November 24, 2020 **PUBLIC DOCUMENT**

Mr. Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
Saint Paul, Minnesota 55101-2147

RE: **PUBLIC Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket No. G011/M-20-637

Dear Mr. Seuffert:

Attached are the **PUBLIC** Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) in the following matter:

> Minnesota Energy Resources Corporation's (MERC or the Company) Request for Change in Demand Units (Petition) for the Northern Natural Gas (NNG) Purchased Gas Adjustment) Area.

The Petition was filed on July 31, 2020 by:

> Joylyn Hoffman Malueg
> Project Specialist 3
> 2685 145th Street West
> Rosemount, MN 55068

Ms. Hoffman Malueg was also responsible for the Petition supplement filed on October 30, 2020.

Based on its review, the Department recommends that the Minnesota Public Utilities Commission:

- **Accept** the Company's proposed level of demand entitlement; and
- **Allow** MERC to recover associated demand costs through the monthly Purchased Gas Adjustment effective November 1, 2020.

The Department is available to answer any questions that the Minnesota Public Utilities Commission may have.

Sincerely,

/s/ ADAM J. HEINEN
Rates Analyst

/s/JOHN KUNDERT
Financial Analyst

AJH/JK/ja
Attachment

COMMERCE DEPARTMENT

Before the Minnesota Public Utilities Commission

PUBLIC Comments of the Minnesota Department of Commerce
Division of Energy Resources

Docket No. G011/M-20-637

I. INTRODUCTION

Pursuant to Minnesota Rules 7825.2910, subpart 2,[1] Minnesota Energy Resources Corporation (MERC or the Company) filed a petition on July 31, 2020 requesting a change in demand[2] units (Petition) for its customers served by the Northern Natural Gas (NNG or Northern) System. MERC requested that the Minnesota Public Utilities Commission (Commission) approve changes in the Company's recovery of the overall level of contracted capacity.

On October 30, 2020, MERC made its November Supplemental Filing (Supplement) detailing final entitlement levels for the 2020-2021 heating season. The Supplement includes final updated demand rates and commodity pricing. The Company did not change its total entitlement level, but the Supplement does reflect updated final futures contracts, storage positions, and call options for the 2020-2021 heating season.

MERC proposed to increase its total design-day requirement by 3,420 dekatherms (Dkt) to 280,796 Dkt/day. The Company currently has design day capacity 314,349 Dkt/day on NNG. As a result, MERC proposed to maintain its total design day at 314,349 Dkt/day. This total design day entitlement level results in an estimated reserve margin of approximately 11.95 percent and represents a 1.38 decrease in the Company's reserve margin from the 13.33 percent figure for the 2019-2020 heating season.

Regarding non-design-day deliverable contracts, MERC noted:

- A change to MERC-NNG contract 112495 in which the variable component of the contract increases by 5,774 Dkt/day while the base component of the contract decreased by the same amount.
- Changes to demand rates charged as a result of the conclusion of NNG's FERC rate case (Docket No. RP19-1353-000).
- NNG contracts 112495 and 112486 have capped rate provisions and were not subject to NNG's recent rate increase.
- MERC's contracted capacity on the Bison pipeline expires January 31, 2021. The change in rate on Bison reflects all FERC-level changes and will be the rate in effect going forward.
- Its two contracts for released storage capacity on NNG for a total volume of 1,500,000 Dkt remain in effect for the 2020-2021 heating season.

[1] "Filing upon a change in demand. Gas utilities shall file for a change in demand to increase or decrease demand, to redistribute demand percentages among classes, or to exchange one form of demand for another."

[2] Also called entitlement, capacity, or transportation on the pipeline.

MERC's proposed entitlement changes result in an estimated decrease in demand costs for residential customers of $0.04 per Dkt or approximately $3.48 per year compared to the rates included in the Company's October 2020 PGA. MERC also includes commodity costs in this Petition. Commodity cost changes are unusual for demand entitlement filings; however, the Commission's May 5, 2017 Order in Docket No. G011/M-15-895 requires the Company to include Rochester Project related capacity costs in the commodity portion of the monthly Purchased Gas Adjustment (PGA). MERC's estimated change to the commodity cost for the residential customers of $0.36896 per Dkt results in an annual increase of $29.84 or 4.6 percent.

II. DEPARTMENT ANALYSIS

The Minnesota Department of Commerce, Division of Energy Resources (Department) provides the following detailed analysis of the Company's Petition and its impact on MERC's rates and ratepayers. The Department's analysis of the Company's request includes the following:

- Rochester Project Compliance;
- MERC's Proposed Changes to the Entitlement Level and to Non-Capacity Items;
- Design-Day Requirements;
- Reserve Margin;
- Distribution Planning; and
- PGA Cost Recovery Proposals.

The Department discusses these topics separately below.

