

Direct Testimony and Schedules
Matthew R. Czervionke

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Minnesota Energy Resources Corporation for Authority to
Increase Rates for Natural Gas Service in Minnesota

Docket No. G011/GR-17-563

Exhibit _____

**Sales Forecast, Fixed Charge Forecast and
Weather Normalization of Sales**

October 13, 2017

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Matthew R. Czervionke. My business address is 231 W. Michigan Street,
4 Milwaukee, WI 53203

5
6 Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

7 A. I am employed by WEC Business Services LLC, a wholly-owned subsidiary of WEC
8 Energy Group, Inc (WEC). I am a Principal Analyst in the Sales and Revenue
9 Forecasting Department supporting Minnesota Energy Resources Corporation (“MERC”)
10 and other regulated wholly-owned utility subsidiaries of WEC.

11
12 Q. FOR WHOM ARE YOU PROVIDING TESTIMONY?

13 A. I am providing testimony on behalf of MERC.

14
15 Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND UTILITY
16 BACKGROUND.

17 A. I hold a Bachelor of Science Degree in International Business from Illinois State
18 University, and a Master of Business Administration from Marquette University. Over
19 the past 15 years I have worked in the mortgage banking, insurance, and captive finance
20 industries performing various functions that include credit default, property valuation,
21 and financial forecasting. In September 2016, I was hired by WEC as a Principal Analyst
22 in the Finance Department. I have carried out duties that include various aspects of the

1 development of the short-term and long-term gas forecasts for WEC's regulated utility
2 subsidiaries, including MERC.

3
4 Q: ARE YOU SPONSORING ANY EXHIBITS IN CONNECTION WITH YOUR
5 TESTIMONY IN THIS PROCEEDING?

6 A. Yes, I am sponsoring Exhibit _____ (MRC-1), which consists of the following three
7 schedules:

- 8 • Schedule E-1 provides the 2016 Historic Year, the 2017 Projected Year, and the
9 2018 Proposed Test Year, including weather normalization, growth, and monthly
10 schedules for sales;
- 11 • Schedule E-2 shows the 2016 Historic Year, the 2017 Projected Year, and the
12 2018 Proposed Test Year annual fixed charge counts, monthly average fixed
13 charge counts, and year end fixed charge counts; and
- 14 • Schedule E-3 shows the 2016 Historic Year, the 2017 Projected Year, and the
15 2018 Proposed Test Year Daily Firm Capacity Nominations.

16
17 The Schedules include the forecast and historical data for each customer class by
18 MERC's three Purchased Gas Adjustment ("PGA") areas: MERC-NNG, MERC-
19 Consolidated, and MERC-Albert Lea ("MERC-AL").

20
21 Q. WERE THESE EXHIBITS PREPARED BY YOU OR UNDER YOUR DIRECTION
22 AND SUPERVISION?

23 A. Yes, they were.

1 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY AGENCY?

2 A. Yes. I have provided testimony supporting Michigan Gas Utilities Corporation's 2017-
3 2018 Gas Cost Recovery filing before the Michigan Public Service Commission (Case
4 No. U-18154).

5
6 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

7 A. The purpose of my Direct Testimony is to provide an explanation of the methodology
8 used to develop and to support MERC's weather normalization procedure, sales forecast,
9 fixed charge count forecast, and daily firm capacity ("DFC") nomination forecast for the
10 2018 test year.

11

12 Q. DOES MERC HAVE ANY COMPLIANCE REQUIREMENTS RELATED TO THE
13 SALES FORECAST THAT YOU ADDRESS IN THIS PROCEEDING?

14 A. Yes, in MERC's most recent rate cases, the Commission required MERC to take the
15 following actions:

16

17 1) Prepare summary spreadsheets that link together its test year sales and revenue
18 estimates, the class cost of service study ("CCOSS") and its rate design schedules,
19 and provide these in its initial filing (Docket No. G007,011/GR-08-835, Order
20 After Reconsideration (September 14, 2009); Docket No. G011/GR-13-617,
21 Findings of Fact, Conclusions, and Order at 63 (October 28, 2014));

22

23 2) Separate sales and revenue forecasts by individual rate classes, for each of its
24 Purchased Gas Adjustment areas; (Docket No. G007,011/GR-08-835, Order After
25 Reconsideration (September 14, 2009));

26

27 3) Provide a spreadsheet that fully links together all raw data to the most detailed
28 information available and in a format that enables the full replication of MERC's
29 process, that the Company uses to calculate the input data it uses in its test-year
30 sales analysis (Docket No. G011/GR-13-617, Findings of Fact, Conclusions, and
31 Order at 63 (October 28, 2014));

- 1 4) Provide a bridging schedule that fully links together old and new billing systems,
2 and demonstrates that there is no difference between the two billing systems, in
3 the event the Company updates, modifies, or changes its billing system (Docket
4 No. G011/GR-13-617, Findings of Fact, Conclusions, and Order at 63 (October
5 28, 2014));
6
7 5) Provide any, and all, data used for its sales forecast 30 days in advance of its next
8 general rate case; (Docket No. G011/GR-13-617, Findings of Fact, Conclusions,
9 and Order at 63 (October 28, 2014));
10
11 6) Provide detailed information sufficient to allow for replication of any and all
12 Company-derived forecast variables (Docket No. G011/GR-13-617, Findings of
13 Fact, Conclusions, and Order at 63 (October 28, 2014)); and
14
15 7) Work with the Department of Commerce, Division of Energy Resources (the
16 “Department”) to address comments and concerns raised by the Department
17 regarding MERC’s forecast methodology in Docket No. G011/GR-15-736.¹
18

19 Q. HAS MERC COMPLIED WITH THESE REQUIREMENTS?

20 A. Yes.

21 1) The spreadsheets required in the first requirement above, per Docket Nos. G007,011-
22 08-835 and G011/GR-13-617, are provided in Exhibit __ (SSD-32) to the Direct
23 Testimony of Seth DeMerritt.

¹ Docket No. G011/GR-15-736, Findings of Fact, Conclusions, and Recommendations, ¶¶356-358 (Aug. 19, 2016). These findings, which were incorporated into the Commission’s final order, provide:

356. The Department, however, raised concerns about MERC’s energy sales and customer counts for various rate classes to set the stage for MERC to work with the Department on the sales forecast between now and MERC’s next rate case.

357. MERC agreed to confirm that, in future forecast pre-filings, all relevant data files will be provided to the Department.

358. MERC and the Department agreed that issues raised regarding MERC’s forecasting methodology could reasonably be worked out before MERC’s next rate case. MERC is committed to working with the Department to address the Department’s comments and to develop a sales forecast that is reasonable and acceptable and to provide the appropriate information to the Department in MERC’s next rate case filing.

- 1 2) The second Commission requirement is met by Exhibit ____ (MRC-1), Schedule E-1
2 to my testimony. This exhibit provides separate sales forecasts by individual revenue
3 classes for each PGA area. Additionally, the forecasts for each revenue class are
4 addressed in my Direct Testimony.
- 5 3) The third Commission requirement above — a spreadsheet that fully links together all
6 raw data, to the most detailed information available and in a format that enables the
7 full replication of MERC’s process, that the Company uses to calculate the input data
8 it uses in its test-year sales analysis — was provided in MERC’s forecast pre-filing on
9 August 30, 2017 in this docket.
- 10 4) Item 4 above is addressed in the Direct Testimony of Seth DeMerritt.
- 11 5) In compliance with item 5, MERC filed its test year sales forecast data on August 30,
12 2017 — more than 30 days in advance of this filing.
- 13 6) MERC’s sales forecast pre-filing submitted in this docket on August 30, 2017 also
14 provides detailed information sufficient to allow for replication of any and all
15 Company-derived forecast variables, in compliance with item 6 above.
- 16 7) In compliance with the seventh requirement listed above, MERC had informal
17 discussions with the Department on June 28, 2017 and August 15, 2017, regarding
18 MERC’s forecasting methodology as described in Section II of my testimony, below.
19

1 **II. CONSULTATION WITH THE DEPARTMENT**

2 Q. WHAT ITEMS DID YOU DISCUSS WITH THE DEPARTMENT WITH RESPECT
3 TO MERC’S FORECAST?

4 A. MERC met with the Department to discuss the concerns raised by the Department with
5 respect to MERC’s forecast in Docket No. G011/GR-15-736 and to attempt to reach
6 resolution regarding those issues for purposes of MERC’s forecast in this case. MERC
7 also asked for general input and feedback and provided an overview of its anticipated
8 forecast methodology. In particular, MERC and the Department discussed (1) MERC’s
9 submission of forecast pre-filing information 30-days in advance of its rate case filing;
10 (2) inclusion of a constant in MERC’s forecasting models; (3) use of normalized weather
11 in the historic period as opposed to actual weighted Heating Degree Days (“HDDs”), (4)
12 ensuring actual weighted HDDs match from MERC’s data files to normal weather for the
13 projected period; (5) consistency of the data used; and (6) updates to MERC’s weather
14 station weightings.

15
16 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS WITH RESPECT TO
17 MERC’S FORECAST PRE-FILING?

18 A. MERC and the Department discussed what would be helpful to the Department with
19 respect to MERC’s forecast pre-filing. This pre-filing is required to be made 30 days in
20 advance of MERC’s initial rate case filing. The Department indicated that it would be
21 most helpful for the Company to provide a process flow document explaining how each
22 of the input files was used in MERC’s forecast models so that the Department could
23 recreate MERC’s processes. Additionally, MERC and the Department discussed how the

1 pre-filing data files would be organized to ensure that all of the necessary files were
2 included. As a result of that discussion, MERC provided, along with its forecast pre-filing
3 made on August 30, 2017, a Sales Forecast Development Guide explaining how all of the
4 data files were used in the development of the forecast and a process-flow document and
5 Excel file providing an example to illustrate the flow of data in the forecast model.

6
7 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS WITH RESPECT TO
8 INCLUSION OF A CONSTANT IN MERC'S FORECAST MODELS?

9 A. MERC confirmed with the Department that constants were included in all forecast
10 models.

11
12 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS REGARDING USE OF
13 NORMALIZED WEATHER?

14 A. MERC confirmed that actual weighted HDDs were used in conjunction with actual
15 historical billing periods.

16
17 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS REGARDING WEIGHTED
18 HDDS MATCHING TO MERC'S WEATHER DATA FILES?

19 A. MERC confirmed that weighted HDDs would correspond with weather data files
20 submitted in the pre-filing request.

21
22 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS REGARDING
23 CONSISTENCY OF MERC'S DATA?

1 A. MERC confirmed that all relevant data files would be provided to the Department. In
2 addition, MERC confirmed that a profiling guide would be provided to identify the flow
3 of data in the forecasting process. An Excel file was also provided, with a detailed set of
4 instructions, to demonstrate how these files were used in the forecast development
5 process.

6
7 With respect to the historical data used for each forecast model, MERC explained that it
8 reviewed the relevant historical data each time it built a forecast to determine the most
9 appropriate set of historic data to be utilized within the model. For example, as explained
10 in Section III below, MERC's joint sales model for firm nominations is based on 2016
11 actual nominations. Because joint customers are permitted to modify their firm
12 nominations year-to-year, inclusion of additional historical data would not produce the
13 most accurate forecast.

14
15 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS WITH RESPECT TO
16 MERC'S WEIGHTING OF WEATHER STATIONS?

17 A. In MERC'S last rate case, Docket No. G011/GR-15-736, the Department raised the
18 concern that MERC had not updated its weather station weightings since its prior rate
19 case despite the fact that updated customer data and weather data was available. MERC
20 stated that it has since updated its weather station weightings as of January 2015,
21 consistent with the company policy to update weather station weightings on a three year
22 basis given the low rate of change, year-over-year, of customer growth and movement.

23

1 Q. WHAT DID MERC AND THE DEPARTMENT DISCUSS WITH RESPECT TO
2 MERC'S USE OF THE PREDICTED RESIDENTIAL CUSTOMER COUNT
3 FORECAST AS AN INDEPENDENT VARIABLE IN THE SMALL COMMERCIAL
4 & INDUSTRIAL CUSTOMER COUNT MODEL?

5 A. MERC confirmed that it had removed the variable from MERC-NNG and MERC-
6 Consolidated. The variable remained in the MERC-AL forecast given its level of
7 significance in that model.

8

9 Q. DID MERC AND THE DEPARTMENT DISCUSS ANY ADDITIONAL ITEMS WITH
10 RESPECT TO MERC'S FORECAST?

11 A. Yes, MERC provided the Department with a general overview of its forecast
12 methodology and explained how it intended to present forecasting data in its forecast
13 prefilings for this rate case.

14

15 **III. PROPOSED SALES FORECAST**

16 Q. PLEASE EXPLAIN HOW MERC'S PROPOSED 2018 GAS SALES FORECAST WAS
17 DEVELOPED.

18 A. MERC'S proposed 2018 sales forecast was developed in MetrixND using an Ordinary
19 Least Squares ("OLS") methodology. This forecast is attached to my testimony as
20 Exhibit _____ (MRC-1), Schedule E-1. MetrixND is a statistical software package
21 developed by Itron, a utility consulting firm. The forecast was developed with monthly
22 historical billed data up through December 2016. The normal weather variable, Heating
23 Degree Day ("HDD"), was based on a rolling 20 year average (years 1997-2016) for

MERC’s three PGA areas: MERC-NNG (7,692 HDD), MERC-Consolidated (9,207 HDD), and MERC-AL (7,692 HDD).

