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Via E-mail

Aida Camacho-Welch
Secretary of the Board
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**Re: In the Matter of Natural Gas Commodity and Delivery Capacities in the State of New Jersey – Investigation of the Current and Mid-Term Future Supply and Demand
BPU Docket No. GO20010033**

Dear Secretary Camacho-Welch:

Public Service Electric and Gas Company (“PSE&G”, or the “Company”) appreciates the opportunity to submit comments on London Economics International, LLC’s (“LEI”) final report entitled “Final Report: Analysis of Natural Gas Capacity to Serve New Jersey Firm Customers” (“LEI Report”) released by the New Jersey Board of Public Utilities’ (“BPU”, or the “Board”) for public comment on December 15, 2021. The Company commends Staff’s continued focus on this very important topic to New Jersey residents and businesses.

Introduction and Summary

PSE&G serves over 1.8 million natural gas customers throughout its service territory within the state of New Jersey. The large majority of these customers are residential and other high priority customers that receive firm service from PSE&G and rely on PSE&G to meet their natural gas needs on an hourly and daily basis throughout the year. In fact, in New Jersey as a whole, approximately 75% of residential households are served by natural gas and rely on natural gas to meet their heating needs, particularly on peak winter days. PSE&G, like the other New Jersey gas distribution companies (“GDCs”), has a statutory obligation to ensure the adequacy of gas supplies and associated pipeline capacity to serve these high priority customers- and is also obligated to serve as the provider of last resort for customers who may be served by a Third Party Supplier (“TPS”) and do not currently receive default commodity service, referred to as Basic Gas Supply Service or “BGSS”. Therefore, considering and ensuring natural gas supply adequacy, as well as delivery system adequacy, are among the Board’s vitally important functions. To that end, the

Company appreciates the Board's inquiry into capacity adequacy for firm gas customers, and Staff's consultant's (LEI) efforts to examine if interstate pipeline capacity and capacity from non-pipeline sources (i.e., non-pipe alternatives, or NPAs) will be sufficient to meet the GDCs' firm gas demands through 2030.

In their Final Report, LEI's main findings are that there is sufficient firm gas capacity to meet firm gas demand in all but "extreme weather" conditions, and in all cases if specific building electrification, energy efficiency and other NPA goals or initiatives are satisfied. LEI also provided a set of best practices and a playbook for responding to emergencies involving disruptions to supply on peak days and recommended tools and procedures which the GDCs should institute in advance of such an occurrence. PSE&G offers the following comments on some of the findings and recommendations in the LEI Report. These comments include a general discussion on gas supply planning and the process LEI utilized in their Final Report, and specific discussions of NPAs, TPSs' roles and obligations, and the role of interruptible customers and interruptible loads). Additionally, the Company offers comment on LEI's proposed best practices and playbook for situations involving large gas supply disruptions during periods of peak demand.

Comments

I. Gas Supply Planning by the NJ GDCs

Throughout its Final Report, LEI cites many differences across the NJ GDCs, including those associated with the distribution of customers across rate classes, percentage of customers served on interruptible gas rates (as a percentage of sendout),¹ different supply pipelines across the GDCs, different storage contract volumes, differing amounts of in-territory peaking supply, and differences in the companies' peak day forecasting methodologies. With respect to the latter, LEI acknowledges that utilities "typically use econometric models as a foundational methodology to derive their demand forecasts", and that "an economic model estimates the historical relationship between ... independent variables (for example, economic growth, weather, household growth) and a dependent variable (for example, firm gas demand)". Put simply, such a model incorporates the effects of things such as economic growth, customer growth, energy efficiency and weather on firm gas demand. When developing a gas load forecast, and specifically the relationship between weather and peak daily sendout, additional parameters that affect sendout on a day-to-day basis must be considered. These factors include whether the day is a weekday, weekend, or holiday. Consumption patterns also change when there is significant snowfall affecting business activity. It is also important to note that the values associated with all of these explanatory factors will vary across the GDCs. In addition, due to the different customer characteristics across the GDCs, the response to these explanatory factors will also vary.

¹ LEI reports that the percentage of interruptible versus total dekatherm demand values for the five highest demand days for each of the 2017-2020 winters (i.e., 15 demand days) were, for Elizabethtown Gas, 0.01%; for NJ Natural Gas, 0.27%; for PSE&G, 10.4%; and for South Jersey Gas, 2.12%. LEI Final Report, at 30, Fig. 9.

