



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill
Rebekah Lacey Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Katherine E. Stock Ethan B. Dively

September 8, 2020

By Email (weymouthcomments@mass.gov)

Massachusetts Department of
Environmental Protection
Southeast Regional Office
Air Permit Section
20 Riverside Drive
Lakeville, MA 02347

Re: **Comments on Preliminary EMD BACT Determination**
In re Algonquin Gas Transmission, LLC, OADR Docket Nos. 2019-
008, 2019-009, 2019-010, 2019-011, 2019-012 and 2019-013

To Whom it May Concern:

This Office represents the Town of Weymouth, and its Mayor Robert L. Hedlund and associated citizens group (together, “Weymouth”), in the above-referenced DEP proceedings. We write on behalf of Weymouth and pursuant to DEP’s Public Notice of August 7, 2020, to submit comments in those proceedings (and as regard Air Quality Plan Approval Application No. SE-15-027) with respect to DEP’s preliminary review and determination that an electric motor drive (“EMD”) is not the best available control technology (“BACT”) to reduce nitrogen oxide (NO_x) pollutant emissions and other pollutant emissions at the proposed compressor station in Weymouth (the “Compressor Station”).

By this letter, Weymouth provides its comments on that Preliminary Determination. We appreciate the significant effort invested by DEP staff to reach its determination in a short time. But it is nonetheless the wrong one. An EMD—which will eliminate all air contaminant emissions associated with the Compressor Station’s compression, including NO_x—is BACT for this facility. In these comments, we explain why that is so and further

identify where and how Algonquin's submissions concluding otherwise are flawed and improperly led DEP staff to its mistaken conclusion.

I. DEP Staff Correctly Rejected Algonquin's Assertion that an EMD is Top Case BACT Based on Recent Air Quality Plan Approvals.

We would like to begin our comments with an issue that DEP staff got right: In its EMD BACT Analysis,¹ Algonquin asserts that two recent Air Quality Plan Approvals issued in Agawam and Hopkinton mean that DEP staff should accept a SoLoNO_x turbine as "Top Case" BACT and thus BACT for the Weymouth Compressor Station. See EMD BACT Analysis §3; 310 CMR 7.02(8)2.² Algonquin advanced this justification independently from its supplemental Top-Down BACT analysis. *Id.*

DEP staff, however, properly rejected that approach. For those reasons identified by staff, that decision was correct. Moreover, the Air Quality Plan Approvals for Agawam and Hopkinton—cited by Algonquin in support of its position—are distinguishable from that in Weymouth. For example, neither of those facilities is sited next to an existing power plant and substation, thus reducing electrical infrastructure and transmission costs for an EMD. Nor is either of those facilities new, with Agawam constituting an upgrade to an existing compressor station and Hopkinton not related to a compressor station at all but to liquefaction facilities at an LNG peak-shaving plant. Because BACT is a case-by-case determination³ the specific factual circumstances of each proposed application must be individually considered. That failure is dispositive and provides an additional basis for rejection of Algonquin's EMD BACT Analysis

¹ The "EMD BACT Analysis shall refer to the Addendum to Non-Major Comprehensive Plan Approval Application (Aug. 7, 2020) (available at <https://www.mass.gov/doc/updated-algonquin-air-plan-approval-application-addendum-with-revised-bact-assessment/download>).

² "Applicants shall identify BACT for their specific application using a top-down BACT analysis. Refer to Department guidance for conducting a top-down BACT analysis. In lieu of an emission unit-specific top-down BACT analysis, an applicant may propose an emission control limitation by using one or more of the following approaches: a. Propose a level of control from the most recent plan approval or other action issued by the Department (Top Case BACT)."

³ New Source Review Workshop Manual (Oct. 1990) ("NSR Manual") at 1 (available at <https://www3.epa.gov/ttn/naaqs/aqmguide/collection/nsr/1990wman.pdf>).

II. DEP Staff Mistakenly Determined that an EMD Should be Eliminated as a Project Redesign at Step 1 of Top-Down BACT Analysis.

DEP staff erred, however, in its subsequent preliminary determination that an EMD would be a project redesign, thus eliminating it as an alternative at Step 1 of Top-Down BACT Analysis. And, even if staff were correct, its preliminary conclusion gives no hint that staff considered ordering inclusion of an EMD as an alternative as a matter of its discretion, as allowed by both DEP and EPA BACT guidance. DEP staff should correct those errors in its final BACT determination.

A. An EMD Does not Redesign the Project Because it Does Not Disrupt the Compressor Station's Basic Business Purpose.

A “project redesign” or “redefining the source” means a change that will disrupt the basic “business purpose” of a facility by changing design elements inherent to that purpose.⁴ DEP staff preliminarily determined that requiring an EMD would redefine the source, requiring elimination of the EMD alternative at Step 1 of a Top-Down BACT Analysis. Thus far, however, the staff has provided no more than that conclusion, without discussion of how this standard applies to the EMD alternative.

