

# **MINNESOTA ENERGY RESOURCES - NNG**

## **DESIGN-DAY DEMAND SUMMARY**

**NOVEMBER 1, 2019**

**NNG**

Design Day Requirement		277,376
Total Peak Day Entitlement		314,349
2018/19 Firm Peak Day Actual Sendout	1/29/2019	268,848
Firm Annual Throughput - Minnesota		24,568,312
No. of Firm Customers		201,190
Department Load Factor Calculation		25.04%

**MINNESOTA ENERGY RESOURCES - NNG**

**NNG MINNESOTA DESIGN DAY REQUIREMENTS**

**NOVEMBER 1, 2019**

**NNG**

Pipeline Group	2018/19 Customer Count	Zone Total Customer Count	1/20 Design DDD	Regression Factors		Regression Total	Regression Adjustment	1/20 Requirements Regression Load	Estimated Contract Demand Units	Total *
				Intercept	Slope					

<b>PEAK</b>										
NNG	201,190	201,190	99	6,734	2,641	267,600	9,681	277,281	95	277,376
<b>Total</b>	201,190	201,190								277,376

<b>OFF PEAK</b>										
NNG	201,190	201,190	55	6,734	2,641	152,006	9,682	161,688	95	161,783
<b>Total</b>	201,190	201,190								161,783

\* Adjusted for customer growth

**MINNESOTA ENERGY RESOURCES - NNG**

**DESIGN-DAY DEMAND PER CUSTOMER - GS**  
**NOVEMBER 1, 2019**

**NNG**

<b><u>Heating Season</u></b>	<b><u>No. of Firm Customers</u></b>	<b><u>Design Day Requirements</u></b>	<b><u>MMBtu /Customer /Day</u></b>
19/20	201,190	277,376	1.38
18/19	198,628	273,842	1.38
17/18	197,991	267,783	1.35
16/17	195,311	262,324	1.34
15/16	192,016	259,076	1.35
14/15	189,078	273,917	1.45
13/14	189,254	258,913	1.37
12/13	187,545	239,325	1.28
11/12	185,890	247,982	1.33
10/11	186,610	234,907	1.26

**MINNESOTA ENERGY RESOURCES - NNG**

SUMMER/WINTER USAGE - Dth  
**PROJECTED 12 MONTHS ENDING JUNE 2020**  
NNG

<u>Class</u>	<u>Summer Apr-Oct</u>	<u>Winter Nov-Mar</u>	<u>Total</u>
GS	6,786,860	17,766,439	24,553,300
SVI	494,515	1,197,653	1,692,167
SVJ	4,941	7,625	12,566
LVI	496,010	616,547	1,112,556
LVJ	713	1,734	2,447
SLV			0
<b>Total</b>	<u>7,783,038</u>	<u>19,589,998</u>	<u>27,373,036</u>

**Attachment 3  
 NNG**

**MINNESOTA ENERGY RESOURCES - NNG**

**ENTITLEMENT LEVELS**

**PROPOSED TO BE EFFECTIVE NOVEMBER 1, 2019**

<b>Capacity Type</b>	<b>Summer</b>			<b>April/October</b>			<b>Winter</b>		
	<b>2018/19 MMBtu</b>	<b>Change MMBtu</b>	<b>Proposed MMBtu</b>	<b>2018/19 MMBtu</b>	<b>Change MMBtu</b>	<b>Proposed MMBtu</b>	<b>2018/19 MMBtu</b>	<b>Change MMBtu</b>	<b>Proposed MMBtu</b>
TF-12 Base & Variable	84,709	0	84,709	84,709	0	84,709	84,709	0	84,709
TF5	0	0	0	0	0	0	36,275	0	36,275
TFX - 12	48,236	37,093	85,329	48,236	37,093	85,329	48,236	37,093	85,329
TFX - 5	0	0	0	0	0	0	104,501	0	104,501
TFX- (Apr/Oct) Offpeak*	0	0	0	2,000	0	2,000	0	0	0
Bison	50,000	0	50,000	50,000	0	50,000	50,000	0	50,000
NBPL	50,000	0	50,000	50,000	0	50,000	50,000	0	50,000
Northwest Gas (Windom)	2,500	0	2,500	2,500	0	2,500	2,500	0	2,500
Northwestern Energy (Ortonville)	1,035	0	1,035	1,035	0	1,035	1,035	0	1,035
NNG Zone Delivery Call Option	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>136,480</b>	<b>37,093</b>	<b>173,573</b>	<b>138,480</b>	<b>37,093</b>	<b>175,573</b>	<b>277,256</b>	<b>37,093</b>	<b>314,349</b>
Heating Season Forecasted Design Day-Adjusted							273,842	3,534	277,376
Non-Heating Season Forecasted Design Day				163,989	(2,206)	161,783			
Heating Season Capacity Surplus/Shortage							3,414	33,559	36,973
Non-Heating Season Capacity Surplus/Shortage				(25,509)	39,299	13,790			
*Not included in Heating Season Total entitlement									
Reserve Margin				-15.56%	24.08%	8.52%	1.25%	12.08%	13.33%

**MINNESOTA ENERGY RESOURCES - NNG**  
**RATE IMPACT OF THE PROPOSED DEMAND CHANGE**  
**NOVEMBER 1, 2019**

All costs in \$/Dth	Base Cost of Gas G011/MR-17-564 1-Jul-19	Demand Charge Oct 1, 2018	Demand Charge Demand Filing Nov 1, 2018 (as revised 7/2/19)	Most Recent PGA July 1, 2019	Proposed Effective Nov 1, 2019	Result of Proposed Change			
						Change from Last Rate Case	Change from Nov 1, 2018 Demand Filing	Change from Last PGA %	Change from Last PGA \$

1) General Service Residential: Avg. Annual Use:						87	Dth			
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9219	\$4.1051	\$0.4378	\$0.1910	40.49%	\$1.1832	
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.9227	(\$0.0136)	(\$0.0266)	-2.80%	(\$0.0266)	
Commodity Margin	\$2.4116	\$2.4116	\$2.4116	\$2.4686	\$2.4686	\$0.0570	\$0.0570	0.00%	\$0.0000	
Total Cost of Gas	\$7.0152	\$6.8270	\$7.2750	\$6.3398	\$7.4964	\$0.4812	\$0.2214	18.24%	\$1.1566	
Avg Annual Cost	\$610.78	\$594.39	\$633.40	\$551.98	\$652.68	\$41.90	\$19.28	18.24%	\$100.70	
Effect of proposed commodity change on average annual bills:									\$103.02	
Effect of proposed demand change on average annual bills:									(\$2.31)	

2) Small C&I Firm, Class 2: Avg. Annual Use:						687	Dth			
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9219	\$4.1051	\$0.4378	\$0.1910	40.49%	\$1.1832	
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.9227	(\$0.0136)	(\$0.0266)	-2.80%	(\$0.0266)	
Commodity Margin	\$1.6885	\$1.6885	\$1.6885	\$1.6857	\$1.6857	(\$0.0028)	(\$0.0028)	0.00%	\$0.0000	
Total Cost of Gas	\$6.2921	\$6.1039	\$6.5519	\$5.5569	\$6.7135	\$0.4214	\$0.1616	20.81%	\$1.1566	
Avg Annual Cost	\$4,320.83	\$4,191.59	\$4,499.23	\$3,815.96	\$4,610.22	\$289.39	\$110.99	20.81%	\$794.26	
Effect of proposed commodity change on average annual bills:									\$812.51	
Effect of proposed demand change on average annual bills:									(\$18.25)	

3) Large C&I Firm Class 3: Avg. Annual Use:						17,946	Dth			
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9219	\$4.1051	\$0.4378	\$0.1910	40.49%	\$1.1832	
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.0067	(\$0.9296)	(\$0.9426)	-99.29%	(\$0.9426)	
Commodity Margin	\$1.6885	\$1.6885	\$1.6885	\$1.2453	\$1.2453	(\$0.4432)	(\$0.4432)	0.00%	\$0.0000	
Total Cost of Gas	\$6.2921	\$6.1039	\$6.5519	\$5.1165	\$5.3571	(\$0.9350)	(\$1.1948)	4.70%	\$0.2406	
Avg Annual Cost	\$112,920.62	\$109,543.11	\$117,583.10	\$91,822.82	\$96,141.57	(\$16,779.05)	(\$21,441.53)	4.70%	\$4,318.75	
Effect of proposed commodity change on average annual bills:									\$21,234.19	
Effect of proposed demand change on average annual bills:									(\$16,915.44)	

4) Small C&I Interruptible, Class 2: Avg. Annual Use:						3,942	Dth			
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9219	\$4.1051	\$0.4378	\$0.1910	40.49%	\$1.1832	
Commodity Margin	\$0.9740	\$0.9740	\$0.9740	\$1.0453	\$1.0453	\$0.0713	\$0.0713	0.00%	\$0.0000	
Total Cost of Gas	\$4.6413	\$4.4527	\$4.8881	\$3.9672	\$5.1504	\$0.5091	\$0.2623	29.82%	\$1.1832	
Avg Annual Cost	\$18,295.41	\$17,551.97	\$19,268.26	\$15,638.19	\$20,302.21	\$2,006.81	\$1,033.95	29.82%	\$4,664.02	
Effect of proposed commodity change on average annual bills:									\$4,664.02	

5) Large C&I Interruptible, Class 3: Avg. Annual Use:						25,685	Dth			
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9219	\$4.1051	\$0.4378	\$0.1910	40.49%	\$1.1832	
Commodity Margin	\$0.5329	\$0.5329	\$0.5329	\$0.9453	\$0.9453	\$0.4124	\$0.4124	0.00%	\$0.0000	
Total Cost of Gas	\$4.2002	\$4.0116	\$4.4470	\$3.8672	\$5.0504	\$0.8502	\$0.6034	30.60%	\$1.1832	
Avg Annual Cost	\$107,881.42	\$103,037.26	\$114,220.44	\$99,328.38	\$129,718.67	\$21,837.24	\$15,498.23	30.60%	\$30,390.29	
Effect of proposed commodity change on average annual bills:									\$30,390.29	

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.

