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April 28, 2021

*Via eFiling*

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: Northern Natural Gas Company  
Docket No. CP20-503-000  
Northern Lights 2021  
Supplemental Information on Greenhouse Gas Impacts

Dear Ms. Bose:

Northern Natural Gas Company (Northern) hereby submits for filing with the Federal Energy Regulatory Commission (Commission) under the above-referenced docket, information to supplement its application made July 31, 2020.

Time is of the essence to begin the construction of the Northern Lights 2021 facilities to meet the in-service date of November 1, 2021. To facilitate Commission review of the application in the instant docket and an order approving the Northern Lights 2021 project to minimize potential negative impacts resulting from delay in the issuance of an order, Northern is providing additional information that summarizes downstream GHG emissions for the project.

In its application, Northern provided data detailing construction and operational GHG emissions. Since then, the Commission issued an order authorizing a certificate to Northern in Docket No. CP20-487-000, in which the Commission announced its intention to consider “the significance of a project’s greenhouse gas (GHG) emissions [and] those emissions’ contribution to climate change.”<sup>1</sup>

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<sup>1</sup> *Northern Natural Gas*, 174 FERC ¶ 61,189, P 29 (March 22, 2021) (“March 22 Order”).

Northern previously supplied key data on GHG emissions expected from the construction<sup>2</sup> and operation<sup>3</sup> of the proposed facilities for the Northern Lights 2021 project. Resource Report 9 discussed the sources for both construction and operation GHG emissions. With this filing, Northern supplements the information on the record to include estimated downstream GHG emission impacts from the project. Northern has attached a consultant report from Stantec Consulting Services Inc. that provides a summary of the GHG emission impacts from the previously filed information and includes new information on estimated downstream impacts.

For the previously reported construction and operational GHG emission data, Northern is supplementing its data with an analysis of those impacts by applying the methodology employed in the March 22 Order. In that order, the Commission took the total estimated GHG emissions, in tons, and applied that amount to the total GHG emission of the U.S. and made a finding that impacts were “not significant.”<sup>4</sup> Adopting the Commission’s methodology, Northern submits that total construction and operational GHG emissions for the Northern Lights 2021 project are within the same order of magnitude as those in the project docketed at CP20-487-000 and are, therefore, not significant. The Commission concluded that its methodology provides a “reasoned basis” to consider the significance of a project’s GHG emissions and their potential impact on climate change.<sup>5</sup>

Northern offers as supplemental information an estimate of downstream emissions. *See Appendix A, Report of GHG Emissions.* Northern’s third-party consultant has estimated the Northern Lights 2021 project’s downstream emissions would fall within a range of an initial amount of 9,768 tons per year to up to 259,334 tons per year assuming current load factors sometime long into the future. However, given the significant programs in place and being developed to achieve GHG emission reductions in Minnesota and nationally, it is unlikely current load factors will continue into the future as these plans are executed upon and targeted reductions are achieved.

Comparing the estimated downstream GHG emissions from the project to the 2019 national GHG emissions of 6.558 billion metric tons,<sup>6</sup> adjusting for the metric conversion, the project’s downstream GHG emissions represents a 0.00014% to 0.0036% increase in GHG emissions, an increase that is of similar magnitude to emissions the Commission concluded were “not significant” in the March 22 Order.

In addition to supplying estimated downstream GHG emissions, Northern further supplements the record by noting other actions and decisions taken during the planning of the project that contribute to GHG emission avoidance:

- By using hot taps and line stops, Northern will avoid releasing 10.2 million cubic feet of natural gas to the atmosphere. Assuming, conservatively, that the gas is pure

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<sup>2</sup> *See*, Resource Report 9, section 9.1.2.

<sup>3</sup> *See*, Resource Report 9, section 9.1.3.

<sup>4</sup> *See*, March 22 Order, at paras. 34-36.

<sup>5</sup> *Id.*

<sup>6</sup> The Commission used the national GHG emission total from 2018 for its analysis in the March 22 Order; the information here reflects 2019 totals.

methane and assuming a gas density of 0.05 lb./cubic feet (at standard temperature and pressure), this equates to 510,000 lbs. of gas or 5,783 metric tons of CO<sub>2e</sub> assuming a global warming potential (GWP) of 25 for methane.