That being said, LEI's analysis ignores the existence of any of these factors on gas consumption. Instead, LEI proposed an analysis based on dividing historical peak day sendout by the number of heating degree days on each reported day - contending that this somehow "normalizes" sendout. LEI ignores the fact that the sendout per heating degree day ("HDD") ratios that they utilize vary significantly across days, making this exercise invalid. They further contend that a "fitted" line of these inaccurate data points results in a baseline growth rate that can be extrapolated for a decade. This is highly questionable given the normal non-linear growth in the all of the drivers of gas demand.

As a result, LEI's conclusions regarding the sufficiency of natural gas capacity to meet future peak day demands, and their one-size fits all approach to the state's GDCs, are incorrect.

II. Non-Pipeline Alternatives (NPAs):

PSE&G believes that the pursuit of NPAs should be a crucial element of state policy and gas supply planning. NPAs can provide a reliable complement to traditional gas pipeline capacity, and as LEI indicates can be either demand-side or supply-side solutions. PSE&G would also like to underscore the importance of utilizing existing peaking facilities and leveraging opportunities to increase output capacity and takeaway where feasible to meet supply needs during peak periods

In terms of demand-side solutions, PSE&G is continuing to advance energy efficiency and vehicle electrification in New Jersey through our Clean Energy Future programs, and look forward to pursuing demand side management in future CEF programs. Such programs can reduce gas demand and provide environmental benefits. As LEI has also acknowledged, PSE&G is committed to modernizing its gas pipeline system through the GSMP program, and is pioneering the use of Advanced Leak Detection ("ALD") technology "to estimate leak rates, targeting the leakiest sections for replacement first to achieve the greatest emissions reduction quickest."²

With regards to supply-side solutions, the Company is pursuing alternatives that support a net zero carbon future, including Renewable Natural Gas ("RNG") and Certified Natural Gas ("CNG"), and we are enthusiastic about the potential benefits of introducing zero-carbon hydrogen into the supply mix. To that end, in its pending BGSS-RSG filing, PSE&G has sought authority to introduce a modest amount of RNG into the gas supply mix in an effort to help meet the NJ State's 2018 Clean Energy Act targets as well as the targeted methane reduction goals set forth in the State's Energy Master Plan ("EMP"). As noted in LEA's Final Report, RNG has started to make inroads in the gas supply mix in several areas of the US from several technologies. Though the Company does not currently purchase RNG, it has been in discussions with one customer regarding the potential to accept RNG into its distribution system. This project would be supportive of and aligned with Goal 2.3.7 of the EMP, which aims to maximize the use of organic waste through

² LEI Final Report, at 78-79.

anaerobic digestion for natural gas pipeline injection (or electric production), and would be a stepping stone for the Company's introduction of this supply option into its gas portfolio.

Additionally, the Company presently operates liquified natural gas ("LNG") and liquefied propane peaking resources to economically satisfy peak loads and ensure system reliability. These resources provide an in-territory supply source and can bolster distribution system operations, and as noted above, the expansion of these resources should be included in the mix of alternatives when considering the future portfolio of gas supply options.

With regard to LNG and CNG trucking, this supply side solution is not without significant challenges that should be considered. Some of these considerations include: community impacts of 24x7 tanker truck deliveries during peak demand when safe roadway conditions may be threatened; the need for leased or purchased land with a set up to inject the supply in remote locations with necessary safety and security requirements; sourcing and staging challenges with competing demand for limited natural gas supplies in the region; and trained personnel requirements to operate these peak facilities while other company peak shaving facilities would be operating.

The Company looks forward to working with the Board, Rate Counsel, and all stakeholders in evaluating and further incorporating NPAs into the Company's BGSS supply portfolio. However, though NPAs can be expected to be a vital component of supply portfolio planning in future years, it should be recognized that the development of these resources to impactful levels may take some time.

III. TPS roles and obligations

LEI also commented on TPS supplied load in New Jersey and noted that across all customer classes, retail choice deliveries in 2019 accounted for around 20% of total deliveries made by GDCs in the state. LEI also notes that TPSs' supply is not transparent, and "[i]n a situation of peak demand and limited transportation capacity, based on available information, LEI cannot determine if TPSs have enough Firm Transportation capacity to meet their firm demand."³ Though TPSs have historically met their required supply obligation, this is an important issue in New Jersey, since TPSs are not required to acquire firm primary delivery or receipt capacity, and there are certainly TPS customers that are not interruptible. Further, PSE&G's capacity portfolio is designed to meet the forecasted PSE&G supply obligation to provide BGSS service, incremental load of TPS customers above required TPS deliveries, and an appropriate risk reserve. PSE&G does not maintain any firm capacity to serve the full TPS customer load on its system, as the cost of maintaining that capacity would unfairly burden PSE&G's BGSS customers to the benefit of the TPSs. As such, to meet total utility demand, PSE&G relies on TPSs to deliver the estimated needs of their customers on a firm basis. If New Jersey wants to address any supply adequacy concerns related to TPS supply, the responsibility to acquire firm pipeline capacity for TPS load

³ Id., at 11.

should be borne by TPSs – and not BGSS customers.

