

Docket No. 4770
Tenth Set of Data Requests of the
Division of Public Utilities and Carriers to National Grid
January 12, 2018

PST Factor

- 10-1. Refer to Appendix 10.10, page 277, regarding the Annual Report on PST Plan Activities which the Company proposes to file by August 1 of each year. The text states that circumstances “may require reasonable deviations from the original PST Plan for the PST Plan Year approved by the Commission. In such cases, for each PST Initiative, the Company shall include in the report an explanation of (1) Actual Capital Investment in excess of Forecasted Capital Investment by ten (10) percent, and (2) Actual O&M Expense in excess of Forecasted O&M Expense by ten (10) percent. For cost recovery purposes, the Company has the burden to show that any such deviations were due to circumstances out of its reasonable control or, if within its control, were reasonable and prudent.”
- a. Please describe the Company’s proposal regarding the process for review and approval of any cost deviations, including whether such a review would occur within a separate proceeding, whether parties would have an opportunity to ask discovery, and the proposed duration of the review process.
 - b. Please describe how the Company would provide assurance that all costs were assigned to appropriate cost categories and not allocated to non-PST categories.
 - c. If any costs associated with achieving the PIM targets for system efficiency, distributed energy resources, and network support services will be recovered through the PST tracker, does the Company believe that cost overages necessary to achieve the targets should be considered prudent?

Response can be found on Bates page(s) 1-2.

PST Initiative Benefit-Cost Analyses

- 10-2. Refer to Appendix 2.1, page 16, regarding the assumed number of electric vehicles that will be adopted due to the construction of each port, by vehicle type.
- a. Please discuss whether the development of these assumptions accounted for state-specific factors such as the price of electricity relative to gas, state incentive programs for electric vehicles, or other factors in order to tailor the estimated ratios to Rhode Island. If so, please provide such calculations. If not, please explain why not.
 - b. Please provide all data and studies used to develop the assumptions in (a). Please provide the requested data in machine-readable format with all formulas intact.

- c. Do these adoption rates depend on the location of the charging port within National Grid's territory, such as in dense urban areas or along highways rather than in more rural areas?
- d. If the response to (c) is yes, please explain whether and how the decision regarding where to install a charging port will take into account the assumed incremental adoption rate of that location.

Response can be found on Bates page(s) 3-38.

- 10-3. Refer to Appendix 2.1, page 24, regarding wholesale market price impacts. Please explain why the wholesale market price impact is only included in the RIM test, and whether this is consistent with current practice for energy efficiency cost-effectiveness.

Response can be found on Bates page(s) 39.

- 10-4. Refer to Appendix 2.1, pages 28-29, regarding the cost categories for the transportation electrification initiative.
- a. Please provide all assumptions, data, and calculations for the costs of the transportation electrification initiative. Please provide the requested data in machine-readable format with all formulas intact.
 - b. Please provide a detailed description of the total program administration costs and the assumptions used to develop this cost category. Please provide the requested data in machine-readable format with all formulas intact.
 - c. Has the Company performed an analysis of whether there are any locations on its system where distribution system infrastructure upgrades would be required prior to installing EV charging stations? If yes, please provide this analysis.
 - d. Please describe whether and how the cost of distribution system infrastructure upgrades at various locations will impact which sites are chosen for DC fast charging investments, if at all.
 - e. Please describe whether and how the cost of distribution system infrastructure upgrades at various locations will impact which sites are chosen for non-DC fast charging investments, if at all.
 - f. Please identify who would bear the costs of any distribution system infrastructure upgrades required to install EV charging stations.
 - g. Has the Company estimated the cost of any distribution system infrastructure upgrades that might be necessary in order to install the planned charging stations? If so, please provide such estimates. Please provide the requested data in machine-readable format with all formulas intact.

Response can be found on Bates page(s) 40-58.

10-5. Refer to Appendix 2.1, pages 64- 80, regarding energy storage.

