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August 26, 2016

BY HAND DELIVERY

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

Re: Docket 4627 – In Re: Request for Approval of Firm Transportation Contracts with Algonquin Gas Transmission, LLC for the Access Northeast Project
Responses to CLF Data Requests – Set 1

Dear Ms. Massaro:

On behalf of National Grid,[1] enclosed are National Grid's responses to the First Set of Data Requests issued by the Conservation Law Foundation in the above-referenced matter.

Thank you for your attention to matter. If you have any questions, please contact me at (617) 951-1400, or Jennifer Brooks Hutchinson at 401-784-7685.

Very truly yours,

John K. Habib

Enclosures

[1] The Narragansett Electric Company d/b/a National Grid.

CLF 1-1

Request:

Refer to Schedule GJW-3. Please provide the following data:

a) In machine-readable, spreadsheet form, please provide all outputs resulting from this analysis for each year and for each sensitivity and scenario in this analysis.

b) In machine-readable, spreadsheet form, please present the annual generation in MWh for each state, region, resource type, fuel type, power plant, or unit, where available, for each year covered by each scenario and sensitivity in this analysis.

c) In machine-readable, spreadsheet form, please present the annual generating capacity in MW for each state, region, resource type, fuel type, power plant, or unit, where available, for each year covered by each scenario and sensitivity in this analysis.

d) In machine-readable, spreadsheet form, please present the annual carbon dioxide (CO2) emissions in short tons for each state, region, resource type, fuel type, or power plant, where available, for each year covered by each scenario and sensitivity in this analysis. Please include data for the six New England states, and for all other modeled states (including New York, Maryland, and Delaware).

e) In machine-readable, spreadsheet form, please present the annual demand for electricity in MWh for each state, region, zone, or node, where available, for each year covered by each scenario and sensitivity in this analysis.

f) In machine-readable, spreadsheet form, please present the annual energy efficiency savings in MWh, or annual savings as a percent of sales before energy efficiency, for each state, region, zone, or node, where available, for each year covered by each scenario and sensitivity in this analysis.

g) In machine-readable, spreadsheet form, please present the annual imports of electricity in MWh to New England from New York and Canada, or more finely defined regions, if available, for each year covered by each scenario and sensitivity in this analysis.

h) In machine-readable, spreadsheet form, please present the annual exports of electricity in MWh from New England to New York and Canada, or more finely defined regions, if available, for each year covered by each scenario and sensitivity in this analysis.

Request (continued):

i) In machine-readable, spreadsheet form, please present the annual non-electric demand for natural gas in million cubic feet for each state, region, zone, node, or sector, where available, for each year covered by each scenario and sensitivity in this analysis.

j) In machine-readable, spreadsheet form, please present the annual non-electric natural gas consumption avoided as a result of energy efficiency, either in terms of millions of cubic feet avoided or as a percent of non-electric natural gas demand before energy efficiency, for each state, region, zone, node, or sector, where available, for each year covered by each scenario and sensitivity in this analysis.

k) In machine-readable, spreadsheet form, please present the assumptions for renewable portfolio standards (RPS) in MWh and percent of affected demand for electricity (i.e., sales) for each state for each year covered by each scenario and sensitivity in this analysis. Please include data for the six New England states, and for all other modeled states (including New York, Maryland, and Delaware).

Response:

a) Please refer to Exhibit NEER-1-1, NEER-1-3, and NEER-2-55 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

b) Please refer to Exhibit NEER-1-1 and Attachments NEER-1-1(b), NEER-1-1(c), NEER-2-55(a) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

c) Please refer to Exhibit NEER-1-1 and Attachment NEER-1-1(d) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

d) Please refer to Exhibit NEER-1-1 and Attachments NEER-1-1(b) and NEER-1-1(c) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

e) Please refer to Exhibit NEER-1-1 and Attachment NEER-1-1(f) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

f) Energy efficiency savings are not available from this analysis. Black & Veatch uses the energy and demand forecasts from the ISO-NE 2015 CELT report, and any assumed energy efficiency savings would be embedded in these forecasts.

