

September 9, 2020

BY ELECTRONIC MAIL

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

**RE: Docket 5043 - National Grid's Gas Long-Range Resource and Requirements Plan
Forecast Period 2020/21 to 2024/25
Response to Division Data Requests – Set 2**

Dear Ms. Massaro:

I have enclosed an electronic version of National Grid's¹ responses to the Division of Public Utilities and Carriers' Second Set of Data Requests in the above-referenced docket.²

Please be advised that the Company's response to data request DIV 2-2 is pending.

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 5043 Service List
Leo Wold, Esq.
Al Mancini, Division
John Bell, Division
Jerome D. Mierzwa, Division Consultant

¹ The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

² Because of the COVID-19 Pandemic emergency period, the Company is providing a PDF version of the above-referenced transmittal. The Company is providing the PUC with one copy and, if needed, additional hard copies at a later date.

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d/b/a National Grid
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Division 2-1

Request:

Please explain in detail why National Grid uses a more conservative design day for its Rhode Island gas operations (occurrence of 1 in 58.92 years per page 4 of the Long-Range Plan) than it does for its Massachusetts' gas operations (occurrence of 1 in 44.5 years per D.P.U. 18-148, Long-Range Resource and Requirements Plan, page 3).

Response:

The Rhode Island design day of 68 heating degree days was determined in Docket No. 3766 (2006) by choosing a probability of occurrence of 1-in-100 at the time of the analysis. The Massachusetts design day of 78 effective degree days was determined in D.P.U. 97-81 (1997) using a cost-benefit methodology as specified by the Massachusetts Department of Public Utilities. To date, the Company has not found it necessary to revise the value of either design day.

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Division 2-3

Request:

Reference Attachment DIV 1-11-2 and Exhibit 15, page 2. Please reconcile the resources presented in Exhibit 15 with those identified in the Attachment.

Response:

Please see Attachment DIV 2-3.

The "Data" tab in Attachment DIV 2-3 contains all the data included in DIV 1-11-2. The Company has appended the sum of daily volumes in 2020/21 Heating Season (MDth) in column FA, labels corresponding to the Exhibit 15, page 2 categories in column FB, and a flag indicating whether a model transportation segment delivers gas to the citygate.

The "Resource Summary" tab in Attachment DIV 2-3 contains a table generated by pivoting the "Total Received Volume by Supply (MDth)" and "Daily Withdrawal Net Vol (MDth)" data in the "Data" tab.

The "Transport Outflow Summary" tab in Attachment DIV 2-3 contains a table generated by pivoting the summed "Daily Outflow (Net Flow) (MDth)" data and filtering by contracts that deliver to the citygate. Since the output contains all contracts in the portfolio, the Company must filter by contracts that deliver to the citygate to avoid double-counting volumes. Due to the nature of the portfolio, contracts can be used to flow gas from multiple supply points. For the purpose of this analysis, M2, M3, TCO Appalachia, and AGT Storage have been combined into a single line item. The volumes displayed in the "Transport Outflow Summary" are net volumes, meaning fuel has been applied and as a result they will be lower than the corresponding volumes in Exhibit 15, page 2 where fuels have not been applied. In addition, LNG from Storage volumes do not appear in "Daily Outflow (Net Flow)" because they do not flow along a transport segment in the model.

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Attachment DIV 2-3

Please see the Excel version of Attachment DIV 2-3

Division 2-4

Request:

Reference the response to Division 1-11(a):

- a) Please confirm that the Dracut and Everett Supply Deals are being acquired to meet design hour rather than design day demands; and
- b) Explain how the costs associated with the Supply Deals will be recovered from sales, FT-1 and FT-2 transportation customers.

Response:

- a) The Dracut and Everett supply deals are needed to meet design season and design hour demands. Page 2 of Exhibit 15 of the Company's Long-Range Resource and Requirements Plan ("LRP"), which does not include the proposed supply deals from Dracut and Everett, shows unserved demand across the design heating season without these deals. The Company, therefore, requires these supplies to meet the design heating season needs of its customers. The Company is not specifically contracting for these supplies to meet design hour requirements, although they are anticipated to be needed to meet design hour requirements. As such, the Dracut and Everett supply deals are not "identified" as hourly peaking supplies only, since they are also needed to meet seasonal requirements.
- b) The fixed and variable costs associated with the supply deal at Everett, as well as the fixed and variable costs associated with the Company's pipeline capacity from Everett, will be recovered from FT-2 transportation customers via the peaking charge assessed to Marketers supplying these customers. No costs will be recovered from FT-1 customers for these supplies because the Company does not plan for the peaking needs of FT-1 customers. Remaining costs will be recovered from sales customers.