- a. Does this section refer only to utility-owned storage, as described in PST Book 1, Chapter 7?
- b. If the answer to (a) is yes, please reconcile the statement on Schedule PST - 1, Chapter 7, page 1 that “the Company proposes to install and own approximately two MWh of energy storage” with the 1.25 MWh of storage identified on page 65 of Appendix 2.1.
- c. Please explain why the Company expects to charge and discharge the battery on a daily basis, rather than only for a small subset of system peak hours.
- d. Has the Company analyzed whether the daily on-peak to off-peak price ratios are sufficient to make it economic to charge and discharge the battery on a daily basis, rather than only for a small subset of system peak hours? If so, please provide this analysis in machine-readable format with all formulas intact.
- e. Will the customer at whose site the battery is located pay for the energy from the grid used to charge the battery?
- f. If the answer to (e) is yes, please provide the expected rate schedule that would apply for distribution service.
- g. If the answer to (e) is yes, please provide the supply service rates that are expected to apply.
- h. If the host customer is assessed a demand charge, please explain how the demand charge would be taken into account when determining when to charge and discharge the battery.
- i. Please provide the assumed battery degradation over the battery lifetime due to cycling, environmental factors, or other factors, and any supporting data used to develop this assumption.
- j. Please provide the number and capacity of behind-the-meter storage systems owned by the Company’s C&I customers. Please provide the requested data in machine-readable format with all formulas intact.
- k. Does the Company procure any demand response services from the systems identified in (j) for the purposes of system peak reductions or local transmission or distribution capacity benefits? If yes, please describe the program(s). If no, please explain why not.

- l. Has the Company analyzed the procurement of capacity and energy services from customer-owned storage relative to utility-owned storage? If yes, please provide all relevant data and analyses in machine-readable format. If not, please explain why not.
- m. Please explain what benefits utility-owned and operated storage provides relative to procurement of capacity and energy services from customer-owned storage.
- n. Please describe what the “lease charge” is that is referenced on page 79 of Appendix 2.1.

Response can be found on Bates page(s) 59-62.

Performance Incentives

10-6. Regarding the Complex Capital Projects Capital Cost Incentive:

- a. Please provide a definition for “complex capital projects”.
- b. How will the Company determine whether a capital project qualifies as “complex” and thereby included in the metric for this incentive?
- c. Please describe how the Company currently estimates ISR project costs, including who is responsible for the cost estimates and what data sources are used to develop the estimates.
- d. Please discuss whether the Complex Capital Projects Capital Cost Incentive would create an implicit incentive for the Company to over-estimate project costs in order to ensure that the delivered cost would be less than the estimate?
- e. Has the Company reviewed its historical accuracy in estimating complex capital costs? If so, please describe the Company’s historical accuracy, and provide supporting data if available. Please provide the requested data in machine-readable format with all formulas intact.

Response can be found on Bates page(s) 63-67.

10-7. Regarding the Construction Costs per Mile Productivity Incentive:

- a. The Company states that this incentive is still in development. Is the Company requesting approval of this incentive in the instant proceeding?
- b. Please describe the rationale for this incentive and provide data to support your response. For example, have per-mile overhead distribution line construction costs been increasing at a faster rate than other costs? Please provide supporting data in machine-readable format with all formulas intact.

- c. Please describe the types of strategies that the Company might employ to reduce per-mile distribution line construction costs.

Response can be found on Bates page(s) 68-69.

10-8. Refer to Appendix 2.1, page 4, regarding benefits and costs accounted for.

- a. Please explain why there are no avoided distribution capacity, O&M, or losses associated with any of the projects, particularly company owned storage.
- b. Please define “Lost Utility Revenues (Cost shift from non-participants to [truncated])”.
- c. Please explain how lost utility revenues are calculated for electric transportation and provide the calculations with supporting data and assumptions. Please provide the requested data in machine-readable format with all formulas intact.
- d. Please explain how lost utility revenues are calculated for electric heat and provide the calculations with supporting data and assumptions. Please provide the requested data in machine-readable format with all formulas intact.
- e. Please explain how lost utility revenues are calculated for company owned solar and provide the calculations with supporting data and assumptions. Please provide the requested data in machine-readable format with all formulas intact.
- f. Please explain how lost utility revenues are calculated for company owned storage and provide the calculations with supporting data and assumptions. Please provide the requested data in machine-readable format with all formulas intact.
- g. Please explain why the category of lost revenues is included in the utility cost test.

Response can be found on Bates page(s) 70-72.

10-9. Regarding the Monthly Peak Demand Reduction incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?

- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please provide the rationale for only allocating 1.75 basis points to the achievement of the associated target, whereas the Annual Peak Demand Reduction incentive target is allocated 12 basis points.

Response can be found on Bates page(s) 73-77.

- 10-10. Regarding the Annual Peak Demand Reduction incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):
- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
 - b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
 - c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
 - d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.

Response can be found on Bates page(s) 78-84.

- 10-11. Regarding the Off-Peak Charging Rebate Pilot Participation incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):
- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.

- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 85-86.

10-12. Regarding the Distributed Generation (“DG”) – Friendly Substations incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 87-88.