**MINNESOTA ENERGY RESOURCES - NNG**  
**RATE IMPACT OF THE PROPOSED DEMAND CHANGE**

NOVEMBER 1, 2019

NNG						01-Nov-19
IV. NORTHERN NATURAL GAS COMPANY'S RATES -- CURRENT COST OF GAS EFFECTIVE						
	Tariff-Summer(7 mths)	Tariff-Winter(5 mths)	Wt. Annual	GRI	Total	
TF-12B	112495 \$ 5.6830	\$ 10.2300	\$ 7.5776	\$ 0.0000	\$ 7.5776	
TF-12B Discount	112495 \$ 5.6830	\$ 10.0320	\$ 7.4951	\$ 0.0000	\$ 7.4951	
TF-12V	112495 \$ 5.6830	\$ 13.8660	\$ 9.0926	\$ 0.0000	\$ 9.0926	
TF-5	112495 \$ -	\$ 15.1530	\$ 15.1530	\$ 0.0000	\$ 15.1530	
TFX	112486 \$ 5.6830	\$ 15.1530	\$ 9.6288	\$ 0.0000	\$ 9.6288	
TFX-5	112486 \$ -	\$ 15.1530	\$ 15.1530	\$ 0.0000	\$ 15.1530	
TFX-5 Discount	112486 \$ -	\$ 10.0320	\$ 10.0320	\$ 0.0000	\$ 10.0320	
TFX Rochester	112486 \$ 37.1175	\$ 37.1175	\$ 37.1175	\$ 0.0000	\$ 37.1175	
TFX Rochester II	112486 \$ 10.7714	\$ 10.7714	\$ 10.7714	\$ 0.0000	\$ 10.7714	
TFX - Discount	111866 \$ 2.2192	\$ 15.1392	\$ 7.6025	\$ 0.0000	\$ 7.6025	
TFX - Discount	111866 \$ 4.8640	\$ 4.8640	\$ 4.8640	\$ 0.0000	\$ 4.8640	
TFX - Discount	111866 \$ 5.4720	\$ 5.4720	\$ 5.4720	\$ 0.0000	\$ 5.4720	
TFX-5	127852 \$ -	\$ 15.1530	\$ 15.1530	\$ 0.0000	\$ 15.1530	
Gas Cost					\$ 2,9695 /Dth	

V. ANNUAL SALES -- As approved in Docket No. G011/MR-17-564 264,337,861

VI. MERC-NNG'S CURRENT COST OF GAS EFFECTIVE:						01-Nov-19
A. GS-NNG						
Contract #(s)	Monthly Entitlements (Dth)	Months	Rate (\$/Dth)	Contract Costs	Contract Costs	Rate/Therm
TF12B (Max Rate) Winter	112495	46,580	5 \$ 10.2300	=	\$ 2,382,567	\$ 0.01006
TF12B (Max Rate) Summer	112495	46,580	7 \$ 5.6830	=	\$ 1,852,999	\$ 0.00782
TF12V (Max Rate)	112495	32,929	12 \$ 9.0926	=	\$ 3,592,923	\$ 0.01517
TF5 (Max Rate)	112495	36,275	5 \$ 15.1530	=	\$ 2,748,375	\$ 0.01160
TF12B (Discount-Winter)	112495	5,200	12 \$ 7.4951	=	\$ 467,694	\$ 0.00197
TFX12 (Max Rate)	112486	10,822	12 \$ 9.6288	=	\$ 1,250,434	\$ 0.00528
TFX Apr (Max Rate)	112486	2,000	1 \$ 5.6830	=	\$ 11,366	\$ 0.00005
TFX Oct (Max Rate)	112486	2,000	1 \$ 5.6830	=	\$ 11,366	\$ 0.00005
TFX5 (Max Rate)	112486	77,688	5 \$ 15.1530	=	\$ 5,886,031	\$ 0.02485
TFX5 (Discount)	112486	1,800	5 \$ 10.0320	=	\$ 90,288	\$ 0.00038
TFX12 (Discount)	111866	1,283	12 \$ 4.8640	=	\$ 74,886	\$ 0.00032
TFX12 (Discount)	111866	8,271	12 \$ 5.4720	=	\$ 543,107	\$ 0.00229
TFX12 (Discount)	111866	11,921	12 \$ 7.6025	=	\$ 1,087,553	\$ 0.00459
TFX5 (Discount)	111866	379	5 \$ 4.8640	=	\$ 9,217	\$ 0.00004
TFX5 (Discount)	111866	2,445	5 \$ 5.4720	=	\$ 66,895	\$ 0.00028
TFX5 (Discount)	111866	22,189	5 \$ 15.1392	=	\$ 1,679,619	\$ 0.00709
Windom		2,500	12 \$ -	=	\$ 0	\$ -
Northwestern Energy		1,035	12 \$ 8.3382	=	\$ 103,560	\$ 0.00044
<b>Total Demand Cost</b>					<b>\$ 21,858,881</b>	<b>\$ 0.09227</b>
<b>Test year sales as approved in Docket No. G011/GR-17-563</b>					<b>236,895,506</b>	
<b>GS-1 Demand Current Cost of Gas/therm</b>						<b>\$ 0.09227</b>
<b>GS-1 Commodity Current Cost of Gas/therm</b>						<b>\$ 0.41051</b>
<b>Total GS-1 Current Cost of Gas/therm</b>						<b>\$ 0.50278</b>

B. GS-NNG, SVI-NNG, LVI-NNG, SJ-NNG, LJ-NNG, SLV-Commodity						
Contract #(s)	Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	Contract Costs	Rate (\$/therm)
FDD - Reservation	118657	81,508	12 \$ 1.7140	=	\$ 1,676,457	\$ 0.00634
FDD - Storage Cycle	118657	939,864	5 \$ 0.3567	=	\$ 1,676,248	\$ 0.00634
FDD - Reservation	118657	5,550	12 \$ 3.3157	=	\$ 220,826	\$ 0.00084
FDD - Storage Cycle	118657	64,000	5 \$ 0.6901	=	\$ 220,832	\$ 0.00084
FDD - Reservation	133736	17,345	12 \$ 1.7140	=	\$ 356,752	\$ 0.00135
FDD - Storage Cycle	133736	200,000	5 \$ 0.3567	=	\$ 356,700	\$ 0.00135
FDD - Reservation	132024	8,672	12 \$ 1.7140	=	\$ 178,366	\$ 0.00067
FDD - Storage Cycle	132024	100,000	5 \$ 0.3567	=	\$ 178,350	\$ 0.00067
Firm Deferred Delivery Storage Contracts					\$ 4,864,530	\$ 0.01840

Per Docket No. G-007/M-07-1402-05 dated August 6, 2014, storage demand charges will be allocated through the commodity charge effective 11/1/2014.