The costs associated with the Dracut supply deal would not be recovered directly from transportation customers because the Company plans to release the underlying pipeline capacity from Dracut to Marketers serving FT-1 and FT-2 customers. Instead, the Company would reduce the maximum daily quantity of the Dracut supply deal to account for releases to Marketers. However, subsequent to the Company's LRP submission and response to Division 1-11(a), the Company is in the process of executing an Asset Management Arrangement to meet its Dracut supply needs and will be receiving a net credit for management of this path. This credit will be allocated to sales customers and the variable cost of Dracut supplies will be recovered from sales customers.

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Division 2-5

Request:

Reference Attachment DIV 1-2-Att.2. Please explain each of the column headings reflected on line 8.

Response:

The various columns in Attachment 2 of DIV 1-2 represents the various components for determining the annual daily sendout at different heating degree day (“HDD”) levels for the Company’s design year cost/benefit analysis.

<u>Header Name</u>	<u>Explanation</u>
TMY10 HDDn	10-year average HDD (Typical Meteorological Year)
Tavg	Daily average of 10 years of daily temperature (oF)
HDDi	TMY10 HDDn when > 0; else, Tavg -65 (i.e. ‘real’ HDD). This is then scaled to different annual HDD levels (e.g.cell G5)
Wkend-n	Weekend dummy variable
PRV_TSO	Uses HDDi and Weekend dummy to backcast the Apr 2016 to March 2017 Total Sendout (i.e Throughput) for Providence Gas (Dth)
BW_TSO	Uses HDDi and Weekend dummy to backcast the Apr 2016 to March 2017 Total Sendout (i.e Throughput) for Bristol Warren (Dth)
VAL_TSO	Uses HDDi and Weekend dummy to backcast the Apr 2016 to March 2017 Total Sendout (i.e Throughput) for Valley Gas (Dth)
WST_TSO	Uses HDDi and Weekend dummy to backcast the Apr 2016 to March 2017 Total Sendout (i.e Throughput) for Westerly (Dth)

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Division 2-5, page 2

TSO Total	Sum of PRV_TSO, BW_TSO, VAL_TSO, and WST_TSO (Dth)
5398 TSO Total	Reference Wholesale Total sendout (Dth) at 5,398 HDD
Wholesale SFT2	Reference Wholesale Sales plus FT2 sendout (Dth) at 5,398 HDD
Wholesale FT1	Reference Wholesale FT1 sendout (Dth) at 5,398 HDD
SFT2+FT1	Sum of "Wholesale SFT2" plus "Wholesale FT1" (Dth)
Row	Indicates the row of the matching monthly totals
(SFT2+FT1)/TSO	Using "Row" value, calculation of the monthly ratio of "SFT2+FT1" divided by "5398 TSO Total"
SCC Total	Calculation of the "SFT2+FT1" portion of "TSO Total"

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Division 2-6

Request:

Reference Attachment DIV 1-1-1. Please provide the database and analysis supporting the mean peak day and standard deviation shown in tab "1-Prob Dist" cells C6 and C7, respectively. Update the database to present.

Response:

In Section III.E.2.a of the Company's 'Long-Range Resource and Requirements Plan Forecast Period 2020/21 to 2024/25' submission, the Company describes the statistical analysis and cost/benefit analysis it performed in 2018 to support its Design Day standard of 68 heating degree days ("HDD").

Attachment 1 to the Company's response to Data Request Division 1-1 is the Excel spreadsheet used to support its Design Day standard. Tab "1-Prob Dist" in that attachment calculates the frequency of occurrence of various HDD levels based on the mean HDD in cell C6 and the standard deviation in cell C7.

In Attachment Division 2-6, tab 'Tavg-WinterData' presents the average daily winter temperature (in degrees F) from November 1, 1977 through March 31, 2017 (November through March only) used by the Company to calculate the 55.00 HDD mean value for cell C6 and the standard deviation for cell C7. Each is highlighted in yellow.

