2020
Natural Gas Procurement Plan

April 2020

NorthWestern® Energy

Delivering a Bright Future

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CHAPTER 1: EXECUTIVE SUMMARY

Demand for natural gas in Montana is highly seasonal and NorthWestern's Gas Transmission system is near capacity to meet our customers' needs. As natural gas demand continues to grow, additional supply and transmission infrastructure will need to be developed to address future increases in demand. Because of long development times, infrastructure development should begin soon. NorthWestern Energy's 2020 Natural Gas Plan addresses the critical need for additional natural gas supply and transmission driven by the needs of our Core customers, and outlines how the Company plans to meet customers' needs with reliable natural gas at the lowest cost.

NorthWestern Energy ("NorthWestern" or "Company") provides natural gas service to 201,500 natural gas customers in 118 Montana communities. NorthWestern's gas load is classified into two categories: (1) Core customers, those residential, commercial, and industrial customers whose supply needs are planned for and met by the NorthWestern Energy Supply Group, and (2) Non-Core customers, who hold capacity contracts on NorthWestern Energy's Gas Transmission and Storage system, but plan for and manage their own natural gas supply needs under NorthWestern Energy's posted gas transportation and storage tariffs. These Non-Core customers can select from a variety of services and may hold firm or interruptible entitlements on the NorthWestern Gas Transmission and Storage system. Included in the Non-Core customers are the gas-fired electric generation facilities that are a part of the NorthWestern electric generation supply portfolio at Dave Gates Generating Station (DGGS) and Basin Creek.

Core Customers	Non-Core Customers
• Residential, Commercial and Industrial customers • NorthWestern plans and procures gas supply to meet need • NorthWestern uses its system to meet the needs of its customers – the costs of this use are embedded in rates	• Commercial and Industrial Customers (includes Electric Generation) • Non-Core customers procure their own gas supply at NorthWestern supply points and interconnections • Non-Core customers pay to use the NorthWestern system under gas transportation and storage tariffs

NorthWestern's customer gas demand (Core and Non-Core) needs are much greater during the winter heating season compared to other periods. NorthWestern's Core customer needs drive the need for additional supply and infrastructure.

The natural gas market and physical delivery infrastructure has experienced drastic changes since the 2012 Gas Plan was filed. NorthWestern's Gas Transmission and Storage system is near capacity to meet our customers' demand. Additional supply and transmission infrastructure will need to be developed to address future growth in natural gas demand. Because of long development times, infrastructure development should commence soon.

Gas Supply Diversity

NorthWestern must meet the gas demand for its Core customers using a variety of diverse supply sources. NorthWestern's gas supply flows from three primary sources: (1) interconnections from two supply points, first with TC Energy's Nova Gas Transmission Line (NGTL) at Carway and, to a lesser extent, Colorado Interstate Gas (CIG) at Grizzly; (2) gas production and reserves located on or near the NorthWestern system, and (3) Company-owned gas storage. Of these supply sources, the NGTL and CIG interconnections that serve NorthWestern's system are currently fully subscribed and NorthWestern is unable to receive any additional supply. Increasing the delivery capacity at these interconnections will require a proactive approach because these projects are long-lead undertakings, often at a significant cost. NorthWestern will see a 16.5 million Dekatherm (Dth[1]) decline in its on-system production over the next ten years, according to decline forecasts, and that volume must be replaced just to maintain current supply resource requirements. Opportunities to increase system storage are limited and take time to develop.

[1] Dekatherm (Dth): A unit of heating value equivalent to 10 therms or 1,000,000 British thermal units.

Infrastructure Challenges

NorthWestern must invest in its physical assets, including storage development, if available, to meet the growth needs of its natural gas customers over the next ten-year horizon. In this plan, several of those infrastructure expansion options are discussed.

CHAPTER 2: PLAN OBJECTIVES AND REQUIREMENTS:

This natural gas procurement plan ("Plan") sets forth NorthWestern's procurement strategies for meeting the natural gas supply needs of its Core customers.