Nonetheless, even without any meaningful discussion of this conclusion by staff, it is plainly the wrong one: Algonquin's Atlantic Bridge Project is for the construction of multiple facilities that will enable its interstate natural gas pipeline to transport gas from points south to points north. The transportation of natural gas pursuant to contracts with shippers is Algonquin's business purpose for that Project. The Weymouth Compressor Station is one of the facilities that comprise that Project. Its purpose is thus coterminous with the Atlantic Bridge Project: to transport natural gas for shippers, with the Compressor Station's specific role to generate and inject hydraulic pressure into the interstate pipeline for the transportation of natural gas.

An EMD would not disrupt that business purpose because that purpose is served no matter the means—an EMD, a combustion turbine, or something else—used to drive the compressor to generate that pressure. Indeed, Solar—the manufacturer of the SoLoNO_x combustion turbine that Algonquin seeks to use—manufactures an EMD intended to function as a seamless substitute for the proposed combustion turbine on the exact same

⁴ Helping Hand Tools v. U.S. Env'tl. Prot. Agency, 848 F.3d 1185 (9th Cir. 2016); Sierra Club v. U.S. Env'tl. Prot. Agency, 499 F.3d 653 (7th Cir. 2007)).

compressor.⁵ Requiring use of a Solar EMD that can easily be substituted in place of a SoLoNO_x combustion turbine would not compromise the basic business purpose for this compressor station and would therefore obviously not be a project redesign.

DEP staff erred in concluding otherwise.

B. Even if an EMD Were a Project Redesign, DEP Should Exercise its Discretion to Consider an EMD as an Available Control Technology.

Even if an EMD were a project redesign, DEP staff has thus far provided no explanation for declining to require an EMD as a BACT alternative in the exercise of its discretion. Staff indisputably has this discretion. EPA recognizes that “states have the discretion to engage in a broader [BACT] analysis” that includes alternatives that would otherwise be a project redesign, if they so desire.⁶

Here, there are compelling reasons for the exercise of that discretion. First, exercise of discretion in this fashion is justified based on the additional NO_x emission reductions from use of an EMD. Using an EMD would achieve an onsite NO_x emissions reduction of 10.03 tons per year (“tpy”).⁷ As DEP knows, NO_x is both responsible for adverse health effects as an air pollutant and also acts as an indirect greenhouse gas through photochemical reactions in the atmosphere. Where an EMD will eliminate NO_x emissions—a significant reduction compared to those emissions from a SoLoNO_x turbine—DEP’s exercise of its discretion to include it at Step 1 of Top-Down BACT analysis is certainly warranted.

Moreover, the proposed natural-gas-fired compressor emits a range greenhouse gases. Eliminating these emissions is important because the *Global Warming Solutions Act* (GWSA) requires statewide greenhouse gas emissions reduction targets of 10 to 25 percent by 2020 (from a 1990 baseline) and 80 percent by 2050. *M.G.L. c.21N*, §3. The GWSA also requires reduction targets for 2030 and 2040 that are consistent with the 2050 goal, although these have not yet been set. In April 2020, Governor Baker announced that net zero greenhouse gas emissions is the legal emissions limit for 2050 ,and that statewide

⁵ EMD BACT Analysis Appendix D – Atlantic Bridge - Weymouth Project: Solar Turbines Electric Motor Drive Compressor Set.

⁶ NSR Manual at B.13.

⁷ EMD BACT Analysis, Table 4-4, p. 4-11.

emissions must decrease by at least 85 percent by 2050 (from the 1990 baseline).⁸ The GWSA's 85 percent emissions reduction by 2050 requirements means that state-wide emissions must drop from 94.5 million metric tons (MMT) of carbon dioxide "equivalents" (CO₂e) in 1990 down to 14.2 MMT in 2050.

Today, the Commonwealth's use of natural gas in homes and businesses—not including gas used to generate electricity—results in emissions of about 13 MMT statewide each year. By 2050, the heating and transportation sectors, together, must share a 4.8 MMT budget. The Commonwealth's gas system cannot continue business-as-usual and comply with the GWSA. Any proposal that does not work towards the legally required decrease—such as Algonquin's gas-fired turbine—is fundamentally at odds with the scale of energy transition needed to comply with the mandates of the law.

DEP staff's apparent decision not even to contemplate an exercise of its discretion to include an EMD at Step 1 of BACT analysis is unjustified considering the significant NO_x reductions and related air pollution benefits that an EMD would achieve.

III. DEP Staff Mistakenly Accepted Algonquin's Conclusion that an EMD Should Be Eliminated as Economically Infeasible at Step 4 of Top-Down BACT Analysis.

DEP staff is also mistaken in its determination that an EMD is not economically feasible and thus should be rejected at Step 4 of a Top-Down BACT analysis. Once again, DEP staff has thus far provided only a conclusion, with no discussion. It is thus impossible to tell whether staff accepted the entirety of Algonquin's EMD BACT Analysis or only a part of it, and whether or to what extent DEP staff reached its conclusion along lines separate from Algonquin's analysis. For purposes of these comments, Weymouth responds to Algonquin's EMD BACT Analysis as though DEP staff accepted its conclusions in their entirety.

A. Algonquin's Supplemental BACT Analysis Fails to Use a Controlled Baseline Emissions Rate.

DEP measures a BACT alternative's economic feasibility by comparing that alternative's cost per ton of pollutant removed to monetary effectiveness ranges DEP developed in 1990.⁹ That calculation requires identifying a baseline uncontrolled emissions rate, which

⁸ Massachusetts Executive Office of Energy and Environmental Affairs. April 2020. "Press Release: Baker-Polito Administration Issues Letter Establishing Net Zero Emissions Target." Available at: <https://www.mass.gov/news/baker-polito-administration-issues-letter-establishing-net-zero-emissions-target>.