The forecast for each of MERC’s three PGA systems was developed by individual revenue class, *i.e.*, Residential, Small Commercial and Industrial (“SC&I”), Large Commercial and Industrial (“LC&I”), Interruptible, Joint, and Transport.

The inputs to the OLS methodology included economic and demographic variables, weather HDD, binary variables, and time trend variables. The forecasting models also incorporated various seasonal and autoregressive components where needed to correct for seasonality and serial correlation in the data patterns. The OLS forecast period was from 2017 through 2020, with 2018 being the test year for this rate case. The estimated average use per customer regression specification using the OLS construct is:

$$\text{AvgUset} = B_0 + B_1\text{HDD65t} + B_2X_t + e_t$$

Where B1 and B2 represent independent variables as described in tables below.

| <u>MERC-Consolidated²</u> | | |
|---|----------------------------------|---|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| Residential | Residential Average Use | Constant Weather - HDD65 Binary - Mar2013 Autoregressive - AR(1) |
| Residential | Residential Customers | Constant MN Population Autoregressive – AR(1) |

² An explanation of technical terms utilized in these tables is set forth in Section VII to this testimony.

MERC-Consolidated²

| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
|---------------------------------|---|--|
| | | Seasonal Moving Average - SMA(1) |
| Small Commercial and Industrial | Small Commercial and Industrial Average Use | Constant Weather - HDD65 Autoregressive – AR(1) Seasonal Moving Average - SMA(1) |
| Small Commercial and Industrial | Small Commercial and Industrial Customers | Constant Binary - Jun15, Jan16, Aug16 Autoregressive – AR(1) |
| Large Commercial and Industrial | Large Commercial and Industrial Sales | Constant Weather - HDD65 Binary - Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept Autoregressive – AR(1) |
| Large Commercial and Industrial | Large Commercial and Industrial Customers | Constant Binary - AfterMay2010, Jan16, Feb16 Autoregressive – AR(1) |
| Interruptible | Interruptible Sales | Constant Weather - HDD65 Binary - Apr16, May16 Seasonal Moving Average – SMA(1) |
| Interruptible | Interruptible Customers | Constant MN Population Binary - Apr16, May16, Aug16 Autoregressive – AR(1) |
| Joint | Joint Sales | Constant Weather - HDD65 Price Autoregressive – AR(1) Seasonal Moving Average – SMA(1) |
| Joint | Joint Customers | Twelve Months-Moving Average |
| Transportation | Transportation Sales | Constant Non-Manufacturing Employment Binary - Jan, Feb, Mar, Apr, May, Nov Time Trend Variable |

| <u>MERC-Consolidated²</u> | | |
|---|----------------------------------|---|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| Transportation | Transportation Customers | Constant Manufacturing Employment Binary - Feb16, Mar16, Apr16, May16 Autoregressive – AR(1) |

1

| <u>MERC-NNG</u> | | |
|---------------------------------|---|---|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| Residential | Residential Average Use | Constant Weather - HDD65 Autoregressive – AR(1) Seasonal Autoregressive – SAR(1) Seasonal Moving Average – SMA(1) |
| Residential | Residential Customers | Constant MN Population Binary – Feb16 Autoregressive – AR(1) Seasonal Autoregressive – SAR(1) |
| Small Commercial and Industrial | Small Commercial and Industrial Average Use | Constant Weather - HDD65 Binary - Jan, Feb, Mar Autoregressive – AR(1) |
| Small Commercial and Industrial | Small Commercial and Industrial Customers | Constant Binary - Apr12, June15, Jan16 Autoregressive – AR(1) |
| Large Commercial and Industrial | Large Commercial and Industrial Sales | Constant Weather - HDD65 Autoregressive – AR(1) Seasonal Moving Average – SMA(1) |
| Large Commercial and Industrial | Large Commercial and Industrial Customers | Constant Binary - Year2015 Autoregressive – AR(1) |
| Interruptible | Interruptible Sales | Constant Weather - HDD65 Binary - Dec09, Apr16, May16 |

| <u>MERC-NNG</u> | | |
|--------------------------|----------------------------------|---|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| | | Moving Average – MA(1) Seasonal Moving Average – SMA(1) |
| Interruptible | Interruptible Customers | Constant Binary - Apr16, May16, Aug16, Oct016 Autoregressive – AR(1) |
| Joint | Joint Sales | Constant Weather - HDD65 Binary - Feb, Mar, Apr, May, Jun, Dec, May13, Feb16, Mar16, Apr16 |
| Joint | Joint Customers | Twelve Months Moving Average |
| Transportation | Transportation Sales | Constant Weather - HDD65 Binary - Nov12, Jan16 Manufacturing Employment MN Population Moving Average – MA(1) |
| Transportation | Transportation Customers | Constant Binary - Feb15, Feb16, Sep16, Dec16 Employment Autoregressive – AR(1) |

1

| <u>MERC-AL</u> | | |
|---------------------------------|---|--|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| Residential | Residential Average Use | Constant Weather - HDD65 Autoregressive – AR(1) Seasonal Autoregressive – SAR(1) |
| Residential | Residential Customers | Constant MN Population Binary – Feb16, Mar16, Apr16, May16 Autoregressive – AR(1) Seasonal Moving Average – SMA(1) |
| Small Commercial and Industrial | Small Commercial and Industrial Average use | Constant Weather - HDD65 Binary – May15, Jan16, Feb16, Mar16 Autoregressive – AR(1) |

| <u>MERC-AL</u> | | |
|---------------------------------|---|--|
| <u>Rate Class</u> | <u>Dependent Variable</u> | <u>Independent Variables</u> |
| Small Commercial and Industrial | Small Commercial and Industrial Customers | Constant Predicted Residential Customers Binary – AfterMay2015 |
| Large Commercial and Industrial | Large Commercial and Industrial Sales | Constant Weather - HDD65 Binary - AfterOct2015 Autoregressive – AR(1) |
| Large Commercial and Industrial | Large Commercial and Industrial Customers | Constant Binary – AfterMay2015 |
| Interruptible | Interruptible Sales | Constant Weather - HDD65 Autoregressive – AR(1) |
| Interruptible | Interruptible Customers | Exponential Smoothing with a Simple / Linear Trend |
| Transportation | Transportation Sales | Constant Weather - HDD65 Binary - After12, Nov15, Mar16, Jun16, Dec16 Autoregressive – AR(1) |

1

2 Q. PLEASE EXPLAIN THE DIFFERENCES IN THE FORECASTING METHODOLOGY
3 USED IN THIS FILING COMPARED TO THE METHODOLOGY USED IN MERC’S
4 LAST RATE CASE.

5 A. MERC uses an Ordinary Least Squares (“OLS”) methodology for all of its forecast
6 models. Forecasts were conducted based on MERC’s three PGA systems at the revenue
7 class level within each PGA, namely, Residential, SC&I, LC&I, Joint, Interruptible,
8 Transport, and Company Use. To address the Department’s concerns from the last case,
9 constants were added to each model. In addition, the predicted residential customer

1 count variable in the SC&I customer count regression model was removed from the
2 MERC-NNG and MERC-Consolidated models.

3
4 Q. WERE THE 2016 HISTORIC SALES USED IN THIS FILING WEATHER
5 NORMALIZED?

6 A. Yes, the 2016 actual calendar sales used in Exhibit ____ (MRC-1) Schedule E-1 are
7 weather normalized based on the methodologies described below.

8
9 Q. WAS REGRESSION ANALYSIS USED FOR ALL SALES AND CUSTOMER
10 COUNT FORECASTING?

11 A. MERC used regression analysis for all of its sales and customer forecasts except for Joint
12 Customer Count forecasts. MERC used a twelve month moving average for the Joint
13 Customer Count forecasts for both MERC-NNG and MERC-Consolidated because the
14 number of joint customers for these two PGAs has been stable, with only three customers
15 for MERC-NNG and four customers for MERC-Consolidated.

16
17 Q. DID MERC INCLUDE VARIABLES IN ITS REGRESSION MODELS WITH A T-
18 STATISTIC LESS THAN ONE?

19 A. Variables with t-statistics less than one were included in forecasting models because there
20 are cases where the variable in question is the best or even the only way to reflect a factor
21 that impacts the forecast period. In such cases, including the variable improves the
22 overall accuracy of the forecast. However, MERC did not rely solely on t-statistics to
23 measure the overall fit of its forecasting models. MERC used several goodness of fit

1 tests including the F-test, a method that includes more than one coefficient to determine
2 the overall fit of the forecast equation rather than relying on the t-statistics of a few
3 variables. The F-test is used most frequently in econometrics to test the overall
4 significance of a model.

5
6 Q. DID MERC MAKE ANY EXOGENOUS, OR POST REGRESSION, ADJUSTMENT
7 TO THE SALES OR CUSTOMER COUNT MODEL OUTPUTS?

8 A. Yes, 17 out of the 51 Albert Lea Interruptible customers, with a sales impact of 28% of
9 Interruptible sales, were moved from Interruptible to LC&I in 2016 due to a tariff
10 change. This adjustment was made since the regression model could not adjust to such a
11 significant change. Several SC&I shifted to LC&I based on volume usage and the
12 expectation in the forecast was for them to move back to SC&I with weather getting back
13 to normal from the Polar Vortex years. These adjustments were made to produce a
14 reasonable forecast based on where the Company expected customers to be in the
15 forecast period. Not including these adjustments would have produced a forecast with
16 higher than expected forecast result.

17
18 Q DO MERC CUSTOMER COUNTS EQUATE TO THE RELEVANT METER
19 COUNTS?

20 A. MERC's customer counts do equate to its meter counts. The definition of a Customer
21 Count is: "The number of active and unique premise metering points that fall within a
22 revenue class. A revenue class is a specific class of revenue that the utilities are required
23 to report to the regulating commission. The classes differ by regulatory

1 jurisdiction/utility. Revenue classes are defined based on groups of billing system
2 revenue codes and product codes. Customer counts need to be summarized by these
3 revenue class groups.”

4 5 **IV. DEVELOPMENT OF WEATHER DATA**

6 Q. PLEASE EXPLAIN HOW THE WEATHER DATA WAS DEVELOPED TO
7 WEATHER NORMALIZE SALES.

8 A. DTN, formerly known as Schneider Electric, provided the raw weather data for seven
9 regional weather stations (Bemidji, Cloquet, Fargo, International Falls, Minneapolis,
10 Rochester, and Worthington). The data from the individual weather stations was then
11 weighted to create variables for “virtual weather stations” that are representative of the
12 overall weather for two of MERC’s PGAs: MERC-Consolidated and MERC-NNG. We
13 used the virtual weather stations for MERC-NNG as a proxy for the MERC-AL PGA
14 because those customers will eventually be fully consolidated with MERC-NNG. The
15 weather stations used for MERC-Consolidated were Bemidji, Cloquet, Fargo, and
16 International Falls. The weather stations used for MERC-NNG and MERC-AL were
17 Bemidji, Cloquet, Minneapolis, Rochester, and Worthington.

18
19 The weightings were developed by first determining the number of Residential and
20 Commercial and Industrial (“C&I”) firm customers MERC had, by zip code, as of
21 January 2015. Each zip code was then assigned to a weather station based on the
22 proximity. Once the assignments were made, the weightings were calculated by taking

1 the number of customers assigned to each weather station divided by the total number of
2 customers. The resulting weightings were:

| 2015 | | | |
|---------------------------|--------------|--------|--------|
| Weather Station | Consolidated | NNG | TOTAL |
| BMJ - Bemidji | 37.6% | 1.5% | 7.1% |
| COQ - Cloquet | 23.7% | 9.5% | 11.7% |
| FGO - Fargo | 14.1% | 0.0% | 2.2% |
| INL - International Falls | 24.5% | 0.0% | 3.8% |
| MSP - Minneapolis | 0.1% | 31.0% | 26.3% |
| ROC - Rochester | 0.0% | 46.6% | 39.3% |
| OTG - Worthington | 0.0% | 11.4% | 9.6% |
| Total | 100.0% | 100.0% | 100.0% |

3
4 Actual degree days were calculated by summing the hourly temperatures each day by
5 weather station. Next, the daily average temperature was calculated for each weather
6 station, and the number of HDD (using 65°F as the base) was determined. Finally, the
7 weighting factors were applied to the HDD data for each day and weather station.

8
9 The calculation of normal HDDs used the same process as above. The normal HDDs
10 were calculated by summing the normal hourly temperatures each day by weather station,
11 based on the 20-year average weather from 1997-2016. Next, the normal daily average
12 temperature was calculated for each weather station, and the number of HDD (using 65°F
13 as the base) was determined. Finally, the weighting factors were applied to the Normal
14 HDD data for each day and weather station.

15

1 Q. ARE THE WEATHER STATIONS USED TO CALCULATE MERC'S SALES
2 FORECAST IN THIS PROCEEDING THE SAME AS THOSE USED IN MERC'S
3 LAST RATE CASE?

