nationalgrid

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James M. Van Nostrand, Chair
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Impact of Everett Marine Terminal

Dear Chair Van Nostrand:

On behalf of Boston Gas Company d/b/a National Grid ("Company"), enclosed are the Company's responses to the questions issued by the Department of Public Utilities on June 30, 2023 regarding the potential closure of the Everett Marine Terminal.

Thank you for your attention to this matter.

Very truly yours,

Andrea G. Keeffe

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Request 1:

Indicate whether the LDC relies on the Everett LNG facility for gas supply for its customers, including whether the LDC may rely on the Everett LNG facility on a design day.

Response:

National Grid has had to rely on the Everett LNG facility for many years, as a critical gas resource. National Grid utilizes the Everett LNG facility within the gas-resource portfolio in both liquid and vapor form to meet design hour, design day, and design season customer requirements.

In New England, Tennessee Gas Pipeline Company ("TGP") and Algonquin Gas Transmission LLC ("AGT") are the only two interstate natural gas pipelines regulated by the Federal Energy Regulatory Commission that transport natural gas to National Grid for distribution to Boston Gas Company's customers from highly traded supply points south and west of the service territory[i]. The Everett LNG facility has a direct connection with National Grid's distribution system that allows National Grid to access supply from the Everett LNG facility without requiring access to transportation on TGP and AGT.

In addition, to the extent the Company's portfolio of transportation contracts with TGP and AGT, and on-system resources such as LNG, are insufficient to meet customer requirements, the Company has the ability to secure incremental vapor deliveries from the Everett LNG facility. In particular, during short periods of cold weather when the Company's on-system LNG facilities are stressed, the Company purchases gas volumes from the Everett LNG facility in order to maintain inventory levels in its own facilities. Additionally, when TGP and AGT experience outages or supply disruptions affecting deliveries into the Company's distribution system during both peak and off-peak periods, the Company is able to secure supply directly from the Everett LNG facility to mitigate the affect of these losses.

[i] Maritimes & Northeast Pipeline, LLC ("Maritimes") is also directly connected to the Company's distribution system in Haverhill, MA. However, gas transported on Maritimes is not typically domestically sourced from points south and west, but instead is sourced from imported LNG.

Request 2:

Describe in detail your LDC's plans to replace the gas supply currently sourced from Everett, if any, if Everett ceases operations next year. Please include a discussion of whether expanded demand-side resources will be explored.

Response:

In 2007, Constellation filed an application under Section 3 and Section 7 of the Natural Gas Act to obtain authorization to abandon services pursuant to its tariff and to cancel its tariff. FERC approved this request in July 2008 and, as a result, the facility was no longer subject to regulation of rates, rate caps for service offerings, and abandonment protection. Accordingly, the Company began to develop a multi-pronged approach to meet portfolio needs for both winter vapor and summer refill requirements.

Supply Side Solutions: In D.P.U. 15-134, the Company received approval to enter into a 20-year firm transportation agreement with TGP for the Northeast Energy Direct ("NED") project that would deliver ~152,000 Dth/day to the Company's service territory and provide pressure guarantee at critical areas of need within the portfolio. NED would have made the Company independent of Constellation for winter vapor based on the forecast at the time. To alleviate the Company's reliance on the Everett terminal for summer refill, the Company also signed precedent agreements to build liquefaction at Providence where it has long held storage with its FERC regulated affiliate and in Charlton, MA. These two liquefaction projects to satisfy Boston's existing refill requirements have either been fully commissioned or are in the final phases of testing to commence service.

In April 2016, TGP withdrew its application at the FERC for NED, citing inadequate capacity commitments. Since the suspension of NED, the Company has successfully met a portion of its forecasted need by acquiring ~22,000 dth/day of capacity on AGT's Atlantic Bridge project that was turned back by an anchor customer, as well as capacity on AGT, TGP and Maritimes and Northeast Pipeline that can *only* be utilized to transport imported LNG.

Absent the addition of new infrastructure into the region, incremental supplies available to the Company will continue to be limited to imported LNG by a limited number of suppliers. As the upstream pipelines serving the Company's distribution system continue to become more constrained, the operational flexibilities which those pipelines have historically provided are expected to diminish. Historically, the Company has had operational flexibility behind each of its take stations on AGT and TGP, within the limits of its total contracted capacity on each pipeline. In recent years, as pipelines serving the Northeast become more heavily utilized by LDCs and generators, the Company has experienced restrictions on this flexibility and in some cases warning by the pipelines that it may issue orders under its tariff for customers, including the Company, to

limit their hourly takes to calculated hourly flow limits at each take station. The Company has therefore in recent years made certain planning decisions to prepare for the potential interruption of operational flexibility at an hourly level.