⁹ DEP BACT Guidance at 5 (available at <https://www.mass.gov/doc/best-available-control-technology-bact-guidance/download>).

serves as the denominator in the average cost effectiveness formula. The uncontrolled emissions rate is therefore a critical input in determining whether an alternative is cost feasible.

Algonquin's EMD BACT Analysis improperly uses the controlled emissions rate of a dry/low NO_x turbine (of which SoLoNO_x is Solar's proprietary model) as its baseline rate. That is error—one revealed by its simple illogic in relation to Algonquin's own application materials. Refer to Algonquin's original application materials to which its EMD BACT Analysis is a supplement. Algonquin's application sets forth a BACT control hierarchy that lists the controlled emissions for less effective alternatives (such as water injection). Where a baseline uncontrolled emissions rate is meant to be an emission unit's emissions without any control technology, to provide a common denominator to calculate the average cost-effectiveness of all available alternatives in such a hierarchy, Algonquin's position must be wrong. In fact, the uncontrolled baseline emissions rate must be higher than the alternatives proposed in Algonquin's hierarchy, including that of any form of dry/low NO_x turbine.

This conclusion also comes simply from the wording choices of DEP and EPA guidance and the commonly accepted meaning of the words "uncontrolled." Where BACT analysis concerns "control" technologies, use of the word "uncontrolled" emissions in guidance has a plain and obvious meaning: without use of any of those control technologies.

What Algonquin should have done—and what DEP staff must require it to do—is identify a true uncontrolled emissions rate to serve as a baseline for calculating the average cost effectiveness for all of the alternatives identified in its control hierarchy, in accordance with examples supplied in EPA guidance.¹⁰ In this case, that should mean, at minimum, one that is more than the emissions rate of the least effective alternative.

B. Algonquin's Supplemental BACT Analysis Overstates Capital and Operating Costs for an EMD.

Algonquin's EMD BACT analysis includes overstated capital and operating cost inputs. To the extent DEP staff accepted those inputs and associated calculations, staff was wrong.

As an initial matter, DEP staff should have rejected all cost calculations furnished by Algonquin in its EMD BACT analysis because they are inconsistent with prior application submissions in a way that compromises the applicant's credibility. In its original application materials, Algonquin calculated the cost of natural gas fuel associated with its SoLoNO_x turbine with selective catalytic reduction ("SCR") using the industrial retail rate for such

¹⁰ E.g., NSR Manual at B.66.

fuel instead of a wholesale rate.¹¹ Because the industrial retail rate is more than the wholesale rate, this resulted in a higher per-ton cost for removal of NO_x using SCR. That, of course, favored Algonquin as it advanced the argument that SCR is not cost-effective for the Weymouth compressor station. Now, in its EMD BACT Analysis, Algonquin has taken the opposite approach—using the wholesale rate—because that rate favors its current position that an EMD is economically infeasible.

Algonquin got it right the first time. The EPA Control Cost Manual (7th Edition), in the context of preparing BACT cost-effectiveness calculations, specifies that the wholesale utility cost should be used only by producers (electric power generators or natural gas producers), and the retail cost should be used by all other parties.¹² Since Algonquin is not a producer, it was wrong to use the retail cost in its BACT analysis. DEP staff should not tolerate this selective and inconsistent use of input data, in the same BACT application, solely to engineer a result favorable to Algonquin's position. It undermines Algonquin's credibility and the integrity of DEP's decision-making. DEP staff should reject Algonquin's EMD BACT analysis on this basis, alone, as the credibility and reliability of the EMD BACT Analysis is irretrievably compromised.

Beyond that compromised credibility, Algonquin's EMD BACT Analysis's calculation of capital and operational costs is also flawed. While we point out specific, significant issues below, we also note that Weymouth previously supplied to DEP staff two letters with concerns regarding Algonquin's EMD BACT Analysis. Those letters—attached to these comments—are incorporated by reference here and identify additional flaws that render Algonquin's EMD BACT Analysis incomplete and insufficient to support DEP staff's preliminary BACT determination.

- Algonquin proposes construction of a high voltage (115-kV) transmission line from the Edgar substation at the Fore River Energy Center to the Compressor

¹¹ Non-Major Comprehensive Plan Approval Updated Permit Application, Attachment E (Revised May 2018) (available at <https://www.mass.gov/doc/updated-air-quality-plan-application-may-2018/download>)

¹² EPA Control Cost Manual, 7th Edition, Section 4 - NO_x Controls, Chapter 2 - Selective Catalytic Reduction, June 2019, pdf. p. 90, footnote 33. "Industrial plants should use the electricity price from their latest utility bill, while electricity generators should use the busbar rate." See: https://www.epa.gov/sites/production/files/2017-12/documents/scrcostmanualchapter7thedition_2016revisions2017.pdf. The Control Cost Manual uses electricity as a strawman for price assumptions for all utilities, as electricity is used universally and other utilities, such as natural gas or water, may or may not be depending on the control device. EPA Control Cost Manual, 7th Edition, Chapter 2 - Cost Estimation: Concepts and Methodology, February 2018, p. 33. See: https://www.epa.gov/sites/production/files/2017-12/documents/epacmcostestimationmethodchapter_7thedition_2017.pdf.