4 A. Yes, they are same as used in Docket No. G-011/GR-15-736, however, the weightings
5 have been updated based on January 2015 zip code information.

6

7 **V. WEATHER NORMALIZATION MODELS AND METHODOLOGY**

8 Q. PLEASE EXPLAIN THE PROCEDURE USED TO DEVELOP THE WEATHER
9 NORMALIZED ADJUSTMENT TO SALES.

10 A. Normal weather was defined as the average daily temperature over the 20 year period of
11 1997 to 2016. As discussed earlier, this results in 7,692 HDD for MERC-NNG and
12 MERC-AL, and 9,207 HDD for MERC-Consolidated. The weather normalized sales are
13 based on a mathematical model that multiplies the daily average actual sales of July and
14 August of the previous year by the number of days in the month to determine the Total
15 Base Load Sales. The Total Base Load Sales are then subtracted from actual monthly
16 sales, resulting in Weather Sensitive Sales. The Weather Sensitive Sales are then divided
17 by actual HDD to give the Weather Sensitive use per HDD. The final total Weather
18 Normalized Sales is equal to Weather Sensitive use per HDD multiplied by the normal
19 HDD for that month, plus Total Base Load Sales. The final Weather Sensitive Sales plus
20 Base Load sales will equal actual sales if the Weather Adjustment is zero.

21

1 Q. DID MERC USE THIS PROCEDURE IN ITS LAST RATE CASE IN DOCKET NO.
2 G011/GR-15-736?

3 A. Yes, MERC used the same method in its previous rate case.
4

5 **VI. FIXED CHARGE COUNTS**

6 Q. PLEASE EXPLAIN THE PROCEDURES USED TO DEVELOP FIXED CHARGE
7 COUNTS FOR THE 2018 TEST YEAR.

8 A. The 2016 actual fixed charge counts, as shown on Exhibit _____ (MRC-1), Schedule E-2,
9 Page 1 of 1, together with the forecasted customer counts (see “III. PROPOSED SALES
10 FORECAST”, above) form the basis for the fixed charge count forecast. The projected
11 fixed charge counts are allocated to the tariff rate class using the ratio of fixed charge
12 counts to customer counts, with 2016 fixed charge counts as the base year. The forecasted
13 customer growth rates are then applied to form the basis of the fixed charge counts
14 projection. The final fixed charge counts are shown on Exhibit _____ (MRC-1), Schedule
15 E-2.
16

17 **VII. DAILY FIRM CAPACITY (“DFC”) NOMINATION FORECAST**

18 Q. PLEASE EXPLAIN HOW TEST YEAR DFC NOMINATIONS WERE DEVELOPED

19 A. The DFC nominations for 2018 are based on actual DFC nominations for 2016, as shown
20 on Exhibit _____ (MRC-1), Schedule E-3. The growth forecasted for DFC nominations
21 for the 2018 test year are based on increases in customers nominating DFC as compared
22 to 2016.
23

1 **VIII. DEFINITIONS OF TECHNICAL TERMS**

2 Q. CAN YOU DEFINE AUTOREGRESSIVE AS YOU USE IT IN YOUR TESTIMONY?

3 A. **Autoregressive** model (“AR”): This model relates the dependent variable (for example,
4 sales) to its own historical values. An autoregressive process is one whose behavior is
5 determined by its own past values, plus an unpredictable shock. For both statistical
6 forecasting and structural economic interpretation, economic time series are often
7 modeled as autoregressions.

8
9 Q. CAN YOU DEFINE MOVING AVERAGE AS YOU USE IT IN YOUR TESTIMONY?

10 A. **Moving Average** model (“MA”): This forecasting method is the average of the last “m”
11 observations. It is useful for time series with a slowly changing mean. That is, a moving
12 average model is conceptually a linear regression of the current value of the series against
13 previous (unobserved) white noise error terms or random shocks. In practice, the moving
14 average will provide a good estimate of the mean of the time series if the mean is
15 constant or slowly changing.

16
17 Q. CAN YOU DEFINE SEASONAL AUTOREGRESSIVE AND SEASONAL MOVING
18 AVERAGE MODELS AS DISCUSSED IN YOUR TESTIMONY?

19 A. **Seasonal Autoregressive** model (“SAR”) and **Seasonal Moving Average** model
20 (“SMA”): Many economic and business variables are affected by seasonal factors. For
21 example, power usage is highest in the months when temperatures are most extreme. The
22 most common type of seasonality is variation due to the time of year, but other types of
23 seasonality are also found in time series data. Incorporating seasonality in an

1 autoregressive and moving average model is useful when the time series has both trend
2 and seasonal components.

3
4 Q. CAN YOU DESCRIBE EXPONENTIAL SMOOTHING AS YOU DISCUSS IN YOUR
5 TESTIMONY?

6 A. **Exponential Smoothing** technique: Smoothing is the local averaging of data, such that
7 the nonsystematic components of individual observations cancel each other out. Thus, if
8 there are outliers in the data (e.g., due to measurement errors), median smoothing
9 typically produces more “reliable” or at least smoother curves.

10
11 **IX. FORECAST RESULTS AND CONCLUSIONS**

12 Q. IN YOUR OPINION, DOES THE SALES FORECAST METHODOLOGY THAT YOU
13 FOLLOWED PROVIDE A REASONABLE BASIS FOR ESTABLISHING RATES IN
14 THIS CASE?

15 A. Yes, the sales forecast methodology provides a reasonable estimate of the Proposed Test
16 Year sales.

17
18 Q. IN YOUR OPINION, DOES THE SALES FORECAST PROVIDE A REASONABLE
19 BASIS FOR ESTABLISHING RATES IN THIS CASE?

20 A. Yes, the sales forecast is a reasonable estimate of the proposed test year sales based on
21 the information that was known and available at the time the forecast was prepared.

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Q. HOW DOES THE SALES FORECAST FOR MERC’S 2018 TEST YEAR COMPARE TO THE FORECAST APPROVED IN MERC’S LAST RATE CASE, DOCKET NO. G011/GR-15-736?

A. On a weather normalized basis and excluding Michigan Taconite Mines, system sales are forecasted to decrease 1.3% driven by declines across all rate classes, except Residential. On a total throughput basis, sales are forecasted to increase 1.0% due to strong sale projections related to mining production and other Super Large Volume customer sales.

Q. HOW DOES THE SALES FORECAST FOR MERC’S 2018 TEST YEAR COMPARE TO ACTUAL SALES IN THE HISTORIC YEAR 2016?

A. On a weather normalized basis and excluding Michigan Taconite Mines, system sales are forecasted to increase 0.6% driven largely by Residential sales. On a total throughput basis, sales are forecasted to increase 1.8% due to strong sale projections related to mining production and growth in other Super Large Volume customer projected usage.

Q. HOW HAVE YOU PROJECTED FOR SALES WITH RESPECT TO MINNESOTA MINING CUSTOMERS AND OTHER SUPER LARGE VOLUME CUSTOMERS?

A. Based on growth through 2016 and conversations with account managers regarding mines ramping up production and growth with other Super Large Volume customers, we went with a more robust projection for sales growth with respect to those customers.

1 Q. HOW DOES THE SALES FORECAST FOR MERC'S 2018 TEST YEAR SUPER
2 LARGE VOLUME TRANSPORT CUSTOMERS COMPARE TO ACTUAL SALES IN
3 THE HISTORIC YEAR 2016?

4 A. In 2016, SLV and Flex customers grouped together had total sales of 313M therms. The
5 2018 forecast forecasts 327.5M therms.

6

7 Q. HOW DID MERC'S APPROVED 2016 TEST YEAR RESIDENTIAL SALES
8 COMPARE TO ACTUAL 2016 RESIDENTIAL SALES?

9 A. On a weather normalized basis, MERC's 2016 forecast was approximately 2.6% higher
10 than 2016 actuals (approximately 4.6M therms).

11

12 Q. HOW DID MERC'S APPROVED 2016 TEST YEAR SMALL COMMERCIAL AND
13 INDUSTRIAL SALES COMPARE TO ACTUAL 2016 SMALL COMMERCIAL AND
14 INDUSTRIAL SALES?

15 A. On a weather normalized basis, MERC's approved 2016 forecast for SC&I sales was
16 approximately 45.2% higher than 2016 actuals (approximately 3.7M therms). A large
17 portion of this differential is attributed to reclassification of customers to LC&I due to
18 their volume consumption. On a weather normalized basis, MERC's approved 2016
19 forecast for LC&I sales was approximately 5.9% lower than 2016 actuals (approximately
20 6.0M therms).

21

1 Q. WHAT FACTORS CONTRIBUTE TO THE DIFFERENTIAL BETWEEN FORECAST
2 AND ACTUAL SALES?

3 A. Forecasting by its nature is not a precise science and rather, represents the forecaster's
4 good-faith estimate of the future based on a set of inputs, assumptions, and statistically
5 acceptable modeling techniques. Differences between these variables and what actually
6 happens with the economy, weather, etc. can drive measurable differences between
7 forecasted and actual sales. MERC's sales forecast is a reasonable estimate of the future
8 based on statistically significant inputs and data.

9

10 Q. DOES THIS CONCLUDE YOUR TESTIMONY ON THE SALES FORECAST, FIXED
11 CHARGE FORECAST, AND WEATHER NORMALIZATION OF SALES AT THIS
12 TIME?

13 A. Yes, it does.

Minnesota Energy Resources Corporation
Proposed Test Year Throughput and Adjustments
For the 12 Months Ending, December 31, 2018

| <u>Line</u> | <u>Rate Class</u> (col. 1) | 2016 <u>Historical</u> <u>Throughput</u> (Therms) (col. 2) | 2016 <u>Weather</u> <u>Normalization</u> (Therms) (col. 3) | Historical <u>Adjusted</u> <u>Throughput</u> (Therms) (col. 4) | 2017 <u>Growth</u> (Therms) (col. 5) | 2017 <u>Forecast</u> <u>Throughput</u> (Therms) (col. 6) | 2018 <u>Growth</u> (Therms) (col. 7) | 2018 <u>Forecast</u> <u>Throughput</u> (Therms) (col. 8) |
|-------------------------------------|---|--|--|--|---|--|---|--|
| 1 | Residential | 162,516,164 | 10,939,744 | 173,455,908 | 10,749,064 | 184,204,972 | (421,124) | 183,783,848 |
| <u>C&I General Service Rate</u> | | | | | | | | |
| 6 | Small General Service | 6,942,314 | 759,691 | 7,702,005 | 2,756,921 | 10,458,926 | (1,369,257) | 9,089,669 |
| 13 | Large General Service | 91,741,417 | 7,593,725 | 99,335,142 | (9,442,546) | 89,892,596 | 2,516,327 | 92,408,923 |
| 14 | Total C&I General Service | <u>98,683,731</u> | <u>8,353,416</u> | <u>107,037,147</u> | <u>(6,685,625)</u> | <u>100,351,522</u> | <u>1,147,070</u> | <u>101,498,592</u> |
| <u>Interruptible & Joint</u> | | | | | | | | |
| 15 | Interruptible | 34,216,089 | | 34,216,089 | 3,085,988 | 37,302,077 | (757,185) | 36,544,892 |
| 22 | Joint | 289,265 | | 289,265 | 97,605 | 386,870 | 17,415 | 404,285 |
| 23 | Total Interruptible & Joint | <u>34,505,354</u> | <u>0</u> | <u>34,505,354</u> | <u>3,183,593</u> | <u>37,688,947</u> | <u>(739,770)</u> | <u>36,949,177</u> |
| 24 | Transportation | 429,255,552 | | 429,255,552 | (69,729,835) | 359,525,717 | 71,323,691 | 430,849,408 |
| 32 | Total MERC-Minnesota | <u>724,960,800</u> | <u>19,293,160</u> | <u>744,253,960</u> | <u>(62,482,802)</u> | <u>681,771,158</u> | <u>71,309,867</u> | <u>753,081,025</u> |
| 34 | Company Use | 308,180 | | | | 277,376 | | 265,940 |
| 37 | Gas Loss and Unaccounted For | (10,940,994) | | | | 15,760,186 | | 17,508,052 |
| 38 | Sales Company Use + Lost Gas Total MERC | <u>714,327,986</u> | | | | <u>697,808,720</u> | | <u>770,855,017</u> |