A. ROCHESTER PROJECT COMPLIANCE

In its May 8, 2018 Order in Docket No. G011/M-15-895, the Commission required MERC to provide semi-annual updates regarding capacity release associated with the Rochester Project and a discussion of each capacity substitution in its annual demand entitlement filing on a going-forward basis.

MERC provided information regarding this compliance requirement in its Petition. The Company explained that the second phase of capacity associated with the Rochester Project entered service on November 1, 2019. This second phase resulted in a significant increase in the Company's reserve margin. To address this increase in the reserve margin, MERC stated that it will continue to submit bi-annual compliance filings regarding capacity releases. The Company also stated that it has used Rochester capacity as a capacity substitution for several previous projects (*i.e.,* Balaton, Esko, Pengilly) and, although no capacity substitutions have occurred recently, MERC will continue to provide updates on future capacity substitutions in future demand entitlement filings.[3]

The Department concludes that MERC complied with the Commission's Rochester Project compliance requirement.

[3] Supplement, Pages 9-10.

B. MERC'S PROPOSED CHANGES TO THE ENTITLEMENT LEVEL AND TO NON-CAPACITY ITEMS

1. Changes to the Entitlement Level

As an initial matter, the Department confirms that, as required by the Commission's Ordering Point No. 9 of its April 28, 2016 Order in Docket Nos. G011/M-15-722, G011/M-15-723, and G011/M-15-724, MERC provided separate data on its summer and winter demand entitlements. As indicated in Department Attachment 1 and noted above, the Company proposed to maintain its entitlement level as follows:

Table 1: MERC's Total Entitlement Levels

Previous Entitlement Level (Dkt)	**Proposed Entitlement Level (Dkt)**	**Entitlement Changes (Dkt)**	**% Change from Previous Year**
314,349	314,349	0	0.00

Based on its design-day and reserve margin analyses in Sections II.C and II.D below, the Department concludes that MERC's proposed level of demand entitlement is appropriate and is likely sufficient to ensure firm reliability on a peak day.

2. Changes to Non-Capacity Items

MERC did not propose any new additions to its non-capacity items in this demand entitlement filing. Rather the Company noted changes to its existing agreements including the expiration of the Bison Contract at the end of January 2021. The Department notes that non-capacity items such as storage can be used as part of an integrated hedging plan to reduce baseload winter gas purchases and potentially lower the number of hedging instruments.

C. DESIGN-DAY REQUIREMENT

As indicated in Department Attachment 1, the Company proposed to increase its total design day in Dkt as follows:

Table 2: MERC's Northern Design-Day Levels

Previous Design Day (Dkt)	Proposed Design Day (Dkt)	Design Day Changes (Dkt)	% Change from Previous Year
277,376	280,796	3,420	1.23

MERC used a similar approach to what it used in last year's filing for its design-day analysis apart from changes to how it estimated peak day consumption for its customers in the former MERC-Albert Lea service area. In its 2017-2018 demand entitlement filing,[4] MERC explained that it completed

[4] Docket No. G011/M-17-588.

installation of telemetry for its former MERC-Albert Lea customers and anticipated having sufficient data for these customers in approximately two years to use in MERC's design-day analysis such that a separate estimate of daily non-firm usage would no longer be necessary. The Company explained in last year's demand entitlement filing that it anticipated having sufficient data in approximately one year to utilize telemetry in its design-day analysis for the former Albert Lea service area.[5] The Company has sufficient non-firm telemetry data available in the current filing to estimate peak load in a consistent manner for all service areas, including Albert Lea.

After accounting for non-firm load from its meter telemetry, MERC had daily firm data in the correct format to estimate peak-day consumption. The design-day analysis employed by MERC, as described in the Petition,[6] is similar to what was used by the Company in recent demand entitlement filings. The Company's design-day analysis is based on Ordinary Least Squares (OLS) regression and daily heating season (*i.e.,* December, January, February) data over the period from December 2017 to February 2020.

Given the disparate nature of MERC's service area, the Company conducted five separate regression models for the various parts of the NNG PGA area. MERC used Adjusted Heating Degree Days (AHDD)[7] and various other determinants (*e.g.,* month, day of the week, holiday) to estimate daily heating season consumption for each weather station area. The Department reviewed each of MERC's design-day regression models and concluded that the signs of the determinant coefficients are appropriate, and the scale of the coefficients appear reasonable. The Department also notes that the Commission required MERC in past demand entitlement orders to verify and make various necessary adjustments to its regression analyses. The Department reviewed the Company's models and supporting information and confirms that MERC complied with the Commission's various orders.

During the 2018-2019 heating season, MERC's service area, and the entire state of Minnesota, experienced a significant cold weather outbreak in late January and early February. This cold weather event marked the coldest conditions since the 1995-1996 heating season, and the Company included information and a discussion regarding this event in its Petition.[8] On an AHDD basis, the cold weather event during the 2018-2019 heating season was the coldest weather on record for all of MERC's NNG PGA system weather stations.