Station to supply electrical power to an EMD. Algonquin, however, provides only conclusory support for that choice over using a medium voltage (13.8-kV) transmission line, which would be sufficient to meet the electrical needs of the make and model EMD it proposes (Solar Spartan EMD Compressor Set). Algonquin’s explanation that a high voltage line is needed for reliability lacks any substantial basis since it does not state any basis for concluding that a medium voltage line would be insufficiently reliable for the Compressor Station.

- Algonquin’s reliance on “reliability” to justify design choices that inflate costs are also improperly cabined to an unsubstantiated concern that unexpected disruptions in the electrical grid will disrupt operation of the EMD. Algonquin supplies no data to quantify that such disruptions are to be expected, much less frequent; provides no significant analysis of engineering options to mitigate their impact; and fails to take into account that an EMD is a more reliable technology than combustion, meaning that use of an EMD will minimize all service disruptions during the equipment’s lifetime, when accounting for maintenance, operating breakdowns, and other factors.
- Algonquin does not analyze how responsibility for capital costs are apportioned between it, National Grid, and/or Eversource. The latter two entities are public utility companies subject to state law governing their operations and oversight by state agencies. Algonquin’s EMD BACT analysis contains no discussion of either of those entities’ policies, tariffs, and other authorities—approved by state agencies—governing respective responsibilities for electrical infrastructure capital costs and how they are apportioned, including through construction advances and otherwise. Indeed, the communication that Algonquin supplied to DEP in response to DEP’s inquiry states that “the circuit between Edgar and the Point of service would be constructed, owned and operated by National Grid” and that “[a]ll substation modifications would be constructed, owned and operated by Eversource.”¹³ Algonquin’s EMD BACT Analysis does not explain how it squares with this underlying communication.
- Algonquin proposes installation of an undergrounded transmission line (leaving aside here the issue of whether a transmission line or a distribution line should be utilized). However, it does not justify the use of an undergrounded transmission line instead of an overhead transmission line. Where even high-

¹³ Goodrich, B. August 7, 2020. Response to MassDEP Request for Clarifying Information on BACT Analysis for EMD Alternative Weymouth Compressor Station (Transmittal No. X266786). P.3.

voltage transmission lines are commonly installed as overhead lines across the Commonwealth, the absence of such an analysis renders Algonquin's EMD BACT analysis incomplete.

- Algonquin provides two bid responses in support of its capital costs analysis, one each from contractors in Illinois (J.L. Allen Services, Inc.) and Texas (Dashiell Corporation). Algonquin, however, does not explain the process that led to these responses, whether additional responses from other contractors were solicited or received, the underlying request (and associated requirements) that yielded these bids, or information sufficient to evaluate whether these bids justify the cost analysis.
- Algonquin computes its annualized capital costs using its rate of return, rather than the cost of borrowing for those capital costs. Using a proper borrowing cost—*i.e.*, the nominal borrowing rate for Algonquin—would substantially reduce the capital costs for an EMD. While Algonquin asserts that EPA Guidance supports its approach, it does not.¹⁴

Spectra, Algonquin's parent company, owns and operates ten compressor stations that use EMD technology.¹⁵ In effect, Spectra's *de facto* "Top Case" prime mover BACT for natural gas compressors is actually EMD. This reality makes the spectacularly high costs Algonquin presents for EMD in this application even more implausible. When a natural gas transportation company has installed EMD at many of its compressor stations, it is reasonable for regulators evaluating the next compressor station simply to direct the firm to use EMD. There is no dispute that EMD minimizes NO_x emissions; and the company's own actions demonstrate that this minimization is reasonable in cost.

For these reasons, and others, Algonquin's EMD BACT analysis incorrectly inflates—by an order of magnitude—the costs of implementing the EMD alternative and, in turn, the average cost-per-ton of NO_x associated with an EMD's pollutant reduction.

¹⁴ EPA Control Cost Manual, 7th Edition, Section 2, p.15.

¹⁵ Enbridge, Response to MassDEP Request for Clarifying Information on BACT Analysis for EMD Alternative Weymouth Compressor Station (Transmittal No. X266786), Aug. 7, 2020, p. 3.

C. DEP’s NO_x Economic Effectiveness Range Fails to Account for Inflation or Changes to Equipment Costs Since 1990.

DEP measures the economic effectiveness of a BACT alternative by comparing the average cost per ton of a pollutant removed to a range of monetary costs. Consistent with DEP and EPA BACT guidance, those ranges were determined in 1990 to be the “costs [that] are integral to the overall cost of doing business and are not to be considered an afterthought.” Thus, those ranges represent the economic burden that DEP deemed appropriate to impose on entities that wish to emit pollutants through their operations.

DEP, however, has not updated those ranges in the three decades since first developing them in 1990. It follows that those ranges no longer represent the “overall costs of doing business” that DEP originally determined appropriate but, instead, a far lower cost that has substantially weakened BACT environmental requirements and protections. The Commonwealth’s BACT cost-effectiveness ranges need updating; the ranges currently used are 30 years old. This means the cost threshold that DEP uses is less in real value now than in 1990, and that these ranges are likely based on outdated assumptions regarding technologies and technology costs.