* Excludes sales data for Michigan taconites

**Minnesota Energy Resources Corporation
Proposed Weather Normalized Volumes & Revenues
For the 12 Months Ending, December 31, 2016**

| <u>Line</u> | <u>Rate Class</u> (col. 1) | 2016 <u>Weather Normalized</u> <u>Therms</u> (col. 2) | <u>Distribution</u> <u>Charge</u> (col. 3) | 2016 <u>Weather</u> <u>Normalized</u> <u>Revenues</u> (col. 4) |
|-------------------------------------|---------------------------------------|--|--|--|
| <u>Residential Rate</u> | | | | |
| 1 | Residential-NNG | 8,891,505 | \$ 0.24116 | \$ 2,144,275 |
| 2 | Residential-Consolidated | 1,623,012 | \$ 0.24116 | \$ 391,406 |
| 3 | Residential-Albert Lea | 425,227 | \$ 0.24116 | \$ 102,548 |
| 4 | Total Residential | <u>10,939,744</u> | | <u>\$ 2,638,229</u> |
| <u>C&I General Service Rate</u> | | | | |
| 5 | Small General Service-NNG | 577,226 | \$ 0.22065 | \$ 127,365 |
| 6 | Small General Service-Consolidated | 182,465 | \$ 0.22065 | \$ 40,261 |
| 7 | Small General Service-Albert Lea | 0 | \$ 0.22065 | \$ - |
| 8 | Large General Service-NNG | 5,596,862 | \$ 0.16885 | \$ 945,030 |
| 9 | Large General Service-Consolidated | 1,585,370 | \$ 0.16885 | \$ 267,690 |
| 10 | Large General Service-Albert Lea | 411,493 | \$ 0.16885 | \$ 69,481 |
| 11 | Total C&I General Service | <u>8,353,416</u> | | <u>\$ 1,449,826</u> |
| <u>Interruptible & Joint</u> | | | | |
| 14 | Interruptible-NNG | | | \$ - |
| 15 | Joint-NNG | | | \$ - |
| 16 | Interruptible-Consolidated | | | \$ - |
| 17 | Joint-Consolidated | | | \$ - |
| 18 | Interruptible-Albert Lea | | | \$ - |
| 19 | Joint-Albert Lea | | | \$ - |
| 20 | Total Interruptible & Joint | <u>0</u> | | <u>\$ -</u> |
| <u>Transportation</u> | | | | |
| 21 | Peak Sales-NNG (Nov-Mar) | | | \$ - |
| 22 | Off Peak Sales-NNG (Apr-Oct) | | | \$ - |
| 23 | Peak Sales-Consolidated (Nov-Mar) | | | \$ - |
| 24 | Off Peak Sales-Consolidated (Apr-Oct) | | | \$ - |
| 25 | Peak Sales-Albert Lea (Nov-Mar) | | | \$ - |
| 26 | Off Peak Sales-Albert Lea (Apr-Oct) | | | \$ - |
| 27 | Total Transportation | <u>0</u> | | <u>\$ -</u> |
| <u>Summary</u> | | | | |
| 28 | MERC-NNG Total | 15,065,593 | | 3,216,670 |
| 29 | MERC-Consolidated Total | 3,390,847 | | 699,356 |
| 30 | MERC-Albert Lea Total | 836,720 | | 172,028 |
| 31 | Total MERC-Minnesota | <u>19,293,160</u> | | <u>4,088,055</u> |

Minnesota Energy Resources Corporation
Actual Year Calendar Sales
For the 12 Months Ending, December 31, 2016

All Units in Therms

| Calendar | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Total |
|--|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| NNG SALES | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 28,024,686 | 32,923,816 | 13,106,194 | 9,192,618 | 3,227,189 | 2,818,318 | 1,079,201 | 2,428,037 | 3,315,988 | 3,271,516 | 10,056,408 | 22,666,731 | 132,110,701 |
| GS-NNG SC&I Sales | 1,139,727 | 1,249,881 | 1,499,412 | (1,374,872) | 1,197,945 | (310,771) | 792,233 | (325,874) | (194,711) | 87,621 | 768,261 | 536,219 | 5,065,071 |
| GS-NNG LC&I Sales | 13,660,409 | 14,396,210 | 10,630,533 | (438,392) | 6,550,968 | 2,935,384 | (2,713,160) | 1,758,982 | 2,136,452 | 1,982,027 | 6,407,696 | 10,212,118 | 67,519,226 |
| SVI-NNG Sales | 2,638,610 | 1,620,710 | 2,606,635 | (1,899,832) | 4,962,225 | (1,559,783) | 308,919 | 349,627 | 906,785 | (20,241) | 2,359,099 | 2,146,246 | 14,419,001 |
| LVI-NNG Sales | 733,821 | 348,223 | (87,210) | 195,937 | 1,751,076 | (182,990) | 165,812 | 1,654,359 | 117,459 | 1,475,846 | 1,690,264 | 939,850 | 8,802,447 |
| SVJ-NNG Sales | 81,865 | (23,357) | 71,303 | (32,155) | 19,371 | 12,704 | (2,630) | 2,553 | 644 | 9,523 | 11,458 | (7,561) | 143,718 |
| CONSOLIDATED SALES | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 5,127,126 | 5,425,186 | 2,717,532 | 1,677,709 | 838,859 | 70,774 | 74,449 | 237,228 | 271,024 | 919,648 | 2,023,865 | 3,674,829 | 23,058,229 |
| GS-CONSOLIDATED SC&I Sales | 385,520 | 441,540 | 181,513 | 104,744 | 33,061 | 141,743 | (128,515) | 6,768 | 21,028 | 52,789 | 371,981 | 76,796 | 1,688,968 |
| GS-CONSOLIDATED LC&I Sales | 3,884,035 | 4,342,315 | 2,149,822 | 1,379,998 | 758,526 | 320,227 | 385,416 | 464,750 | 431,838 | 901,512 | 2,000,388 | 2,776,562 | 19,795,389 |
| SVI-CONSOLIDATED Sales | 708,483 | 451,687 | 795,440 | (412,628) | 1,336,325 | (450,587) | 143,341 | 123,547 | 94,078 | 162,414 | 406,391 | 515,019 | 3,873,510 |
| LVI-CONSOLIDATED Sales | 582,547 | 11,131 | 780,499 | 96,960 | 1,005,637 | (76,564) | 327,144 | 304,085 | 244,276 | 397,411 | 274,131 | 300,700 | 4,247,957 |
| SVJ-CONSOLIDATED Sales | 54,014 | 12,710 | 20,647 | (13,638) | 52,835 | (24,908) | 16,998 | 8,372 | 4,441 | 8,652 | 16,519 | (11,095) | 145,547 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 1,613,521 | 1,775,029 | 749,593 | 584,099 | 211,118 | 97,680 | 88,842 | 119,295 | 157,790 | 183,053 | 540,491 | 1,226,723 | 7,347,234 |
| GS-ALBERT LEA NNG SC&I Sales | 70,350 | (72,463) | 86,605 | 2,070 | 6,551 | 1,975 | 11,626 | (5,763) | 8,262 | 14,898 | 41,659 | 22,505 | 188,275 |
| GS-ALBERT LEA NNG LC&I Sales | 891,607 | 1,032,885 | 324,027 | 280,583 | 117,722 | 120,208 | 123,584 | 96,377 | 143,821 | 199,713 | 359,237 | 737,038 | 4,426,802 |
| SVI-ALBERT LEA NNG Sales | 491,356 | (57,436) | 111,352 | 70,950 | 64,693 | 980,975 | (936,113) | 83,840 | 47,615 | 85,952 | 441,780 | 177,300 | 1,562,264 |
| LVI-ALBERT LEA NNG Sales | 94,452 | 288,673 | 177,089 | 48,398 | 143,131 | 76,223 | 89,224 | 65,213 | 100,106 | 31,761 | 47,494 | 149,146 | 1,310,910 |
| NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-NNG Transport | 273,867 | 168,621 | 282,911 | 56,926 | 655,266 | 237,165 | (21,620) | 119,142 | 189,273 | 152,179 | 180,558 | 132,528 | 2,426,817 |
| LVI-NNG Transport - CIP Applicable | 3,990,556 | 3,526,239 | 2,962,667 | 2,048,293 | 3,102,582 | 2,357,611 | 2,153,775 | 2,595,206 | 2,142,594 | 2,709,662 | 2,167,139 | 3,522,102 | 33,278,426 |
| LVI-NNG Transport - CIP Exempt | 653,366 | 2,092,584 | 1,323,903 | (1,430,118) | 1,941,070 | (414,618) | 540,914 | (322,531) | - | - | - | - | 4,384,570 |
| SVJ-NNG Transport | 361,984 | 551,136 | 422,096 | 204,289 | 96,608 | 185,726 | 107,962 | 147,658 | 60,396 | 209,648 | 195,666 | 497,179 | 3,040,347 |
| LVI-NNG Transport - CIP Applicable | 1,828,276 | 2,224,216 | 1,818,942 | 676,984 | 1,298,095 | 690,610 | 977,569 | 97,205 | 1,284,787 | 881,498 | 778,872 | 1,473,001 | 14,030,055 |
| LVI-NNG Transport - CIP Exempt | 799,649 | 2,906,081 | 2,295,547 | 4,566,295 | (1,793,911) | 3,218,138 | 2,958,910 | 3,395,174 | (581,687) | 2,946,087 | 1,509,962 | 5,575,212 | 25,795,457 |
| SLVI-NNG Transport-CIP Exempt | 19,616,219 | 28,408,910 | 21,762,485 | 11,249,139 | 12,976,874 | 15,211,771 | 12,960,533 | 14,958,235 | 12,626,936 | 12,742,431 | 16,362,205 | 16,900,832 | 195,776,572 |
| SLVI-NNG Transport-CIP Applicable | 42,336 | 58,007 | 2,127,179 | (466,001) | (365,856) | (732) | 175,653 | 61,924 | 601,860 | (238,916) | 19,379 | (27,717) | 1,987,117 |
| SLVJ-NNG Transport-CIP Exempt | 798,576 | (473,997) | 10,710,036 | 9,769,261 | (6,032,409) | (1,473,360) | 6,692,839 | 4,695,117 | 6,865,235 | (1,284,085) | 2,361,091 | 1,083,738 | 33,712,042 |
| Transport for Resale | 17,468 | 66,670 | 38,017 | 7,282 | 16,726 | (3,699) | (40) | 1,993 | 2,440 | 3,743 | 17,769 | 29,619 | 197,988 |
| LVI-NNG Flex Transport (Cust "A") | 763,539 | 796,877 | 547,313 | 322,203 | 608,709 | 576,733 | 91,199 | 369,630 | 684,300 | 557,647 | 434,201 | 386,836 | 6,139,188 |
| LVI-NNG Flex Transport (Cust "B") | 508,243 | 1,461,348 | 1,323,274 | 1,530,885 | (1,504,801) | 2,147,249 | 1,053,714 | 1,055,242 | 1,076,691 | 1,025,557 | 1,170,225 | 2,214,149 | 13,061,775 |
| LVI-NNG Flex Transport (Cust "C") | 1,038,390 | 2,335,465 | 1,542,707 | 788,017 | 1,752,832 | 1,371,103 | 1,157,869 | 1,208,358 | 1,058,925 | 1,054,536 | 1,405,325 | 2,448,831 | 17,289,358 |
| LVI-NNG Flex Transport (Cust "D") | (480,185) | (699,563) | - | - | - | - | - | - | - | - | - | - | (1,179,749) |
| LVI-NNG Flex Transport (Cust "E") | 300,919 | (289,903) | 3,193,700 | (560,288) | 740,523 | 536,517 | 498,224 | 410,002 | 563,970 | 612,070 | 665,364 | 644,597 | 7,315,964 |
| LVI-NNG Flex Transport (Cust "F") | 740,833 | 602,905 | 495,613 | 289,021 | 1,898,060 | (482,399) | 345,188 | 354,170 | 144,146 | 469,824 | 348,002 | 362,073 | 5,567,436 |
| LVI-NNG Flex Transport (Cust "G") | 220,586 | 275,671 | 229,707 | 6,358 | 15,684 | 111,137 | 538,350 | (506,730) | 49,326 | 30,734 | 80,660 | 125,101 | 1,176,584 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 377,121 | 369,102 | 256,173 | (21,040) | 136,234 | 127,215 | 13,625 | 38,326 | 70,437 | 85,131 | 159,219 | 152,180 | 1,763,724 |
| LVI-CONSOLIDATED Transport | 2,066,746 | 1,145,781 | 3,650,654 | (1,682,927) | 586,226 | 49,376 | 383,937 | 242,564 | 432,942 | 486,144 | 588,779 | 1,430,718 | 9,380,940 |
| SVJ-CONSOLIDATED Transport | 279,160 | 327,874 | 199,618 | 461,918 | (494,454) | 75,045 | 66,258 | 63,548 | 75,512 | 91,129 | 147,924 | 165,406 | 1,458,938 |
| LVI-CONSOLIDATED Transport | 1,250,358 | 1,282,749 | 832,875 | 3,681,085 | (1,428,226) | 1,044,971 | 770,812 | 673,816 | 905,626 | 835,248 | 1,232,724 | 66,549 | 11,148,587 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 1,953,175 | 5,251,847 | 4,000,619 | 5,635,453 | 1,019,185 | 4,014,941 | 3,809,801 | 1,673,300 | 2,953,385 | 2,398,655 | 4,222,638 | 2,036,661 | 38,969,660 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 25,868 | 46,509 | 104,112 | 18,871 | 21,916 | 18,857 | 11,201 | 17,869 | 18,019 | 23,966 | 26,132 | 83,421 | 416,741 |
| LVI-ALBERT LEA Transport | 83,357 | 114,214 | 562,138 | 22,596 | 211,049 | 448,270 | (94,291) | 32,874 | 158,638 | 172,228 | 156,311 | 249,633 | 2,117,016 |
| Taconite Mines (Michigan) | 4,601,675 | 13,992,253 | 12,469,663 | 7,761,993 | 16,380,441 | 14,166,459 | 11,117,428 | 10,313,947 | (790,055) | 5,439,017 | 10,345,365 | 8,028,601 | 113,826,787 |
| Total MERC | 102,294,211 | 130,708,335 | 109,073,204 | 54,399,042 | 54,115,656 | 49,184,694 | 46,136,181 | 49,067,435 | 38,527,593 | 41,168,229 | 72,392,632 | 91,720,377 | 838,787,588 |
| Company Use Gas | 63,079 | 47,747 | 44,747 | 36,264 | 21,769 | 14,293 | 7,651 | 4,954 | 7,276 | 11,293 | 18,768 | 30,339 | 308,180 |
| Gas Lost & Unaccounted For | 1,224,084 | 1,668,702 | (4,948,538) | (4,217,983) | 741,877 | (2,777,168) | (1,568,508) | 1,697,419 | (1,253,763) | (1,521,353) | 3,770,809 | (3,756,572) | (10,940,994) |
| Total GCR Gas @ Gate Station | 103,581,374 | 132,424,784 | 104,169,413 | 50,217,323 | 54,879,302 | 46,421,819 | 44,575,324 | 50,769,808 | 37,281,106 | 39,658,169 | 76,182,209 | 87,994,144 | 828,154,774 |
| Michigan | 4,601,675 | 13,992,253 | 12,469,663 | 7,761,993 | 16,380,441 | 14,166,459 | 11,117,428 | 10,313,947 | (790,055) | 5,439,017 | 10,345,365 | 8,028,601 | 113,826,787 |
| Minnesota | 97,692,536 | 116,716,082 | 96,603,541 | 46,637,048 | 37,735,215 | 35,018,235 | 35,018,753 | 38,753,488 | 39,317,648 | 35,729,212 | 62,047,267 | 83,691,776 | 724,960,800 |