g) Please refer to Exhibit NEER-1-1, Attachment NEER-1-1(e) and Attachment NEER-2-55(e) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

h) Please refer to Exhibit NEER-1-1, Attachment NEER-1-1(e) and Attachment NEER-2-55(e) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits weere provided in response to Data Request PUC 1-1.

i) Please refer to Exhibit NEER-1-1 and Attachment NEER-1-1 (j) (Highly Sensitive Confidential Information) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1. The annual non-electric demand for natural gas remained unchanged in each scenario.

j) Non-electric energy efficiency savings are not available for this analysis. Black & Veatch's projection of non-electric demand was informed by a compilation of local distribution long-term supply and demand resource plans and any assumed energy efficiency savings would be embedded in these forecasts.

k) Please refer to Exhibit NEER-1-1, and Attachment NEER-1-1(b) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

CLF 1-2

Request:

Refer to Schedule GJW-3. Please provide a detailed annual accounting of how expected electric-sector CO2 emissions from Rhode Island and relevant states (i.e., under Rhode Island's Greenhouse Gas Inventory) compare to annual emission targets under the Resilient Rhode Island Act of 2014 as follows:

a) Present the Rhode Island electric sector emissions and non-electric heating and other buildings emissions relevant to the Rhode Island Greenhouse Gas Inventory for each year and for each sensitivity and scenario in this analysis.

b) Which scenarios and sensitivities do not achieve compliance with the emissions reduction targets set forth in the Resilient Rhode Island Act in 2020 given expected emissions from other sources?

c) Which scenarios and sensitivities do not achieve compliance with the emissions reduction targets set forth in the Resilient Rhode Island Act in 2035 given expected emissions from other sources?

Response:

a-c) Black & Veatch's analysis in Schedule GJW-3 examined the environmental benefits of the ANE project to the entire New England region. The analysis indicates that the ANE project could lower New England regional electric sector air emissions by approximately 15% for NOx, 25% for SOx, and 0.85% for greenhouse gases. Black & Veatch did not analyze non-electric and other building heating emissions relevant to the Rhode Island Greenhouse Gas Inventory or the Resilient Rhode Island Act.

CLF 1-3

Request:

Refer to Schedule GJW-3. Please provide a detailed annual accounting of how expected electric-sector CO2 emissions compare to annual emission targets under all other modeled states' specific climate laws and regulations as follows:

a) Present each modeled state's electric sector emissions and non-electric heating and other buildings emissions relevant to state inventory systems used to evaluate emissions for compliance with state emission laws and regulations for each year and for each sensitivity and scenario in this analysis.

b) Which scenarios and sensitivities do not achieve compliance with state climate laws and regulations given expected emissions from other sources?

Response:

a-b) Please see Exhibit CLF-1-3 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-4

Request:

Refer to Schedule GJW-3. For each scenario and sensitivity modeled in this analysis, please provide a detailed accounting of how expected CO2 emissions compare to emission targets under the U.S. Environmental Protection Agency's Clean Power Plan as follows:

a) Please present the assumptions used for the Clean Power Plan approach modeled in each scenario and sensitivity, including a discussion of the particular compliance path modeled (i.e., rate-based vs. mass-based compliance pathways, etc.). Please provide detailed assumptions used to model regional trading under the Clean Power Plan. With what pools of states, if any, are Rhode Island and the other New England states allowed to trade allowances or emission rate credits?

b) Please present the forecast of Rhode Island electric sector CO2 emissions from sources required to comply with the Clean Power Plan for each scenario and sensitivity by year throughout the modeled period.

c) Which scenarios or sensitivities do not achieve Rhode Island compliance with the Clean Power Plan in each Clean Power Plan compliance period?

d) Please present the forecast of other modeled states' electric sector CO2 emissions from sources required to comply with the Clean Power Plan for each scenario and sensitivity by year throughout the modeled period.

e) Which scenarios and sensitivities do not achieve each modeled state's compliance with the Clean Power Plan in each Clean Power Plan compliance period?