- Because one of the project shippers sought alternative gas supply after consultation and collaboration with Northern on the original project scope, the project scope was significantly reduced. Because the reduced project scope requires fewer construction spreads, there is less construction-related CO<sub>2e</sub>. Applying a general ratio formula (spreads initially required vs. actual spreads required), the CO<sub>2e</sub> avoidance is estimated at approximately 10,000 metric tons.

In applying the assumptions to the calculation of GHG emissions, Northern emphasizes the use of data based on the presumption of less than full capacity utilization to determine estimated GHG emission output reflects the varying demand requirements of our customers at different times of the year. The project was developed based on customers' needs and reflects the balance between securing the required energy to meet the growth needs of the shippers' customers and the carbon reduction goals adopted or articulated by the state and their local community. In 2007, the state enacted the Next Generation Energy Act that requires the state to reduce GHG emissions by 80% between 2005 and 2050; the Act set an interim goal of a 30% reduction in GHG emissions by 2025. The City of Minneapolis has adopted clean energy goals calling for 100% clean energy by 2040.

As part of a first-of-its-kind agreement with the City of Minneapolis, CenterPoint and Xcel Energy, the two largest shippers in the Northern Lights 2021 project, joined in 2014 to form the Clean Energy Partnership. The Partnership will work together to help the City of Minneapolis reach its climate goals. This may occur through planning, implementing, marketing and tracking new approaches to delivering energy efficiency, energy choices, and renewable energy to Minneapolis residents and businesses. Further, Xcel Energy received the 2020 Climate Leadership Award recognizing the company's efforts to reducing carbon emissions; Xcel Energy has targeted an 80% reduction in carbon emissions by 2030. In addition, Xcel Energy is implementing a strategy to further reduce leaks on its distribution system and enable customers to manage their end-use carbon dioxide emissions through a variety of innovative programs.

Even as our Minnesota customers work toward these carbon-reduction goals, they responsibly and prudently retain a focus on their customers' energy needs. They have shared with the Minnesota Public Utilities Commission and the Minnesota Department of Commerce their energy growth needs to continue heating homes, businesses, schools and hospitals. The customers narrowly tailored their need for the scope of the Northern Lights 2021 project. The resulting project represents the best balance between ensuring reliable and sufficient energy for design day needs and continuing progress to meeting the objectives of carbon reduction adopted by their communities.

Northern respectfully requests Commission consideration of the supplemental information provided and prompt resolution of the pending issues in Northern's application and issue a certificate in the Northern Lights 2021 docket.

Respectfully submitted,

/signed/ Michael T. Loeffler

Michael T. Loeffler  
Senior Director, Certificates and External Affairs

## Appendix A

### Report of GHG Emissions

#### Northern Lights 2021 Expansion Project (Project)

##### 1.0 Greenhouse Gas Emissions

Northern Natural Gas (Northern) considered the potential environmental impacts, including greenhouse gas (GHG) emission impacts from downstream sources, in developing its Northern Lights 2021 project.

Specifically, for greenhouse gas emissions impact, Northern analyzed additional end-user consumption, in addition to the construction and operational impacts. The following sections discuss the GHG emission impacts of each and the overall impacts when compared against nationwide GHG emissions, the standard applied by the Federal Energy Regulatory Commission (FERC) in its March 22, 2021 order (March Order) in Docket No. CP20-487-000.

##### 1.1 Construction Emissions Impacts

As discussed in Resource Report 9, Section 9.1, which was included in the section 7 application filed for the project submitted by Northern July 31, 2020, Northern calculated the construction GHG impacts from the Project to be 7,614 tons (6,907 metric tons). Northern notes the numbers in the construction emissions, as noted in Table 1.1.1 below, represent GHG emission impacts for Year One of the project as construction activities will be short in duration. GHG emissions are represented by cumulative CO<sub>2</sub> emissions and are denoted by CO<sub>2e</sub>.