10-13. Regarding the Demand Response – Residential Participation incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please provide the historical number of enrolled residential customers, by month, in the ConnectedSolutions program. Please provide the requested data in machine-readable format with all formulas intact.
- b. Please provide the magnitude of any incentives offered to customers through the ConnectedSolutions program, including any changes in incentive levels over time. Please provide the requested data in machine-readable format with all formulas intact.
- c. Please provide the historical costs of operating the ConnectedSolutions program by cost category. Please provide the costs by month, or in the most granular format available. Please provide the requested data in machine-readable format with all formulas intact.
- d. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets that will be developed in the 2019 energy efficiency plan.
- e. Please explain how the costs associated with (d) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- f. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- g. If the answer to (f) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- h. Please explain why the allocated basis points for this incentive are reasonable when the targets have not yet been developed.

Response can be found on Bates page(s) 89-93.

10-14. Regarding the Demand Response – C&I Participation incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the Company's current C&I demand response programs, and when each program began.
- b. Please provide the historical number of enrolled C&I customers, by month, in the Company's current C&I demand response programs. Please provide the requested data in machine-readable format with all formulas intact.
- c. Please provide the magnitude of any incentives offered to customers through the Company's C&I demand response programs, including any changes in incentive levels over time. Please provide the requested data in machine-readable format with all formulas intact.
- d. Please provide the historical costs of operating the Company's C&I demand response programs by cost category. Please provide the costs by month, or in the most granular format available. Please provide the requested data in machine-readable format with all formulas intact.
- e. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets that will be developed in the 2019 energy efficiency plan.
- f. Please explain how the costs associated with (e) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- g. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- h. If the answer to (g) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- i. Please explain why the allocated basis points for this incentive are reasonable when the targets have not yet been developed.

Response can be found on Bates page(s) 94-98.

- 10-15. Regarding the Electric Heat Program incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 99-100.

10-16. Regarding the Electric Vehicles incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 101-102.

10-17. Regarding the Behind the Meter Storage incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 103-104.

10-18. Regarding the Company-Owned Storage incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets

- ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable, given that the Company will presumably earn a return on the storage investment.

Response can be found on Bates page(s) 105-106.

10-19. Regarding the AMF Customer Engagement and Deployment incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why an incentive is warranted for delivering a customer engagement plan.
- f. Please explain why an incentive is warranted for conducting and reporting on customer awareness.
- g. Please explain why an incentive is warranted for commencing mass scale meter deployment.
- h. Please explain the target “30% deployment and customer portal access.” Does this target mean that 30% of customers have accessed the portal? Or that 30% of customers could theoretically access the portal?
- i. Please explain why the incentive for 30% deployment and customer portal access is reasonable.

Response can be found on Bates page(s) 107-109.

10-20. Regarding the Volt/Var Optimization (“VVO”) Pilot Delivery incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why it is appropriate to provide an incentive for the project being in service.
- f. Please explain whether the target for 2021 is incremental to the 2020 target.
- g. Please explain why the basis point allocation for these targets is reasonable.

Response can be found on Bates page(s) 110-135.

10-21. Regarding the Interconnection Support – Time to ISA incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:

- i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 136-137.

10-22. Regarding the Interconnection Support – Average Days to System Modification incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?
- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 138.

10-23. Regarding the Interconnection Support – Estimate versus Actual Costs incentive and the annual targets contained in Appendix 10.10 (as R.I.P.U.C. No. 2205, Sheet 15, Appendix A):

- a. Please describe the actions, investments, and activities that the Company expects to undertake to achieve the targets.
- b. Please explain how the costs associated with (a) will be recovered from customers, if at all. For example, will these costs be included in the PST Plan and recovered through the PST Factors?
- c. Has the Company or its consultants conducted a cost-benefit analysis associated with achieving the targets?

- d. If the answer to (c) is yes, please provide the cost-benefit analysis in machine readable format with all formulas intact. If not, please provide the following in machine-readable format with all formulas intact:
 - i. The expected benefits of achieving the annual targets
 - ii. The expected costs associated with achieving the targets, not including the financial incentives paid to the Company for achieving the targets.
- e. Please explain why the allocated basis points for this incentive are reasonable.

Response can be found on Bates page(s) 139.

- 10-24. Please describe the factors considered by the Company when developing its proposed allocation of basis point incentives across the various performance incentive mechanisms, and how those factors resulted in the proposed allocations.

Response can be found on Bates page(s) 140.

- 10-25. Please identify each instance where the achievement of one PIM target might also contribute to the achievement of another PIM target; i.e., where there is overlap among the PIMs.

Response can be found on Bates page(s) 141-142.

- 10-26. Please explain how the Company incorporates the value of peak load reduction when evaluating the need for additional “Distribution”, “Transmission”, or “Generation” capacity. Please provide specific examples where such an analysis was performed.

Response can be found on Bates page(s) 143-145.