Regarding the latter, the existing BGSS construct has been operating extremely well alongside a highly functioning, mature, competitive natural gas marketplace in New Jersey. The Board has established mechanisms to ensure that customers are receiving their supply of natural gas at a reasonable, market-based cost and a high level of reliability, while also not limiting the ability of customers to identify, switch to, and be served by TPSs. A robust competitive retail gas market was developed in New Jersey many years ago, and suppliers have been able to source supply and reliably deliver gas for firm customers through the years.

IV. Role of interruptible customers and interruptible load

LEI also states that the GDCs do not assume the full load served by TPSs in their design day planning, and observes that if a substantial and unexpected volume of TPS load were to switch back to BGSS, GDCs may not have sufficient capacity to serve all customers on a design day. LEI suggests that this risk is tempered because some of the commercial and industrial demand served by third party suppliers could be interruptible. The Company notes that while some of those customers may be on interruptible rates, they too present a reliability-risk if they do not interrupt or are otherwise not required to comply with EDC directives or penalties associated with non-compliance. This is reinforced by LEI's observation that gas consumption growth has been largely driven by the interruptible loads of the electric power and industrial sectors. Therefore, the Company believes that interruptible supply is a tool to be utilized to manage peak demand, but if the interruptible supply is to be relied upon, it is critical that interruptible customers are held to tariff requirements to insure compliance. PSE&G agrees with LEI's admonition that the formal development of enforceable rules can help avoid situations where "significant disruption occurs despite policymakers and first responders having the knowledge and expertise to prevent them."⁴

V. Best Practices and Playbook

Regarding the "Best Practices and Playbook" section of the LEI report, PSE&G has the following comments.

PSE&G supports LEI's suggestion that in implementing the IIP rule, the Board should include "a premium for resiliency attributes associated with infrastructure improvements" and, specifically, that the Board place "extra weight . . . on resiliency attributes . . . that could help the system cope with extreme weather events or design day demand." Final Report, at 117. PSE&G agrees that placing "additional value on benefits that may not be quantifiable in dollar terms" would be appropriate. In support of PSE&G's Energy Strong programs, the Company has relied in part on the "Value of Lost Load" ("VoLL") factors, which provide monetary estimates of the direct damage costs private parties may incur resulting from outages. However, it is well-known that the VoLL factors exclude many other direct and indirect costs, which can be very extensive and are not estimated as part of the monetary results in a standard cost-benefit analysis ("CBA").

⁴ Id., at 17.

While some of the impacts of a gas outage are quantifiable in monetary terms, other impacts reflect broad, social impacts tied to convenience, personal safety, pain and suffering, security and other less tangible, but very real, values to the customer.

PSE&G generally agrees that developing a “[p]laybook for emergencies”, like that outlined at pages 120-129 of the LEI Report, is a crucial responsibility of New Jersey GDCs as well as of the Board. And, as LEI properly notes regarding preparation for emergencies and the need to “coordinate strategies” among responsible entities, “New Jersey has had experience with natural disasters and may already have a clear system of accountability in place.”

Indeed, the New Jersey Administrative Code along with GDC practices like those set forth in PSE&G’s Emergency Procedures Manual (“Manual”) establish lines of responsibility and detailed requirements for action in the event of emergencies. The Code, at Section 14, Chapter 29, sets forth New Jersey’s plan for Energy Emergencies, which is to be implemented by the BPU “when the Governor, by Executive Order, has proclaimed a state of energy emergency,” although the Board may implement specific portions of the plan, including those requiring public appeals to reduce consumption and load interruption plans, prior to a Governor’s declaration of an energy emergency.⁵ The Board President is authorized to act on behalf of the entire Board “[i]n cases where a Board action or decision is urgently needed and a quorum cannot be convened in a timely manner”⁶

Section 2 of Chapter 29 sets forth an “end use energy reduction” plan, directing the Board to make and/or require utilities and energy suppliers to make public appeals to reduce usage in emergencies. The section also sets forth several specific energy reduction measures, limitations of energy uses and reductions of hours of operation for the Board to implement in an energy emergency.⁷ Section 3, covering gas utilities in particular, includes a detailed priority plan setting forth mandatory curtailment requirements “in the event that [the demand reduction] measures taken under [Section 2] do not provide sufficient relief to achieve a balance between the supply of and demand for natural gas.” Notably, the regulations require that utilities “[r]educe gas service to a minimum at gas company facilities” and then “suspend all interruptible natural gas service” as the first two steps in the curtailment process.⁸