In Attachment Division 2-6, tab 'Tavg-update' presents the average daily winter temperature (in degrees F) from November 1, 2017 through March 31, 2020 (November through March only).

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Division 2-7

Request:

Reference Attachment DIV 1-1-2. Please explain the various annual HDD figures reflected in cells G3, G5, F393, and H 393, and explain how they relate to the design year standard of 6,250 HDD used by the Company.

Response:

In its response to Division Data Request 1-1 in this docket, the Company describes the statistical analysis and cost/benefit analysis it performed in 2018 to support its Design Day standard of 68 heating degree days (HDD). Attachment Division 1-1-2 in the Company's responses to Division Data Request 1-1 was a copy of the Company's response to Data Request Division 1-12 in Docket 4816, the Company's 'Long-Range Resource and Requirements Plan for the Forecast Period 2017/18 to 2026/27', which described the Company's design day statistical analysis. It contains no cell references.

The cell references in this data request appear to refer to Attachment DIV 1-2-2. In its response to Division Data Request 1-2 in this docket, the Company describes the statistical analysis and cost/benefit analysis it performed in 2018 to support its Design Year standard of 6,250 HDD. Attachment DIV 1-2-1 is a copy of the Company's response to Data Request Division 1-17 in Docket 4816, the Company's 'Long-Range Resource and Requirements Plan for the Forecast Period 2017/18 to 2026/27' which described the Company's design year statistical analysis. Attachment DIV 1-2-2 is a copy of the Excel spreadsheet referred to in Attachment 1 as 'Attachment DIV 1-17-1' used to model daily sendout.

In performing its design year standard analysis, the Company quantifies the increases in gas sendout at different levels of annual HDD. Cell G3 represents the annual normal HDD used in the 2018 analysis. It is set equal to the value in cell F393 (see below). Cell G5 is the target annual HDD level at which the Company is determining the daily sendout values for each of its four divisions. This value is entered in by the analyst. Cell F393 is the sum of the daily HDD values in the normal year found in range F12:F376. Cell H393 is the sum of the daily HDD values for the target level in cell G5. These daily HDD values are the daily normal year HDD scaled by the ratio of cell G5 to cell G3. Please note that Cell H393 will not equal cell G5 since the HDD values in column H are also permitted to be negative for the purposes of the Company's regression analyses. Typically, HDD values are truncated to zero if the daily average air temperature exceeds 65 degrees F.

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Division 2-8

Request:

With respect to the Company's design year standard of 6,250 HDD, please provide a monthly breakdown of that standard. Also provide normal HDDs for each month.

Response:

The Company's monthly normal year heating degree days (HDD) are presented on page 14 of its Gas Long Range Resources and Requirements Plan for the Forecast Period 2020/21 to 2024/25. The table is reproduced below along with the equivalent monthly values for the t design year.

Month	Normal HDD	Design HDD
Jan	1,083	1,250
Feb	946	1,091
Mar	812	942
Apr	464	518
May	191	228
Jun	41	48
Jul	0	3
Aug	2	2
Sep	65	70
Oct	316	361
Nov	610	697
<u>Dec</u>	<u>892</u>	<u>1,040</u>
Total	5,422	6,250

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Division 2-9

Request:

Reference Attachment DIV 1-11-1. Please provide the calculations supporting the total daily demands by area/class. Also provide daily HDDs used to determine total daily demands.

Response:

In its response to Data Request Division 1-11 in this docket, in part c, the Company provided Attachment DIV 1-11-1, which contains the design year daily demand volumes for the winter of 2020-2021 in thousands of dekatherms for its Sales and FT-2 customers plus the pipeline capacity portion of its capacity-eligible FT-1 customers. Attachment Division 2-9 is the Excel sheet that produces the Company's wholesale volume forecast based on its retail monthly volume forecast and its regression analyses of daily citygate volumes versus heating degree days ("HDD"). The daily demand in Attachment DIV 1-11-1 can be found on Tab 'Design-RI-NovOct_Econ_SoRI' in column BP of Attachment Division 2-9. The associated design year HDD can be found in column E of Attachment Division 2-9.

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Attachment DIV 2-9

Please see the Excel version of Attachment DIV 2-9

Please be advised that the electronic file size of Attachment DIV 2-9 is very large (29MB)