[5] Docket No. G011/M-19-496, Initial Petition, Attachment 12, Page 10.
[6] Petition, Attachment 12.
[7] AHDD incorporates the impacts of wind into the weather determinant used to estimate peak day consumption. MERC has historically used AHDD in its design-day analysis.
[8] Petition, Attachment 12, Pages 3-5.

Table 3: January 2019 Cold Weather Data

Station	Date	Avg. Temp	Avg. Wind Speed (mph)	HDD65	AHDD65	AHDD65-1
Bemidji	1/29/2019	-32	14	97	110	84
Cloquet*	1/29/2019	-24	16	89	103	74
Fargo	1/18/1996	-16	34	81	109	85
International Falls	2/2/1996	-34	8	99	107	107
Minneapolis*	1/29/2019	-20	17	85	100	71
Rochester*	1/29/2019	-20	21	85	104	76
Worthington*	1/29/2019	-20	21	85	103	81
Ortonville*	1/29/2019	-23	14	88	101	77

* NNG PGA weather station.

In previous demand entitlement filings, the Company's planning objective was based on the coldest day in AHDD for each of MERC's regional regression models. Beginning with last year's demand entitlement filing (covering the2019-2020 heating season), the Company considered the day prior to the coldest day (AHDD65-1) when determining whether a specific date represents the planning objective for a weather station. MERC provided the following explanation in its Petition: [9]

> While the January 2019 cold weather outbreak was significant, it was not considered to be as severe as the weather conditions experienced in 1996. With the exception of Worthington, the 1996 weather conditions overall were colder when considering both the current day and the prior day weather conditions.

As a result, the following planning objective data for the various weather stations were used in the Company's design-day analysis.

[9] Petition, Attachment 12, Page 4.

Table 4: MERC Planning Objective Data

Station	Date	Avg. Temp	Avg. Wind Speed (mph)	HDD65	AHDD65	AHDD65-1
Bemidji	2/1/1996	-34	8	99	107	94
Cloquet*	2/2/1996	-31	7	96	103	100
Fargo	1/18/1996	-16	34	81	109	85
International Falls	2/2/1996	-34	8	99	107	107
Minneapolis*	2/2/1996	-25	8	90	97	92
Rochester*	2/2/1996	-27	10	92	101	94
Worthington*	1/29/2019	-20	21	85	103	81
Ortonville*	1/14/2009	-21	11	86	96	86

* NNG PGA weather station.

As noted above, for each of the regression models, except Worthington, MERC's planning objective did not occur during the data period (2017 through 2020); as such, the Company adjusted the results to approximate usage at the planning objective. The Company's combined regression analyses resulted in a design-day estimate of 270,362 Dkt/day. However, as explained in MERC's filing, the Company modified the analysis such that the ultimate design-day estimate was based on a higher throughput estimate that factors in a volume risk adjustment. This adjustment resulted in a calculated design-day estimate of 280,796 Dkt/day, which is 3,420 Dkt/day greater than the design-day estimate in last year's demand entitlement filing. The Company stated that volume risk adjustments were incorporated into the forecast to provide a confidence level that the daily metered load under design conditions would not exceed the daily metered regression estimate.[10] In other words, the volume risk adjustment is meant to modify the results to ensure a bias toward reliability since this adjustment places the design-day estimate at the top end of expected design-day conditions based on the regressions. This post-regression adjustment is similar to what the Company used in previous demand entitlement filings.

The Department reviewed MERC's analysis and was able to replicate the Company's results. In addition to this review, the Department conducted further analysis to determine whether MERC's peak-day calculations were reasonable.[11] First, unlike in last year's demand entitlement, the Department observed a bias in the Company regression results. In particular, the Department observed a bias toward over-estimating daily historical consumption because there were more observations, across all models, where there were instances of predicted consumption greater than actual consumption. From a theoretical perspective it is expected that regression results have an even distribution of under- and over-estimation, which suggests an unbiased analysis from a results perspective. However, the over-estimation bias for daily historical consumption appears minor and does not appear to be a concern at this time. It is not a concern because the bias does not require MERC to procure additional capacity or adversely impacts firm reliability on a peak day.

[10] Petition, Attachment 12, Page 6.
[11] **Public** Department Attachment 2.

Second, using the regression coefficients from the Company's design-day models, the Department estimated firm throughput at both the Company's planning objective and a planning objective based solely on the coldest AHDD value. Based on this analysis, the Department determined that firm throughput would have been approximately 274,901 Dkt on 2018-2019 heating season's peak day if the average temperature was at the Company's new planning objective and 268,907 Dkt at the former planning objective.[12] It appears that the Company's planning objective selection provides for more conservative results, from a planning perspective, by estimating greater consumption on a peak day.

As a further check, the Department compared the 274,901 Dkt throughput estimate (using the regression coefficients from this year's design-day models but at the average temperatures assumed by the new planning objective) to the results of MERC's regression-estimated design day in its last demand entitlement filing.