Strategies to safely and reliably meet a portion of its requirements beginning with the winter of 2024/25 include both supply side and demand side resources. Supply-side and on-system solutions include a combination of: (1) existing pipeline capacity originating from LNG import terminals; (2) incremental pipeline capacity from an upstream pipeline expansion project; (3) increased vaporization at existing LNG facilities; (4) portable LNG; and (5) major on-system pipeline system projects to transport volumes from where they are available to where they are needed. It should be noted that it will take many years to develop, construct, and commission the above-referenced projects in order to get them into service and provide broad benefit to the gas system. A number of these projects are currently included in the Company's 10-year capital investment plan and others are under further consideration and/or extend beyond the 10-year planning timeframe.

To further leverage any existing interstate pipeline capacity as a substitute for Everett, the Company would require major new on-system infrastructure to increase system utilization into this same area of Boston. In evaluating this possibility, the Company must consider the maximum allowable operating pressure of the area being served by the facilities, as well as the length of pipeline and constructability to move gas supply into where it is needed on the distribution system.

The Company is pursuing permanently increasing LNG vaporization capacity at several of its existing LNG facilities as well as implementing portable injection sites. However, although incremental LNG plant volumes supplement the overall supply portfolio and address peak hour imbalances, they generally do not benefit or support the imbalance which exists in areas fed or supplied from Everett. Further, increased vaporization at existing facilities without an expansion of storage will not address any seasonal shortfall in the portfolio and will increase the Company's reliance on transportation of LNG via trucks into the Company's facilities throughout the winter months.

Demand Side Solutions: In addition to supply-side resources, the Company has and continues to explore incremental demand-side resources, including targeted outreach efforts and localized enhanced incentives for gas energy efficiency and gas to electric conversions of customer space and water heating loads, as well as the launch of gas demand response programs.

In light of the demand side contributions already being made through the Company's existing, approved energy efficiency and electrification programs, the potential impact of these incremental demand side resources is likely to be small as compared to the scale of the need that would be created should Everett cease operations (or the opportunities afforded by the supply side strategies identified above).

Additionally, policy questions remain regarding the incremental cost of these solutions, the impact of any locally enhanced incentives on Company ability to deliver on existing statewide energy efficiency and electrification targets, the cost effectiveness of these potential offerings under the current energy efficiency avoided cost framework, and the scope of potential solutions (including incentivizing customer fuel switching from natural gas to deliverable fuels during peak periods) that would be appropriate for inclusion in any portfolio of demand response offerings. The Company anticipates continuing to explore these questions, and, to the extent that a determination is made to pursue any incremental demand side resources as a component of a portfolio of solutions would likely do so either through a mid-term modification proposal under the current three year energy efficiency plan framework, or as a component of the 2025-2027 Three Year Energy Efficiency Plan, to be filed with the Department in October 2024.

Request 3:

What are the cost implications for LDC consumers if Everett ceases operations next year?

Response:

The cost implications for LDC consumers if the Everett LNG facility ceases to operate next year are unknown at this time. A number of significant factors will influence the cost implications for LDC consumers, including but not limited to:

- Regional Supply/Demand Balance: With few suppliers able to import LNG into New England and a lack of new gas pipeline infrastructure into New England limiting access to low-cost domestic supplies, continued reliance on the delivery of imported LNG supplies to satisfy existing and forecasted requirements exposes customers to price volatility and supply reliability risk. Should Constellation cease operation of the Everett LNG facility, the region will be solely reliant on the willingness of Repsol and Excelerate, the two remaining LNG importers to New England, to supply LNG into the region. Further, even when Repsol and Excelerate will agree to supply LNG, incremental pipeline transportation capacity on Algonquin, Tennessee, and Maritimes will be necessary to deliver such supplies to LDC consumers to meet the same locational needs as Everett does today. The impact of this type of situation from a risk and cost perspective is likely significant, but indeterminate at this point in time.
- Upstream Pipeline Operations: As upstream pipelines continue to become more constrained, it is likely that they will impose limitations on operational flexibilities that currently provide reliability benefits to the LDCs. To maintain system reliability, the upstream pipelines enforce Operational Flow Orders ("OFOs"). OFOs set limits on the volume of gas that can be consumed by pipeline customers, including LDCs, over a given time frame, typically on a daily basis. The inability to secure incremental volumes from Everett to ease these operational limitations has the potential to compromise reliability in the future.
- Alternatives: There are no alternatives currently available in the marketplace that offer the services provided by the Everett LNG facility. The Company would need a combination of on-system and upstream projects to replace the services provided by Everett. These projects would vary in scope, size, and cost. Further, the scalability of such alternatives would be a challenge, as would the constructability and permitting of such projects.
- Reliability: Today, if either TGP or AGT were to experience outages or supply disruptions impacting deliveries into the Company's distribution system, the Company could access supply directly from the Everett LNG facility to mitigate the impact of

these losses. Without the ability that the ability of the Everett LNG facility has to come on-line in real time to offset volumes that are interrupted, reliability to the region may be compromised.

Request 4:

What, if any, new DPU-jurisdictional distribution infrastructure would be required to maintain gas system reliability if Everett ceases operations? What, if any, new FERC-jurisdictional pipeline infrastructure would be required to maintain gas system reliability if Everett ceases operations?

Response:

The Constellation Everett Facility is in a unique position to support gas system reliability due to both its location and significant sendout capability. The facility is located at a strategic delivery site for both National Grid as well as other customers (e.g., other local distribution companies ("LDCs"), power plants, industrial customers) of Algonquin Gas Transmission ("AGT") and Tennessee Gas Pipeline ("TGP") pipelines in areas north and west of Boston. Constellation is capable of providing critical hydraulic balancing on the AGT, TGP, and National Grid systems in eastern Massachusetts through direct connection to each of the respective facilities. Everett is a hub with significant pipeline infrastructure that allows for injections of gas supply directly into National Grid's feeder systems, as well as constrained areas on the Algonquin and Tennessee systems. Gas supplies at Everett can mitigate, as well as prevent, disruptions on the Company's distribution system that may otherwise be experienced resulting from upstream pipeline maintenance, compressor failures, or on-system LNG plant shut-downs, or on-system feeder or distribution piping isolations/shutdowns at any time of year.

National Grid can accept gas supply from Constellation in Everett and distribute this gas into the Boston gas network spanning from Everett, south to Milton, west to Wellesley and north on the distribution feeder system to supply many communities spanning from Arlington in the west to Lynn in the east. Takeaway at this site under design day[1] conditions can meet approximately fifteen-percent of total design hour[2] requirements. Under non-peak conditions, Everett is capable of supplying over fifty-percent of National Grid's total sendout in Massachusetts. Further, Constellation has the capability to inject into the end of the AGT and TGP systems in Everett and bolster pressures on these constrained portions of the pipelines systems that in turn supply approximately half of the Company's take stations in Massachusetts. These injections are critical to ensure adequate pressures are maintained to these National Grid take stations and to provide for uninterrupted deliveries to the Company's customers. The Company's contractual pipeline deliveries alone may not be adequate to maintain system pressures to these stations. As the

[1] The Company's design day remains at 78 EDD with a frequency of occurrence of 1 in 47.9 years using the Company's entire 51-year history of EDD weather data.

[2] The design hour criteria is five percent of the design day.

upstream pipelines serving the Company's distribution system continue to become more constrained, the operational flexibilities which they have historically provided will continue to diminish.

For the Company to exactly replicate the gas system reliability provided by Everett, the Company would need to construct a LNG plant in Everett with similar function to Constellation. To provide the same reliability to National Grid, the facility would need: to be located within the vicinity of the Everett facility; be interconnected into the National Grid, AGT and TGP systems with high volume sendout capability; have significant onsite storage; and have established refill capability (e.g., import, liquefaction, trucking). This would provide for supplemental gas to support all National Grid facilities currently benefitting from the plant today. A scaled down version of the plant with injections into the National Grid system alone would provide for more limited reliability benefits. These benefits would be realized primarily by those National Grid systems and stations directly supplied via Everett and not the majority of the Company's stations fed off the pipeline laterals. The size and scale of the facility would dictate if this would be new DPU jurisdictional or FERC-regulated facility.

