

Attachment 4-1
Rhode Island Energy
Summary of 2027 Electric Cost-Effectiveness Framework (Docket 4600)

(a)	(b)	(c)	(d)	(e)	(f)
Level	#	Mixed Benefit or Cost Category from Original Framework	Description of Benefit Versus Costs	Value	Notes
Power Sector	1	Energy Supply & Transmission Operating Value of Energy Provided or Saved (Time- & Location-specific LMP)	Benefit: Reduced Energy Costs	\$49,808,285	Electric benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix B (counterfactual #3) and Appendix J (counterfactual #3). Gas benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix C.
	2	Renewable Energy Credit Cost / Value	Benefit: Reduced REC Costs	See Column (f)	Wholesale cost of RECs is embedded in the retail avoided costs described in row #1.
	3	Retail Supplier Risk Premium	Benefit: Reduced Energy Costs	See Column (f)	Wholesale risk premium is embedded in the retail avoided costs described in row #1.
	4	Forward Commitment: Capacity Value	Benefit: Reduced Generation Capacity Costs	See Column (f)	Forward commitment capacity avoided costs are included in the value on row #1.
	5	Forward Commitment: Avoided Ancillary Services Value	Benefit: Reduced Ancillary Services Costs	See Column (f)	Not applicable.
	6	Utility / Third Party Developer Renewable Energy, Efficiency, or DER costs	Cost: Utility Administration and Measure Costs Cost: Third Party Developer Costs	\$58,702,514	Includes "Program Planning and Administration", "Rebates and Other Customer Incentives", "Sales, Technical Assistance, and Training", "Evaluation and Market Research", and the "Performance Incentive".
	7	Electric Transmission Capacity Costs / Value	Benefit: Reduced Transmission Costs	\$8,507,174	Includes PTF and Non-PTF transmission benefits. PTF benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix B (counterfactual #3). Non-PTF benefit is monetized using internal Company investment forecasts, FERC Form data, and Rhode Island ISR Plan data.
	8	Electric transmission infrastructure costs for Site Specific Resources	Cost: Increase Transmission Costs	See Column (f)	Currently no location-specific energy efficiency measures. All measures are offered across the service territory.
	9	Net risk benefits to utility system operations (generation, transmission, distribution) from DER flexibility and diversity.	Benefit: Reduced Risk	\$92,870	Benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix J (counterfactual #3).
	10	Option value of individual resources	Benefit: Reduced Risk	See Column (f)	Additional research necessary to determine applicability.
	11	Investment under Uncertainty: Real Options Cost / Value	Benefit: Reduced Risk	See Column (f)	Additional research necessary to determine applicability.
	12	Energy Demand Reduction Induced Price Effect	Benefit: Wholesale Market Price Suppression Effect	\$38,940,768	Benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix B (counterfactual #3), Appendix C, Appendix D, and Appendix J (counterfactual #3).
	13	Greenhouse gas (GHG) compliance costs	Benefit: Reduced GHG Compliance Costs	See Column (f)	Cost of compliance with GHG regulations is embedded in the retail avoided costs described in row #1.
	14	Criteria air pollutant and other env'tl compliance costs	Benefit: Reduced Environmental Compliance Costs	See Column (f)	Cost of compliance with criteria air pollutant regulations is embedded in the retail avoided costs described in row #1.
	15	Innovation and Learning by Doing	Benefit: Innovation and Market Transformation	See Column (f)	Additional research necessary to determine applicability. Possibly non-zero through pilots, demonstrations, and assessments. Likely of minimal value.
	16	Distribution capacity costs	Benefit: Reduced Distribution Costs Cost: Increased Distributions Costs	\$8,667,801	Benefit is monetized using internal Company investment forecasts, FERC Form data, and Rhode Island ISR Plan data.
	17	Distribution delivery costs	Benefit: Reduced Distribution Costs Cost: Increased Distributions Costs	See Column (f)	Additional research necessary to determine applicability.
	18	Distribution system performance	Benefit: Reduced Distribution Costs Cost: Increased Distributions Costs	See Column (f)	Additional research necessary to determine applicability.
	19	Utility low income	Benefit: Utility Non-Energy Benefits	\$98,837	Includes "reduced arrearages", "bad debt write-offs", "terminations and reconnections", "notices", "safety related emergency calls", and "customer calls and collections". Embedded in row #22.
	20	Distribution system and customer reliability / resilience impacts	Benefit: Reduced Distribution Costs Cost: Increased Distributions Costs	See Column (f)	See row #9.
	21	Distribution system safety loss/gain	Benefit: Reduced Distribution Costs Cost: Increased Distributions Costs	See Column (f)	Additional research necessary to determine applicability.