Minnesota Energy Resources Corporation
Projected Calendar Sales
For the 12 Months Ending, December 31, 2017

All Units in Therms

| Calendar | Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17 | Total |
|--|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| NNG SALES | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 26,303,305 | 24,775,133 | 20,683,764 | 13,480,399 | 7,322,706 | 3,021,808 | 1,909,316 | 1,939,226 | 3,719,604 | 8,686,714 | 15,438,794 | 22,695,022 | 149,975,791 |
| GS-NNG SC&I Sales | 1,543,521 | 1,469,643 | 1,216,596 | 516,374 | 257,985 | 78,919 | 41,949 | 49,789 | 167,717 | 476,443 | 815,551 | 1,202,507 | 7,836,994 |
| GS-NNG LC&I Sales | 12,248,882 | 10,282,023 | 8,451,524 | 4,910,217 | 2,581,822 | 978,438 | 637,094 | 707,202 | 1,775,411 | 4,537,856 | 7,588,168 | 11,048,485 | 65,747,122 |
| SVI-NNG Sales | 2,962,245 | 2,628,356 | 2,214,951 | 1,451,216 | 968,415 | 549,255 | 383,838 | 271,744 | 314,517 | 673,850 | 1,468,013 | 2,494,982 | 16,381,382 |
| LVI-NNG Sales | 970,187 | 890,103 | 779,981 | 529,669 | 346,217 | 306,902 | 375,722 | 509,260 | 774,301 | 1,208,645 | 1,290,676 | 1,257,285 | 9,238,948 |
| SVJ-NNG Sales | 22,305 | 21,712 | 20,002 | 15,235 | 11,093 | 7,430 | 5,574 | 4,736 | 5,655 | 8,995 | 13,369 | 18,858 | 154,964 |
| CONSOLIDATED SALES | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 4,720,851 | 3,972,787 | 3,344,695 | 2,019,072 | 1,103,230 | 366,631 | 132,899 | 202,001 | 745,618 | 1,860,487 | 3,003,249 | 4,306,376 | 25,777,896 |
| GS-CONSOLIDATED SC&I Sales | 432,041 | 389,332 | 326,369 | 196,560 | 106,749 | 34,460 | 11,318 | 17,904 | 71,136 | 180,682 | 293,294 | 421,972 | 2,481,817 |
| GS-CONSOLIDATED LC&I Sales | 3,652,680 | 3,273,026 | 2,744,979 | 1,713,724 | 1,022,742 | 524,743 | 411,587 | 385,890 | 566,445 | 1,175,455 | 1,906,615 | 2,984,325 | 20,362,211 |
| SVI-CONSOLIDATED Sales | 724,986 | 642,604 | 551,781 | 505,976 | 295,379 | 177,092 | 108,877 | 77,070 | 149,597 | 84,809 | 406,663 | 544,069 | 4,268,903 |
| LVI-CONSOLIDATED Sales | 578,413 | 588,673 | 591,597 | 350,923 | 356,466 | 339,886 | 269,633 | 257,097 | 318,103 | 380,903 | 450,458 | 499,588 | 4,981,740 |
| SVJ-CONSOLIDATED Sales | 43,202 | 36,059 | 30,213 | 18,117 | 9,774 | 3,083 | 964 | 1,598 | 6,533 | 16,632 | 26,975 | 38,756 | 231,906 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 1,585,427 | 1,334,506 | 1,101,862 | 632,708 | 327,434 | 114,474 | 71,480 | 80,666 | 218,608 | 581,054 | 976,065 | 1,427,001 | 8,451,285 |
| GS-ALBERT LEA NNG SC&I Sales | 24,382 | 20,450 | 17,355 | 10,644 | 6,407 | 3,305 | 2,432 | 2,451 | 4,561 | 9,934 | 15,686 | 22,508 | 140,115 |
| GS-ALBERT LEA NNG LC&I Sales | 298,144 | 296,902 | 322,475 | 267,549 | 308,574 | 348,745 | 347,853 | 330,856 | 383,788 | 139,896 | 244,153 | 494,328 | 3,783,263 |
| SVI-ALBERT LEA NNG Sales | 180,808 | 167,633 | 129,601 | 78,919 | 40,039 | 14,012 | 26,369 | 29,391 | 45,817 | 83,309 | 123,952 | 158,681 | 1,078,531 |
| LVI-ALBERT LEA NNG Sales | 158,206 | 167,633 | 129,601 | 118,377 | 95,687 | 100,472 | 68,069 | 66,094 | 83,960 | 90,605 | 125,140 | 148,729 | 1,352,573 |
| NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-NNG Transport | 190,319 | 207,386 | 193,233 | 130,349 | 114,515 | 100,791 | 80,081 | 75,587 | 74,191 | 67,238 | 105,842 | 210,690 | 1,550,222 |
| LVI-NNG Transport - CIP Applicable | 2,181,551 | 2,383,527 | 2,302,219 | 1,844,462 | 2,694,588 | 1,832,404 | 2,314,821 | 2,196,435 | 2,661,587 | 2,502,407 | 2,477,854 | 2,196,795 | 27,588,650 |
| LVI-NNG Transport - CIP Exempt | 83,312 | 41,715 | 24,314 | 83,081 | 19,207 | 9,450 | 790,808 | 849,971 | 649,467 | 734,317 | 378,800 | 196,930 | 3,861,372 |
| SVJ-NNG Transport | 203,416 | 266,539 | 315,163 | 163,512 | 145,035 | 101,202 | 87,624 | 76,004 | 70,628 | 63,740 | 115,650 | 290,465 | 1,898,978 |
| LVI-NNG Transport - CIP Applicable | 1,394,242 | 1,531,957 | 1,339,631 | 1,113,137 | 1,026,623 | 906,994 | 866,211 | 824,332 | 850,990 | 804,116 | 981,858 | 1,186,797 | 12,826,888 |
| LVI-NNG Transport - CIP Exempt | 1,220,413 | 1,316,182 | 1,443,815 | 1,235,675 | 1,222,720 | 1,477,833 | 1,821,856 | 1,845,485 | 1,873,733 | 1,657,947 | 1,688,392 | 1,588,852 | 18,392,903 |
| SLVI-NNG Transport-CIP Exempt | 18,916,738 | 19,465,844 | 17,134,257 | 15,719,677 | 13,833,116 | 9,582,603 | 9,503,434 | 10,889,502 | 10,510,236 | 11,642,710 | 13,970,080 | 17,244,684 | 168,412,881 |
| SLVI-NNG Transport-CIP Applicable | 25,603 | 16,191 | 38,423 | 84,608 | 10,092 | 66,149 | 231,093 | 523,633 | 376,309 | 1,616,439 | 1,601 | 12,934 | 3,003,075 |
| SLVJ-NNG Transport-CIP Exempt Transport for Resale | 690,047 | 1,029,304 | 1,889,320 | 1,100,553 | 1,751,279 | 2,158,556 | 1,701,768 | 4,177,944 | 3,667,659 | 3,444,420 | 1,469,446 | 1,016,406 | 24,096,702 |
| LVI-NNG Flex Transport (Cust "A") | 32,458 | 37,631 | 35,488 | 19,859 | 13,584 | 6,902 | 2,907 | 2,352 | 2,443 | 2,620 | 10,040 | 17,882 | 184,166 |
| LVI-NNG Flex Transport (Cust "B") | 507,242 | 497,526 | 307,699 | 339,908 | 364,133 | 457,054 | 502,589 | 555,506 | 603,125 | 412,859 | 435,535 | 431,117 | 5,414,293 |
| LVI-NNG Flex Transport (Cust "C") | 951,776 | 949,353 | 845,400 | 906,020 | 1,051,137 | 1,061,635 | 1,212,801 | 1,120,796 | 1,205,936 | 1,000,163 | 1,300,511 | 984,251 | 12,589,779 |
| LVI-NNG Flex Transport (Cust "D") | 1,041,670 | 973,717 | 918,495 | 986,322 | 904,142 | - | - | - | - | - | - | - | 4,824,346 |
| LVI-NNG Flex Transport (Cust "E") | - | - | - | - | - | 1,170,444 | 904,577 | 154,836 | 587,457 | 1,089,137 | 1,261,768 | 955,726 | 6,123,945 |
| LVI-NNG Flex Transport (Cust "F") | 531,620 | 497,756 | 407,257 | 476,303 | 542,483 | 484,630 | 581,099 | 514,148 | 545,251 | 543,161 | 675,221 | 560,107 | 6,359,036 |
| LVI-NNG Flex Transport (Cust "G") | 302,614 | 298,654 | 288,963 | 291,814 | 318,429 | 326,043 | 312,909 | 333,263 | 356,161 | 335,137 | 384,828 | 314,715 | 3,863,530 |
| SVJ-NNG Flex Transport (Cust "G") | 185,044 | 186,066 | 174,310 | 161,282 | 172,531 | 153,518 | 157,239 | 126,601 | 131,091 | 94,038 | 63,001 | 80,015 | 1,684,736 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 212,106 | 250,071 | 205,172 | 120,430 | 146,155 | 108,697 | 91,254 | 96,704 | 98,657 | 93,205 | 125,446 | 140,702 | 1,688,599 |
| LVI-CONSOLIDATED Transport | 1,197,343 | 1,410,748 | 1,286,064 | 812,348 | 840,310 | 784,373 | 867,253 | 856,625 | 916,299 | 860,487 | 944,902 | 825,419 | 11,602,171 |
| SVJ-CONSOLIDATED Transport | 142,615 | 170,047 | 172,255 | 122,061 | 123,470 | 63,030 | 38,721 | (28,715) | 26,040 | 38,263 | 76,742 | 84,466 | 1,028,995 |
| LVI-CONSOLIDATED Transport | 411,949 | 778,831 | 715,319 | 389,393 | 429,877 | 256,760 | 263,535 | 291,343 | 301,311 | 263,356 | 319,607 | 345,543 | 4,766,824 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 3,487,360 | 3,480,720 | 3,073,802 | 3,410,420 | 2,923,284 | 3,001,620 | 2,910,253 | 2,881,560 | 2,653,291 | 2,820,334 | 2,529,917 | 2,511,684 | 35,684,245 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 45,397 | 39,242 | 33,536 | 26,001 | 22,963 | 20,996 | 16,916 | 27,092 | 28,371 | 29,376 | 12,179 | 35,374 | 337,443 |
| LVI-ALBERT LEA Transport | 163,431 | 155,223 | 147,558 | 129,261 | 132,421 | 141,377 | 139,488 | 127,132 | 138,496 | 141,492 | 162,175 | 163,884 | 1,741,938 |
| Taconite Mines (Michigan) | | | | | | | | | | | | | |
| Taconite Mines (Michigan) | 11,103,796 | 8,272,818 | 8,823,124 | 8,864,509 | 7,398,253 | 10,354,546 | 8,914,510 | 5,800,096 | 6,825,116 | 7,343,580 | 10,638,440 | 11,621,974 | 105,960,762 |
| Total MERC | 101,671,647 | 95,213,623 | 84,772,163 | 65,346,664 | 51,361,066 | 41,597,262 | 39,118,721 | 39,251,207 | 44,505,216 | 57,796,811 | 74,316,656 | 92,780,884 | 787,731,920 |
| Company Use Gas | 39,120 | 36,319 | 36,586 | 26,509 | 19,596 | 14,095 | 11,347 | 11,131 | 12,346 | 16,783 | 23,288 | 30,256 | 277,376 |
| Gas Lost & Unaccounted For | 2,034,215 | 1,904,999 | 1,696,175 | 1,307,463 | 1,027,613 | 832,227 | 782,601 | 785,247 | 890,351 | 1,156,272 | 1,486,799 | 1,856,223 | 15,760,186 |
| Total GCR Gas @ Gate Station | 103,744,982 | 97,154,941 | 86,504,924 | 66,680,636 | 52,408,275 | 42,443,584 | 39,912,669 | 40,047,585 | 45,407,913 | 58,969,866 | 75,826,743 | 94,667,363 | 803,769,482 |
| Michigan | 11,103,796 | 8,272,818 | 8,823,124 | 8,864,509 | 7,398,253 | 10,354,546 | 8,914,510 | 5,800,096 | 6,825,116 | 7,343,580 | 10,638,440 | 11,621,974 | 105,960,762 |
| Minnesota | 90,567,851 | 86,940,805 | 75,949,039 | 56,482,155 | 43,962,813 | 31,242,716 | 30,204,211 | 33,451,111 | 37,680,100 | 50,453,231 | 63,678,216 | 81,158,910 | 681,771,158 |