Contract #(s)	Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	Contract Costs	Rate (\$/therm)
Bison	FT0003	50,000	12 \$ 17.4896	=	\$ 10,493,750	\$ 0.03970
NBPL	T8673F	50,000	12 \$ 6.3905	=	\$ 3,834,300	\$ 0.01451
TFX12 (Rochester)	112486	10,500	12 \$ 37.1175	=	\$ 4,676,805	\$ 0.01769
TFX12 (Rochester II)	112486	34,500	12 \$ 10.7714	=	\$ 4,459,360	\$ 0.01687
TFX12 (SE MN Expansion)	112486	8,032	12 \$ 9.6288	=	\$ 928,062	\$ 0.00351
					\$ 24,392,277	\$ 0.09228

Per Doct No. G-007/M-10-1166 and G-011/M-10-1168 dated January 26, 2015, recover the costs associated with Bison contract through commodity effective

Contract #(s)	Annual Sales (Dth)	Rate (\$/Dth)	Commodity Cost	Rate Case Sales (therm)	Rate (\$/therm)
CD-1 Commodity	26,433,786	\$ 2.9695	\$ 78,495,128	264,337,861	\$ 0.29695
SMS-Bal Service	272,160	\$ 2.1800	\$ 593,309	264,337,861	\$ 0.00224
Physical Forward Start Premium			\$ 0	264,337,861	\$ -
Call Option Premium			\$ 168,419	264,337,861	\$ 0.00064

**GS-NNG, SVI-NNG, LVI-NNG, SJ-NNG, LJ-NNG, SLV Commodity Current Cost of Gas/therm** **\$ 84,121,385** **264,337,861** **\$ 0.41051**

**MINNESOTA ENERGY RESOURCES - NNG**

**Financial Options  
 Heating Season 2019-2020**

**Units - Gas Daily Peaker Packages (Physical)**

<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Daily Total</u>	<u>Term Total</u>
<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>		
N/A		N/A		N/A		N/A		N/A			

**Premium - Gas Daily Peaker (Monthly Cost)**

<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Option Premium</u>	<u>Total Premium Cost</u>
<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>		
N/A		N/A		N/A		N/A		N/A			

**Units - Futures (Dth)**

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Term Total</u>
	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	
1	05/02/19	1,688	05/14/19	2,667	05/16/19	2,998	05/07/19	2,700	05/09/19	2,129	367,931
2	06/04/19	1,688	06/13/19	2,401	6/18/19	2,725	06/06/19	2,700	06/11/19	1,863	342,845
3	07/02/19	1,688	01/00/00	-	01/00/00	-	07/09/19	2,400	01/00/00	-	117,069
4	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
5	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
6	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
7	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
8	01/00/00	-									-
<b>Total</b>		<b>5,063</b>		<b>5,068</b>		<b>5,723</b>		<b>7,800</b>		<b>3,992</b>	<b>827,845</b>

**Units - Call Options (Dth)**

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Term Total</u>
	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	
1	43587	3,046	43594	4,801	43592	2,972	43599	5,357	43601	3,726	597,868
2	43620	3046.153846	43627	4801.488834	43237	2701.957541	43629	5059.52381	43634	3725.806452	581158.12
3	07/02/19	3,046	07/11/19	4,535	06/06/19	5,404	01/00/00	-	01/00/00	-	399,483
4	01/00/00	-	01/00/00	-	07/09/19	5,134	01/00/00	-	01/00/00	-	159,145
5	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
6	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	01/00/00	-	-
7					01/00/00	-					-
8											-
<b>Total</b>		<b>9,138</b>		<b>14,138</b>		<b>16,212</b>		<b>10,417</b>		<b>7,452</b>	<b>1,737,654</b>

**Premium - Call Option (Monthly Cost)**

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Option Premium</u>	<u>Total Premium</u>
	<u>Option Premium</u>	<u>Premium</u>	<u>Option Premium</u>	<u>Premium</u>	<u>Option Premium</u>	<u>Premium</u>	<u>Option Premium</u>	<u>Premium</u>	<u>Option Premium</u>	<u>Premium</u>		
1	0.095	8,682	0.09	13,396	0.095	8,753	0.093	13,950	0.098	11,319	0.09383297	56,100
2	0.1	9,138	0.1	14,885	0.098	8,209	0.097	13,742	0.1	11,550	0.09898045	57,523
3	\$ 0.1000	\$ 9,138	\$ 0.0970	\$ 13,636	\$ 0.0990	\$ 16,585	\$ -	\$ -	\$ -	\$ -	\$ 0.0985	\$ 39,359
4	\$ -	\$ -	\$ -	\$ -	\$ 0.0970	\$ 15,437	\$ -	\$ -	\$ -	\$ -	\$ 0.0970	\$ 15,437
5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	#DIV/0!	\$ -
6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	#DIV/0!	\$ -
7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	<b>\$ 0.0983</b>	<b>\$ 26,958</b>	<b>\$ 0.0956</b>	<b>\$ 41,917</b>	<b>\$ 0.0975</b>	<b>\$ 48,983</b>	<b>\$ 0.0949</b>	<b>\$ 27,692</b>	<b>\$ 0.0990</b>	<b>\$ 22,869</b>	<b>\$ 0.0969</b>	<b>\$ 168,419</b>

**Units - Collar Floor (put)**

No Puts were purchased.



**Attachment 6**  
**Page 1 of 2**

**19/20 Winter Portfolio Plan - NNG MERC Hedging Plan**

10,000 Contract Size

System	Purchase Month	Contracts		Contracts		Contracts		Contracts		Contracts		Total		Percent of Requirements
		Number Contracts	Contract Volume	Number Contracts	Contract Volume	Number Contracts	Contract Volume	Number Contracts	Contract Volume	Number Contracts	Contract Volume	Number Contracts	Contract Volume	
<b>MN Requirements</b>			2,729,521		4,302,043		4,900,437		4,277,234		3,347,223		19,556,458	19,556,458
<b>Daily Average</b>			90,984		138,776		158,079		152,758		107,975		129,513	
10%	Futures		272,952		430,204		490,044		427,723		334,722		1,955,646	
20%	Call		545,904		860,409		980,087		855,447		669,445		3,911,292	
30%	Storage		818,856		1,290,613		1,470,131		1,283,170		1,004,167		5,866,937	
40%	Index		1,091,808		1,720,817		1,960,175		1,710,894		1,338,889		7,822,583	
Futures														
Contracts	May-18	5	50,000	8	80,000	9	90,000	7	70,000	6	60,000	35	350,000	
	Jun-18	5	50,000	7	70,000	8	80,000	7	70,000	6	60,000	33	330,000	
	Jul-18	5	50,000	7	70,000	8	80,000	7	70,000	6	60,000	33	330,000	
	Aug-18	4	40,000	7	70,000	8	80,000	7	70,000	5	50,000	31	310,000	
	Sep-18	4	40,000	7	70,000	8	80,000	7	70,000	5	50,000	31	310,000	
	Oct-18	4	40,000	7	70,000	8	80,000	7	70,000	5	50,000	31	310,000	
	<b>Total</b>	27	270,000	43	430,000	49	490,000	42	420,000	33	330,000	194	1,940,000	<b>9.92%</b>
Call Options	May-18	9	90,000	15	150,000	17	170,000	15	150,000	11	110,000	67	670,000	
	Jun-18	9	90,000	15	150,000	17	170,000	14	140,000	11	110,000	66	660,000	
	Jul-18	9	90,000	14	140,000	16	160,000	14	140,000	11	110,000	64	640,000	
	Aug-18	9	90,000	14	140,000	16	160,000	14	140,000	11	110,000	64	640,000	
	Sep-18	9	90,000	14	140,000	16	160,000	14	140,000	11	110,000	64	640,000	
	Oct-18	9	90,000	14	140,000	16	160,000	14	140,000	11	110,000	64	640,000	
	<b>Total</b>	54	540,000	86	860,000	98	980,000	85	850,000	66	660,000	389	3,890,000	<b>19.89%</b>
Collars	May-18	0	0	0	0	0	0	0	0	0	0	0	0	
	Jun-18	0	0	0	0	0	0	0	0	0	0	0	0	
	Jul-18	0	0	0	0	0	0	0	0	0	0	0	0	
	Aug-18	0	0	0	0	0	0	0	0	0	0	0	0	
	Sep-18	0	0	0	0	0	0	0	0	0	0	0	0	
	Oct-18	0	0	0	0	0	0	0	0	0	0	0	0	
	<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>0.00%</b>
Index (back financial)	<b>Total</b>		810,000		1,290,000		1,470,000		1,270,000		990,000		5,830,000	<b>29.81%</b>
Physical Hedges			0		0		0		0		0		0	
Storage			635,634		1,597,234		1,597,234		1,597,234		635,634		6,062,969	<b>31.00%</b>
Prepaid Obl			0		0		0		0		0		0	<b>0.00%</b>
Term Index		0	0	0	0	0	0	0	0	0	0	0	0	<b>0.00%</b>
		0	0	0	0	0	0	0	0	0	0	0	0	<b>0.00%</b>
<b>Total NNG MN</b>														
Futures													1,940,000	<b>9.92%</b>
Call Options													3,890,000	<b>19.89%</b>
Costing Collar													0	<b>0.00%</b>
Storage													6,062,969	<b>31.00%</b>
Prepaid Obl													0	<b>0.00%</b>
Term Index													0	<b>0.00%</b>
Month/Daily													7,663,489	<b>39.19%</b>
<b>Total</b>													19,556,458	<b>100.00%</b>

**MINNESOTA ENERGY RESOURCES**

**NNG WINTER PLAN  
 NOVEMBER 2019 THROUGH MARCH 2020**

<u>PHYSICAL FIXED PRICE HEDGES</u>	<u>Deal #</u>	<u>Trigger Locked</u>	<u>Trigger Exercised</u>	<u>Receipt Point</u>	<u>Nov</u>	<u>Dec</u>	<u>Daily Volumes</u>			<u>Monthly Total</u>
							<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	
No Physical Fixed Price Hedges										-
Total Actual Fixed/Option Physical					-	-	-	-	-	-

