nationalgrid

Raquel J. Webster
Senior Counsel

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BY ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Docket 5099 - Proposed FY 2022 Gas Infrastructure, Safety, and Reliability Plan
Responses to PUC Data Requests – Set 4

Dear Ms. Massaro:

I have enclosed an electronic version of National Grid's[1] responses to the Rhode Island Public Utilities Commission's Fourth Set of Data Requests in the above-referenced matter.

Thank you for your attention to this matter. If you have any questions, please contact me at 781-907-2121.

Very truly yours,

Raquel J. Webster

Enclosures

cc: Docket 5099 Service List
Leo Wold, Esq.
Al Mancini, Division
John Bell, Division
Rod Walker, Division

[1] The Narragansett Electric Company d/b/a National Grid ("National Grid" or "Company").

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Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

Joanne M. Scanlon

January 29, 2021
Date

Docket No. 5099- National Grid's FY 2022 Gas Infrastructure, Safety and Reliability (ISR) Plan - Service List 1/7/2021

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PUC 4-1

Request:

Referring to Bates page 17 and the "hybrid" solution for Aquidneck Island, please provide a more complete explanation of the hybrid solution, explaining how the infrastructure and non-infrastructure components address the identified reliability problem, compared to other alternatives. Please also provide cost estimates for each of the infrastructure and non-infrastructure components being considered.

Response:

The Company is proposing a "hybrid" approach that includes both new infrastructure and non-infrastructure components to address the gas capacity constraint and vulnerability needs facing Aquidneck Island. The infrastructure element of the "hybrid" approach replace the current portable LNG operations at Old Mill Lane. The non-infrastructure elements of the "hybrid" approach offset incremental demand growth, which would otherwise diminish the contingency capacity provided by new infrastructure over time. This non-infrastructure portfolio will be sized to offset incremental demand growth. The "hybrid" approach addresses multiple stakeholders' concerns with current portable LNG operations at Old Mill Lane and maintains contingency capacity, which each alternative did not provide on its own.

The Company is considering one of three potential infrastructure options to replace current portable LNG operations at Old Mill Lane: (1) Portable LNG at a new site on Navy-owned property; (2) Permanent LNG Storage at a new site on Navy-owned property; and (3) use of an LNG barge for offshore storage and vaporization. The final infrastructure solution, once chosen, will address the island's capacity constraint and provide contingency capacity in the event of upstream disruptions on the Algonquin Gas Transmission ("Algonquin") G-4 lateral.

As part of its process to develop the Aquidneck Long-Term Capacity Study, the Company modeled costs for each of these alternative solutions. All costs were expressed as Net Present Value (NPV) of Costs from 2021/22-2034/35 and will be subject to further revision if the Company develops new cost estimates.

- Portable LNG at a New Site on Navy-Owned Property: $101M NPV of Infrastructure costs
- Permanent LNG Storage on Navy-Owned Property: $107M-$123M NPV of Infrastructure costs (depending on whether permanent LNG displaces trucked LNG at Old Mill Lane or new portable operations at a Navy site)
- LNG Barge: $72M NPV of Infrastructure costs

Prepared by or under the supervision of: Stephen Caldwell and Amy Smith

PUC 4-1, page 2

The non-infrastructure elements of the "hybrid" approach include incremental energy efficiency and demand response initiatives. Table PUC 4-1-1shows the total contingency capacity provided by a new LNG facility with and without non-infrastructure components. By 2034/35, design hour contingency capacity for an approach without non-infrastructure components is equivalent to 29% of hourly capacity at the Portsmouth take station; with infrastructure, contingency capacity is substantially higher, at 48% of hourly capacity at Portsmouth. An approach which does not include non-infrastructure components would therefore be more susceptible to upstream supply disruptions.

Table PUC 4-1-1

Assumes new LNG facility begins operations in 2024.

Contingency Capacity as % of Design Hour Capacity at Portsmouth											
	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
With Non-Infrastructure Portfolio	44%	44%	44%	44%	45%	46%	46%	47%	47%	47%	48%
Without Non-Infrastructure Portfolio	36%	36%	35%	34%	34%	33%	32%	31%	30%	29%	29%

The Company has modeled costs for incremental energy efficiency and demand response initiatives included in the non-infrastructure component of the "hybrid" approach. All costs are expressed as Net Present Value of Costs from 2021/22-2034/35 and will be subject to further revision subsequent to more detailed program design.

- Incremental Energy Efficiency: $13M NPV of Non-Infrastructure Costs
- Incremental Demand Response, including continuation of current 2-customer pilot: $9M NPV of Non-Infrastructure Costs

As detailed in the Aquidneck Island Long-Term Capacity Study, the Company also considered a pipeline project. An Algonquin pipeline project could range from a narrowly targeted reinforcement project (which would address the island's vulnerability needs but not the capacity constraint, which would require additional infrastructure or non-infrastructure solutions) to a broader system expansion which would address regional needs of multiple utilities and solve both the capacity constraint and vulnerability needs. A pipeline project was deprioritized due to cost, timeline, and feasibility (e.g., permitting) concerns. Additional detail can be found in the

Aquidneck Island Long-Term Capacity Study, published in September 2020.
The Company also considered continuing portable LNG operations at the current Old Mill Lane site. Over the years, a residential neighborhood has built up around the Old Mill Lane site, and now multiple stakeholders—local residents, town councils, and state representatives—have expressed concerns about the Company continuing to operate at the Old Mill Lane site. In response to these concerns, the Company is advancing the above-listed alternatives to the

recurring use of LNG at Old Mill Lane, with the objective of balancing stakeholder feedback, technical and financial assessment of alternatives, and the need to advance solutions at the lowest cost to the Company's customers.