DEP should update these ranges to ensure that BACT requirements hold their value over time and reflect the state of modern technology.

D. Algonquin’s Use of “Indirect Emissions” for an EMD Should be Rejected.

Algonquin includes, as part of its analysis, indirect emissions that it asserts should be used to evaluate the EMD alternative, such as those from transmission line losses from the point of electric generation to the Compressor Station. It is unclear whether DEP staff relied on this portion of Algonquin’s analysis but, in any event, it should not do so.

First, Weymouth is unaware of any other DEP BACT determination that engages in such an indirect emissions analysis. Nor is Weymouth aware of any DEP regulation, policy, or other sub-regulatory guidance concerning such an analysis. No reason has been given for DEP to break new ground here, and staff should not do so.

Second, and in any event, Algonquin once again inconsistently advances analysis across its Air Quality Plan Approval application to serve its own ends. Nowhere in its BACT analysis for the other alternative does Algonquin engage in this type of analysis. For example, Algonquin has not considered the indirect emissions associated with obtaining the natural gas fuel needed for the turbine or transporting gas to the turbine. If MassDEP includes

indirect emissions in its decision-making on EMD, then Algonquin needs to consider indirect emissions for both technologies for their BACT Top-Down analysis to be complete. This would involve estimating the emissions in facilities owned and operated by others to produce and transport the gas needed to power Algonquin's turbine.

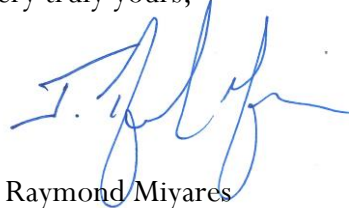
Third, any "indirect emissions" analysis, if done, should account for the dynamic nature of the electrical grid's future emissions compared to the static nature of installing a combustion turbine at this facility. As previously noted, the GWSA has set emissions goals and targets that the Commonwealth will implement over the coming decades. In so doing, the Commonwealth's electrical grid will become increasingly green and any indirect emissions that may be linked to an EMD will correspondingly decline. That contrasts with Algonquin's proposed combustion turbine. No matter the Commonwealth's progress in its march toward a greener future, that combustion turbine's emissions will not change. Rather, the turbine will endure as a non-green source of NO_x.

IV. Reservation of Rights.

DEP staff's preliminary BACT determination contains only a high-level statement of its reasoning and does not identify what portions of Algonquin's EMD BACT analysis (if any) were relied upon in support of its conclusion. Weymouth has therefore prepared these comments in anticipation of the rationale that DEP staff may think supports its conclusion. But without knowing, for certain, what that rationale will include, Weymouth reserves all rights and waives none with respect to advancing additional and supplemental reasons for why EMD technology is BACT for the Weymouth Compressor Station.

Thank you for your courtesy in considering these comments.

Very truly yours,



J. Raymond Miyares


cc: Service List (OADR Docket Nos. 2019-008, 2019-009, 2019-010, 2019-011, 2019-012 and 2019-013)

Jane Rothchild, Presiding Officer (by filing with OADR
Case Administrator, Caseadmin.OADR@mass.gov)

B.F. Bertram, I.G. Fried, K.E. Stock, J. Callanan

CERTIFICATE OF SERVICE

I hereby certify that the foregoing public comment letter was served on all parties to the OADR docket numbers set forth below, on September 8, 2020, by emailing the same to those party representatives listed in the Service List below.



Bryan Bertram

Representative

Michael H. Hayden
Morrison Mahoney LLP
250 Summer Street
Boston, MA 02210-1198
mhayden@morrisonmahoney.com

Margaret Bellafiore
49 Caldwell Street
Weymouth, MA 02191
Margaret@mobius.org

Elizabeth Moulds, Pro Se
70 Winter Street
Hingham, MA 02043
egmoulds@gmail.com

Kerry T. Ryan, Special Counsel
Bogle, Deascentis & Coughlin, P.C.
25 Foster Street, First Floor
Quincy, MA 02169
ktr@b-dlaw.com

Party

PETITIONER (in 2019-008)
Ten Residents Group

PETITIONER (in 2019-008)
Ten Residents Group

PETITIONER (in 2019-009)
Hingham Ten Persons Group

PETITIONER (in 2019-010)
Town of Hingham

Stephen J. Durkin, Esq.
Assistant City Solicitor
City of Quincy
Quincy City Hall
1305 Hancock Street
Quincy, MA 02169
sdurkin@quincyma.gov

PETITIONER (in 2019-011)
City of Quincy

John J. Goldrosen, Esq.
Assistant Town Solicitor
Town of Braintree
One JFK Memorial Drive
Braintree, MA 02184
jgoldrosen@braintreema.gov

PETITIONER (in 2019-012)
Town of Braintree

Nicholas Cramb, Esq.
Caitlin Hill, Esq.
Mintz, Levin, Cohn, Ferris, Glovsky and
Popeo, P.C.
One Financial Center
Boston, MA 02111
nncramb@mintz.com
cahill@mitz.com

