared Solar (LI Offtaker w/Bonus) (5000 kW - TPO)	No	Yes	Yes	Yes	No	No
Landfill Shared Solar (5000 kW - TPO)	No	Yes	No	Yes	No	No
Brownfield Shared Solar (5000 kW - TPO)	No	Yes	No	Yes	No	No
Gravel Pit Shared Solar (5000 kW - TPO)	No	Yes	No	Yes	No	No
Ground Mounted (10000 kW - TPO)	No	Yes	No	No	No	No
Ground Mounted Shared Solar (10000 kW - TPO)	No	Yes	Yes	Yes	No	No
Brownfield Shared Solar (Non-Shared if REG) (10000 kW - TPO)	No	Yes	No	Yes	No	No
Gravel Pit Shared Solar (Non-Shared if REG) (10000 kW - TPO)	No	Yes	No	Yes	No	No
Ground Mounted (20000 kW - TPO)	No	Yes	No	No	No	No
Ground Mounted Shared Solar (20000 kW - TPO)	No	Yes	No	Yes	No	No
Brownfield Shared Solar (Non-Shared if REG) (20000 kW - TPO)	No	Yes	No	Yes	No	No

Note: Storage cases have identical blocks to Alt policy cases

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Appendix B: Net Metering Incentive Gaps

This table provides a breakdown of which resources were shown to be economical based on the modeled revenue requirements as compared to forecasted net metering revenue. Resources marked as "No" would require additional incentives in order to be economical and thus were not included in the modeling of program-wide benefits and costs.

Does Resource Block have sufficient NM revenue to be economical?

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Residential Building Mounted (7 kW - TPO)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residential Building Mounted (7 kW - Host)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residential Building Mounted (LI) (7 kW - TPO)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residential Building Mounted (LI) (7 kW - Host)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Building Mounted (25 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Building Mounted (25 kW - Host)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Building Mounted (250 kW - TPO)	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Commercial Building Mounted (250 kW - Host)	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Carport (250 kW - TPO)	No	No	No	No	No	No	No	No	No	No
Commercial Building Mounted (500 kW - TPO)	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Building Mounted (500 kW - Host)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carport (500 kW - TPO)	No	No	No	No	No	No	No	Yes	Yes	Yes
Commercial Building Mounted (1000 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ground Mounted (1000 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Landfill (1000 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brownfield (1000 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gravel Pit (1000 kW - TPO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Carport (1000 kW - TPO)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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Appendix C: Primary Input Assumption Sources

Cost/Benefit Stream	Primary Data Source
DG compensation*	CREST analysis, SEA retail rate projections (for the latter, see RIPUC Docket 23-03-EL)
Utility remuneration	Existing, proposed policies
Program administration	REG Program Factor Filings (see, most recently, RIPUC Docket 22-48-REG)
Energy value	AESC*, adjusted with updated AEO natural gas futures
Energy price effects - intrastate	AESC
Energy price effects – Other NE States	AESC
Capacity value	AESC
Capacity price effects - intrastate	AESC
Capacity price effects – Other NE States	AESC
Reduced transmission costs	AESC
Reduced distribution costs	RIE 2023 Energy Efficiency Plan Filing (see RIPUC Docket 23-33-EE)
REC value	SEA Projections (from SEA's New England Renewable Energy Market Outlook (REMO))
Improved reliability	AESC
Land use benefits	USFS EVALIDator, Delaware Valley Regional Planning Commission study
Non-embedded GHG emissions	AESC
Non-embedded NOx emissions	AESC
Economic development/macroeconomic	NREL's Jobs and Economic Development Impact model (JEDI)
Electric-Gas price effects - intrastate	AESC
E-G price effects - ROP	AESC
E-G-E price effects - intrastate	AESC
E-G-E price effects - ROP	AESC
LMI utility benefits	RIE 2023 Energy Efficiency Plan Filing (see RIPUC Docket 23-33-EE)

*AESC = 2021 Avoided Energy Supply Cost Study

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Appendix D: Summary of Relevant DG-Focused Provisions of Inflation Reduction Act of 2022 (P.L. 117-169)

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Investment Tax Credit (Existing §48 Authority)