Response:

(a-e). Please see Exhibit CLF-1-4 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-5

Request:

Refer to Schedule GJW-3. For each scenario and sensitivity modeled in this analysis, please provide a detailed accounting of how expected CO2 emissions compare to emission targets under the Regional Greenhouse Gas Initiative (RGGI) as follows:

a) Please present the forecast of the RGGI region's electric sector CO2 emissions from sources required to comply with RGGI, for the RGGI region as a whole and
by each of the nine RGGI states, for each scenario and sensitivity by year throughout the modeled period.

b) Which scenarios and sensitivities do not achieve RGGI caps on CO2 emissions in each modeled year?

c) Provide the RGGI electric-sector CO2 emissions caps assumed in years after 2020.

Response:

(a-c). Please see Exhibit CLF-1-5 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-6

Request:

Refer to Schedule GJW-3. Please provide a detailed accounting of compliance with state Renewable Portfolio Standards (RPS) in all modeled scenarios and sensitivities and years as follows:

a) For each New England state, for what share of total state electric demand are REC purchases required in each year in each scenario and sensitivity and year modeled?

b) For Rhode Island, by how much does the share of total state electric demand for which REC purchases are required grow in each year after 2020?

c) For Massachusetts, are the stipulations of the Massachusetts House Bill 4568 "An Act to promote energy diversity," including expanded hydroelectric imports and incremental offshore wind, included in each and every scenario and sensitivity, including the Reference Case?

d) For New York, are the NY-SUN and Large Scale Renewables programs modeled in addition to New York's existing RPS? Is the New York Clean Energy Standard (including the increased RPS and subsidization of existing nuclear plants) taken into account? If so, please describe in detail how these are modeled.

Response:

a) Please refer to Exhibit CLF-1-6 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

b) Beyond 2020, the share of total RI electric demand to be served by REC purchases remains flat at 16% per year.

c) Please refer to Schedule GJW-3, page 22-23 regarding the assumptions used in Sensitivity Reference Case A and Sensitivity Reference Case B, which included additional renewable hydro imports and wind generation.

d) Please refer to Exhibit CLF-1-6 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

Prepared by or under the supervision of: Denny K. Yeung and Gary J. Wilmes

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CLF 1-7

Request:

Refer to Schedule GJW-3. Please provide a detailed accounting of compliance with state electric energy efficiency laws, regulations, and plans including Energy Efficiency Resources Standards, utility Integrated Resource Plans (IRPs), state energy efficiency plans, and third-party provider plans in all modeled scenarios and sensitivities and years as follows:

a) Describe how the electric energy efficiency laws, regulations, and plans of each New England state and New York are accounted for in this analysis.

b) For each New England state and New York, for which scenarios and sensitivities is compliance with the state electric energy efficiency laws, regulations, and plans not achieved in each year? Please provide a detailed response by year, state, and scenario and sensitivity to supplement the information provided in Schedule GJW-3.

c) Please provide a detailed accounting of assumptions on costs, cost levelization, and cost allocation for electric-sector energy efficiency measures for each state, year, and sector (i.e., residential, commercial, and industrial).

Response:

(a-c). Please refer to Exhibit CLF-1-7 and Exhibit NEER-1-5 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. These exhibits were provided in response to Data Request PUC 1-1.

CLF 1-8

Request:

Refer to Schedule GJW-3. Please provide a detailed accounting of compliance with gas electric energy efficiency laws, regulations, and plans, including Energy Efficiency Resources Standards, utility IRPs, state energy efficiency plans, and third-party provider plans in all modeled scenarios and sensitivities and years as follows:

a) Describe how the electric energy efficiency laws, regulations, and plans of each New England state and New York are accounted for in this analysis.

b) For each New England state and New York, for which scenarios and sensitivities is compliance with the state gas energy efficiency laws, regulations, and plans not achieved in each year, if any? Please provide a detailed response by year, state, and scenario and sensitivity to supplement the information provided in Schedule GJW-3.

c) Please provide a detailed accounting of assumptions on costs, cost levelization, and cost allocation for electric-sector energy efficiency measures for each state, year, and sector (including residential, commercial, and industrial).