**Table 1.1.1 Construction GHG Emissions**

| Description                    | Construction Emissions <sup>1</sup><br>(tons per year) |
|--------------------------------|--|
|                                | CO <sub>2e</sub>                                       |
| NL 2021 Construction Emissions | 7,614  |
| <b>TOTAL</b>                   | <b>7,614</b>   |

<sup>1</sup> Construction emission impacts represent Year One GHG emission impacts.

Northern compared the Year One construction GHG emissions from the Project to the 2019 national GHG emissions of 6.558 billion metric tons, the same metric<sup>1</sup> as referenced by FERC in its March 22 Order. The GHG emissions from the Project's construction activities represents a 0.00011% increase in national GHG emissions; this increase is not significant.

##### 1.2 Operating Emission Impacts

In Resource Report 9, Section 9.1, Northern calculated the operational GHG emission impacts from the Project to be 41,096 tons (37,282 metric tons). Table 1.2.1 below summarizes the estimated annualized GHG emissions from the operation of the project facilities. Operational GHG emissions impacts are representative of Year Two of the project and annualized for years beyond. GHG emissions are represented by cumulative CO<sub>2</sub> emissions denoted by CO<sub>2e</sub>.

<sup>1</sup> In its March 22 Order, the Commission used the same data from 2018.

**Table 1.2.1 Operating GHG Emissions**

| Description  | Operating Emissions<br>(tons per year) |
|--|--|
|  | CO <sub>2e</sub>                       |
| Ancillary Equipment Operational Fugitive Emissions | 13                                     |
| Hinckley Station Operational Emissions             | 40,402                                 |
| Hinckley Station Blowdown Emissions                | 367                                    |
| Pierz Station Operational Emissions                | 128                                    |
| Pierz Station Blowdown Emissions                   | 186                                    |
| <b>TOTAL</b>                                       | <b>41,096</b>                          |

Northern compared the operational GHG emissions from the Project to the 2019 national GHG emissions of 6.558 billion metric tons as referenced above. The GHG emissions from the operation of the Project facilities represents a 0.00057% increase in national GHG emissions; the increase is not significant.

### 1.3 Downstream Emissions Impacts

Downstream GHG impacts are evaluated as a function of the combustion of supplied gas by an end-user, be it a homeowner, manufacturing facility, power generation, etc. The combustion equipment of the end-users may vary; however, the combustion profile remains the same regardless of the manner in which its combusted. Accordingly, Northern believes the analysis provided herein gives an accurate and reasonable range of GHG impacts.

The incremental GHG emissions associated with the use of the firm transportation capacity proposed in the Project is likely to start near zero and could increase and eventually plateau over time. While the Project provides the three gas utility customers the necessary capacity to meet design day obligations and thus assure the human needs and public safety requirements of their residential and commercial customers are met, the initial load factor for use of this capacity would likely be low. While design day requirements are based on the coldest system-weighted temperature in a utility’s service territory, these extremes are rarely experienced. For purposes of initial incremental GHG emissions, a 1% load factor on the incremental capacity was used. This equates to a significantly higher utilization than a design day calculation would indicate. Table 1.3.1 below summarizes the GHG emissions from the consumption of the gas by downstream end-users during the first year after the incremental capacity is placed in service. Emissions calculations assume all natural gas supplied is combusted. Based on a 1% load factor in the first year, the Project will result in an additional 166,779 dekatherms (Dth) of natural gas combusted by end-users annually. Emissions were calculated using emission factors for combustion from the Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98, Subpart C).

**Table 1.3.1 Initial Downstream GHG Emissions**

| Description           | Average Annual Downstream Emissions (tons per year) <sup>1</sup> |                 |                  |                  |
|-----------------------|--|-----------------|------------------|------------------|
|                       | CO <sub>2</sub>  | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2e</sub> |
| Downstream (End-User) | 9,755  | 0.2             | 0.03             | 9,768            |

<sup>1</sup> GHG emission factors for fuel combustion from 40 CFR Part 98, Subpart C, Tables C-1 and C-2.