NorthWestern previously filed four biennial natural gas procurement plans – in 2006, 2008, 2010, and 2012 – to address the natural gas pricing environments that existed during those times and to comply with the Montana Public Service Commission's ("Commission") *Natural Gas Procurement Guidelines ("Guidelines").* *See* Order No. 6683d, Docket No. N2005.6.101 (April 12, 2007). Since 2013, when the Commission commented on NorthWestern's 2012 Plan, the Commission has not required NorthWestern to file a biennial natural gas procurement plan. *See* Docket No. N2012.12.125, Commission Comments ¶¶ 32–36, May 22, 2013 (stating that NorthWestern should be guided by the 2012 Plan). In its order on NorthWestern's 2016 natural gas general rate review, however, the Commission determined that NorthWestern must file a planning proposal if it intends to explore the possibility of any future utility-owned natural gas production assets. Order No. 7522g, Docket No. D2016.9.68, ¶ 67. This Plan satisfies that planning proposal requirement and is consistent with the *Guidelines.*

As stated in the *Guidelines*, the Commission requires "**adequate, reliable, and stably and reasonably priced** natural gas default supply service" over the planning horizon. The Commission encourages the incorporation of demand-side management, where its use is cost-effective and appropriate. The Commission recommends that NorthWestern "maintain a mix of supply contracts with **staggered start and expiration dates[,]" and that NorthWestern "**maintain a mix of contracts, stored gas supply, and other hedging mechanisms that **mitigate price risk."** See Order No. 6683d, p. 4 (Emphasis added).

NorthWestern's objectives in operating the Natural Gas Supply procurement function are (1) to provide customers with reliable natural gas supply at reasonable and stable prices

that reflect market conditions over time, and (2) to assure NorthWestern's cost recovery for all prudently incurred natural gas supply-related expenditures.

This Plan describes NorthWestern's procurement strategy for the 2020-2022 tracking periods and beyond, which is designed to achieve these objectives. Specifically, NorthWestern proposes to (1) utilize the Company-owned natural gas production as a base of flowing natural gas supporting price stability and reliability; (2) enter into sufficient gas supply contracts for flowing natural gas to assure reliability during the winter heating season (typically defined as November through March); (3) place natural gas into storage during the injection season (typically defined as April through October); (4) use its system storage rights to provide additional reliability and peak day supply during the winter heating season; (5) use, where appropriate, storage for customer economic benefit; and (6) continue evaluation of purchase opportunities for additional Company-owned production when the purchase price makes sense for customers.

a. HISTORY

A brief discussion on the background of NorthWestern's 2012 Plan and its relationship to the procurement strategies for the 2020-2022 tracking periods is set forth below:

Implementation of the 2012 Plan

NorthWestern closely followed the 2012 Plan during the 2013-2019 tracking periods. Company-owned storage and production assets were valuable tools in reducing cost to NorthWestern's customers during these periods. Overall, NorthWestern's procurement strategies for the 2013-2019 timeframe and execution of the 2012 Plan resulted in rate stability for customers and a reliable natural gas supply at a reasonable cost.

Relationship between the 2012 Plan and the current Plan

This Plan contains many of the same basic principles included in the 2012 Plan. There are some notable differences, however, due mainly to fundamental changes in supply and demand of natural gas since 2012. These changes are discussed

in Chapter 5. The Plan reflects comments and concepts noted in the scrutiny of the 2012 Plan, the *Guidelines*, and the experience NorthWestern gained implementing the 2012 Plan during the 2013-2019 timeframe. NorthWestern has also made adjustments to reflect actual and expected changes in market fundamentals for the 2020-2022 tracking periods. Market prices for natural gas are currently trading fairly close to their 10-year lows; however, there is volatility in the overall price of natural gas driven by seasonal changes and localized supply and infrastructure conditions.

As stated above, this Plan is well-grounded in the experience NorthWestern gained in implementing the 2012 Plan and is consistent with Commission directives and approved *Guidelines*. The Plan has, however, evolved and been adjusted accordingly to reflect the need, the expected market conditions, and the potential opportunities in the 2020-2022 tracking periods. Thus, NorthWestern believes the Plan represents a solid approach to procurement of natural gas supply for its Core customers for the 2020-2022 time periods.

Planning Horizon

The planning horizon in the *Guidelines* is the longer of:

(a) the longest remaining contract term in the utility's current natural gas default supply portfolio;

(b) the longest contract term being considered for a new resource acquisition; or

(c) at least three years.