- Credit Amount/Applicability to Eligible Resources
  - Increases maximum 2023 credit rate ***from 22% to 30%*** if project fulfills prevailing wage/apprenticeship requirements (with ***6% base credit***).
- Expansion to New Resources
  - Expands eligibility to include energy storage <=5 kWh (including resources paired with solar PV projects)
- Bonus Credit Eligibility:
  - Eligible for 10 percentage point ***domestic content, "energy communities" and ITC-specific low-income/disadvantaged community bonuses*** (10-20 percentage points) <u>only</u> for solar, wind and paired energy storage <5 MW
- Transmission/Distribution Interconnection Property for <=5 MW
  - Projects can now include interconnection property ***regardless of whether an electric utility owns it*** in the basis for calculating ITC's value

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Investment Tax Credit (§ 48) Phase-Out

- Extension is available for projects starting construction by end of year (EOY) 2024.
- ***Statutory placed-in-service deadline (end of year (EOY) 2025) eliminated***, subjecting eligible resources to existing rules requiring ***4-6 years of "continuous construction"***.
- Base/full credit structure (and thus prevailing wage/apprenticeship) requirements effective date was in early 2023
- Ability to claim bonus credits (as well as interconnection property in ITC basis) open to projects ***<u>placed in service</u> in 2023 and thereafter***, but limited to those ***starting construction by EOY 2024***.

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ITC (§ 48) Low Income/Disadv. Comm. Bonus Values (1)

- **Eligible Projects:** ITC-eligible solar and wind projects ***<5 MW*** (which appears to include ***both ITC-eligible solar and paired storage ILoPTC-eligible wind***
- **Bonus Credit Values:**
  - 10 percentage point additional ITC value, based upon the otherwise applicable credit value, ***for solar projects that are in a low-income community***, as defined in §45D (the New Markets Tax Credit program); or
  - 20 percentage point additional ITC value for solar projects that are 1) part of a ***low-income residential building project***; or 2) a l***ow-income economic benefit project*** where half the project's economic benefits go to recipients with income at 200% of the federal poverty line or below 80% of area median income

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ITC (§ 48) Low Income/Disadv. Comm. Bonus Values (2)

- Available Capacity Limitations & Project Selection
  - Added credits would be limited to ***1.8 GW per year nationwide*** (with carry-over of unused capacity permitted).
- Capacity Allocation (for 2023 – approach for 2024 unclear):
  - **Category 1 (Located in Low-Income Community):** 700 MW (10 percentage point ITC bonus)
  - **Category 2 (Tribal Land):** 200 MW (10 percentage point ITC bonus)
  - **Category 3 (Low-Income Residential Building Projects):** 200 MW (20 percentage point ITC bonus)
  - **Category 4 (Low-Income Economic Benefit Projects):** 700 MW (20 percentage point ITC bonus)
- Application/Selection Timing
  - **Category 3 & 4 projects:** Applications accepted Q3 2023, selections TBD
  - **Category 1 & 2 projects:** Applications accepted TBD, selections TBD
- Phase-Out Approach/Effective Date: Same as core ITC (***placed in service* 2023 and after**, but *starting construction by EOY 2024*)

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Successor Clean Energy Investment Credit (CEIC) (§48E)

- **Eligible Resources & Minimum Emission Requirements:** Any new resource with an emission rate "at or below zero" (net of carbon capture) is eligible (which functionally includes all non-biomass renewable energy)
- **Credit Amount/Applicability:** Same base (6%) and full rate (30%) structure as §48 ITC, and same 1 MW threshold for prevailing wage/apprenticeship requirements
- **Bonus Credit Eligibility:** CEIC/CEPC projects are eligible for same bonus credits, including energy communities, domestic content, and projects <=5 MW serving low-income/disadvantaged beneficiaries
- **Allowances for Transmission/Distribution Interconnection Property for Projects <=5 MW:** Same ability to count such property in CEIC basis as for § 48 ITC
- **Phase-Out:** Phases out in 2032 or later (based on national achievement of certain emission thresholds)

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For more information on this work, please visit OER's Evaluation of Rhode Island Distributed Generation Policies site

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