Table 5: MERC Planning Objective Data

	MERC Estimated Design-Day (2019-2020 Heating Season) (Dkt)	Department Estimated Design-Day Throughput for January 29, 2019 based on AHDD65-1 (Dkt)	Difference (Dkt)	Percentage Difference
Throughput (Dkt)	267,600	274,901	7,301	2.73%
	Volume Adjusted MERC Estimated Design-Day (2018-2019 Heating Season) (Dkt)	Department Estimated Design-Day Throughput for January 29, 2019 based on AHDD65-1 (Dkt)	Difference (Dkt)	Percentage Difference
Throughput (Dkt)	277,376	274,901	(2,475)	0.89%

As shown in Table 5 above, the Company estimated design-day consumption of 267,600 Dkt in last year's demand entitlement filing. The Department estimated firm throughput of 274,901 Dkt in this docket is 7,301 Dkt, or 2.73 percent, greater than the Company's estimated design-day figure of 267,600 Dkt calculated in last year's demand entitlement filing. However, this regression-estimated design-day figure does not reflect the Company's volume risk adjustment. When the volume risk adjustment is applied to last year's estimated design-day figure of 267,600 Dkt, the Department estimated firm throughput of 274,901 Dkt in this docket is 2,475 Dkt, or 0.90 percent, lower than the adjusted design-day estimate of 277,376 Dkt that was used by the Company to determine its total entitlement level (*i.e.,* actual planning threshold) in last year's demand entitlement filing. This analysis suggests that MERC's approach to calculating its design-day is likely sufficient to ensure reliability.

[12] The peak day on the Northern system occurred on January 29, 2019 last heating season. The new planning objective calculation is as follows: Minneapolis-St. Paul 80,272 Dkt + Cloquet 37,894 Dkt + Albert Lea 15,978 Dkt + Rochester 110,968 + Worthington 29,789 Dkt = 274,901 Dkt. The former planning objective calculation is as follows: Minneapolis-St. Paul 78,446 Dkt + Cloquet 36,154 Dkt + Albert Lea 15,913 Dkt + Rochester 108,695 Dkt + Worthington 29,789 Dkt = 268,907 Dkt.

Third, the Department reviewed historical weather and throughput data for dates in which the average temperature was below zero (65 AHDD), including the cold weather event last heating season, to ascertain whether the determinant coefficients from the Company's regressions adequately estimated actual historical usage.[13] Based on this review, the Department determined that the Company's model coefficients and results did not exhibit bias toward over- or under-estimating sales on a peak day and produced consumption results similar to the peak day calculations discussed above.

Based on these analyses, the Department recommends that the Commission approve the Company's peak-day analysis. The Department's analysis of use on a peak day shows that MERC's decision to use a volume risk adjustment to modify its regression estimates is reasonable and necessary to ensure firm reliability. The Department also concludes that the Company's planning objective is reasonable at this time. Since each of MERC's regression models suggests that weather on the previous day, in addition to weather on the current day, impacts consumption on the current day, the Company was correct in factoring this into its planning objective. Although January 29, 2019 marked the coldest day, on an AHDD basis, for most of the Company's weather stations, the weather conditions on January 28, 2019 were warmer, on a comparative basis, than during the 1996 cold weather event. The Company's approach results in a slight bias toward reliability, namely that it estimates greater firm consumption on a peak day and is a reasonable approach at this time.

D. RESERVE MARGIN

As indicated in Department Attachment 1 and summarized in Table 6 below, the proposed reserve margin is 33,553 Dkt/day, or 11.95 percent.

Table 6: MERC-Northern Reserve Margin

Total Entitlement (Dkt)	Design-Day Estimate (Dkt)	Difference (Dkt)	Reserve Margin (%)	Percentage Point Change From Prior Year
314,349	280,796	33,553	11.95%	(1.38)%

The proposed reserve margin of 11.95 percent represents a decrease of 1.38 percentage points as compared to last year's reserve margin of 13.33 percent. The decrease in the reserve margin is the likely result of system growth decreasing the reserve margin experienced last heating season as a result of the second phase of MERC's Rochester Project capacity coming online November 1, 2019. The Company's proposed reserve margin is higher than the Commission typically approves but is driven by the Rochester Project and the nature of large natural gas projects. The Commission was aware of these facts when it approved the Rochester Project and required MERC, as discussed in Section II.A above, to explore methods such as capacity release to mitigate higher reserve margins.

[13] **Public** Department Attachment 2.

Based on the Department's review of MERC's historic design-day data, regression results, and the nature of its Rochester Project and associated capacity expansions, the Department concludes that MERC's reserve margin is acceptable. The Department will continue to monitor this in future demand entitlement filings and capacity release compliance filings.