The Company also modeled costs for each of these alternative solutions. All costs were expressed as Net Present Value of Costs from 2021/22-2034/35 and could be subject to further revision.

- Portable LNG at Old Mill Lane: $31M NPV of Infrastructure Costs + $22M NPV of Non-Infrastructure Costs (sized to maintain contingency capacity against demand growth).
- Algonquin Targeted Reinforcement Project: $98M NPV of Infrastructure Costs + $49M NPV of Non-Infrastructure Costs. Non-Infrastructure solutions were sized to address the capacity constraint after the vulnerability need is met by the reinforcement project. Non-Infrastructure solutions were modeled as incremental programs on Aquidneck Island, but could potentially come upstream on Algonquin in certain other parts of Rhode Island, which could reduce the cost of achieving the necessary demand reductions.

PUC 4-2

Request:

Referring to Bates page 17 and the "hybrid" solution for Aquidneck Island, please explain why there would be a residual need for a non-infrastructure component after the infrastructure component is in place. Why would the infrastructure component not solve the reliability issue without the addition of efficiency, demand response, and electrification?

Response:

As described in the Company's Aquidneck Island Long-Term Natural Gas Capacity Study, Aquidneck Island faces both a natural gas capacity constraint reliability need and a capacity vulnerability reliability need.

Without being able to count on having the operational flexibility with Algonquin Gas Transmission, LLC ("AGT"), which the Company historically relied upon to meet projected peak demand under design day/hour conditions, the Company has identified a gap between the gas capacity available to the Company on Aquidneck Island and forecasted design day and design hour gas demand. This is the capacity constraint need that must be addressed.

Aquidneck Island faces a second and distinct reliability need in terms of capacity vulnerability. Even if the Company were able to match projected peak demand with available pipeline capacity after accounting for the loss of operational flexibility on AGT, there could still be unexpected upstream disruptions that would limit available pipeline capacity and lead to customer service interruptions.

As detailed in the Company's response to Data Request PUC 4-1, the infrastructure component of the "hybrid" solution will solve the capacity constraint on Aquidneck Island. The infrastructure component will also provide contingency capacity (i.e., available gas capacity that is greater than projected peak customer demand) so that, in the event of a pipeline disruption, the new infrastructure would avoid or significantly reduce the degree of customer service interruptions (depending on the level of customer gas demand and on the magnitude of the disruption). However, demand growth on the island will reduce the size of contingency capacity provided by an infrastructure solution. Over time, this would mean that, all else equal, the number of customer service interruptions from a given level of pipeline disruption would increase. The non-infrastructure element of the "hybrid" approach will offset demand growth and preserve the contingency capacity available to meet an upstream disruption. Please also see the Company's response to Data Request PUC 4-1 for more details.

Prepared by or under the supervision of: Stephen Caldwell and Amy Smith

PUC 4-3

Request:

Referring to Bates page 17 and the "hybrid" solution for Aquidneck Island, how is the Company contemplating that the costs for the non-infrastructure solution would be recovered from ratepayers? What would be the annual revenue requirement for the non-infrastructure component and over how many years would the related revenue requirement be recovered in rates?

Response:

The Company anticipates seeking approval and recovery for the incremental costs associated with the non-infrastructure elements of the "hybrid" solution through the System Reliability Procurement ("SRP") process. While an SRP-based request for incremental funds to be used in support of locational demand side resource development intended to reduce potential gas capacity vulnerabilities (as opposed to the more traditional avoidance or deferral of otherwise necessary infrastructure investment) would be a novel use of the SRP process, the Company believes that it represents the most appropriate vehicle for consideration and adjudication of this funding request.

While the Company's current estimates of these incremental costs are provided in Attachment 4-3-1, the Company would also anticipate further refining and validating these preliminary estimates as a core component of preparing the SRP filing through which approval and cost recovery would be sought.

The Company does not currently anticipate capitalizing any of these expenses. Rather, costs would be expensed and recovered on an annualized basis, through the Company's existing volumetric, fully reconciling SRP factor embedded into the Company's annual energy efficiency gas system benefit charges. Therefore, the estimated annual revenue requirement would equal the estimated incremental expenses outlined in the Attachment.

Prepared by or under the supervision of: Amy Smith and Christopher Porter

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 5099
In Re: Gas Infrastructure, Safety, and Reliability Plan FY2022
Attachment PUC 4-3-1

Period	Nominal Cost (in millions)
2021-22	$1.0
2022-23	$1.2
2023-24	$1.7
2024-25	$1.9
2025-26	$2.2
2026-27	$2.3
2027-28	$2.8
2028-29	$3.1
2029-30	$3.4
2030-31	$3.7
2031-32	$4.0
2032-33	$4.2
2033-34	$4.4
2034-35	$4.4