Response:

(a-c). Please see Exhibit CLF-1-8 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-9

Request:

Refer to Schedule GJW-3. Please provide the following:

a) In machine-readable, spreadsheet form, please provide the specific CO2 allowance prices that are used in modeling for each scenario and sensitivity and each modeled year.

b) In machine-readable, spreadsheet form, please provide any annual probabilities used to weight these CO2 allowance prices.

c) Provide a detailed explanation of the rationale for, and the source of, any probabilities used to weight these CO2 allowance prices.

d) Provide a detailed explanation of the rationale for, and the source of, any CO2 allowance prices used in this analysis.

Response:

(a-d). Please see Exhibit CLF-1-9 (Supplemental) and Attachment CLF-1-9 (a) (Highly Sensitive Confidential Information) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information. These exhibits were provided in response to Data Request PUC 1-1.

CLF 1-10

Request:

Refer to Schedule GJW-3. Please provide a detailed description of any assumptions regarding existing and soon-to-be constructed pipeline capacity as follows:

a) For each existing pipeline, please provide a detailed explanation of the rationale for, and the source of, any assumptions regarding pipeline capacity in each scenario and sensitivity and each modeled year.

b) For each soon-to-be constructed pipeline, please provide a detailed explanation of the rationale for, and the source of, any assumptions regarding pipeline capacity in each scenario and sensitivity and each modeled year.

Response:

(a-b). Please see Exhibit CLF-1-10 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-11

Request:

Refer to Schedule GJW-3. Please provide a detailed description of assumed LNG shipments to New England and Canaport as follows:

a) In machine-readable, spreadsheet form, please provide LNG shipments to New England and Canaport assumed by month, year, and scenario and sensitivity in billion cubic feet.

b) Provide a detailed explanation of the rationale for, and source of, any assumptions regarding LNG shipments modeled in each scenario and sensitivity and year.

c) Do the LNG shipments modeled include consideration of 2015/2016 historical LNG shipments? If so, how are 2015/2016 historical LNG shipments considered and included in the assumptions modeled?

Response:

(a-c). Please see Exhibit CLF-1-11, Attachment NEER-1-11(a), and Attachment AG-4-8(c) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the information requested above. Each of these exhibits was provided in response to Data Request PUC 1-1.

CLF 1-12

Request:

Refer to Schedule GJW-3. Please provide a detailed description of assumed LNG storage and vaporization as follows:

a) In machine-readable, spreadsheet form, please provide LNG storage and vaporization by facility, month, year, and scenario and sensitivity. Please address storage owned and/or operated by the following types of entities: local distribution companies; pipeline owners/developers; electric generators; gas and electric utilities; state agencies; and any other potential owners or operators of storage and vaporization.

b) Please provide a detailed explanation of the rationale for, and source for, any assumptions regarding LNG storage, liquefaction, and vaporization modeled in each scenario and sensitivity and year.

Response:

(a-b). Please see Exhibit CLF-1-12 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the information requested above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-13

Request:

Refer to Schedule GJW-3. Please present the natural gas prices created as outputs and/or used as inputs for each of the models used (including ProMOD and GPCM) as follows:

a) In machine-readable, spreadsheet form, please provide natural gas prices at the finest level of geographical and temporal resolution available for each region or delivery site for which natural gas prices were differentiated in this analysis.

b) Were daily natural gas prices modeled by or incorporated into the Black and Veatch models used in this analysis? If so, please provide daily natural gas prices as daily values for each region or delivery site for which natural gas prices were differentiated in this analysis.

c) Do the daily, monthly, or annual natural gas prices modeled include consideration of 2015/2016 natural gas prices? If so, in what way are 2015/2016 natural gas prices considered and included in the assumptions modeled? Please include a specific discussion of temporal resolution.

Response:

(a-c). Please see Exhibit CLF-1-13 and Attachment NEER-2-55(d) (Highly Sensitive Confidential Information) filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the information requested above. These exhibits were provided in response to Data Request PUC 1-1.