**INDEX**

<u>Contract Number</u>	<u>Date</u>	<u>Receipt Point</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Total</u>
77624	4/23/2019	NNG/GLGT Carlton	15,000	15,000	15,000	15,000	15,000	2,265,000
77626	4/23/2019	NNG/GLGT Grand Rapids	6,064	6,064	6,064	6,064	6,064	915,664
77627	4/23/2019	NNG-NBPL/NNG Ventura	5,000	5,000	5,000	5,000	5,000	755,000
77629	4/23/2019	NNG-NBPL/NNG Ventura		20,000	20,000	20,000		1,800,000
77633	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77637	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77634	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77635	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
Total Actual Seasonal Index			66,064	86,064	86,064	86,064	66,064	11,775,664

**GAS DAILY PACKAGES**

Physical Call Option	75217	2/25/2019	NNG Ventura	40,000	40,000	40,000	40,000	40,000
----------------------	-------	-----------	-------------	--------	--------	--------	--------	--------

**STORAGE**

<u>Injection Month</u>	<u>K#118657 Volume Injected</u>	<u>K#132024 Volume Injected</u>	<u>K#133736 Volume Injected</u>	<u>Total Volume Injected</u>
May - balance forward	0	0	0	0
June	984,181	98,039	196,078	1,278,298
July	1,016,987	101,307	202,614	1,320,908
August	1,016,987	101,307	202,614	1,320,908
Sept	984,181	98,039	196,078	1,278,298
Oct (est)	1,016,987	101,307	202,614	1,320,908
<b>Total</b>	<b>5,019,321</b>	<b>500,000</b>	<b>1,000,000</b>	<b>6,519,321</b>

## MINNESOTA ENERGY RESOURCES - NNG

	2015-2016 NNG GS	2016-2017 NNG GS	2017-2018 NNG GS	2018-2019 NNG GS	2019-2020 NNG GS	Proposed Change
Design Day	259,076	262,324	267,783	273,842	<b>277,376</b>	3,534
Customer Requirements moving to Transportation						
Adjusted Design Day						
Design Day Percentages	32.40%	29.71%	30.43%	28.70%	<b>25.04%</b>	-3.66%
Total Design Day Capacity (includes non-recallable capacity)	266,317	266,317	266,317	277,256	<b>314,349</b>	37,093
Less: Windom	2,500	2,500	2,500	2,500	<b>2,500</b>	0
Less: Northwestern Energy	1,035	1,035	1,035	1,035	<b>1,035</b>	0
Total Design Day Capacity NNG Pipeline	262,782	262,782	262,782	273,721	<b>310,814</b>	37,093
Factors for All Winter Capacity	100.00%	100.00%	100.00%	100.00%	<b>100.00%</b>	
<u>Direct Assigned Entitlements in PGA</u>						
TF12B	48,183	48,183	54,419	51,706	<b>51,780</b>	<b>74</b>
TF12V	36,526	36,526	30,290	33,003	<b>32,929</b>	<b>(74)</b>
TF5	36,275	36,275	36,275	36,275	<b>36,275</b>	<b>0</b>
TFX12	32,297	32,297	32,297	48,236	<b>85,329</b>	<b>37,093</b>
TFX(5)	109,501	109,501	109,501	104,501	<b>104,501</b>	<b>0</b>
TFX(5) (12-V)						<b>0</b>
TFX (April Only)	2,000	2,000	2,000	2,000	<b>2,000</b>	<b>0</b>
TFX (October Only)	2,000	2,000	2,000	2,000	<b>2,000</b>	<b>0</b>
Windom	2,500	2,500	2,500	2,500	<b>2,500</b>	<b>0</b>
Northwestern Energy	1,035	1,035	1,035	1,035	<b>1,035</b>	<b>0</b>
NNG Zone Delivery Call Option	0	0	0	0	<b>0</b>	<b>0</b>
Bison *	50,000	50,000	50,000	50,000	<b>50,000</b>	<b>0</b>
NBPL *	50,000	50,000	50,000	50,000	<b>50,000</b>	<b>0</b>
Total Direct Assignments	266,317	266,317	266,317	277,256	<b>314,349</b>	<b>37,093</b>
LP Peak Shaving						<b>0</b>
Total Design Day Capacity	266,317	266,317	266,317	277,256	<b>314,349</b>	<b>37,093</b>
Total Annual Transportation	120,541	120,541	120,541	136,480	<b>173,573</b>	<b>37,093</b>
Total Seasonal Transportation	145,776	145,776	145,776	140,776	<b>140,776</b>	<b>0</b>
Total Percent Seasonal	54.7%	54.7%	54.7%	50.8%	<b>44.8%</b>	<b>-6.0%</b>
Reserve Margin	2.79%	1.52%	-0.55%	1.25%	<b>13.33%</b>	<b>12.1%</b>
Total Design Day Capacity w/ contract demand	266,317	266,317	266,317	277,256	<b>314,349</b>	37,093
Factors	32.40%	29.71%	30.43%	28.70%	<b>25.04%</b>	-3.66%
<u>Other Entitlements not included in Peak Day Deliverability</u>						
TFX Oct	2,000	2,000	2,000	2,000	<b>2,000</b>	0
TFX Apr	2,000	2,000	2,000	2,000	<b>2,000</b>	0
FDD Storage Reservation	100,934	107,871	113,075	113,075	<b>113,075</b>	0
FDD Storage Capacity	1,163,864	1,163,864	1,303,864	1,303,864	<b>1,303,864</b>	0
FDD Maximum Storage Quantity	5,819,321	6,219,321	6,519,321	6,519,321	<b>6,519,321</b>	0
SMS	24,380	24,380	22,680	22,680	<b>22,680</b>	0

## MINNESOTA ENERGY RESOURCES - NNG

### Change in Costs due to November 1, 2019 Change in Entitlement Levels and Related Demand Costs

Costs Assigned In Demand	Contract	2018/19	2019/20	Entitlement	Months	2019/20	2018/19	2019/20	Total Annual Cost
		Entitlements	Entitlements	Change		Rate	Total Annual Cost	Total Annual Cost	Change
TF12B (Max Rate) Winter	112495	46,506	46,580	74	5	\$10.2300	\$2,378,782	\$2,382,567	\$3,785
TF12B (Max Rate) Summer	112495	46,506	46,580	74	7	\$5.6830	\$1,850,055	\$1,852,999	\$2,944
TF12V (Max Rate)	112495	33,003	32,929	(74)	12	\$9.0926	\$3,600,997	\$3,592,923	(\$8,074)
TF5 (Max Rate)	112495	36,275	36,275	0	5	\$15.1530	\$2,748,375	\$2,748,375	\$0
TF12B (Discount-Winter)	112495	5,200	5,200	0	12	\$7.4951	\$467,694	\$467,694	\$0
TFX12 (Max Rate)	112486	16,261	10,822	(5,439)	12	\$9.6288	\$1,878,887	\$1,250,434	(\$628,453)
TFX Apr (Max Rate)	112486	2,000	2,000	0	1	\$5.6830	\$11,366	\$11,366	\$0
TFX Oct (Max Rate)	112486	2,000	2,000	0	1	\$5.6830	\$11,366	\$11,366	\$0
TFX5 (Max Rate)	112486	77,688	77,688	0	5	\$15.1530	\$5,886,031	\$5,886,031	\$0
TFX5 (Discount)	112486	1,800	1,800	0	5	\$10.0320	\$90,288	\$90,288	\$0
TFX12 (Discount)	111866	1,283	1,283	0	12	\$4.8640	\$74,886	\$74,886	\$0
TFX12 (Discount)	111866	8,271	8,271	0	12	\$5.4720	\$543,107	\$543,107	\$0
TFX12 (Discount)	111866	11,921	11,921	0	12	\$7.6025	\$1,087,553	\$1,087,553	\$0
TFX5 (Discount)	111866	379	379	0	5	\$4.8640	\$9,217	\$9,217	\$0
TFX5 (Discount)	111866	2,445	2,445	0	5	\$5.4720	\$66,895	\$66,895	\$0
TFX5 (Discount)	111866	22,189	22,189	0	5	\$15.1392	\$1,679,619	\$1,679,619	\$0
Windom		2,500	2,500	0	12	\$0.0000	\$0	\$0	\$0
Northwestern Energy		1,035	1,035	0	12	\$8.3382	\$103,560	\$103,560	\$0
<b>Total Demand Cost</b>							<b>\$22,488,679</b>	<b>\$21,858,881</b>	<b>(\$629,798)</b>