E. DISTRIBUTION PLANNING

In recent demand entitlement filings, the Department requested information from MERC, and conducted analysis, regarding the Company's distribution planning and the integration of electric generation onto the MERC system. In last year's demand entitlement proceeding, the Department concluded that the Company's current planning approach was reasonable and did not represent a negative impact to ratepayers or reliability. The Department asked the Company informally during our review of this Petition, if it has made any changes to its distribution planning assumptions since its previous demand entitlement filing. MERC responded that it had not. Given that MERC has not suffered from weather-related reliability or deliverability issues in its distribution system as have other natural gas local distribution companies, the Department concludes that MERC's planning assumptions continue to be acceptable at this time.

F. PGA COST RECOVERY PROPOSAL

In Department Attachment 3, the Department compares MERC's October 2020 PGA to MERC's projected November 2020 PGA rates assuming identical commodity costs. This perspective allows the Commission to identify the effects of the changes to demand costs in the Petition. Table 7 summarizes the information included in Attachment 3. to highlight the changes in commodity costs. Table 7 summarizes the effects of the Company's demand entitlement proposal.

Table 7: Comparison of Annual Impact on Demand Costs to October to November 2020 PGA Proposal by Customer Class

Customer Class	Annual Difference ($/yr/customer)	Percentage Change
Residential	($3.48)	-0.6%
Small Commercial	($27.47)	-0.6%
Large Commercial	($717.86)	-0.7%
Small Interruptible	$0.00	0.0%
Large Interruptible	$0.00	0.0%

Demand costs for the customer classes receiving firm service all decline slightly. Since interruptible service doesn't require demand costs by definition, the demand costs for the interruptible classes remains unchanged.

The Department notes that MERC appropriately included Rochester related demand costs in the commodity portion of the PGA, as required by the Commission's May 5, 2017 Order in Docket No. G011/M-15-895. For this reason, the Department included commodity related bill impacts that include the Rochester Project in its calculations in Table 8. Although the rate impacts appear large, from 4.6 to 8.1 percent, it is important to note that the majority of these rate changes are within the commodity portion of the PGA. It is not unusual for the commodity portion of the PGA to change at levels greater than the rate impacts related to the Rochester Project. For example, without the impact of the Rochester Project, the commodity portion of the MERC PGA increased 14 percent between October 2020 and November 2020.[14]

Table 8: Comparison of October 2020 PGA Commodity Cost to November 2020 PGA Proposal by Customer Class

Customer Class	Annual Difference ($/yr/customer)	Percentage Change
Residential	$29.34	4.6%
Small Commercial	$231.42	5.2%
Large Commercial	$6,047.94	5.6%
Small Interruptible	$1,486.09	8.0%
Large Interruptible	$9,683.18	8.1%

Based on its analysis, the Department recommends that the Commission approve the proposed demand costs with an effective date of November 1, 2020.

III. DEPARTMENT CONCLUSIONS AND RECOMMENDATIONS

Based on its review, the Department recommends that the Commission:

- Accept the Company's proposed level of demand entitlement; and
- Allow MERC to recover associated demand costs through the monthly Purchased Gas Adjustment (PGA) effective November 1, 2020.

/ja

[14] October 2020 Northern PGA, Docket No. G011/AA-20-756 and November 2020 Northern PGA, Docket No. G011/AA-20-804. See Department Attachment 4.

Department Attachment 1
Docket No. G011/M-20-637
MERC NNG Demand Entitlement Analysis*

	Number of Firm Customers			Design-Day Requirement			Total Entitlement Plus Peak Shaving			Reserve Margin	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Heating Season	Number of Customers	Change from Previous Year	% Change From Previous Year	Design Day (Dth)	Change from Previous Year	% Change From Previous Year	Total Design-Day Capacity (Dth)	Change from Previous Year	% Change From Previous Year	Reserve (7) - (4)	% Reserve [(7)-(4)]/(4)
2020-2021	204,781	3,591	1.78%	280,796	3,420	1.23%	314,349	0	0.00%	33,553	11.95%
2019-2020	201,190	2,562	1.29%	277,376	3,534	1.29%	314,349	37,093	13.38%	36,973	13.33%
2018-2019	198,628	11,434	6.11%	273,842	7,017	2.63%	277,256	10,939	4.11%	3,414	1.25%
2017-2018	187,194	2,617	1.42%	266,825	18,029	7.25%	266,317	14,190	5.63%	(508)	-0.19%
2016-2017	184,577	3,251	1.79%	248,796	3,533	1.44%	252,127	0	0.00%	3,331	1.34%
2015-2016	181,326	2,938	1.65%	245,263	(15,739)	-6.03%	252,127	(14,258)	-5.35%	6,864	2.80%
2014-2015	178,388	(190)	-0.11%	261,002	15,124	6.15%	266,385	10,000	3.90%	5,383	2.06%
2013-2014	178,578	1,641	0.93%	245,878	19,995	8.85%	256,385	22,900	9.81%	10,507	4.27%
2012-2013	176,937	1,696	0.97%	225,883	(9,172)	-3.90%	233,485	(12,500)	-5.08%	7,602	3.37%
2011-2012	175,241	(786)	-0.45%	235,055	16,842	7.72%	245,985	(15,690)	-6.00%	10,930	4.65%
2010-2011	176,027	799	0.46%	218,213	(9,827)	-4.31%	261,675	7,000	2.75%	43,462	19.92%
2009-2010	175,228	1,266	0.73%	228,040	(19,148)	-7.75%	254,675	4,227	1.69%	26,635	11.68%
2008-2009	173,962	1,846	1.07%	247,188	23,434	10.47%	250,448	0	0.00%	3,260	1.32%
2007-2008	172,116	7,063	4.28%	223,754	1,635	0.74%	250,448	2,036	0.82%	26,694	11.93%
2006-2007	165,053			222,119			248,412			26,293	11.84%
Average			1.57%			1.84%			1.83%		6.77%