APPLICANT
Algonquin Gas Transmission LLC

Mike Dingle, Esq., Chief, Litigation
MacDara Fallon Senior Counsel
Jenny E. Outman, Senior Counsel
Lauren Karam, Counsel
MassDEP Office of General Counsel
One Winter Street
Boston, MA 02108
mike.dingle@state.ma.us
macdara.fallon@mass.gov
jenny.e.outman@mass.gov
lauren.karam@mass.gov

MASSDEP

Thomas Cushing, Permit Chief
Bureau of Air & Waste
MassDEP Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347
thomas.cushing@mass.gov

MASSDEP

Shaun Walsh, Chief Regional Counsel
MassDEP/Southeast Regional Office
Office of General Counsel
20 Riverside Drive
Lakeville, MA 02347
shaun.walsh@mass.gov

MASSDEP

Leslie DeFilippis, Paralegal
MassDEP/Office of General Counsel
One Winter Street
Boston, MA 02108
Leslie.defilippis@mass.gov

MASSDEP



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill
Rebekah Lacey Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Katherine E. Stock Ethan B. Dively

August 4, 2020

By Electronic Mail

Mike Dingle, Esq.
Chief, Litigation

Jennie E. Outman, Esq.
Senior Counsel

MacDara Fallon, Esq.
Senior Counsel

Lauren Karam, Esq.
Counsel

Department of Environmental Protection
Office of General Counsel
One Winter Street
Boston, MA 02108

Re: In the Matter of Algonquin Gas Transmission, LLC
 OADR Docket Nos. 2019-008, 2019-009, 2019-010, 2019-011, 2019-012 and 2019-013

Dear Counsel:

As you know, we represent the Town of Weymouth and associated petitioners in these consolidated proceedings. On July 24, Algonquin Gas Transmission, LLC (“Algonquin”) submitted to the Southeast Regional Office (“SERO”) Staff an “Addendum to Non-Major Comprehensive Air Plan Approval,” prepared by Trinity Consultants (the “EMD BACT Analysis”), and supporting prefiled witness testimony. Pursuant to the Commissioner’s remand schedule, SERO now has until August 7 to review the Electric Motor Drive (“EMD”) BACT Analysis and request from Algonquin such additional information and analysis that it requires to complete its BACT determination (following a public comment period) on September 29.

We write to you because Weymouth’s own experts have preliminarily reviewed the EMD BACT Analysis and believe that there are additional information and analysis that are necessary to reach a final BACT determination, and that SERO should therefore request from Algonquin. Rather than identifying these items during a public comment period or a post-determination adjudication, we believe that they are better raised now while SERO still has an opportunity to request that Algonquin supplement the record. Doing so also gives SERO an opportunity to see Weymouth’s concerns about missing information and analysis in advance, with an opportunity to consider those concerns thoroughly as part of its own process.

1. Communications with National Grid.

The Prefiled Direct Testimony of John Heintz, on page 3, refers to “communications in June 2020 with representatives from National Grid,” but does not supply copies of those communications. We suggest that SERO request copies of any written documentation of communications to or from National Grid concerning the proposed Weymouth Compressor Station’s use of an EMD, not restricted to only June 2020 or the specifically referenced communications. If Algonquin is relying on technical or other information from National Grid, SERO should have access to those documents so that SERO can properly consider that information.

2. Edgar Substation Information.

An important issue related to the EMD BACT alternative is the potential use of the Edgar substation to provide electrical power. We suggest that SERO request from Algonquin the rated megavolt amperes (“MVA”) capacity of the Edgar substation and the actual annual peak MVA load on the Edgar Substation, for calendar years 2015 through and including 2019. Such data are necessary to evaluate the representation that the Edgar substation “does not have the capacity to provide the level of service that would be required to power the EMD.”

3. Explanation for 115 kV Transmission Voltage Supply.

Algonquin’s vendors propose to install a 115 kV high voltage transmission supply from the Edgar substation, instead of 13.8 kV distribution voltage supply also available at Edgar substation, and a 30 MVA substation capacity for the proposed 6 MVA load, medium voltage EMD. We suggest that SERO request that Algonquin evaluate installation of a 13.8 kV distribution voltage supply for its medium voltage EMD.

4. National Grid Unit Costs for 13.8-kV Underground Transmission Line.

Algonquin provides certain cost estimates to construct an underground transmission line from the Edgar substation to the proposed Compressor Station. In relation to the request immediately above, we suggest that SERO request from Algonquin documentation of National Grid’s unit cost to install an underground 13.8-kV transmission line.

5. Underground Transmission Line Route.

Algonquin states that an underground transmission line from the Edgar substation would be approximately 0.5 miles and pass under a road and bridge. We suggest that SERO request that Algonquin supply a map (properly scaled so as to determine distance) that contains its proposed transmission line route and that depicts any alternative routes considered by Algonquin.

6. Currently Configured Electric Supply to the Compressor Station.

As currently configured for a combustion turbine, the proposed Weymouth Compressor Station receives electrical power. We suggest that SERO request from Algonquin details about that electrical power supply, including: origin point; length of the conductor from the origin point to the Compressor Station; route of the conductor (ideally depicted on a map); whether the conductor is an overhead transmission line or undergrounded; and the type (e.g. 477AAC), voltage, and amperage rating of the conductor.