Consistent with the requirements of this Plan, NorthWestern will detail its general strategy towards managing Core system supply needs.

Prior plans have detailed supply procurement strategies. In this Plan, NorthWestern also discusses options for the physical assets that it uses to deliver natural gas to all of its customers.

b. SEPARATION OF NATURAL GAS SUPPLY, TRANSMISSION, AND STORAGE

Code of Conduct and Functional Separation

Statute, tariffs, and rules all require separation between Natural Gas Energy Supply ("Energy Supply") and the Natural Gas Transmission and Storage functions ("Gas Transmission"). NorthWestern Gas Transmission operates and manages load for the entire system and advises Energy Supply on the needs of the Core customers. NorthWestern has a gas tariff in place under which the remaining Non-Core customers manage their capacity contracts on the NorthWestern System. The Non-Core customers are either Transmission business unit customers (TBU) directly connected to the Transmission system, or Distribution business unit customers (DBU) served behind the city gate. The following discussion provides an overview of the structure under which Energy Supply operates.

Section 69-3-1404(1), MCA, provides, in part, as follows:

> … a natural gas utility that provides customer choice and open access on its system shall:
>
> (a) functionally separate its natural gas production and gathering resources from its natural gas transmission, storage, and distribution services …;
>
> (b) adopt and comply with commission-approved standards of conduct to be included in a tariff to govern its natural gas transmission, storage, and distribution services ….

Consistent with (b), NorthWestern's Natural Gas Tariff, Schedule No. GTC-1, General Terms and Operating Conditions ("GTC-1"), contains provisions implementing this law.

Under statute, Commission rules, and NorthWestern's Natural Gas Tariff, the Storage function is separated from the Energy Supply function. Storage capacity is calculated and allocated by the Transmission division. The Energy Supply unit communicates, at arms-length (according to GTC-1, section 21), with the NorthWestern Gas Transmission division to ensure adequate supply and reliability.

NorthWestern's Energy Supply group receives the same information that others in the market receive. The Energy Supply function does not have access to daily information that other marketers do not have, does not have access to detailed storage information that other marketers do not have, and, in general, operates independently of the transmission and storage function.

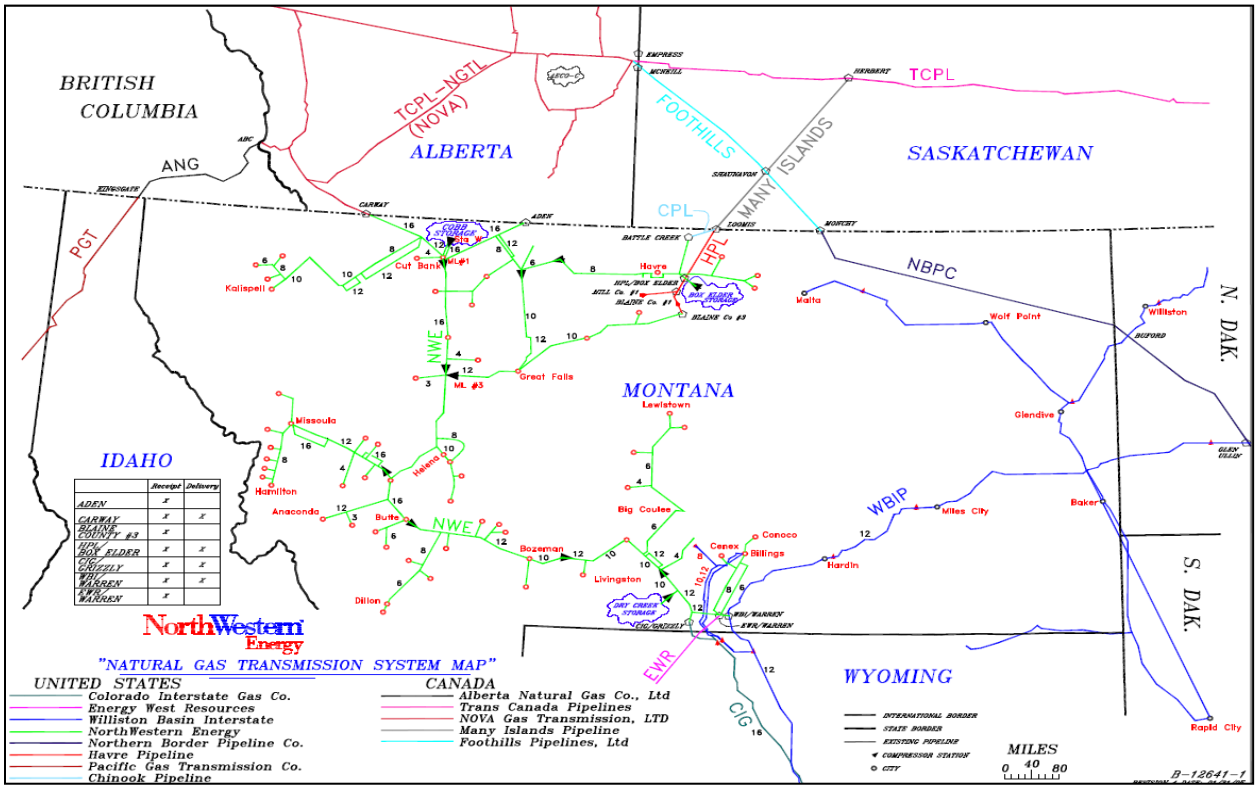
That being said, this Plan will provide a high-level overview of total system throughput and planning requirements; the planning requirements, in turn, are informed, at least in part, by information provided by Gas Transmission.