Prepared by or under the supervision of: Denny K. Yeung and Gary J. Wilmes

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CLF 1-14

Request:

Refer to Schedule GJW-3. Please present the wholesale electricity prices created as outputs and/or used as inputs for each of the models used (including ProMOD and GPCM) as follows:

a) In machine-readable, spreadsheet form, please provide wholesale electricity prices at the finest level of geographical and temporal resolution available for each region or delivery site for which wholesale electricity prices were differentiated in this analysis.

b) Were daily wholesale electricity prices modeled by or incorporate into the Black and Veatch models used in this analysis? If so, provide daily wholesale electricity prices as daily values for each region or delivery site for which wholesale electricity prices were differentiated in this analysis.

c) Do the daily, monthly, or annual wholesale electricity prices modeled include consideration of 2015/2016 natural gas prices? If so, in what way are 2015/2016 natural gas prices considered and included in the assumptions modeled? Please include a specific discussion of temporal resolution.

Response:

(a-c). Please see Exhibit CLF-1-14 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the information requested above. A copy of this exhibit was provided in response to Data Request PUC 1-1.

CLF 1-15

Request:

Refer to Schedule GJW-3. Please provide a detailed description of the assumptions used to model ISO-NE's Winter Reliability program as follows:

a) What specific assumptions and methodology are used to represent the Winter Reliability program in ProMOD? In this description, please address whether and in what way dual-fuel units are assumed to be subject to air quality constraints, and how and in what way the model selects the fuel used in a given dual fuel unit in a particular scenario and sensitivity and year.

b) What specific assumptions and methodology are used to represent the Winter Reliability program in GPCM? In this description, please address whether and in what way dual-fuel units are assumed to be subject to air quality constraints, and how and in what way the model selects the fuel used in a given dual fuel unit in a particular scenario and sensitivity and year.

Response:

(a-b). Please see Exhibit CLF-1-15 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-16

Request:

Refer to Schedule GJW-3. Please provide a detailed description of the assumptions used to model ISO-NE's Pay for Performance program as follows:

a) What specific assumptions and methodology are used to represent the Pay for Performance program in ProMOD? In this description, please address how fines are modeled by scenario and sensitivity and year.

b) What specific assumptions and methodology are used to represent the Pay for Performance program in GPCM? In this description, please address how fines are modeled by scenario and sensitivity and year.

Response:

(a-b). Please see Exhibit CLF-1-16 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-17

Request:

Refer to Schedule GJW-3. Please provide a detailed description of the specific methodology used to forecast electric load growth as follows:

a) In machine-readable, spreadsheet form, please provide hourly, monthly, and annual electric demand by sector (i.e., residential, commercial, industrial, and transportation) for each year analyzed for New York and each New England state, both inclusive and exclusive of electric-sector energy efficiency in MWh, for all scenarios and sensitivities.

b) In machine-readable, spreadsheet form, please provide the specific assumptions made regarding future electric peak load and annual electric demand as a result of changes in vehicle electrification for each year analyzed, for all scenarios and sensitivities.

c) In machine-readable, spreadsheet form, please provide the specific assumptions made regarding future electric peak load and annual electric demand as a result of increased electrification of heating (i.e., from new incremental heat pump units) and water heating (i.e., from new incremental electric water heating units) for each year analyzed, for all scenarios and sensitivities.

d) In machine-readable, spreadsheet form provide the specific assumptions made regarding future winter peak demand for electricity by each sector for each state for each year analyzed, for all scenarios and sensitivities.

Response:

(a-d). Please refer to Exhibit CLF-1-17 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.

CLF 1-18

Request:

Refer to Schedule GJW-3. Please provide a detailed description of the specific methodology used to forecast end-use natural gas demand in the residential, commercial, industrial, and transportation sectors as follows:

a) In machine-readable, spreadsheet form, please provide hourly, monthly, and annual end-use natural gas demand by sector (i.e., residential, commercial, industrial, and transportation) for each year analyzed for each state in New England, both inclusive and exclusive of end-use energy efficiency in billion cubic feet, for all scenarios and sensitivities.

b) In machine-readable, spreadsheet form, please provide the specific assumptions made regarding in future winter peak demand for end-use natural gas by each sector for each state for each year analyzed, for all scenarios and sensitivities.

Response:

(a-b). Please see ExhibitCLF-1-18 filed by the Company's Massachusetts affiliates in D.P.U. 16-05 for the requested information above. This exhibit was provided in response to Data Request PUC 1-1.