7. Electric Power Supply Infrastructure Costs.

We suggest that SERO require Algonquin to explain whether and to what extent National Grid will be responsible for any costs referenced in the EMD BACT Analysis for electric power supply infrastructure (including but not limited to interconnection with the proposed Compressor Station). We suggest that SERO require any such response to include all D.P.U.-approved and other National Grid documents relevant to those costs and calculations, including the relevant D.P.U.-approved tariff and National Grid connection terms and conditions.

8. Natural Gas Costs.

In its prior BACT analyses (most recently in 2018), Algonquin used the Massachusetts statewide industrial retail natural gas rate (in 2015 dollars, \$11.34/MMBtu) when calculating BACT costs. But in the EMD BACT Analysis, Algonquin changes that price assumption to what appears to be the wholesale rate and, in any event, a much lower rate: \$3.04 MMBtu. We suggest that SERO request that Algonquin explain the rationale for this change from its prior analyses.

9. Natural Gas Source.

We suggest that SERO ask Algonquin to confirm that the natural gas referenced in the May 2018 BACT SCR cost-effectiveness calculation is the natural gas fuel used by the proposed Taurus 60 gas turbine, and that the additional natural gas fuel cost shown in the SCR cost-effectiveness calculation is associated with overcoming the pressure drop across the SCR.

10. Industrial Electrical Power Retail Rate.

Algonquin uses an industrial retail rate for electrical power of \$0.1437 per kW-hour. We suggest that SERO ask Algonquin to provide documentation confirming that rate where the U.S. Energy Information Administration lists the rate as \$0.1387 for May 2020.

(https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a)

11. Spartan EMD Technical Information.

We suggest that SERO confirm from Algonquin that the Spartan EMD it proposed for the Weymouth Compressor Station includes an input transformer and request that Algonquin supply 13.8 kV distribution voltage, available from the Edgar substation, to the input transformer.

12. Analysis of Transmission Losses.

Algonquin calculated certain, purported electrical grid efficiency losses as part of its EMD BACT analysis. Algonquin, however, omits any analysis of natural gas pipeline transmission losses, including in the form of compressor station power demand and natural gas consumption at compressor stations from the source of the natural gas to Weymouth. We suggest that SERO request from Algonquin such an analysis. Further, we suggest that SERO request from Algonquin the gearbox efficiency for the Solar Taurus 60 combustion turbine it proposed to operate at the Weymouth Compressor Station.

* * *

Thank you in advance for your consideration of this letter. Please also relay our similar thanks to SERO. Should SERO have any questions concerning the content of this letter, it should not hesitate to contact us (through your office). Finally, please note that we provide this letter to assist SERO in its decision-making. In doing so, we do not intend to waive Weymouth's rights to advance any arguments concerning these or other matters (including the relevance of any of this information to BACT for the Weymouth Compressor Station) in the future, for any reason. To the contrary, Weymouth reserves, and does not waive, all rights.

Sincerely,



J. Raymond Miyares
Bryan F. Bertram
Katherine E. Stock

cc: Service List



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill
Rebekah Lacey Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Katherine E. Stock Ethan B. Dively

August 6, 2020

By Electronic Mail

Mike Dingle, Esq.
Chief, Litigation

MacDara Fallon, Esq.
Senior Counsel

Jennie E. Outman, Esq.
Senior Counsel

Lauren Karam, Esq.
Counsel

Department of Environmental Protection
Office of General Counsel
One Winter Street
Boston, MA 02108

Re: In the Matter of Algonquin Gas Transmission, LLC
OADR Docket Nos. 2019-008, 2019-009, 2019-010, 2019-011, 2019-012 and 2019-013

Dear Counsel:

This letter will supplement the correspondence sent to you on August 4. Since that letter, our experts have conducted additional reviews of the EMD BACT Analysis and supporting prefiled written testimony submitted to the Southeast Regional Office (“SERO”) and believe that still more information and analysis are necessary to reach a final BACT determination, which SERO should therefore request from Algonquin. In making its requests to Algonquin, we suggest that SERO should seek supporting materials, notes, studies, and workbooks (with formulae intact) related to the requested information and analysis, in order to allow for SERO and the public to understand and evaluate the submissions provided.

13. Storage Options.

The EMD BACT Analysis states that installing an electric motor drive (EMD) instead of a natural gas-fired turbine would “cause substantial upstream air emissions” (p. 4-8), and that “natural gas delivery to the Maritimes system would cease during a power outage, preventing the delivery of natural gas from south of the compressor station to points north” (p. 4-7). We suggest that SERO ask Algonquin whether it considered battery or other storage options in order to mitigate natural gas delivery disruptions during a power outage and upstream emissions. If so, we suggest that SERO request that its analysis of storage options be provided.

14. Grid Reliability.

The EMD BACT Analysis states that (p. 4-6) “The Facility would be unable to meet its basic business purpose with an EMD when power from the grid is unavailable. That is, during electric power outages, Algonquin would not be able to transport gas from the lower pressure Algonquin system into the higher pressure system.” We suggest that SERO request information on the number, extent and duration of blackouts that have impacted the project area, or the greater Boston area, in the 21st century.