Minnesota Energy Resources Corporation
Proposed Test Year Calendar Weather Normalized Sales
For the 12 Months Ending, December 31, 2018

All Units in Therms

| Calendar | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Total |
|--|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|
| NNG SALES | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 28,219,537 | 23,624,806 | 19,143,162 | 11,154,019 | 5,764,000 | 2,140,212 | 1,375,058 | 1,553,141 | 3,910,152 | 10,293,562 | 17,000,509 | 25,316,298 | 149,494,456 |
| GS-NNG SC&I Sales | 1,396,584 | 1,210,863 | 876,111 | 442,002 | 218,045 | 66,971 | 35,189 | 42,721 | 141,383 | 409,343 | 690,109 | 1,143,549 | 6,672,870 |
| GS-NNG LC&I Sales | 12,239,829 | 10,365,238 | 8,513,619 | 5,194,153 | 2,957,632 | 1,452,322 | 1,135,877 | 1,208,988 | 2,184,140 | 4,829,310 | 7,593,659 | 11,028,682 | 68,702,959 |
| SVI-NNG Sales | 2,878,756 | 2,552,791 | 2,555,710 | 858,800 | 893,587 | 499,823 | 478,836 | 183,160 | 398,218 | 548,820 | 1,361,340 | 2,014,917 | 15,224,758 |
| LVI-NNG Sales | 1,014,996 | 776,134 | 260,638 | 1,041,056 | 388,905 | 367,219 | 300,622 | 616,493 | 670,298 | 1,249,124 | 1,198,913 | 1,492,603 | 9,377,001 |
| SVJ-NNG Sales | 23,595 | 23,290 | 20,096 | 14,935 | 11,710 | 7,407 | 4,214 | 4,320 | 5,738 | 9,585 | 10,299 | 15,294 | 150,483 |
| CONSOLIDATED SALES | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 4,920,994 | 4,102,045 | 3,397,862 | 2,051,429 | 1,086,269 | 330,296 | 76,306 | 154,929 | 706,161 | 1,871,038 | 2,995,651 | 4,419,698 | 26,112,678 |
| GS-CONSOLIDATED SC&I Sales | 453,045 | 373,912 | 306,239 | 178,058 | 86,077 | 13,988 | (10,380) | (3,056) | 49,328 | 160,274 | 267,533 | 403,459 | 2,278,477 |
| GS-CONSOLIDATED LC&I Sales | 3,613,370 | 3,160,215 | 2,608,599 | 1,678,013 | 1,021,815 | 539,846 | 427,666 | 413,986 | 531,918 | 1,131,503 | 1,884,995 | 2,983,853 | 19,995,779 |
| SVI-CONSOLIDATED Sales | 746,144 | 656,847 | 583,596 | 328,354 | 332,695 | 105,480 | 115,699 | 120,713 | 126,793 | 245,032 | 473,094 | 709,757 | 4,544,204 |
| LVI-CONSOLIDATED Sales | 580,685 | 504,523 | 435,282 | 418,232 | 218,742 | 293,209 | 231,690 | 242,513 | 347,495 | 463,740 | 461,731 | 510,974 | 4,708,816 |
| SVJ-CONSOLIDATED Sales | 36,906 | 32,613 | 28,737 | 20,454 | 14,471 | 9,736 | 8,157 | 8,661 | 12,160 | 19,556 | 26,671 | 35,680 | 253,802 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 1,596,398 | 1,325,287 | 1,060,966 | 605,399 | 298,269 | 93,540 | 54,586 | 65,693 | 197,057 | 549,602 | 922,427 | 1,407,490 | 8,176,714 |
| GS-ALBERT LEA NNG SC&I Sales | 24,876 | 21,038 | 17,244 | 10,430 | 5,835 | 2,739 | 2,087 | 2,238 | 4,247 | 9,699 | 15,400 | 22,489 | 138,322 |
| GS-ALBERT LEA NNG LC&I Sales | 355,139 | 341,872 | 328,807 | 305,445 | 289,709 | 279,119 | 276,887 | 277,401 | 284,255 | 302,848 | 322,279 | 346,424 | 3,710,185 |
| SVI-ALBERT LEA NNG Sales | 195,663 | 132,885 | 126,246 | 78,309 | 59,849 | 33,011 | 29,403 | 61,773 | 99,382 | 99,616 | 223,637 | 223,637 | 1,354,562 |
| LVI-ALBERT LEA NNG Sales | 173,874 | 194,688 | 160,001 | 134,048 | 102,735 | 96,078 | 92,625 | 61,883 | 45,950 | 104,525 | 50,811 | 118,333 | 1,335,551 |
| NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-NNG Transport | 338,061 | 281,153 | 274,401 | 244,381 | 348,849 | 172,362 | 112,376 | 112,529 | 175,864 | 233,454 | 208,762 | 313,369 | 2,815,561 |
| LVI-NNG Transport - CIP Applicable | 3,740,673 | 2,822,882 | 2,523,685 | 2,909,862 | 2,246,223 | 2,105,879 | 2,034,292 | 2,438,631 | 2,374,508 | 3,438,580 | 2,846,044 | 3,308,492 | 32,789,751 |
| LVI-NNG Transport - CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Transport | 343,225 | 380,576 | 318,488 | 346,004 | 171,351 | 153,313 | 139,715 | 177,038 | 108,901 | 209,515 | 221,095 | 507,301 | 3,076,522 |
| LVJ-NNG Transport - CIP Applicable | 1,453,364 | 1,393,543 | 1,383,393 | 1,250,909 | 957,468 | 834,658 | 855,261 | 480,558 | 1,034,257 | 1,152,500 | 1,025,685 | 1,593,629 | 13,414,775 |
| LVJ-NNG Transport - CIP Exempt | 1,994,544 | 2,167,790 | 1,948,302 | 1,729,701 | 1,200,739 | 2,117,344 | 2,401,684 | 2,065,001 | 2,019,290 | 2,552,728 | 2,130,962 | 2,485,085 | 24,813,170 |
| SLVI-NNG Transport-CIP Exempt | 21,254,018 | 20,767,459 | 19,955,007 | 17,890,164 | 15,737,995 | 15,445,881 | 14,413,279 | 15,369,090 | 17,660,668 | 20,318,403 | 21,326,015 | 22,996,395 | 223,134,374 |
| SLVI-NNG Transport-CIP Applicable | 43,621 | 33,755 | 1,083,138 | 246,166 | 10,981 | 1,124 | 85,612 | 71,815 | 391,300 | 58,143 | 39,111 | 38,734 | 2,103,500 |
| SLVJ-NNG Transport-CIP Exempt | 1,634,207 | 2,694,551 | 2,755,669 | 3,451,281 | 4,150,587 | 2,447,636 | 4,361,678 | 4,401,772 | 6,566,812 | 2,859,091 | 2,809,288 | 2,093,146 | 40,225,718 |
| Transport for Resale | 33,019 | 43,072 | 34,889 | 21,824 | 18,098 | 5,517 | 2,503 | 2,188 | 2,699 | 4,127 | 13,114 | 25,629 | 206,679 |
| LVJ-NNG Flex Transport (Cust "A") | 515,118 | 486,225 | 453,321 | 426,385 | 453,486 | 476,719 | 262,170 | 306,751 | 577,057 | 714,568 | 603,778 | 549,238 | 5,824,816 |
| LVI-NNG Flex Transport (Cust "B") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "C") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVJ-NNG Flex Transport (Cust "E") | 675,358 | 645,044 | 659,676 | 586,802 | 589,656 | 511,960 | 475,476 | 430,727 | 580,040 | 753,877 | 767,744 | 796,990 | 7,473,350 |
| LVJ-NNG Flex Transport (Cust "F") | 381,187 | 368,176 | 385,708 | 370,536 | 379,219 | 360,219 | 328,514 | 331,795 | 278,417 | 483,503 | 442,731 | 453,370 | 4,563,375 |
| LVJ-NNG Flex Transport (Cust "G") | 174,756 | 163,684 | 130,048 | 108,596 | 89,278 | 73,192 | 57,604 | 8,732 | 45,238 | 47,047 | 72,599 | 116,782 | 1,087,556 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 135,451 | 115,046 | 100,714 | 74,232 | 129,326 | 79,413 | 63,554 | 65,895 | 72,624 | 97,329 | 83,240 | 97,292 | 1,114,116 |
| LVI-CONSOLIDATED Transport | 1,460,629 | 817,055 | 689,706 | 562,918 | 549,452 | 377,537 | 361,976 | 390,719 | 439,786 | 569,421 | 527,234 | 1,080,409 | 7,826,842 |
| SVJ-CONSOLIDATED Transport | 208,589 | 219,408 | 191,655 | 207,810 | 139,896 | 90,382 | 74,408 | 89,003 | 86,324 | 108,849 | 119,209 | 157,761 | 1,693,294 |
| LVJ-CONSOLIDATED Transport | 1,217,357 | 1,759,337 | 1,785,696 | 944,807 | 1,028,623 | 822,915 | 798,926 | 950,240 | 981,253 | 1,101,626 | 1,073,087 | 938,297 | 13,402,164 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 3,712,597 | 3,707,393 | 3,672,262 | 4,249,048 | 3,369,161 | 3,523,873 | 3,606,702 | 3,421,138 | 3,348,648 | 3,449,752 | 3,535,624 | 3,570,363 | 43,166,561 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 41,054 | 67,846 | 28,786 | 28,851 | 22,675 | 22,286 | 12,879 | 22,128 | 19,178 | 20,749 | 23,972 | 46,102 | 356,506 |
| LVI-ALBERT LEA Transport | 154,891 | 122,468 | 155,983 | 146,004 | 145,501 | 141,395 | 149,855 | 140,824 | 146,683 | 153,003 | 158,027 | 146,144 | 1,760,778 |
| Taconite Mines (Michigan) | 13,032,357 | 11,794,497 | 10,590,271 | 10,084,937 | 11,428,706 | 11,827,960 | 10,794,561 | 10,263,853 | 5,567,651 | 6,934,926 | 9,727,397 | 10,008,538 | 122,055,654 |
| Total MERC | 111,014,467 | 100,250,007 | 89,543,713 | 70,394,354 | 56,917,615 | 47,922,561 | 46,027,057 | 46,555,984 | 52,191,873 | 67,557,918 | 83,244,927 | 103,516,203 | 875,136,679 |
| Company Use Gas | 36,265 | 37,923 | 34,520 | 27,606 | 18,696 | 13,129 | 10,103 | 9,764 | 10,803 | 15,215 | 21,693 | 30,223 | 265,940 |
| Gas Lost & Unaccounted For | 2,221,015 | 2,005,759 | 1,791,565 | 1,408,439 | 1,138,726 | 958,714 | 920,743 | 931,315 | 1,044,054 | 1,351,463 | 1,665,332 | 2,070,929 | 17,508,052 |
| Total GCR Gas @ Gate Station | 113,271,747 | 102,293,689 | 91,369,798 | 71,830,399 | 58,075,037 | 48,894,404 | 46,957,903 | 47,497,063 | 53,246,730 | 68,924,596 | 84,931,952 | 105,617,355 | 892,910,671 |
| Michigan | 13,032,357 | 11,794,497 | 10,590,271 | 10,084,937 | 11,428,706 | 11,827,960 | 10,794,561 | 10,263,853 | 5,567,651 | 6,934,926 | 9,727,397 | 10,008,538 | 122,055,654 |
| Minnesota | 97,982,110 | 88,455,510 | 78,953,442 | 60,309,417 | 45,488,909 | 36,094,601 | 35,232,496 | 36,292,131 | 46,624,222 | 60,622,992 | 73,517,530 | 93,507,665 | 753,081,025 |