DPU-jurisdictional projects under consideration by the Company include: (1) portable LNG; (2) increased vaporization at existing LNG facilities; and (3) major on-system pipeline projects to transport volumes from where they are available to where they are needed. These projects would only partially maintain gas system reliability of the Everett operation, and would need to overcome major permitting and siting obstacles, require significant investment and time to develop, design and construct.

To maintain same gas system reliability benefit as the Constellation facility in Everett to all area LDCs, the Department should consider FERC-jurisdictional pipeline infrastructure including construction of a new interstate transportation pipeline or LNG storage and vaporization facility. Today, any existing opportunities to leverage FERC-jurisdictional capacity involves continued reliance on the global LNG market and can only be delivered to existing take stations where the Company may not be experiencing need. Should the region be willing to consider an expansion of the interstate pipeline system, that project would need to go through the permitting application process at the federal level, as well as receipt of any required local permits where the incremental facilities traverse.

Request 5:

What is the current status of negotiations, if any, between the LDCs and Constellation regarding continued operation of Everett? Please provide a proposed schedule for providing the Department with regular updates on the status of any negotiations with Constellation.

Response:

To the Company's knowledge, Constellation continues to engage customers, including the Company, regarding the long-term viability of the Everett LNG terminal. Beyond winter 2023/24, National Grid is not aware of any contractual obligations between Constellation and other parties that would require the Everett terminal to remain open and operational. Constellation has indicated publicly that if it is unable to enter into arrangements with an anchor tenant(s) after the conclusion of its RMR agreement with Mystic, it will cease to remain operational.

Any agreement entered into by the Company for gas supply services in excess of a year will be submitted for the Department's approval under G.L. c. 164, § 94A along with supporting evidence by the Company that the filed contract is in the public interest, consistent with portfolio objectives, and compares favorably to alternatives available to meet the Company's forecasted firm requirements. Should the Company enter into an agreement with Constellation for gas supply services beyond winter 2023/24, Constellation may condition its offer on the Company receiving approval by the Department to enter into such an agreement prior to March 2024, which will necessitate an expedited review by the Department.

In terms of providing the Department regular updates on the status of negotiations with Constellation, the Company recommends such updates be provided once per month (e.g., around the 20th) until the negotiations conclude.

Request 6:

How would any contractual agreement with Constellation supporting Everett's continued operation ensure that the costs are shared fairly and equitably among gas and electric entities across New England that benefit from Everett's continued operation including, without limitation, wholesale pipeline operators, natural gasfired generation facilities, and LDCs?

a) To inform such cost sharing arrangements, please indicate whether there is interest in undertaking, with the Department's participation and oversight, an expedited analysis quantifying the services provided by the Everett facility and the extent to which entities on the gas and electric systems receive these benefits. If this expedited analysis is of interest, please include a proposed scope of work and timeline for draft and final results.

b) If and to the extent LDCs outside of Massachusetts benefit from retaining Everett, how are costs proposed to be allocated between the respective jurisdictions? What is the basis for such inter-jurisdictional cost allocation?

Response:

Should the Company enter into an agreement with Constellation, the Company would do so after a determination that the agreement is reasonable, compares favorably to available alternatives, and is in the best interest of the Company's firm gas customers.

Almost all natural gas infrastructure in New England is financially supported by customers of the local natural gas distribution companies ("LDCs") because the infrastructure is critically needed to meet customer requirements in winter peak and design day conditions to ensure that sufficient gas-supply resources are available under all operating conditions. Some of the costs to support the New England natural gas infrastructure are shared when the LDC customers are not utilizing portions of this infrastructure and when the resources can, instead, be used by other market participants, namely gas-fired generators through direct sales, but also through capacity release, asset management agreements, or secondary pipeline services.

National Grid and the other LDCs are focused on securing necessary resources from the Everett LNG facility, correlating to the needs that each system actually has in relation to the company's respective customers. Any ancillary benefits to the region, including to the New England electrical system, would typically be allocated through the normal course of business.

At the June 20, 2023 FERC New England Gas-Electric Forum, ISO-NE provided an early release of the EPRI study through the year 2027, purportedly showing that the Everett LNG facility was

not needed for electric reliability. However, ISO-NE CEO Gordon van Welie still deemed it prudent to retain the resource. Moreover, NERC CEO Jim Robb stated that "[t]he natural gas system up here is absolutely critical and it needs to be reinforced and it need to be integrated into the electric sector that is a huge gap in the energy policy of that region." These statements acknowledge the underlying fact that the Everett LNG facility serves as a critical reserve unit in the context of a wholesale generation market that is still reliant on natural gas for almost half of the generation supply.