15. Taurus 60 Gas Turbine Availability.

We suggest that SERO ask Algonquin to provide data on the frequency and duration of periods when gas turbines in the MW capacity range of the Taurus 60 MW have historically been offline for maintenance and, separately, on the subset of periods involving forced outages due to mechanical failures. We further suggest that SERO ask Algonquin to confirm that Taurus 60 maintenance outages or forced outages will disable the proposed Weymouth compressor whether or not there is an adequate supply of natural gas to run the gas turbine.

16. Behind-the-Meter Generation Options.

We further suggest that SERO ask Algonquin whether it considered onsite solar or other behind-the-meter generation options in order to mitigate natural gas delivery disruptions during a power outage and upstream emissions. If so, we suggest that SERO request that its analysis of behind-the-meter generation options be provided.

17. Need for New Construction.

The EMD BACT Analysis states that “electric driven compression would necessitate the construction of a new building, electric substation, and ancillary equipment within TGP’s existing CS 261 site.” (Appendix A, p. 8 of 50). We suggest that SERO request that Algonquin provide its analysis justifying the need for the new building, electrical substation or ancillary equipment associated with the EMD alternative and demonstrating the capital costs thereof.

18. Wetlands Analysis.

The EMD BACT Analysis also states that “[g]iven the existing facilities on the site, the only location where these facilities could be located would be in the southwest portion of the site, which has a large wetland system associated with Worthington Brook” (Appendix A, p. 8 of 50). We suggest that SERO request that Algonquin provide its analysis demonstrating that the wetland system adjacent to the existing site is the only suitable location available.

19. Upgrades and Additional Infrastructure Analysis.

The EMD BACT Analysis states that: “[t]he additional major infrastructure identified for the Weymouth Station to power EMD, based on information collected for this BACT Addendum, includes the following:

- Upgrades to Existing Edgar Substation
- High Voltage Transmission Line Installation
- Right of Way Land Purchase Costs (High Voltage Transmission Line);
- Weymouth Site Substation Installation; and
- Medium Voltage Line at Weymouth Station.”

(p. 4-5). We suggest that SERO request that Algonquin provide its analysis demonstrating the necessity of the station and transmission upgrades and justifying the need for additional infrastructure. Of particular interest would be any analysis of alternatives to these upgrades and new infrastructure.

20. Level of Service.

In our August 4 letter, we noted the Prefiled Direct Testimony of John Heintz, which refers to communications with representatives of National Grid. Specifically, Mr. Heintz states that, “[i]n order to provide power to an EMD for the Weymouth Compressor Station, additional infrastructure improvements are required, including, but not limited to: (1) upgrades to the existing Edgar Substation located at the Calpine Fore River Energy Center, including a new breaker (“Edgar Substation”)” (p. 3, ¶9). He then states that, “the existing Edgar Substation does not have the capacity to provide the level of service that would be required to power the EMD.” (p. 3, ¶10). We suggest that SERO ask Algonquin to define “level of service” as used in this testimony, and to clarify what “level of service” is required to power the EMD and what “level of service” can currently be provided at the existing Edgar Substation.

21. Need for and Cost of the Transmission Line.

In his Prefiled Direct Testimony Mr. Heintz states that: “To transmit the electricity necessary to power an EMD at the Weymouth Compressor Station, approximately one-half mile of underground high voltage transmission line would need to be installed connecting the Edgar Substation to the Weymouth Compressor Station site” (p. 4, ¶12). We suggest that SERO ask Algonquin how this need was determined, including any analysis of alternatives, and the basis for the \$8.5 million cost estimate for the high voltage (115 kV) transmission line installation (EMD BACT, Table 4-6, p. 4-15).

22. New Substation.

Mr. Heintz's Pre-Filed Direct Testimony also states that, "in order to transform the transmission level voltage from the Edgar Substation down to a useable voltage, Algonquin would need to construct a new substation at the Weymouth Compressor Station site." (p. 5, ¶15). We suggest that SERO ask Algonquin how this need was determined—specifically identifying the current transmission level voltage of the Edgar Substation and providing a definition of "useable voltage" in the context of transforming the transmission level voltage of the Edgar Substation.

23. Right of Way Land Purchase Costs.

The EMD BACT Analysis lists the "Right of Way Land Purchase Costs (High Voltage Transmission Line)" as \$619,460 (Appendix C, Table 2). We suggest that SERO ask Algonquin to provide the basis for this figure.

24. Medium Voltage Line Costs.

The EMD BACT Analysis lists the "'Medium Voltage Line at Weymouth Station" costs as \$693,764 (Appendix C, Table 2). We suggest that SERO ask Algonquin to provide the basis for this figure.

* * *

Again, thank you in advance for your consideration of this letter, and please also relay our similar thanks to SERO. Should SERO have any questions, it should not hesitate to contact us (through your office). Finally, as stated previously, we provide this letter to assist SERO in its decision-making. In doing so, we do not intend to waive Weymouth's rights to advance any arguments concerning these or other matters (including the relevance of any of this information to BACT for the Weymouth Compressor Station) in the future, for any reason. To the contrary, Weymouth reserves, and does not waive, all rights.

Sincerely,



J. Raymond Miyares
Bryan F. Bertram
Katherine E. Stock

cc: Service List