CHAPTER 3: LOAD SERVICE REQUIREMENTS

Energy Supply Load Requirements

NorthWestern's Energy Supply division is responsible for managing its gas supply portfolio to meet its Core customers' natural gas load demand requirements (referred to as the "Core Load") throughout each year. The Core Load consists of approximately 201,500 residential and commercial customers covering over 70,500 square miles (one-half of Montana) with an annual usage of approximately 20 billion cubic feet ("Bcf") of natural gas. Of these customers, 88% (177,000) are residential and the other 12% (24,000) are commercial. The infrastructure that moves gas to customers is comprised of 5,187 miles of underground distribution pipeline, 2,100 miles of transmission pipeline, 140 city gate stations, and 3 underground storage facilities. The infrastructure must have adequate capacity to move the gas supply to the point of customer consumption. Below is a depiction of the service territory along with other pipelines that are connected to NorthWestern's system.

Figure 1 System Map



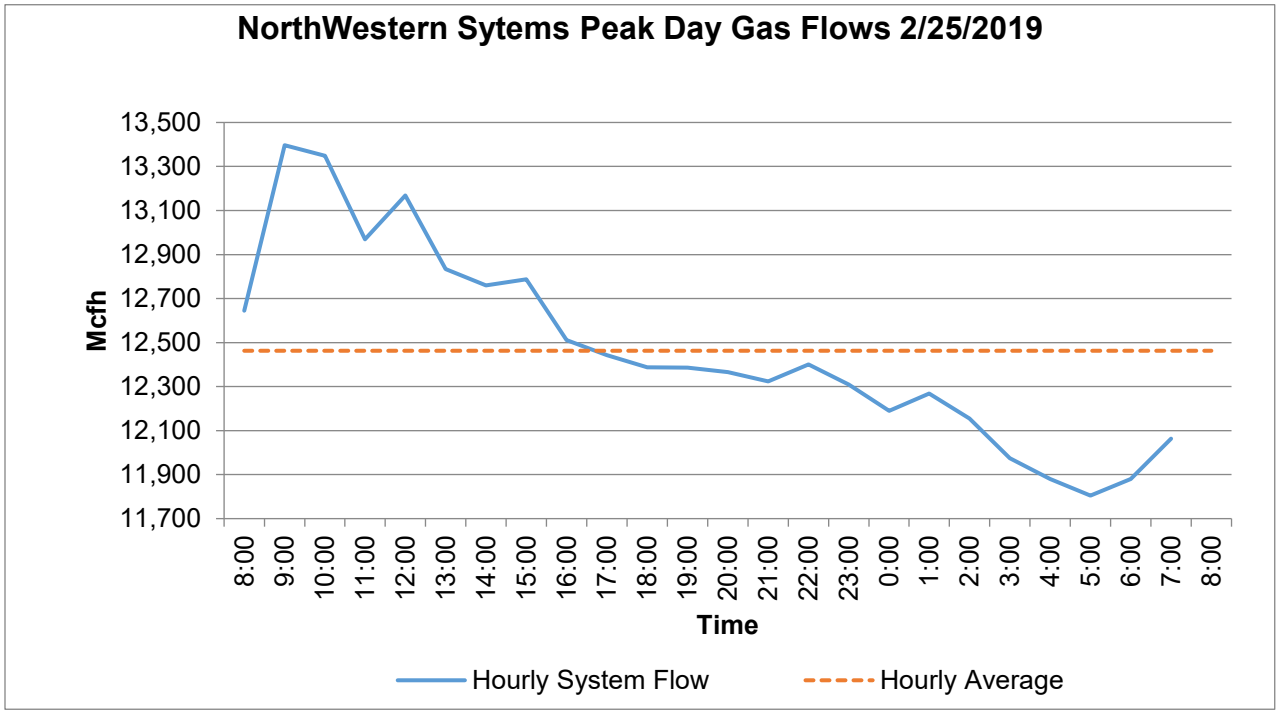
Like much of the United States, NorthWestern's Core customer base creates a supply need that is highly seasonal and weather dependent (i.e., consumption is heavily weighted to the heating months). However, unlike much of the United States, Montana has one of the highest energy consumption rates per capita.[2] The annual load factor (average load/peak load) is less than 25% which means that the majority of consumption (approximately 68% of the annual total or 13.5 Bcf) occurs during the winter period (November – March) when market prices have historically been the highest.