The LDCs cannot solve the region's supply issues. Instead, the LDCs have an obligation to their customers to maintain the reliability of natural gas distribution and supply service and the LDCs will take all necessary steps within their control to assure that their customers have heat on cold winter days. Sharing of costs to preserve capabilities of the Everett LNG facility is not within the purview of the LDCs to control outside of optimization arrangements that allow other market participants to use LDC resources when the LDCs do not need them to serve firm customers.

National Grid's and Eversource's electric affiliated distribution companies previously attempted to secure regional natural gas infrastructure dedicated to New England's power generation units that, by ISO-NE market rules, do not have sufficient incentives to secure those resources ahead of time. Those efforts, driven primarily through the proposed Access Northeast project, were unsuccessful and the project was ultimately terminated as a result of a lawsuit jointly brought by ENGIE (former owners of the Everett LNG facility), and the Conservation Law Foundation. In that docket, the Attorney General and other parties contested the need for additional pipeline infrastructure, resting on the theory that greater utilization of existing LNG infrastructure, including the Everett LNG facility, would adequately meet the region's needs for gas supply in the wholesale generation market. Unless or until there is recognition by market participants other than the LDCs that the Everett LNG facility is a critical linchpin to the region's fuel stability, the LDCs can only remain focused on meeting their obligations to natural gas customers, which the LDCs will do.

The Massachusetts LDCs are ready and willing to participate in any study the Department deems necessary or useful. However, given the ongoing and time-sensitive negotiations between the LDCs and Constellation, any cost-sharing analysis would likely not be impactful to these negotiations nor would result in a meaningful change to the Everett LNG facility contractual arrangements based on the fundamental needs of the LDC systems.

Request 7:

If Everett continued operating, what measures would your LDC take to systematically transition away from reliance on Everett during any retention period? Please discuss plans for securing demand-side solutions to reduce your LDC's dependence on Everett instead of supply-side resources.

Response:

National Grid is actively working to transition away from fossil gas as part of the Company's Clean Energy Vision. As described in response to Request #2, the Company is continuing to explore and execute on a variety of both supply and demand side solutions to mitigate exposure to the Everett LNG terminal. However, the potential impact of these incremental demand side resources is likely to be small as compared to the scale of the need currently fulfilled through the Everett LNG terminal. Thus, demand side resources alone will not be a complete substitute for a loss of the Everett LNG terminal.

Demand-side solutions are a key pillar of this vision and National Grid will continue to rely on the Company's nation leading energy efficiency programs, as filed with and approved by the Department, in order to develop and provide programs for customers to accelerate energy efficiency improvements to buildings. These efforts include traditional energy efficiency measures that reduce peak gas demand, deep energy retrofits, and both full and partial displacement of gas end uses with high efficiency electric equipment. The Company also remains supportive of and is active in advocating for advance of more rigorous appliance standards and building codes for new buildings and major renovations.

In addition to customer efforts as delivered through energy efficiency programs, the Company is also exploring new levers to reduce gas demand outside of energy efficiency programming, including networked geothermal. The Company is currently working to develop the capability to identify and evaluate non-pipeline alternatives ("NPAs"), such as electrification to avoid capacity or supply constraints or in lieu of leak prone pipe replacement. The Company has already identified and pursued 30 NPAs in New York, per a regulatory requirement.

Electrification solutions could include air-source heat pumps, ground-source heat pumps, or networked geothermal. Scaling networked geothermal via utility-owned thermal energy networks is another potential lever for reducing demand. National Grid recently broke ground on the Company's first networked geothermal pilot in Lowell, MA, where it will install and operate geothermal networks at up to four separate locations, serving a group of customers with diversity in size and use. Scaling up networked geothermal will require new regulatory and policy enablers.

Demand-side levers to mitigate gas growth will also be necessary alongside solutions to reduce demand, which could involve changes to energy efficiency and/or hybrid electrification at the point of connection, alternatives to gas connections, or a gas moratorium for new customers. National Grid also supports building codes and policies to mitigate gas growth from new construction, including the new stretch energy code and municipal opt-in code finalized by DOER and implemented in 2023.