	Firm Peak-Day Sendout**			Per Customer Metrics			
	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Heating Season	Firm Peak-Day Sendout (Dth)	Change from Previous Year	% Change From Previous Year	Excess per Customer [(7) - (4)]/(1)	Design Day per Customer (4)/(1)	Entitlement per Customer (7)/(1)	Peak-Day Send per Customer (12)/(1)
2020-2021	unknown			0.1638	1.3712	1.5350	unknown
2019-2020	220,338	(48,510)	-18.04%	0.1838	1.3787	1.5624	1.0952
2018-2019	268,848	34,903	14.92%	0.0172	1.3787	1.3959	1.3535
2017-2018	233,945	21,292	10.01%	-0.0027	1.4254	1.4227	1.2497
2016-2017	212,653	8,209	4.02%	0.0180	1.3479	1.3660	1.1521
2015-2016	204,444	10,596	5.47%	0.0379	1.3526	1.3905	1.1275
2014-2015	193,848	(18,958)	-8.91%	0.0302	1.4631	1.4933	1.0867
2013-2014	212,806			0.0588	1.3769	1.4357	1.1917
2012-2013				0.0430	1.2766	1.3196	
2011-2012				0.0624	1.3413	1.4037	
2010-2011				0.2469	1.2397	1.4866	
2009-2010				0.1520	1.3014	1.4534	
2008-2009				0.0187	1.4209	1.4397	
2007-2008				0.1551	1.3000	1.4551	
2006-2007				0.1593	1.3457	1.5050	
Average			5.10%	0.0843	1.3535	1.4378	1.1935

*Increases to the 2017-2018 Number of Firm Customers, Design-Day, and Total Entitlement were largley attributed the Albert Lea PGA.
**Effective 7/1/13 MERC PGAs were consolidated from four down to two (NNG and Consolidated). Prior to 2013, no Peak-Day was calculated for only the NNG PGA.
Source: MERC's Attachment 1

Prepared by the Minnesota Department of Commerce

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Under Estimate
	TRADE SECRET DATA BEGINS																
12/1/2017																	
12/2/2017																	
12/3/2017																	
12/4/2017																	
12/5/2017																	
12/6/2017																	
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Observations	271.00
Under-Estimate	31.00
Over-Estimate	240.00

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	MERC Design Day	DOC Design Day

TRADE SECRET DATA ENDS

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	First two Y	Predicted	Difference	Over/Unde
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Observations	271.00
Under-Estimate	49.00
Over-Estimate	222.00

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	MERC Design Day	DOC Design Day

TRADE SECRET DATA ENDS

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Under Estimate
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Under Estimate
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Under Estimate
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2/28/2020																	
2/29/2020																	
																Observations	271.00
																Under-Estimate	63.00
																Over-Estimate	208.00

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

Sun	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact	Dec_Impact	MERC Design Day	DOC Design Day

TRADE SECRET DATA ENDS

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Und
	TRADE SECRET DATA BEGINS																
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Und
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Und
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Und
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Predicted	Difference	Over/Und
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Observations	271.00
Under-Estimate	48.00
Over-Estimate	223.00

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Sat	Dec	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Sat_Impact	Dec_Impact	MERC Design Day	DOC Design Day

TRADE SECRET DATA ENDS

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
	TRADE SECRET DATA BEGINS																	
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
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Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
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1/7/2020																		
1/8/2020																		
1/9/2020																		
1/10/2020																		
1/11/2020																		
1/12/2020																		
1/13/2020																		
1/14/2020																		
1/15/2020																		

Date	Throughput	Nonfirm Customers (DeMaxx)	Nonfirm Telemetry	Total Nonfirm	Net Throughput	AHDD65	AHDD65-1	Fri	Sat	Sun	Dec	Feb	Weekday	Adjusted Weekday	Last Year	Predicted	Difference	Over/Under Estimate
1/16/2020																		
1/17/2020																		
1/18/2020																		
1/19/2020																		
1/20/2020																		
1/21/2020																		
1/22/2020																		
1/23/2020																		
1/24/2020																		
1/25/2020																		
1/26/2020																		
1/27/2020																		
1/28/2020																		
1/29/2020																		
1/30/2020																		
1/31/2020																		
2/1/2020																		
2/2/2020																		
2/3/2020																		
2/4/2020																		
2/5/2020																		
2/6/2020																		
2/7/2020																		
2/8/2020																		
2/9/2020																		
2/10/2020																		
2/11/2020																		
2/12/2020																		
2/13/2020																		
2/14/2020																		
2/15/2020																		
2/16/2020																		
2/17/2020																		
2/18/2020																		
2/19/2020																		
2/20/2020																		
2/21/2020																		
2/22/2020																		
2/23/2020																		
2/24/2020																		
2/25/2020																		
2/26/2020																		
2/27/2020																		
2/28/2020																		
2/29/2020																		