Costs Assigned In Commodity		2018/19	2019/20	Entitlement	Months	2019/20	2018/19	Entitlement	Entitlement
		Entitlements	Entitlement	Change		Rate/Dth	Total Annual Cost	Total Cost	Change
<u>Upstream</u>									
<u>Surcharges:</u>									
<u>Storage (FDD)</u>									
FDD - Reservation	118657	81,508	81,508	0	12	\$ 1.7140	\$1,676,457	\$1,676,457	\$0
FDD - Storage Cycle	118657	939,864	939,864	0	5	\$ 0.3567	\$1,676,248	\$1,676,248	\$0
FDD - Reservation	118657	5,550	5,550	0	12	\$ 3.3157	\$220,826	\$220,826	\$0
FDD - Storage Cycle	118657	64,000	64,000	0	5	\$ 0.6901	\$220,832	\$220,832	\$0
FDD - Reservation	133736	17,345	17,345	0	12	\$ 1.7140	\$356,752	\$356,752	\$0
FDD - Storage Cycle	133736	200,000	200,000	0	5	\$ 0.3567	\$356,700	\$356,700	\$0
FDD - Reservation	132024	8,672	8,672	0	12	\$ 1.7140	\$178,366	\$178,366	\$0
FDD - Storage Cycle	132024	100,000	100,000	0	5	\$ 0.3567	\$178,350	\$178,350	\$0
<u>Pipeline</u>									
Bison	FT0003	50,000	50,000	0	12	\$17.4896	\$10,493,750	\$10,493,750	\$0
NBPL	T8673F	50,000	50,000	0	12	\$6.3905	\$3,834,300	\$3,834,300	\$0
TFX12 (Rochester)	112486	10,500	10,500	0	12	\$37.1175	\$4,676,805	\$4,676,805	\$0
TFX12 (Rochester II)	112486	0	34,500	34,500	12	\$10.7714	\$0	\$4,459,360	\$4,459,360
TFX12 (SE MN Expansion)	112486	0	8,032	8,032	12	\$9.6288	\$0	\$928,062	\$928,062
SMS-Bal Service		272,160	272,160	0	1	\$2.1800	\$593,309	\$593,309	\$0
Physical Forward Start Premium							\$128,700	\$0	(\$128,700)
Financial Call Option Premium							\$378,446	\$168,419	(\$210,027)
<b>Total Commodity Costs</b>							<b>\$24,969,839</b>	<b>\$30,018,534</b>	<b>\$5,048,695</b>

## MINNESOTA ENERGY RESOURCES - NNG

Daily Total Throughput Data - July 1, 2018 through June 30, 2019  
 NNG

Design Day:

Base	6,734
Variable	2,641

Date	13.98% Cloquet Adjusted HDD	29.22% Minneapolis Adjusted HDD	45.15% Rochester Adjusted HDD	11.65% Worthington Adjusted HDD	100.00% Weighted Adjusted HDD	Actual Total Through- Put *	Estimated Firm Through- Put **
7/1/18	4	0	0	0	1	153,400	<b>8,137</b>
7/2/18	0	0	0	0	0	158,144	<b>6,734</b>
7/3/18	0	0	0	0	0	158,076	<b>6,734</b>
7/4/18	0	0	0	0	0	148,516	<b>6,734</b>
7/5/18	2	0	0	0	0	164,949	<b>7,325</b>
7/6/18	0	0	0	0	0	148,088	<b>6,734</b>
7/7/18	0	0	0	0	0	133,834	<b>6,734</b>
7/8/18	0	0	0	0	0	139,828	<b>6,734</b>
7/9/18	0	0	0	0	0	171,141	<b>6,734</b>
7/10/18	0	0	0	0	0	163,202	<b>6,734</b>
7/11/18	0	0	0	0	0	160,018	<b>6,734</b>
7/12/18	0	0	0	0	0	173,884	<b>6,734</b>
7/13/18	0	0	0	0	0	171,112	<b>6,734</b>
7/14/18	0	0	0	0	0	156,175	<b>6,734</b>
7/15/18	0	0	0	0	0	163,632	<b>6,734</b>
7/16/18	1	0	0	0	0	175,846	<b>6,919</b>
7/17/18	4	0	0	0	1	180,515	<b>8,063</b>
7/18/18	0	0	0	0	0	162,721	<b>6,734</b>
7/19/18	0	0	0	0	0	140,340	<b>6,734</b>
7/20/18	0	0	0	0	0	162,793	<b>6,734</b>
7/21/18	0	0	0	0	0	137,855	<b>6,734</b>
7/22/18	3	0	0	0	0	153,671	<b>7,879</b>
7/23/18	0	0	0	0	0	167,603	<b>6,734</b>
7/24/18	0	0	0	0	0	167,423	<b>6,734</b>
7/25/18	0	0	0	0	0	153,685	<b>6,734</b>
7/26/18	11	1	4	4	4	149,506	<b>17,785</b>
7/27/18	3	0	2	3	1	161,048	<b>10,586</b>
7/28/18	0	0	0	1	0	151,485	<b>6,888</b>
7/29/18	0	0	0	0	0	159,328	<b>6,734</b>
7/30/18	0	0	0	0	0	172,497	<b>6,734</b>
7/31/18	0	0	0	0	0	171,944	<b>6,734</b>
8/1/18	7	0	0	6	2	166,210	<b>11,275</b>
8/2/18	8	0	3	0	3	158,142	<b>13,540</b>
8/3/18	3	0	0	0	0	149,225	<b>7,731</b>
8/4/18	0	0	0	0	0	125,345	<b>6,734</b>
8/5/18	0	0	0	0	0	157,562	<b>6,734</b>

Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

8/6/18	4	0	0	0	1	159,528	<b>8,100</b>
8/7/18	0	0	2	0	1	155,864	<b>8,642</b>
8/8/18	0	0	0	0	0	161,897	<b>6,734</b>
8/9/18	0	0	0	0	0	172,733	<b>6,734</b>
8/10/18	0	0	0	0	0	171,416	<b>6,734</b>
8/11/18	0	0	0	0	0	141,454	<b>6,734</b>
8/12/18	0	0	0	0	0	149,350	<b>6,734</b>
8/13/18	0	0	0	0	0	169,570	<b>6,734</b>
8/14/18	0	0	0	0	0	168,995	<b>6,734</b>
8/15/18	0	0	0	0	0	163,580	<b>6,734</b>
8/16/18	0	0	0	0	0	159,430	<b>6,734</b>
8/17/18	0	0	0	0	0	140,654	<b>6,734</b>
8/18/18	0	0	0	0	0	131,844	<b>6,734</b>
8/19/18	0	0	0	0	0	126,654	<b>6,734</b>
8/20/18	4	0	0	1	1	117,218	<b>8,285</b>
8/21/18	5	0	6	6	4	120,334	<b>17,095</b>
8/22/18	0	0	1	1	0	124,750	<b>7,484</b>
8/23/18	0	0	0	0	0	120,825	<b>6,734</b>
8/24/18	2	0	0	0	0	119,054	<b>7,288</b>
8/25/18	0	0	0	0	0	117,009	<b>6,734</b>
8/26/18	0	0	0	0	0	120,798	<b>6,734</b>
8/27/18	0	0	0	0	0	149,400	<b>6,734</b>
8/28/18	14	6	5	11	7	153,458	<b>25,724</b>
8/29/18	7	2	6	2	4	165,918	<b>18,538</b>
8/30/18	2	0	0	0	0	149,920	<b>7,325</b>
8/31/18	0	0	0	0	0	145,179	<b>6,734</b>
9/1/18	0	0	0	0	0	147,511	<b>6,734</b>
9/2/18	5	0	0	0	1	151,612	<b>8,506</b>
9/3/18	0	0	0	0	0	157,083	<b>6,734</b>
9/4/18	2	0	0	0	0	170,990	<b>7,325</b>
9/5/18	14	3	6	6	6	150,371	<b>22,965</b>
9/6/18	6	0	3	3	3	151,201	<b>13,602</b>
9/7/18	3	0	5	5	3	141,113	<b>15,167</b>
9/8/18	10	1	7	4	5	131,142	<b>20,763</b>
9/9/18	8	2	7	3	5	133,876	<b>19,682</b>
9/10/18	2	0	0	0	0	145,363	<b>7,325</b>
9/11/18	0	0	0	0	0	136,431	<b>6,734</b>
9/12/18	0	0	0	0	0	155,159	<b>6,734</b>
9/13/18	0	0	0	0	0	150,375	<b>6,734</b>
9/14/18	0	0	0	0	0	178,434	<b>6,734</b>
9/15/18	2	0	0	0	0	163,707	<b>7,325</b>
9/16/18	0	0	0	0	0	156,297	<b>6,734</b>
9/17/18	8	0	0	0	1	170,441	<b>9,651</b>
9/18/18	13	2	1	0	3	158,796	<b>13,787</b>
9/19/18	12	4	1	3	4	156,282	<b>16,313</b>
9/20/18	14	7	1	6	5	140,431	<b>19,795</b>
9/21/18	20	14	19	19	18	152,727	<b>53,732</b>
9/22/18	12	7	9	8	9	146,019	<b>29,926</b>

Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

9/23/18	17	0	3	0	4	150,723	<b>16,946</b>
9/24/18	9	1	0	7	2	174,982	<b>12,661</b>
9/25/18	23	16	16	19	17	181,293	<b>52,801</b>
9/26/18	17	12	12	12	13	165,266	<b>40,535</b>
9/27/18	20	14	14	13	15	178,862	<b>45,474</b>
9/28/18	27	20	22	23	22	197,581	<b>65,679</b>
9/29/18	27	22	24	24	24	193,654	<b>69,564</b>
9/30/18	20	17	18	19	18	191,010	<b>54,700</b>
10/1/18	21	18	18	20	19	215,849	<b>56,583</b>
10/2/18	17	12	8	9	11	196,543	<b>34,732</b>
10/3/18	25	9	8	9	11	189,233	<b>35,653</b>
10/4/18	26	23	25	28	25	242,916	<b>72,425</b>
10/5/18	26	19	18	23	20	231,208	<b>59,110</b>
10/6/18	26	22	22	27	23	219,061	<b>67,666</b>
10/7/18	24	18	19	22	20	209,262	<b>59,161</b>
10/8/18	21	15	11	20	14	206,163	<b>44,426</b>
10/9/18	27	21	8	27	16	200,225	<b>50,049</b>
10/10/18	34	25	19	35	25	195,059	<b>72,382</b>
10/11/18	38	34	37	38	36	247,580	<b>101,843</b>
10/12/18	35	28	32	32	31	237,664	<b>88,970</b>
10/13/18	28	22	25	27	25	201,892	<b>71,525</b>
10/14/18	35	34	38	41	37	235,642	<b>103,362</b>
10/15/18	33	29	32	35	31	223,628	<b>89,440</b>
10/16/18	33	22	22	24	24	215,920	<b>69,794</b>
10/17/18	34	25	29	24	28	235,980	<b>80,734</b>
10/18/18	16	10	14	9	13	180,389	<b>40,345</b>
10/19/18	25	18	17	18	19	189,195	<b>55,810</b>
10/20/18	37	32	38	35	36	232,712	<b>100,496</b>
10/21/18	28	20	25	20	23	228,967	<b>68,174</b>
10/22/18	25	21	22	22	22	239,265	<b>64,886</b>
10/23/18	32	26	29	26	28	255,662	<b>81,245</b>
10/24/18	25	22	26	22	24	228,311	<b>70,675</b>
10/25/18	23	16	21	20	20	240,190	<b>58,921</b>
10/26/18	22	19	20	20	20	236,052	<b>60,349</b>
10/27/18	23	18	20	18	20	210,005	<b>58,705</b>
10/28/18	24	21	26	24	24	216,710	<b>69,650</b>
10/29/18	27	21	23	20	23	231,441	<b>66,353</b>
10/30/18	26	21	24	24	23	241,995	<b>68,454</b>
10/31/18	32	22	24	26	25	261,678	<b>72,794</b>
11/1/18	32	24	24	21	25	259,503	<b>72,522</b>
11/2/18	35	26	26	25	27	250,503	<b>78,714</b>
11/3/18	32	26	30	29	29	231,641	<b>82,551</b>
11/4/18	32	30	31	31	31	222,338	<b>88,497</b>
11/5/18	30	25	27	31	27	218,263	<b>78,668</b>
11/6/18	36	36	38	45	38	252,510	<b>106,765</b>
11/7/18	45	41	45	44	44	301,805	<b>122,291</b>
11/8/18	50	45	47	48	47	310,964	<b>130,454</b>
11/9/18	57	54	60	61	58	314,251	<b>160,323</b>

Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

11/10/18	50	47	51	50	49	296,241	<b>137,253</b>
11/11/18	48	46	48	49	48	293,168	<b>132,220</b>
11/12/18	61	56	59	59	59	343,331	<b>161,590</b>
11/13/18	56	51	54	44	52	334,091	<b>144,672</b>
11/14/18	43	36	38	33	38	271,211	<b>106,274</b>
11/15/18	38	32	36	32	35	262,956	<b>97,942</b>
11/16/18	49	42	45	49	45	276,845	<b>125,140</b>
11/17/18	56	52	61	63	58	303,840	<b>158,675</b>
11/18/18	49	50	57	48	53	286,536	<b>146,330</b>
11/19/18	64	49	50	59	53	308,512	<b>146,036</b>
11/20/18	53	46	47	39	47	290,213	<b>129,870</b>
11/21/18	54	44	45	41	45	290,236	<b>126,845</b>
11/22/18	41	34	38	31	37	246,100	<b>103,350</b>
11/23/18	27	26	30	31	29	220,962	<b>82,030</b>
11/24/18	43	39	41	46	41	248,276	<b>116,282</b>
11/25/18	55	49	53	61	53	295,228	<b>146,876</b>
11/26/18	57	52	58	60	57	331,376	<b>155,965</b>
11/27/18	54	49	53	50	51	309,689	<b>142,665</b>
11/28/18	49	46	48	46	47	299,943	<b>131,876</b>
11/29/18	40	38	40	38	40	268,045	<b>111,059</b>
11/30/18	38	39	40	41	39	249,534	<b>110,595</b>
12/1/18	42	40	43	47	43	251,979	<b>119,008</b>
12/2/18	45	41	43	49	44	255,625	<b>122,022</b>
12/3/18	50	43	45	48	45	275,526	<b>126,691</b>
12/4/18	47	43	48	50	47	284,179	<b>130,765</b>
12/5/18	48	45	55	48	50	289,196	<b>139,602</b>
12/6/18	61	56	64	60	61	328,173	<b>167,016</b>
12/7/18	55	49	53	54	52	316,406	<b>144,194</b>
12/8/18	52	48	54	56	52	297,888	<b>143,991</b>
12/9/18	46	46	53	49	50	299,666	<b>138,053</b>
12/10/18	51	49	56	52	53	320,705	<b>146,251</b>
12/11/18	49	47	51	47	49	294,211	<b>136,617</b>
12/12/18	40	41	46	39	43	284,266	<b>119,894</b>
12/13/18	44	39	43	39	42	283,664	<b>116,973</b>
12/14/18	33	37	45	38	40	273,310	<b>112,501</b>
12/15/18	33	35	41	35	37	248,925	<b>104,858</b>
12/16/18	40	33	41	36	38	260,081	<b>107,586</b>
12/17/18	44	36	43	40	41	276,873	<b>113,998</b>
12/18/18	36	29	34	32	32	251,991	<b>92,460</b>
12/19/18	34	29	34	34	33	243,553	<b>92,884</b>
12/20/18	46	40	42	46	43	281,350	<b>119,185</b>
12/21/18	51	43	45	44	45	290,594	<b>126,504</b>
12/22/18	43	39	42	39	41	275,245	<b>114,948</b>
12/23/18	51	49	53	47	51	297,745	<b>141,310</b>
12/24/18	47	46	49	43	47	286,381	<b>131,455</b>
12/25/18	48	41	37	41	40	270,744	<b>113,378</b>
12/26/18	48	39	40	40	41	270,282	<b>114,846</b>
12/27/18	46	40	37	57	41	261,656	<b>115,891</b>



Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

12/28/18	69	55	53	75	58	322,582	<b>159,957</b>
12/29/18	62	54	59	65	59	321,861	<b>161,728</b>
12/30/18	46	41	45	43	44	277,534	<b>122,609</b>
12/31/18	67	58	56	69	60	325,221	<b>164,037</b>
1/1/19	71	62	61	71	64	355,996	<b>175,941</b>
1/2/19	59	48	52	53	52	319,871	<b>144,433</b>
1/3/19	38	34	39	40	38	266,750	<b>105,908</b>
1/4/19	35	29	33	34	32	250,493	<b>90,877</b>
1/5/19	45	32	33	33	34	247,984	<b>97,412</b>
1/6/19	43	35	37	38	37	254,275	<b>105,723</b>
1/7/19	39	32	33	34	34	255,268	<b>95,470</b>
1/8/19	63	56	58	57	58	328,658	<b>160,048</b>
1/9/19	64	59	61	60	60	347,021	<b>166,448</b>
1/10/19	56	50	51	49	51	318,560	<b>142,379</b>
1/11/19	47	41	43	42	43	284,272	<b>119,317</b>
1/12/19	41	41	40	45	41	263,909	<b>114,997</b>
1/13/19	40	36	42	40	39	258,072	<b>110,937</b>
1/14/19	49	38	41	42	42	273,382	<b>116,429</b>
1/15/19	62	51	51	59	53	292,619	<b>147,534</b>
1/16/19	66	52	50	57	54	309,610	<b>149,137</b>
1/17/19	68	52	54	53	55	324,526	<b>152,442</b>
1/18/19	77	67	67	76	70	352,251	<b>190,722</b>
1/19/19	78	68	73	78	73	355,126	<b>198,791</b>
1/20/19	72	66	76	77	73	360,210	<b>198,350</b>
1/21/19	64	63	70	64	66	343,064	<b>181,487</b>
1/22/19	57	53	54	61	55	317,462	<b>151,774</b>
1/23/19	56	54	58	60	56	312,169	<b>155,950</b>
1/24/19	80	76	79	81	79	386,669	<b>214,289</b>
1/25/19	85	69	75	70	74	386,851	<b>201,496</b>
1/26/19	83	68	76	67	74	374,718	<b>201,055</b>
1/27/19	82	75	79	69	77	356,533	<b>210,415</b>
1/28/19	75	71	76	83	75	374,200	<b>205,422</b>
1/29/19	104	97	101	101	100	457,369	<b>271,362</b>
1/30/19	97	91	98	87	95	460,432	<b>256,547</b>
1/31/19	84	79	86	74	82	418,104	<b>223,527</b>
2/1/19	64	60	58	53	59	331,114	<b>161,282</b>
2/2/19	52	39	33	36	38	252,666	<b>106,655</b>
2/3/19	47	36	37	61	41	252,543	<b>114,794</b>
2/4/19	67	60	65	77	65	355,190	<b>178,514</b>
2/5/19	64	60	58	71	61	353,481	<b>166,728</b>
2/6/19	54	50	50	71	53	327,786	<b>147,393</b>
2/7/19	72	71	79	89	77	390,426	<b>209,322</b>
2/8/19	80	76	82	76	79	422,899	<b>215,856</b>
2/9/19	70	70	69	66	69	359,416	<b>188,867</b>
2/10/19	57	53	51	57	53	323,142	<b>146,505</b>
2/11/19	53	47	49	50	49	306,749	<b>136,499</b>
2/12/19	54	58	65	69	62	322,722	<b>169,546</b>
2/13/19	51	56	59	55	57	311,217	<b>156,245</b>

Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

2/14/19	65	63	67	75	67	348,594	<b>182,398</b>
2/15/19	65	62	72	67	67	357,510	<b>184,055</b>
2/16/19	59	57	59	60	58	318,766	<b>161,211</b>
2/17/19	61	55	59	63	59	317,168	<b>161,342</b>
2/18/19	63	59	65	63	63	342,784	<b>172,646</b>
2/19/19	58	58	61	61	59	322,635	<b>163,632</b>
2/20/19	50	52	57	59	54	321,122	<b>150,575</b>
2/21/19	48	54	60	56	56	320,890	<b>154,099</b>
2/22/19	50	48	51	48	50	281,021	<b>137,704</b>
2/23/19	45	48	51	58	50	279,237	<b>139,515</b>
2/24/19	76	70	77	76	75	356,657	<b>204,108</b>
2/25/19	75	70	73	78	73	380,832	<b>199,567</b>
2/26/19	66	65	68	71	67	367,962	<b>184,108</b>
2/27/19	68	64	73	68	69	359,100	<b>188,301</b>
2/28/19	59	56	62	57	59	349,952	<b>163,041</b>
3/1/19	60	56	56	62	57	340,221	<b>158,183</b>
3/2/19	74	69	74	78	73	333,993	<b>200,281</b>
3/3/19	79	78	85	86	82	398,930	<b>224,421</b>
3/4/19	72	70	79	75	75	368,821	<b>204,150</b>
3/5/19	68	60	69	65	66	348,018	<b>181,259</b>
3/6/19	66	56	63	57	60	328,845	<b>166,510</b>
3/7/19	56	53	57	58	56	314,821	<b>153,539</b>
3/8/19	43	42	46	45	44	268,161	<b>123,069</b>
3/9/19	37	39	42	48	41	253,528	<b>115,232</b>
3/10/19	54	50	55	49	53	295,608	<b>145,516</b>
3/11/19	49	46	50	42	48	283,326	<b>132,490</b>
3/12/19	38	38	39	34	38	255,626	<b>106,430</b>
3/13/19	31	29	31	32	31	235,734	<b>87,573</b>
3/14/19	36	35	36	48	37	252,087	<b>104,556</b>
3/15/19	44	43	47	44	45	265,619	<b>125,557</b>
3/16/19	44	39	43	39	41	254,429	<b>116,208</b>
3/17/19	39	35	42	39	39	254,185	<b>109,661</b>
3/18/19	36	33	39	35	36	241,037	<b>102,739</b>
3/19/19	32	28	33	32	31	221,366	<b>89,579</b>
3/20/19	33	28	34	35	32	229,892	<b>91,745</b>
3/21/19	26	28	32	31	30	215,284	<b>85,284</b>
3/22/19	37	28	32	29	31	222,735	<b>88,205</b>
3/23/19	26	23	27	23	25	204,061	<b>73,416</b>
3/24/19	47	27	28	30	31	235,472	<b>87,767</b>
3/25/19	37	30	31	35	32	281,136	<b>91,143</b>
3/26/19	31	27	29	28	28	228,766	<b>81,251</b>
3/27/19	23	18	20	19	19	204,832	<b>58,213</b>
3/28/19	37	27	29	31	30	233,742	<b>85,311</b>
3/29/19	38	30	31	37	32	233,145	<b>91,263</b>
3/30/19	45	40	44	46	43	261,142	<b>121,176</b>
3/31/19	39	36	37	31	36	260,942	<b>102,749</b>
4/1/19	33	30	35	37	33	264,240	<b>95,151</b>
4/2/19	34	28	31	30	30	255,779	<b>87,200</b>

Minnesota Energy Resources Corporation  
 2019-2020 Demand Entitlement  
 MERC-NNG  
 August 1, 2019

4/3/19	35	25	24	26	26	234,423	<b>75,306</b>
4/4/19	33	28	30	28	29	263,076	<b>84,448</b>
4/5/19	26	22	22	15	22	229,714	<b>64,784</b>
4/6/19	28	16	10	11	14	202,616	<b>43,626</b>
4/7/19	25	13	16	12	16	215,405	<b>49,448</b>
4/8/19	22	12	15	15	15	211,660	<b>46,789</b>
4/9/19	37	25	22	25	26	238,943	<b>74,206</b>
4/10/19	42	41	43	45	42	278,755	<b>118,219</b>
4/11/19	45	39	39	39	40	293,445	<b>111,906</b>
4/12/19	36	36	41	44	39	281,809	<b>109,739</b>
4/13/19	41	35	37	39	37	270,967	<b>104,438</b>
4/14/19	35	28	34	32	32	249,271	<b>91,772</b>
4/15/19	30	21	22	16	22	226,072	<b>64,258</b>
4/16/19	15	8	10	13	10	199,744	<b>33,946</b>
4/17/19	26	21	22	23	22	226,785	<b>65,775</b>
4/18/19	27	23	26	26	25	232,025	<b>73,142</b>
4/19/19	15	12	18	15	15	200,851	<b>47,343</b>
4/20/19	7	0	4	0	3	156,715	<b>13,904</b>
4/21/19	24	5	0	4	5	175,233	<b>20,681</b>
4/22/19	30	26	19	29	24	229,375	<b>69,280</b>
4/23/19	16	11	15	11	13	218,283	<b>41,999</b>
4/24/19	7	1	7	2	4	206,370	<b>18,373</b>
4/25/19	13	9	14	14	12	192,551	<b>39,326</b>
4/26/19	26	16	20	24	20	201,936	<b>59,833</b>
4/27/19	28	23	36	32	31	206,933	<b>87,538</b>
4/28/19	24	20	25	29	24	198,946	<b>69,843</b>
4/29/19	33	19	18	22	21	221,271	<b>61,502</b>
4/30/19	32	26	27	27	28	242,173	<b>79,425</b>
5/1/19	32	23	24	25	25	237,765	<b>71,727</b>
5/2/19	29	20	23	21	23	224,324	<b>66,928</b>
5/3/19	20	12	18	13	16	190,401	<b>49,274</b>
5/4/19	11	6	12	10	10	163,052	<b>32,048</b>
5/5/19	23	11	11	14	13	166,216	<b>40,641</b>
5/6/19	26	18	14	21	18	188,393	<b>53,649</b>
5/7/19	20	10	16	15	14	175,112	<b>44,987</b>
5/8/19	28	27	30	34	29	207,135	<b>84,132</b>
5/9/19	26	22	27	28	25	204,294	<b>73,935</b>
5/10/19	18	15	17	17	16	172,896	<b>49,943</b>
5/11/19	15	13	20	15	17	176,586	<b>50,369</b>
5/12/19	17	12	18	20	16	185,616	<b>50,130</b>
5/13/19	10	8	12	8	10	179,474	<b>33,661</b>
5/14/19	9	2	10	3	7	171,925	<b>24,493</b>
5/15/19	15	0	0	0	2	170,844	<b>12,383</b>
5/16/19	16	0	0	1	2	176,917	<b>12,937</b>
5/17/19	21	9	16	10	14	164,937	<b>43,594</b>
5/18/19	30	20	12	8	16	185,020	<b>50,258</b>
5/19/19	29	27	28	29	28	197,791	<b>80,065</b>
5/20/19	16	11	16	16	14	174,944	<b>44,448</b>

Minnesota Energy Resources Corporation  
2019-2020 Demand Entitlement  
MERC-NNG  
August 1, 2019