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Customer	22	Program participant / prosumer benefits / costs	Benefit: Participant Non-Energy Benefits	\$22,616,253	Non resource and non-energy impacts may include but are not limited to labor, material, facility use, health and safety, materials handling, national security, property values, and transportation. Includes utility non-energy benefits described in row #19.
			Cost: Participant Measure Costs Cost: Participant Non-Energy Costs	\$12,030,704	Participant cost defined as the measure cost not covered by the rebates and other customer incentives described in row #6. Of note, participant cost nets out cost paid by free-riders for energy efficiency measures they would have installed regardless of the Company's programs.
	23	Participant non-energy costs/benefits: Oil, Gas, Water, Waste Water	Cost: Increased Water and Other Fuel Use Benefit: Reduced Water and Other Fuel Use	\$14,524,668	Gas benefit is embedded in row #1. Oil and Propane benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix D. Water and waste water benefit is monetized using population-weighted county-specific water and waste water rates.
	24	Low-Income Participant Benefits	Benefit: Low-Income Participant Non-Energy Benefits	See Column (f)	Embedded in row #22.
	25	Consumer Empowerment & Choice	Benefit: Customer Empowerment	See Column (f)	Additional research necessary to determine applicability.
	26	Non-participant (equity) rate and bill impacts	Not an input to the cost-effectiveness analysis	See Column (f)	See Attachment 5, Table E-9 and Attachment 6 Table G-9.
Societal	27	Greenhouse gas externality costs	Benefit: Reduced GHG Impacts	\$28,065,344	Benefit is monetized using retail avoided costs sourced from AESC 2024, Appendix B (counterfactual #3), and Appendix G (counterfactual #3). Note, non-CO2 GHGs and state policy considerations were applied in the AESC 2024 User Interface.
	28	Criteria air pollutant and other env'tl externality costs	Benefit: Reduced Environmental Impacts (non-GHG)	\$1,489,744	NOx benefit is monetized using retail avoided costs sourced from AESC 2021, Appendix B (counterfactual #3). AESC 2024 does not produce NOx avoided costs.
	29	Conservation and community benefits	Benefit: Reduced Environmental Impacts (non-GHG)	See Column (f)	Additional research necessary to determine applicability.
	30	Non-energy costs/benefits: Economic Development	Benefit: Economic Development Impacts	\$97,434,908	Presented separate from the cost-effectiveness analysis. Economic benefits are calculated by applying multipliers developed by the Brattle Group in the report "Economic Impacts of Rhode Island Energy's 2023 Annual Energy Efficiency Plan" to program implementation expenses. See Attachment 5, Table E-4 and Attachment 6, Table G-4.
	31	Innovation and knowledge spillover (Related to demonstration projects and other RD&D)	Benefit: Innovation and Market Transformation (included in the Power Sector)	See Column (f)	Additional research necessary to determine applicability. Possibly non-zero through pilots, demonstrations, and assessments. Likely of minimal value.
	32	Societal Low-Income Impacts	Benefit: Societal Low-Income Benefits	See Column (f)	Embedded in row #22.
	33	Public Health	Benefit: Public Health Benefits	See Column (f)	Embedded in row #22.
	34	National Security and US international influence	Benefit: Energy Security Benefits	See Column (f)	Embedded in row #22.

Notes:

1) Columns (a), (c), and (d) sourced from "The Rhode Island Cost-Effectiveness Framework, Methodologies for Developing Inputs for Distributed Energy Resources", Page 6, Table 1.