**Minnesota Energy Resources Corporation
Proposed Test Year Fixed Charge Counts
For the 12 Months Ending, December 31, 2018**

| <u>Line</u> | <u>Rate Class</u> (col. 1) | Fixed Charge Counts 2016 Total Annual Per Books (col. 2) | 2017 Growth (col. 3) | Fixed Charge Counts 2017 Forecast (col. 4) | 2018 Growth (col. 5) | Fixed Charge Counts 2018 Forecast (col. 6) |
|-------------------------------------|-------------------------------|--|----------------------------|---|----------------------------|---|
| <u>Residential Rate</u> | | | | | | |
| 1 | Residential | 2,505,405 | 23,107 | 2,528,512 | (4,541) | 2,523,971 |
| <u>C&I General Service Rate</u> | | | | | | |
| 6 | Small General Service | 103,491 | 23,450 | 126,941 | (17,782) | 109,159 |
| 13 | Large General Service | 171,659 | (35,365) | 136,294 | 20,086 | 156,380 |
| 14 | Total C&I General Service | <u>275,150</u> | <u>(11,915)</u> | <u>263,235</u> | <u>2,304</u> | <u>265,539</u> |
| <u>Interruptible & Joint</u> | | | | | | |
| 15 | Interruptible | 5,809 | (297) | 5,512 | (30) | 5,482 |
| 16 | Joint | 89 | (5) | 84 | - | 84 |
| 23 | Total Interruptible & Joint | <u>5,898</u> | <u>(302)</u> | <u>5,596</u> | <u>(30)</u> | <u>5,566</u> |
| <u>Transportation</u> | | | | | | |
| 24 | Transportation | 2,475 | (286) | 2,189 | 55 | 2,244 |
| 31 | Total MERC-Minnesota | <u>2,788,929</u> | <u>10,603</u> | <u>2,799,532</u> | <u>(2,212)</u> | <u>2,797,320</u> |

* Excludes fixed charge counts for Michigan taconites

Minnesota Energy Resources Corporation
Actual Year Fixed Charge Count Including Additional Meters
For the 12 Months Ending, December 31, 2016

| | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Total | Average |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|
| NNG SALES | | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 173,421 | 176,354 | 167,240 | 167,638 | 167,744 | 167,684 | 167,695 | 167,401 | 168,118 | 167,990 | 168,910 | 169,121 | 2,029,315 | 169,110 |
| GS-NNG SC&I Sales | 6,782 | 6,811 | 6,485 | 6,289 | 6,457 | 6,417 | 6,200 | 6,669 | 6,426 | 6,440 | 6,486 | 6,480 | 77,939 | 6,495 |
| GS-NNG LC&I Sales | 10,337 | 10,265 | 9,837 | 9,775 | 9,828 | 9,765 | 9,501 | 10,051 | 9,819 | 9,714 | 9,817 | 9,807 | 118,513 | 9,876 |
| SVI-NNG Sales | 300 | 247 | 294 | 82 | 550 | 232 | 258 | 399 | 235 | 330 | 292 | 303 | 3,521 | 293 |
| LVI-NNG Sales | 58 | 44 | 36 | 51 | 93 | 56 | 41 | 82 | 36 | 74 | 62 | 57 | 691 | 58 |
| SVJ-NNG Sales | 6 | 7 | 9 | 4 | (4) | 3 | (2) | 6 | 3 | 7 | 6 | (2) | 44 | 4 |
| CONSOLIDATED SALES | | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 31,474 | 31,273 | 29,864 | 30,033 | 29,926 | 29,909 | 29,850 | 29,753 | 30,007 | 29,993 | 30,026 | 30,067 | 362,175 | 30,181 |
| GS-CONSOLIDATED SC&I Sales | 2,194 | 2,189 | 2,092 | 2,106 | 2,062 | 2,064 | 1,980 | 2,171 | 2,079 | 2,051 | 2,055 | 2,072 | 25,114 | 2,093 |
| GS-CONSOLIDATED LC&I Sales | 3,382 | 3,406 | 3,220 | 3,226 | 3,225 | 3,196 | 3,117 | 3,341 | 3,241 | 3,216 | 3,230 | 3,211 | 39,013 | 3,251 |
| SVI-CONSOLIDATED Sales | 73 | 68 | 66 | 16 | 142 | 49 | 49 | 124 | 56 | 88 | 71 | 75 | 877 | 73 |
| LVI-CONSOLIDATED Sales | 7 | 5 | 7 | 3 | 13 | 5 | 7 | 9 | 6 | 10 | 7 | 7 | 86 | 7 |
| SVJ-CONSOLIDATED Sales | 5 | 4 | 3 | 2 | 7 | - | 3 | 9 | 1 | 7 | 4 | - | 45 | 4 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 9,968 | 9,814 | 8,920 | 9,973 | 9,427 | 9,407 | 9,431 | 9,399 | 9,428 | 9,392 | 9,375 | 9,382 | 113,916 | 9,493 |
| GS-ALBERT LEA NNG SC&I Sales | 33 | 34 | 35 | 35 | 33 | 33 | 47 | 37 | 35 | 35 | 38 | 41 | 438 | 36 |
| GS-ALBERT LEA NNG LC&I Sales | 1,218 | 1,229 | 1,165 | 1,176 | 1,176 | 1,183 | 1,125 | 1,206 | 1,169 | 1,166 | 1,157 | 1,164 | 14,133 | 1,178 |
| SVI-ALBERT LEA NNG Sales | 36 | 37 | 38 | 29 | 35 | 35 | 29 | 52 | 40 | 40 | 45 | 44 | 460 | 38 |
| LVI-ALBERT LEA NNG Sales | 15 | 13 | 15 | 15 | 16 | 15 | 15 | 16 | 11 | 14 | 13 | 15 | 174 | 14 |
| NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-NNG Transport | 21 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 18 | 153 | 13 |
| LVI-NNG Transport - CIP Applicable | 72 | 36 | 38 | 43 | 31 | 37 | 37 | 41 | 33 | 37 | 36 | 48 | 489 | 41 |
| LVI-NNG Transport - CIP Exempt | 4 | 2 | 2 | (1) | 1 | 1 | 1 | - | - | - | - | - | 10 | 1 |
| SVJ-NNG Transport | 42 | 35 | 25 | 35 | 25 | 29 | 29 | 34 | 24 | 29 | 30 | 41 | 378 | 31 |
| LVJ-NNG Transport - CIP Applicable | 44 | 24 | 26 | 27 | 23 | 25 | 25 | 26 | 24 | 25 | 25 | 27 | 321 | 27 |
| LVJ-NNG Transport - CIP Exempt | 2 | 2 | 2 | 6 | 2 | 3 | 3 | 3 | 1 | 2 | 2 | 4 | 32 | 3 |
| SLVI-NNG Transport-CIP Exempt | 17 | 10 | 14 | 12 | 12 | 12 | 12 | 13 | 13 | 13 | 13 | 13 | 154 | 13 |
| SLVI-NNG Transport-CIP Applicable | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 26 | 2 |
| SLVJ-NNG Transport-CIP Exempt | 2 | - | 4 | 2 | 2 | 2 | 2 | 3 | (5) | 2 | 2 | 2 | 18 | 2 |
| Transport for Resale | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "A") | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 13 | 1 |
| LVI-NNG Flex Transport (Cust "B") | 1 | 1 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 13 | 1 |
| LVI-NNG Flex Transport (Cust "C") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 13 | 1 |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVJ-NNG Flex Transport (Cust "E") | 1 | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "F") | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 39 | 3 |
| LVJ-NNG Flex Transport (Cust "G") | 3 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | 1 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 34 | 13 | 13 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 166 | 14 |
| LVI-CONSOLIDATED Transport | 23 | 7 | 8 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 92 | 8 |
| SVJ-CONSOLIDATED Transport | 28 | 18 | 17 | 22 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 20 | 238 | 20 |
| LVJ-CONSOLIDATED Transport | 22 | 11 | 11 | 14 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 154 | 13 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 84 | 7 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 17 | 1 |
| LVI-ALBERT LEA Transport | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 25 | 2 |
| Taconite Mines (Michigan) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 21 | 2 |
| Total MERC | 239,650 | 241,992 | 229,524 | 230,667 | 230,907 | 230,248 | 229,539 | 230,926 | 230,882 | 230,757 | 231,782 | 232,074 | 2,788,950 | 232,412 |
| Michigan | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 21 | 2 |
| Minnesota | 239,648 | 241,990 | 229,522 | 230,665 | 230,905 | 230,246 | 229,537 | 230,924 | 230,880 | 230,756 | 231,781 | 232,073 | 2,788,929 | 232,411 |

Minnesota Energy Resources Corporation
Projected Fixed Charge Count Including Additional Meters
For the 12 Months Ending, December 31, 2017

| | Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17 | Total | Average |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|
| NNG SALES | | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 173,086 | 171,428 | 170,569 | 168,843 | 171,271 | 171,905 | 171,584 | 171,332 | 171,174 | 171,477 | 171,107 | 172,081 | 2,055,857 | 171,321 |
| GS-NNG SC&I Sales | 8,192 | 8,184 | 8,103 | 7,709 | 8,109 | 8,160 | 8,141 | 8,131 | 8,128 | 8,112 | 8,088 | 8,162 | 97,219 | 8,102 |
| GS-NNG LC&I Sales | 8,011 | 7,956 | 7,871 | 8,167 | 7,882 | 7,901 | 7,900 | 7,886 | 7,857 | 7,844 | 7,821 | 7,828 | 94,924 | 7,910 |
| SVI-NNG Sales | 298 | 300 | 297 | 299 | 293 | 282 | 294 | 291 | 294 | 293 | 293 | 294 | 3,528 | 294 |
| LVI-NNG Sales | 60 | 60 | 58 | 58 | 61 | 58 | 60 | 63 | 61 | 63 | 60 | 58 | 720 | 60 |
| SVJ-NNG Sales | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 36 | 3 |
| CONSOLIDATED SALES | | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 30,574 | 30,022 | 29,425 | 29,705 | 30,052 | 30,110 | 30,349 | 29,979 | 29,722 | 29,897 | 29,223 | 29,899 | 358,957 | 29,913 |
| GS-CONSOLIDATED SC&I Sales | 2,483 | 2,440 | 2,396 | 2,370 | 2,432 | 2,446 | 2,478 | 2,460 | 2,431 | 2,453 | 2,413 | 2,457 | 29,259 | 2,438 |
| GS-CONSOLIDATED LC&I Sales | 2,716 | 2,665 | 2,609 | 2,689 | 2,635 | 2,647 | 2,682 | 2,673 | 2,610 | 2,651 | 2,596 | 2,636 | 31,809 | 2,651 |
| SVI-CONSOLIDATED Sales | 72 | 72 | 72 | 71 | 71 | 68 | 71 | 70 | 70 | 72 | 68 | 70 | 847 | 71 |
| LVI-CONSOLIDATED Sales | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 84 | 7 |
| SVJ-CONSOLIDATED Sales | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 48 | 4 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 9,622 | 9,533 | 9,467 | 9,366 | 9,501 | 9,520 | 9,491 | 9,464 | 9,444 | 9,441 | 9,405 | 9,444 | 113,698 | 9,475 |
| GS-ALBERT LEA NNG SC&I Sales | 39 | 39 | 38 | 36 | 38 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 463 | 39 |
| GS-ALBERT LEA NNG LC&I Sales | 807 | 801 | 793 | 822 | 794 | 796 | 796 | 794 | 791 | 790 | 788 | 789 | 9,561 | 797 |
| SVI-ALBERT LEA NNG Sales | 20 | 20 | 20 | 20 | 20 | 19 | 20 | 19 | 20 | 20 | 19 | 20 | 237 | 20 |
| LVI-ALBERT LEA NNG Sales | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 | 8 | 8 | 8 | 7 | 96 | 8 |
| NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-NNG Transport | 10 | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 119 | 10 |
| LVI-NNG Transport - CIP Applicable | 40 | 34 | 43 | 42 | 43 | 42 | 43 | 41 | 41 | 41 | 42 | 44 | 496 | 41 |
| LVI-NNG Transport - CIP Exempt | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| SVJ-NNG Transport | 20 | 17 | 21 | 21 | 21 | 20 | 20 | 21 | 20 | 20 | 21 | 22 | 244 | 20 |
| LVJ-NNG Transport - CIP Applicable | 22 | 19 | 24 | 24 | 24 | 23 | 23 | 23 | 23 | 23 | 24 | 25 | 277 | 23 |
| LVJ-NNG Transport - CIP Exempt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| SLVI-NNG Transport-CIP Exempt | 11 | 9 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 131 | 11 |
| SLVI-NNG Transport-CIP Applicable | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| SLVJ-NNG Transport-CIP Exempt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Transport for Resale | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "A") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVI-NNG Flex Transport (Cust "B") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVI-NNG Flex Transport (Cust "C") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 1 |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 1 |
| LVJ-NNG Flex Transport (Cust "E") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "F") | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 35 | 3 |
| LVJ-NNG Flex Transport (Cust "G") | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 15 | 15 | 15 | 15 | 16 | 16 | 15 | 15 | 16 | 15 | 15 | 15 | 183 | 15 |
| LVI-CONSOLIDATED Transport | 12 | 12 | 12 | 12 | 13 | 13 | 12 | 12 | 13 | 12 | 12 | 12 | 147 | 12 |
| SVJ-CONSOLIDATED Transport | 12 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 134 | 11 |
| LVJ-CONSOLIDATED Transport | 11 | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 123 | 10 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 84 | 7 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| LVI-ALBERT LEA Transport | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Taconite Mines (Michigan) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Total MERC | 236,185 | 233,708 | 231,928 | 230,363 | 233,370 | 234,159 | 234,112 | 233,408 | 232,848 | 233,357 | 232,128 | 233,990 | 2,799,556 | 233,288 |
| Michigan | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Minnesota | 236,183 | 233,706 | 231,926 | 230,361 | 233,368 | 234,157 | 234,110 | 233,406 | 232,846 | 233,355 | 232,126 | 233,988 | 2,799,532 | 233,286 |

