



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

July 15, 2009

Attn: Steven Warsaw
NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540

Re: 310 CMR 7.00 Appendix B(7)
Transmittal # X223942 and X223943
Approval of BWP AQ27 and AQ28
Applications for Certification and
Verification of GHG Credits at four
Compressor Stations in North and South
Dakota

Dear Mr. Warsaw:

The Massachusetts Department of Environmental Protection (MassDEP or the Department) hereby approves your Application for Certification of GHG (Greenhouse Gas) Credits (BWP AQ27), dated December 29, 2008. The Department also approves your Application for Verification of GHG Credits (BWP AQ 28), dated January 20, 2009. In accordance with the requirements of 310 CMR 7.00: Appendix B(7)(f), the Department conducted a 30-day public comment period on the Proposed Approval. The public comment period ended on June 22, 2009. No public comments were received during the comment period.

The Final Approval of your Application for Certification of GHG Credits (BWP AQ 27), combined with the Final Approval of your Application for Verification of GHG Credits (BWP AQ 28) creates 102,064 verified GHG Credits for emission reductions that occurred between January 1, 2007 and December 31, 2007 at four separate natural gas compressor stations, located in St. Anthony, North Dakota, and in Pembrook, Woodland, and Hidewood, South Dakota. These credits have been deposited into MA GHG Credit account MAGHG-C-3, Somerset Power LLC; the GHG Credit Account Representative for this account is Leonard Ariagno. The serial numbers of the credits are 12,642,858 through 12,744,921. Verified GHG Credits from this project can only be used by affected facilities for compliance with the CO₂ emissions standards of 310 CMR 7.29.

Included as part of this Final Approval of your Application for Certification and Verification of GHG Credits are the following:

- (1) A description of your project.
- (2) A table showing the number of GHG Credits approved for certification and verification.
- (3) A list of relevant determinations that the Department has made in accordance with the requirements of 310 CMR 7.00: Appendix B(7).

- (4) An explanation of how the number of GHG Credits approved for certification and verification was calculated.

Note that your applications are also incorporated, by reference, into this Final Approval.

(1) Description of the Project

As described in the applications:

The project involves the operation of heat recovery equipment at four Northern Border Pipeline natural gas compressor stations for the purpose of generating electricity. The project is comprised of four separate Recovered Energy Generation power plants. Each [Recovered Energy Generation] plant utilizes the waste heat exhausted from the [Northern Border Pipeline] natural gas compressor station to a gas turbine driver to generate electricity. The Project provides a total of 22 [megawatts] of base-loaded near zero emissions generation capacity to Basin Electric Power Cooperative customers.

(2) Table showing the number of GHG Credits

Note: The applicant applied for credit for reductions that occurred in 2006; however, MassDEP is not certifying or verifying reductions that occurred before January 1, 2007 because 310 CMR 7.00: Appendix B(7)(e)2 states, in part: “In order for GHG Credits to be eligible for verification, an application... shall be submitted to the Department within two calendar years after the end of the calendar year in which the emission reduction, avoided emission, or sequestered emission actually occurred.” The Application for Verification for this project was submitted to the Department on January 20, 2009.

	Time period	Number of Credits
Certified GHG Credits	January 1, 2007 through December 31, 2007	102,064
Verified GHG Credits	January 1, 2007 through December 31, 2007	102,064

(3) A list of relevant determinations that the Department has made in accordance with the requirements of 310 CMR 7.00: Appendix B(7). (Defined terms and language that is directly excerpted from regulations appear in italics.)

The Department has made the following determinations:

- The emission reductions are *Real*, in that, by lowering demand for electricity from other power plants in the MRO West eGrid Subregion, the project actually resulted in a decrease in emissions from those electric power plants. Furthermore, there were no emissions associated with operation of the project. According to the applicant, “The

operation and emission of the compressor stations has not changed due to the addition of the [heat] recovery equipment and the generation of electricity from that recovered energy.”