As shown by the table, annualized downstream emissions are estimated at 9,768 tons per year (8,862 metric tons). Northern compared the downstream GHG emissions from the Project to the 2019 national GHG emissions of 6.558 billion metric tons, adjusting for the metric conversion. The Project’s downstream GHG emissions represents a 0.00014% increase in GHG emissions, a total which is not significant.

Table 1.3.2 below summarizes the GHG emissions from the consumption of the gas by downstream end-users at a later period in time assuming the utilization of the additional capacity has increased to Northern’s system average utilization for the winter period when this additional capacity would be used. To the extent aggregate natural gas consumption on Northern’s system decreases over time as a result of GHG emission reduction efforts, actual downstream emissions would be less than calculated below. Emissions calculations assume all natural gas supplied is combusted. Data from Northern’s gas supply experts estimate that utilization of capacity from the Project would result in an additional 4,427,652 dekatherms (Dth) of natural gas combusted by end-users annually. Emissions were calculated using emission factors for combustion from the Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98, Subpart C).

**Table 1.3.2 High End Estimate of Downstream GHG Emissions**

| Description           | Average Annual Downstream Emissions (tons per year) <sup>1</sup> |                 |                  |                  |
|-----------------------|--|-----------------|------------------|------------------|
|                       | CO <sub>2</sub>  | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2e</sub> |
| Downstream (End-User) | 258,967  | 5.4             | 0.8              | 259,334          |

<sup>1</sup> GHG emission factors for fuel combustion from 40 CFR Part 98, Subpart C, Tables C-1 and C-2.

As shown by the table, annualized downstream emissions are estimated at 259,334 tons per year (235,264 metric tons). Northern compared the downstream GHG emissions from the Project to the 2019 national GHG emissions of 6.558 billion metric tons, adjusting for the metric conversion. The Project’s downstream GHG emissions represents a 0.0036% increase in national GHG emissions, a total which is not significant.

#### 1.4 Impacts to Climate Change

The Minnesota Pollution Control Agency (MPCA) has set a target of an 80% reduction in GHG emissions by 2050. According to the 2021 Biennial Greenhouse Gas Emissions Reduction Report, published online by the MPCA, 2018 actual GHG emissions were approximately 161 million tons (146 million metric tons). MPCA deducts a portion of the emissions for residential, agricultural, and waste management to account for carbon recapture equivalent to 9,664,633 tons CO<sub>2e</sub>. As a result, Northern’s estimates are conservatively high. Therefore, the comparisons made herein are not comparable.

Comparing project construction impacts to overall state-level GHG emissions, the project represents a 0.0047% increase in GHG emissions; the incremental level is not significant. Comparing project operational and downstream impacts to overall state-level GHG emissions, the project represents a 0.032% to 0.19% increase in state level GHG emissions depending on actual downstream emissions;<sup>2</sup> the increase is not significant.

<sup>2</sup> The potential impacts would actually be reduced taking into account the existing turbines located in northern Iowa supporting existing system loads whose emissions should not be counted against Minnesota’s statewide totals.



When considered on the larger scale, the Project's operational and downstream impacts (Year Two and beyond) represent an annual average increase in CO<sub>2</sub>e emissions of 50,864 tons per year or 46,143 metric tons to 300,430 tons per year or 272,546 metric tons depending on actual downstream emissions. When compared to 2019 national GHG emissions of 6.558 billion metric tons, the project represents a 0.00071% to 0.0042% increase, depending on actual downstream emissions, which is not significant. Compared to overall state-level GHG emissions, the Project represents a 0.032% to 0.19% increase in GHG emissions, depending on actual downstream emissions; these ranges are not significant. The Project's construction emission impacts (Year One) represent an increase of 7,614 tons (6,907 metric tons), which equates to a 0.00011% increase in nationwide GHG emissions. The increase is not significant.

In conclusion, the incremental GHG emission levels from the construction and operation of the Project facilities would not be a significant contributor to climate change.

### References

Electronic Code of Federal Regulations (e-CFR). <https://ecfr.federalregister.gov>.

MPCA. Greenhouse Gas Emissions Inventory: 2005 to 2018. [state.mn.us](http://state.mn.us).

2019 Methane Emissions Intensity Report, ONE Future