Observations	271.00
Under-Estimate	48.00
Over-Estimate	223.00

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

ColdAHDD	ColdAHDDLag	MERC_Planning	MERC_Planning_Lag	DOC_Planning	DOC_Planning_Lag	MP_Difference	MPL_Difference	DP_Difference	DPL_Difference	Intercept	AHDD Coefficient	AHDDLag Coefficient	Fri	Sat	Sun	MERC AHDD Impact	MERC AHDD-1 Impact	DOC AHDD Impact	DOC AHDD-1 Impact	Fri_Impact	Sat_Impact	Sun_Impact		MERC Design Day	DOC Design Day

TRADE SECRET DATA ENDS

MINNESOTA ENERGY RESOURCES - NNG

RATE IMPACT OF THE PROPOSED DEMAND CHANGE

NOVEMBER 1, 2020

NNG

All costs in $/Dth	Base Cost of Gas G011/MR-17-564 1-Jul-19	Demand Charge Demand Filing Nov 1, 2019	Most Recent PGA Oct 1, 2020	Proposed Effective Nov 1, 2020	Result of Proposed Change: Change from Last Rate Case	Change from Nov 1, 2019 Demand Filing	Change from Last PGA %	Change from Last PGA $
1) General Service Residential: Avg. Annual Use:		**87**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.6896	$3.6896	$0.0223	$0.0239	0.00%	$0.0000
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$2.4686	$2.4686	$2.4686	$2.4686	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$7.0722	$7.0570	$7.2943	$7.2543	$0.1821	$0.1973	-0.55%	($0.0400)
Avg Annual Cost	$615.74	$614.42	$635.08	$631.60	$15.85	$17.18	-0.55%	($3.48)
Effect of proposed commodity change on average annual bills:								$0.00
Effect of proposed demand change on average annual bills								($3.48)
Residential Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA								**-0.6%**
2) Small C&I Firm, Class 2: Avg. Annual Use:		**687**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.6896	$3.6896	$0.0223	$0.0239	0.00%	$0.0000
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$1.6857	$1.6857	$1.6857	$1.6857	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$6.2893	$6.2741	$6.5114	$6.4714	$0.1821	$0.1973	-0.61%	($0.0400)
Avg Annual Cost	$4,318.91	$4,308.48	$4,471.42	$4,443.95	$125.05	$135.47	-0.61%	($27.47)
Effect of proposed commodity change on average annual bills:								$0.00
Effect of proposed demand change on average annual bills								($27.47)
Small C&I Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA								**-0.6%**
3) Large C&I Firm Class 3: Avg. Annual Use:		**17946**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.6896	$3.6896	$0.0223	$0.0239	0.00%	$0.0000
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$1.2453	$1.2453	$1.2453	$1.2453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$5.8489	$5.8337	$6.0710	$6.0310	$0.1821	$0.1973	-0.66%	($0.0400)
Avg Annual Cost	$104,966.77	$104,694.39	$108,952.67	$108,234.81	$3,268.04	$3,540.42	-0.66%	($717.86)
Effect of proposed commodity change on average annual bills:								$0.00
Effect of proposed demand change on average annual bills								($717.86)
Large C&I Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA								**-0.7%**
4) Small C&I Interruptible, Class 2: Avg. Annual Use:		**3,942**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.6896	$3.6896	$0.0223	$0.0239	0.00%	$0.0000
Commodity Margin	$1.0453	$1.0453	$1.0453	$1.0453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$4.7126	$4.7110	$4.7349	$4.7349	$0.0223	$0.0239	0.00%	$0.0000
Avg Annual Cost	$18,576.46	$18,570.15	$18,664.36	$18,664.36	$87.90	$94.21	0.00%	$0.00
Effect of proposed commodity change on average annual bills								$0.00
Small C&I Interruptible Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA								**0.0%**
5) Large C&I Interruptible, Class 3: Avg. Annual Use:		**25,685**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.6896	$3.6896	$0.0223	$0.0239	0.00%	$0.0000
Commodity Margin	$0.9453	$0.9453	$0.9453	$0.9453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$4.6126	$4.6110	$4.6349	$4.6349	$0.0223	$0.0239	0.00%	$0.0000
Avg Annual Cost	$118,473.85	$118,432.75	$119,046.62	$119,046.62	$572.77	$613.87	0.00%	$0.00
Effect of proposed commodity change on average annual bills								$0.00
Large C&I Interruptible Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA								**0.0%**

Note: Average Annual Use based on new class structure found in 2018 MERC Gas Rate Design in Docket GR-17-56

Note: Rates do not include the ACA adjustment.