- The emission reductions are *Additional*, in that there is no legal requirement to recover the waste heat from natural gas pipeline compressor stations or to use waste heat from compressor stations as a fuel to generate electricity.
- The emission reductions are *Verifiable*, in that there are monthly invoices specifying the mega-watt hours the project sites have generated and delivered to the bulk electricity transmission grid. According to the applicant the invoices were reviewed by an external auditing firm with the assistance of Basin Electric Power Cooperative’s internal auditors and Certified Public Accountants. The applicant also supplied documentation to support the assertion that “the operation and emission of the compressor stations has not changed due to the addition of the [heat] recovery equipment and the generation of electricity from that recovered energy.” These documents showed that emissions from the compressors were not significantly higher after the project was installed than they were before the project was installed.
- The emission reductions are *Permanent*, in that once electricity has been generated using waste heat from the compressors at this time and location, the same electricity can never be generated again.
- The emission reductions are *Enforceable*, in that, pursuant to 310 CMR 7.00: Appendix B(7)(g)8., violations of the requirements of 310 CMR 7.00: Appendix B(7) may be enforced against any person who applied for certification or verification of GHG Credits, an affected facility that purchases GHG Credits created by this project, or any combination thereof.
- The project commenced *on or after January 1, 2006*, in accordance with 310 CMR 7.00: Appendix B(7)(d)9., in that the project commenced operation at each of the four compressor stations in either July, August, or October 2006.
- The project is expected to *generate an annual average over the period applied for of 5,000 or more tons of carbon dioxide equivalent (CO_{2e})*, in accordance with 310 CMR 7.00: Appendix B(7)(e)3., in that the project generated approximately 100,000 tons of CO_{2e} emission reductions over a period of twelve months.
- The application includes *a proposed method for determining, monitoring and assuring compliance*, in accordance with 310 CMR 7.00: Appendix B(7)(e)4.b, in that the amount of electricity that is exported to the electric grid was separately metered at each project site.
- The applicant has specified *the best management practice used to determine an emissions baseline*, in accordance with 310 CMR 7.00: Appendix B(7)(e)4.d., in that the applicant provided the following explanation:

The use of heat recovery to generate electricity from compressor stations is rare. The first and only project of which NRG has knowledge was a project at Gold Creek, Canada. The equipment supplier for the sites covered by NRG’s

application has represented to NRG that the four sites covered by the application are the first in the world of this type and size.

- The project does not present any potential project leakage.

(4) Explanation of how the number of GHG Credits for certification and verification was calculated

The number of GHG Credits was calculated using the following equation:

GHG Credits = 102,064

GHG Credits = $N_{\text{baseline}} - N_{\text{project}}$

Where $N_{\text{project}} = 0$, the number of tons of CO₂ emitted by the project in 2007

$N_{\text{baseline}} = 112,047 \times 0.91$

Where:

112,047 = the total amount megawatt hours (MWhs) of electricity exported to the electric grid produced by each Recovered Energy Generation unit at the four compressor stations in 2007.

0.91 = Conversion factor derived by taking the published emission factor for electricity use in the United States for the applicable eGRID Subregion MRO West (1,821.8 pounds (lbs) of CO₂ per MWh), and dividing it by 2000 lbs per ton. The eGRID number was taken from The Climate Registry's General Reporting Protocol v1.1 published on March 2, 2009.

Should you have any questions concerning this Final Approval, please contact Loreen Kelley at loreen.kelley@state.ma.us (617) 574-6815.

Very truly yours,

Nancy L. Seidman
Deputy Assistant Commissioner
Climate Strategies
Bureau of Waste Prevention

cc: Cynthia Karlic, NRG Energy Inc., cynthia.karlic@nrgenergy.com
Leonard Ariagno, Somerset Power, LLC, len.ariagno@somersetpower.com
William Lamkin, MassDEP, BWP, NERO
William Space, MassDEP, BWP, Boston
Stacy DeGabriele, MassDEP, BWP, Boston
Loreen Kelley, MassDEP, BWP, Boston