Minnesota Energy Resources Corporation
Proposed Test Year Fixed Charge Count Including Additional Meters
For the 12 Months Ending, December 31, 2018

| | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Total | Average |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|
| NNG SALES | | | | | | | | | | | | | | |
| GS-NNG Residential Sales | 173,219 | 171,286 | 169,989 | 168,253 | 170,608 | 171,050 | 170,447 | 170,149 | 170,087 | 169,971 | 169,646 | 170,397 | 2,045,102 | 170,425 |
| GS-NNG SC&I Sales | 6,872 | 6,879 | 6,807 | 6,483 | 6,830 | 6,871 | 6,857 | 6,850 | 6,848 | 6,829 | 6,807 | 6,867 | 81,800 | 6,817 |
| GS-NNG LC&I Sales | 9,290 | 9,193 | 9,063 | 9,374 | 9,022 | 9,018 | 8,993 | 8,957 | 8,903 | 8,872 | 8,827 | 8,821 | 108,333 | 9,028 |
| SVI-NNG Sales | 308 | 313 | 324 | 315 | 308 | 280 | 296 | 316 | 292 | 298 | 298 | 303 | 3,651 | 304 |
| LVI-NNG Sales | 60 | 56 | 40 | 51 | 55 | 68 | 67 | 47 | 73 | 67 | 63 | 57 | 704 | 59 |
| SVJ-NNG Sales | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 36 | 3 |
| CONSOLIDATED SALES | | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | 31,097 | 30,536 | 29,940 | 30,234 | 30,591 | 30,649 | 30,886 | 30,503 | 30,231 | 30,402 | 29,709 | 30,393 | 365,171 | 30,431 |
| GS-CONSOLIDATED SC&I Sales | 2,288 | 2,248 | 2,206 | 2,182 | 2,237 | 2,249 | 2,278 | 2,260 | 2,231 | 2,251 | 2,213 | 2,253 | 26,896 | 2,241 |
| GS-CONSOLIDATED LC&I Sales | 3,294 | 3,230 | 3,162 | 3,256 | 3,190 | 3,203 | 3,244 | 3,232 | 3,154 | 3,202 | 3,136 | 3,183 | 38,486 | 3,207 |
| SVI-CONSOLIDATED Sales | 62 | 62 | 62 | 60 | 60 | 56 | 59 | 59 | 58 | 62 | 57 | 57 | 714 | 60 |
| LVI-CONSOLIDATED Sales | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 4 | 6 | 6 | 79 | 7 |
| SVJ-CONSOLIDATED Sales | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 48 | 4 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | 9,622 | 9,533 | 9,467 | 9,366 | 9,501 | 9,520 | 9,491 | 9,464 | 9,444 | 9,441 | 9,405 | 9,444 | 113,698 | 9,475 |
| GS-ALBERT LEA NNG SC&I Sales | 39 | 39 | 38 | 36 | 38 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 463 | 39 |
| GS-ALBERT LEA NNG LC&I Sales | 807 | 801 | 793 | 822 | 794 | 796 | 796 | 794 | 791 | 790 | 788 | 789 | 9,561 | 797 |
| SVI-ALBERT LEA NNG Sales | 20 | 21 | 20 | 18 | 19 | 19 | 21 | 20 | 22 | 21 | 21 | 20 | 242 | 20 |
| LVI-ALBERT LEA NNG Sales | 8 | 7 | 8 | 10 | 9 | 8 | 8 | 8 | 6 | 7 | 6 | 7 | 92 | 8 |
| NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-NNG Transport | 18 | 16 | 17 | 15 | 19 | 17 | 17 | 16 | 18 | 17 | 18 | 16 | 204 | 17 |
| LVI-NNG Transport - CIP Applicable | 31 | 33 | 36 | 37 | 32 | 35 | 34 | 36 | 33 | 35 | 35 | 32 | 409 | 34 |
| LVI-NNG Transport - CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Transport | 36 | 32 | 24 | 30 | 26 | 27 | 27 | 30 | 24 | 27 | 29 | 37 | 349 | 29 |
| LVJ-NNG Transport - CIP Applicable | 20 | 22 | 25 | 23 | 24 | 23 | 23 | 23 | 24 | 23 | 24 | 24 | 278 | 23 |
| LVJ-NNG Transport - CIP Exempt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| SLVI-NNG Transport-CIP Exempt | 13 | 14 | 14 | 13 | 16 | 14 | 14 | 13 | 15 | 14 | 15 | 14 | 169 | 14 |
| SLVI-NNG Transport-CIP Applicable | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| SLVJ-NNG Transport-CIP Exempt | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Transport for Resale | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "A") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVI-NNG Flex Transport (Cust "B") | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "C") | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVJ-NNG Flex Transport (Cust "E") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| LVJ-NNG Flex Transport (Cust "F") | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 36 | 3 |
| LVJ-NNG Flex Transport (Cust "G") | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 1 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 132 | 11 |
| LVI-CONSOLIDATED Transport | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 6 | 81 | 7 |
| SVJ-CONSOLIDATED Transport | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 17 | 215 | 18 |
| LVJ-CONSOLIDATED Transport | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 10 | 131 | 11 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 72 | 6 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| LVI-ALBERT LEA Transport | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 24 | 2 |
| Taconite Mines (Michigan) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 21 | 2 |
| Total MERC | 237,190 | 234,406 | 232,121 | 230,664 | 233,465 | 234,028 | 233,683 | 232,901 | 232,379 | 232,450 | 231,220 | 232,834 | 2,797,341 | 233,112 |
| Michigan | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 21 | 2 |
| Minnesota | 237,188 | 234,404 | 232,119 | 230,662 | 233,463 | 234,026 | 233,681 | 232,899 | 232,377 | 232,449 | 231,219 | 232,833 | 2,797,320 | 233,110 |

Minnesota Energy Resources Corporation
Proposed Test Year Daily Firm Capacity Nominations
For the 12 Months Ending, December 31, 2018

| <u>Line</u> | <u>Rate Class</u> (col. 1) | DFC Nomination 2016 Total Annual Per Books (col. 2) | 2017 Growth (col. 3) | DFC Nomination Charge Counts 2017 Forecast (col. 4) | 2018 Growth (col. 5) | DFC Nomination Charge Counts 2018 Forecast (col. 6) |
|-------------------------------------|-------------------------------|---|----------------------------|---|----------------------------|---|
| <u>Residential Rate</u> | | | | | | |
| 1 | Residential | - | - | - | - | - |
| <u>C&I General Service Rate</u> | | | | | | |
| 6 | Small General Service | - | - | - | - | - |
| 13 | Large General Service | - | - | - | - | - |
| 14 | Total C&I General Service | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| <u>Interruptible & Joint</u> | | | | | | |
| 15 | Interruptible | - | - | - | - | - |
| 16 | Joint | 24,600 | (6,600) | 18,000 | 6,600 | 24,600 |
| 23 | Total Interruptible & Joint | <u>24,600</u> | <u>(6,600)</u> | <u>18,000</u> | <u>6,600</u> | <u>24,600</u> |
| <u>Transportation</u> | | | | | | |
| 24 | Transportation | 15,991,754 | (8,085,914) | 7,905,840 | 216,240 | 8,122,080 |
| 31 | Total MERC-Minnesota | <u>16,016,354</u> | <u>(8,092,514)</u> | <u>7,923,840</u> | <u>222,840</u> | <u>8,146,680</u> |

Minnesota Energy Resources Corporation
Actual Year Daily Firm Capacity Nominations
For the 12 Months Ending, December 31, 2016

| | Jan-16 | Feb-16 | Mar-16 | Apr-16 | May-16 | Jun-16 | Jul-16 | Aug-16 | Sep-16 | Oct-16 | Nov-16 | Dec-16 | Total |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|----------------|--------------------|----------------|--------------------|-------------------|
| NNG SALES | | | | | | | | | | | | | |
| GS-NNG Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-NNG SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-NNG LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Sales | 950 | 950 | 950 | 950 | 950 | 950 | 950 | 3,353 | (1,054) | 3,424 | 4,319 | (5,292) | 11,400 |
| CONSOLIDATED SALES | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-CONSOLIDATED SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-CONSOLIDATED LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-CONSOLIDATED Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-CONSOLIDATED Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-CONSOLIDATED Sales | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 6,618 | 352 | 2,706 | 5,819 | (9,995) | 13,200 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-ALBERT LEA NNG SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-ALBERT LEA NNG LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-ALBERT LEA NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-ALBERT LEA NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-NNG Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Transport - CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Transport - CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Transport | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 149,381 | (15,374) | 81,840 | 40,129 | 103,623 | 513,949 |
| LVI-NNG Transport - CIP Applicable | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 426,330 | 414,406 | 92,570 | (28,373) | 222,860 | 1,441,254 |
| LVI-NNG Transport - CIP Exempt | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 2,189,525 | (1,349,521) | 1,166,220 | (185,156) | (86,028) | 2,176,040 |
| SLVI-NNG Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-NNG Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-NNG Transport-CIP Exempt | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 4,813,141 | 1,324,777 | (2,970,881) | 423,942 | (242,628) | 5,736,751 |
| Transport for Resale | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "A") | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 316,856 | 172,358 | 52,945 | (52,719) | (48,792) | 485,447 |
| LVI-NNG Flex Transport (Cust "B") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "C") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "E") | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 441,930 | 48,948 | 78,851 | 44,075 | 9,178 | 664,980 |
| LVI-NNG Flex Transport (Cust "F") | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 29,364 | 6,428 | 18,883 | 12,911 | 13,682 | 165,267 |
| LVI-NNG Flex Transport (Cust "G") | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 36,157 | 16,191 | 4,583 | 28,842 | 38,615 | 176,888 |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-CONSOLIDATED Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-CONSOLIDATED Transport | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 81,233 | 13,260 | 24,775 | 43,278 | 35,233 | 287,169 |
| LVI-CONSOLIDATED Transport | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 739,232 | 71,191 | 69,939 | 202,805 | (446,918) | 852,689 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 2,728,088 | 138,046 | 24,419 | 404,739 | (641,872) | 3,491,319 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-ALBERT LEA Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Taconite Mines (Michigan) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total MERC | 668,370 | 668,370 | 668,370 | 668,370 | 668,370 | 668,370 | 668,370 | 11,961,209 | 840,006 | (1,349,727) | 944,610 | (1,058,334) | 16,016,354 |

**Minnesota Energy Resources Corporation
Projected Daily Firm Capacity Nominations
For the 12 Months Ending, December 31, 2017**

| | Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17 | Total |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| NNG SALES | | | | | | | | | | | | | |
| GS-NNG Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-NNG SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-NNG LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Sales | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 4,800 |
| CONSOLIDATED SALES | | | | | | | | | | | | | |
| GS-CONSOLIDATED Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-CONSOLIDATED SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-CONSOLIDATED LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-CONSOLIDATED Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-CONSOLIDATED Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-CONSOLIDATED Sales | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 1,100 | 13,200 |
| ALBERT LEA-NNG SALES | | | | | | | | | | | | | |
| GS-ALBERT LEA NNG Residential Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-ALBERT LEA NNG SC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GS-ALBERT LEA NNG LC&I Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVI-ALBERT LEA NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-ALBERT LEA NNG Sales | - | - | - | - | - | - | - | - | - | - | - | - | - |
| NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-NNG Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Transport - CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Transport - CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-NNG Transport | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 22,050 | 264,600 |
| LVJ-NNG Transport - CIP Applicable | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 44,780 | 537,360 |
| LVJ-NNG Transport - CIP Exempt | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 756,000 |
| SLVI-NNG Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-NNG Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-NNG Transport-CIP Exempt | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 341,200 | 4,094,400 |
| Transport for Resale | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVJ-NNG Flex Transport (Cust "A") | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 6,400 | 76,800 |
| LVI-NNG Flex Transport (Cust "B") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "C") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-NNG Flex Transport (Cust "D") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVJ-NNG Flex Transport (Cust "E") | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 | 72,000 |
| LVJ-NNG Flex Transport (Cust "F") | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 144,000 |
| LVJ-NNG Flex Transport (Cust "G") | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CONSOLIDATED TRANSPORT | | | | | | | | | | | | | |
| SVI-CONSOLIDATED Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-CONSOLIDATED Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SVJ-CONSOLIDATED Transport | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 12,770 | 153,240 |
| LVJ-CONSOLIDATED Transport | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 30,920 | 371,040 |
| SLVI-CONSOLIDATED Transport-CIP Exempt | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVI-CONSOLIDATED Transport-CIP Applicable | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SLVJ-CONSOLIDATED Transport-CIP Exempt | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 119,700 | 1,436,400 |
| ALBERT LEA-NNG TRANSPORT | | | | | | | | | | | | | |
| SVI-ALBERT LEA Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| LVI-ALBERT LEA Transport | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Taconite Mines (Michigan) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total MERC | 660,349 | 660,350 | 660,351 | 660,352 | 660,353 | 660,354 | 660,355 | 660,356 | 660,357 | 660,358 | 660,359 | 660,360 | 7,923,840 |