PSE&G maintains the aforementioned Manual to direct and prioritize emergency action across the Company’s entire gas operations. The procedures and practices in the Manual have been developed to comply with regulations for gas operation emergency preparedness that are

⁵ See N.J.A.C. 14:29-1.1, -2.2, and 4.1(b). The Governor’s declaration of a “state of energy emergency” shall be “based upon a finding by the Board that there impends or exists an energy supply shortage of a dimension which endangers the public health, safety or welfare in all or any part of the State.” N.J.A.C. 14:29-1.1(b) (emphasis added).

⁶ N.J.A.C. 14:29-1.5.

⁷ N.J.A.C. 14:29-2.3, 2.4.

⁸ N.J.A.C. 14:29-3.2.

contained in the Code of Federal Regulations (CFR) 49, Part 192 (Department of Transportation) and requirements of the New Jersey Administrative Code, including but not limited to Chapter 29 of Section 14 cited above.

The Manual includes checklists for various emergencies, with references to subsequent sections of the Manual that contain detailed requirements and guidance on specific emergency procedures, as well as contact information. The Manual includes a 34-page chapter covering the curtailment of gas load, which provides instructions to follow whenever it is necessary to reduce gas consumption due to supply difficulties, and implementing the curtailment prioritization required under relevant regulations. This section outlines the general plan and progressive steps to follow to reduce load, setting the roles and responsibilities of the specific individuals within PSEG Energy, Resources and Trading (ER&T); PSE&G's Electric and Gas Operations, Asset Management and Planning, Emergency Operations Center, and Customer Operations groups; and the PSEG External Affairs, Corporate Communications, and Legal functions.

Thus, we believe that New Jersey, and PSE&G in particular, are already aligned with and in compliance with LEI's suggestions that the Board require each utility to maintain "a worst-case emergency plan" that "identifies critical gas infrastructure" and "indicate[s] the order in which facilities should be shut off in the event of an emergency."⁹ However, we note that certain of LEI's suggestions fail to account for the complexities of PSE&G's gas delivery system, or the potentially significant impact on New Jersey's customer base and associated costs of those suggestions.

In particular, LEI recommends that GDCs be required to include in their emergency plans the ability to "[s]egment[] the GDC network such that statewide coordinators can easily identify areas that can be shut off without impacting others." By way of example, LEI proposes that "senior housing complexes and locations which host other vulnerable populations should be served even if gas service to nearby areas must be shut off."¹⁰ PSE&G notes that given the size, complexity, and customer density of the Company's gas distribution system, the cost of installing and maintaining automatic sectionalizing valves required to provide the degree of system control suggested by LEI is well beyond what can realistically be considered for large portions of the system and a significant proportion of PSE&G's customers.

Similarly, while PSE&G appreciates LEI's efforts to outline "[a]uthorities' responses to three shortfall scenarios" and to provide a specific "[p]laybook plan for critical and emergency events" (LEI Report, Figs. 56 and 57), we note that these somewhat stylized "plans" set forth activities and time frames that seem to ignore the extraordinary magnitude of the required restoration efforts, and the real human dislocation that would accompany those efforts, following, even a relatively insignificant gas curtailment event, let alone an event of the magnitude that New Jersey GDCs must be prepared for.

⁹ LEI Final Report, at 121-22.

¹⁰ Id., at 122.

For example, in January 2019, National Grid shut down a portion of its natural gas distribution system in Newport and Middletown, Rhode Island. The emergency was precipitated by: increased demand driven by sudden low temperatures (from 2°-12° F); a power system failure at an LNG facility, causing a sudden increase in demand for pipeline gas (Enbridge); and a valve malfunction on an Enbridge pipeline in Massachusetts. This resulted in curtailment of 7,500 customers due to low system pressures, a fraction of the potential customers impacted given the shortfall estimated by LEI. This limited curtailment required the evacuation of people dependent upon gas heat and the establishment of multiple warming centers in the local area. Residents were placed in temporary lodgings while construction crews and National Guard troops secured homes one-by-one against the threat of explosion. These efforts continued for approximately one week. In the event of an even larger curtailment, significantly more people could be impacted for a greater period of time requiring resources and support from far reaching areas.

Conclusion

The Company appreciates the opportunity to provide comments in this manner and looks forward to continuing to engage with the Board and stakeholders on these important issues.

Very truly yours,

A handwritten signature in blue ink that reads "Matthew Weissman". The signature is written in a cursive style.

Matthew M. Weissman