Source: MERC's Attachment 4 to its November Update.

MINNESOTA ENERGY RESOURCES - NNG

RATE IMPACT OF THE PROPOSED DEMAND CHANGE ON AVERAGE ANNUAL COMMODITY COSTS INCLUDING ROCHESTER PROJECT

NOVEMBER 1, 2020

NNG

All costs in $/Dth	Base Cost of Gas G011/MR-17-564 1-Jul-19	Demand Charge Demand Filing Nov 1, 2019	Most Recent PGA Oct 1, 2020	Proposed Effective Nov 1, 2020	Result of Proposed Change: Change from Last Rate Case	Change from Nov 1, 2019 Demand Filing	Change from Last PGA %	Change from Last PGA $
1) General Service Residential: Avg. Annual Use:		**87**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.3126	$3.6896	$0.0223	$0.0239	11.38%	$0.3770
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$2.4686	$2.4686	$2.4686	$2.4686	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$7.0722	$7.0570	$6.9173	$7.2543	$0.1821	$0.1973	4.87%	$0.3370
Avg Annual Cost	$615.74	$614.42	$602.26	$631.60	$15.85	$17.18	4.87%	$29.34
Effect of proposed commodity change on average annual bills:								$32.82
Effect of proposed demand change on average annual bills:								($3.48)
Residential Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA including Demand Costs								**4.6%**
2) Small C&I Firm, Class 2: Avg. Annual Use:		**687**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.3126	$3.6896	$0.0223	$0.0239	11.38%	$0.3770
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$1.6857	$1.6857	$1.6857	$1.6857	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$6.2893	$6.2741	$6.1344	$6.4714	$0.1821	$0.1973	5.49%	$0.3370
Avg Annual Cost	$4,318.91	$4,308.48	$4,212.53	$4,443.95	$125.05	$135.47	5.49%	$231.42
Effect of proposed commodity change on average annual bills:								$258.89
Effect of proposed demand change on average annual bills:								($27.47)
Small C&I Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA including Demand Costs								**5.2%**
3) Large C&I Firm Class 3: Avg. Annual Use:		**17946**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.3126	$3.6896	$0.0223	$0.0239	11.38%	$0.3770
Demand Cost	$0.9363	$0.9227	$1.1361	$1.0961	$0.1598	$0.1734	-3.52%	($0.0400)
Commodity Margin	$1.2453	$1.2453	$1.2453	$1.2453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$5.8489	$5.8337	$5.6940	$6.0310	$0.1821	$0.1973	5.92%	$0.3370
Avg Annual Cost	$104,966.77	$104,694.39	$102,186.87	$108,234.81	$3,268.04	$3,540.42	5.92%	$6,047.94
Effect of proposed commodity change on average annual bills:								$6,765.80
Effect of proposed demand change on average annual bills:								($717.86)
Large C&I Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA Including Demand Costs								**5.6%**
4) Small C&I Interruptible, Class 2: Avg. Annual Use:		**3,942**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.3126	$3.6896	$0.0223	$0.0239	11.38%	$0.3770
Commodity Margin	$1.0453	$1.0453	$1.0453	$1.0453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$4.7126	$4.7110	$4.3579	$4.7349	$0.0223	$0.0239	8.65%	$0.3770
Avg Annual Cost	$18,576.46	$18,570.15	$17,178.28	$18,664.36	$87.90	$94.21	8.65%	$1,486.09
Effect of proposed commodity change on average annual bills:								$1,486.09
Small C&I Interruptible Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA including Demand Costs								**8.0%**
5) Large C&I Interruptible, Class 3: Avg. Annual Use:		**25,685**	**Dth**					
Commodity Cost	$3.6673	$3.6657	$3.3126	$3.6896	$0.0223	$0.0239	11.38%	$0.3770
Commodity Margin	$0.9453	$0.9453	$0.9453	$0.9453	$0.0000	$0.0000	0.00%	$0.0000
Total Cost of Gas	$4.6126	$4.6110	$4.2579	$4.6349	$0.0223	$0.0239	8.85%	$0.3770
Avg Annual Cost	$118,473.85	$118,432.75	$109,363.44	$119,046.62	$572.77	$613.87	8.85%	$9,683.18
Effect of proposed commodity change on average annual bills:								$9,683.18
Large C&I Interruptible Class - Annual Percentage Change in Commodity Cost from October 2020 PGA to November 2020 PGA including Rochester Proje								**8.1%**

Note: Average Annual Use based on new class structure found in 2018 MERC Gas Rate Design in Docket GR-17-563

Note: Rates do not include the ACA adjustment.

Source: MERC's Attachment 4 to its November Update.