5/21/19	14	13	20	22	17	180,847	<b>52,666</b>
5/22/19	19	9	9	16	11	165,968	<b>35,339</b>
5/23/19	15	11	11	12	11	174,858	<b>37,085</b>
5/24/19	18	3	3	4	5	157,083	<b>20,598</b>
5/25/19	15	8	6	10	8	147,969	<b>28,432</b>
5/26/19	7	1	1	0	2	144,829	<b>10,723</b>
5/27/19	25	17	12	14	15	162,699	<b>47,078</b>
5/28/19	11	9	11	12	11	159,503	<b>34,536</b>
5/29/19	3	1	4	9	3	156,552	<b>15,199</b>
5/30/19	13	0	0	0	2	153,773	<b>11,571</b>
5/31/19	5	0	0	0	1	164,921	<b>8,506</b>
6/1/19	12	3	7	8	7	139,924	<b>24,194</b>
6/2/19	11	0	3	0	3	131,335	<b>13,978</b>
6/3/19	11	0	0	0	2	135,863	<b>10,832</b>
6/4/19	3	0	0	0	0	154,587	<b>7,915</b>
6/5/19	16	0	0	0	2	167,706	<b>12,789</b>
6/6/19	1	0	0	0	0	162,555	<b>6,919</b>
6/7/19	5	0	0	0	1	145,438	<b>8,691</b>
6/8/19	0	0	0	0	0	123,688	<b>6,734</b>
6/9/19	9	4	3	7	5	125,139	<b>19,203</b>
6/10/19	11	0	2	0	2	133,259	<b>12,851</b>
6/11/19	8	4	7	7	6	124,180	<b>22,170</b>
6/12/19	16	6	10	12	10	127,058	<b>33,039</b>
6/13/19	5	0	2	0	2	141,037	<b>11,277</b>
6/14/19	5	0	0	0	1	129,782	<b>8,506</b>
6/15/19	11	0	1	0	2	124,614	<b>11,207</b>
6/16/19	12	0	5	0	4	151,076	<b>17,595</b>
6/17/19	8	0	0	0	1	170,279	<b>9,762</b>
6/18/19	9	0	1	3	2	158,521	<b>12,240</b>
6/19/19	3	0	0	0	0	148,600	<b>7,915</b>
6/20/19	3	0	2	0	1	132,385	<b>10,539</b>
6/21/19	9	0	5	1	3	128,159	<b>15,650</b>
6/22/19	8	0	0	0	1	114,613	<b>9,503</b>
6/23/19	9	0	0	4	2	137,224	<b>11,183</b>
6/24/19	3	0	2	0	1	145,120	<b>10,354</b>
6/25/19	0	0	0	0	0	146,448	<b>6,734</b>
6/26/19	0	0	0	0	0	151,542	<b>6,734</b>
6/27/19	1	0	0	0	0	147,691	<b>7,103</b>
6/28/19	0	0	0	0	0	145,318	<b>6,734</b>
6/29/19	0	0	0	0	0	138,029	<b>6,734</b>
6/30/19	0	0	0	0	0	143,417	<b>6,734</b>
Totals	10,672	8,939	9,707	9,827	9,632	82,744,333	27,895,005

\* Volumes include interruptible and transportation volumes

\*\* Design Model numbers are used to calculate firm volumes only

### MINNESOTA ENERGY RESOURCES - NNG

Customer Counts by PGAC Class - July 1, 2018 through June 30, 2019

Tariff Rate Class	Rate Designation	Jul-18 Average Customers	Aug-18 Average Customers	Sep-18 Average Customers	Oct-18 Average Customers	Nov-18 Average Customers	Dec-18 Average Customers	Jan-19 Average Customers	Feb-19 Average Customers	Mar-19 Average Customers	Apr-19 Average Customers	May-19 Average Customers	Jun-19 Average Customers	Annual Average Customers
GS- Residential	MERC000001	172,694	172,762	172,921	173,195	173,814	172,550	177,209	174,486	174,348	174,449	175,296	174,922	174,054
GS-C&I <1,500 therms/yr (Small)	MERC000005	7,319	7,310	7,329	7,301	7,284	7,296	7,514	7,235	6,648	6,647	6,692	6,679	7,104
GS-C&I <1,500 therms/yr (Small) Emmons, IA	MERC000013	1	1	1	1	1	1	1	1	1	1	1	1	1
GS-C&I >1,500 therms/yr (Large)	MERC000009	9,128	9,091	9,151	9,119	9,190	9,119	9,490	9,338	9,933	9,951	9,947	9,949	9,450
GS-C&I >1,500 therms/yr (Large) Emmons, IA	MERC000014	2	2	2	2	2	2	2	2	2	2	2	2	2
Small Volume Interruptible (SVI)	MERC000015	259	258	255	246	270	271	269	262	259	260	257	258	260
Small Volume Interruptible w/Joint (SVJ)	MERC000019	2	2	2	2	3	3	2	2	2	2	3	3	2
Large Volume Interruptible (LVI)	MERC000022	58	59	60	58	70	58	67	62	59	62	63	61	61
Large Volume Interruptible w/Joint (LVJ)	MERC000026	8	-1	9	9	-5	-62	0	0	0	0	0	1	-3
	MERC000101	9,398	9,379	9,349	9,333	9,377	9,122	9,674	9,380	9,368	9,395	9,384	9,386	9,379
	MERC000102	584	577	575	571	579	567	581	578	548	555	559	549	569
	MERC000103	586	583	583	590	607	574	606	590	618	623	617	621	600
	MERC000104	32	34	22	35	40	30	34	32	32	31	32	33	32
	MERC000106	14	14	25	16	14	13	13	13	13	12	12	12	14
Total		200,072	200,057	200,258	200,461	201,232	199,530	205,449	201,970	201,818	201,977	202,854	202,465	201,512



## MINNESOTA ENERGY RESOURCES - NNG

Projected Storage Cost - November 2019 through March 2020

Month/ Year	K#118657 NNG Storage (Dth)	LS Power K#132024 NNG Storage (Dth)	LS Power K#133736 NNG Storage (Dth)	Total NNG Storage (Dth)	Projected NNG WACOG	K#118657 NNG Storage Cost	K#132024 NNG Storage Cost	K#133736 NNG Storage Cost	Total NNG Storage Cost	ANR Storage GLGT/VGT (Dth)	ANR Storage GLGT/VGT WACOG	ANR Storage GLGT/VGT Cost
Nov-19	489,384	48,750	97,500	635,634	\$ 2.5729	\$ 1,259,154	\$ 125,431	\$ 250,861	\$ 1,635,446	96,000	\$ 2.8102	\$ 269,779
Dec-19	1,229,734	122,500	245,000	1,597,234	\$ 2.5729	\$ 3,164,028	\$ 315,185	\$ 630,370	\$ 4,109,582	189,100	\$ 2.8102	\$ 531,408
Jan-20	1,229,734	122,500	245,000	1,597,234	\$ 2.5729	\$ 3,164,028	\$ 315,185	\$ 630,370	\$ 4,109,582	189,100	\$ 2.8102	\$ 531,408
Feb-20	1,229,734	122,500	245,000	1,597,234	\$ 2.5729	\$ 3,164,028	\$ 315,185	\$ 630,370	\$ 4,109,582	196,000	\$ 2.8102	\$ 550,799
Mar-20	489,384	48,750	97,500	635,634	\$ 2.5729	\$ 1,259,154	\$ 125,431	\$ 250,861	\$ 1,635,446	85,900	\$ 2.8102	\$ 241,396
<b>Total</b>	<b>4,667,969</b>	<b>465,000</b>	<b>930,000</b>	<b>6,062,969</b>		<b>\$ 12,010,391</b>	<b>\$ 1,196,416</b>	<b>\$ 2,392,832</b>	<b>\$ 15,599,639</b>	<b>756,100</b>		<b>\$ 2,124,790</b>

Month/ Year	NNG Storage Volume (Dth)	NNG Index Price	NNG Index Cost	Month/ Year	ANR Storage Volume (Dth)	Emerson Index Price	Emerson Market Cost
Nov-19	635,634	\$ 2.4275	\$ 1,543,001	Nov-19	96,000	\$ 2.3975	\$ 230,160
Dec-19	1,597,234	\$ 3.2905	\$ 5,255,697	Dec-19	189,100	\$ 2.8330	\$ 535,720
Jan-20	1,597,234	\$ 3.5985	\$ 5,747,645	Jan-20	189,100	\$ 2.9710	\$ 561,816
Feb-20	1,597,234	\$ 3.5490	\$ 5,668,582	Feb-20	196,000	\$ 2.9440	\$ 577,024
Mar-20	635,634	\$ 2.6135	\$ 1,661,229	Mar-20	85,900	\$ 2.7260	\$ 234,163
<b>Total</b>	<b>6,062,969</b>		<b>\$ 19,876,155</b>	<b>Total</b>	<b>756,100</b>		<b>\$ 2,138,884</b>
<b>Storage Savings (Cost):</b>			<b>\$ 4,276,516</b>				<b>\$ 14,093</b>

\*Indexes and projected WACOG based on 7/15/19 market prices