While the annual and winter load shapes typically do not fluctuate widely from year to year, the temperature-driven daily load requirements vary substantially. In order to meet this need, NorthWestern Gas Transmission uses a combination of storage withdrawals and line pack to maintain adequate pressure to meet increased early morning demand. Line pack occurs when NorthWestern uses its pipeline system like a storage facility,

[2] https://www.eia.gov/todayinenergy/detail.php?id=41173&src=email#

packing excess gas to serve morning demand. The chart below shows the hourly customer demand curve (including both Core and Non-Core customers) for the 2018/2019 heating season peak day on the entire NorthWestern System. This chart shows that the need is the greatest during the first few hours of a gas day. This means that the NorthWestern transmission and storage function needs to have sufficient system infrastructure in place, in addition to gas supply, to meet the system needs during this peak time. Interstate pipelines deliver gas on an hourly basis, which means the daily nomination is delivered to NorthWestern on a daily nomination divided by 24 hours to determine the hourly rate, which is represented by the dashed line on the chart below. The areas above and below the dashed average line represent times of day when NorthWestern transmission and storage uses its physical assets (line pack, compression, and storage) to balance system demand when gas supplies are long or short based on the system actual gas load. Gas physically moves between 12 and 22 miles per hour in the pipeline system, so managing a cold, multiple-day event requires the diligent use of NorthWestern's assets to maintain delivery pressure.

Chart 1 Peak Day Hourly Flows



a. PLANNING PROCESS

NorthWestern's load service planning requirements are split into two major categories: Planning for annual system needs, and planning for a design day, or the maximum anticipated system condition.

Annual Core Load Sensitivity and Shape

The NorthWestern Gas Transmission function commences its planning process prior to the heating season each year as part of its annual design cycle. It starts by compiling load data and forecast supply into its hydraulic pipeline modeling system, which is provided by Gregg Engineering. The NorthWestern Gas Transmission function then relays the portion of this supply requirement to its Energy Supply group, so that Energy Supply can manage its supply resources to meet the forecasted need of its Core customers. For example, the Core load peak day consumption is predicted to be 234,872 Dth for the 2019/2020 heating season, while the minimum summer day load requirement is predicted to be approximately 13,750 Dth.

A review of 10 previous years' loads with actual temperatures reveals annual load variations surrounding the 20 Bcf annual load estimate of between 18.5 Bcf/year (during a warm year) and 22.7 Bcf/year (during an extremely cold year). These variations of about 4.2 Bcf result in a total temperature-based annual load sensitivity of approximately 18.5%. Table 1 shows the natural gas consumption for the Core Load for the past 10 years (2010 through 2019).

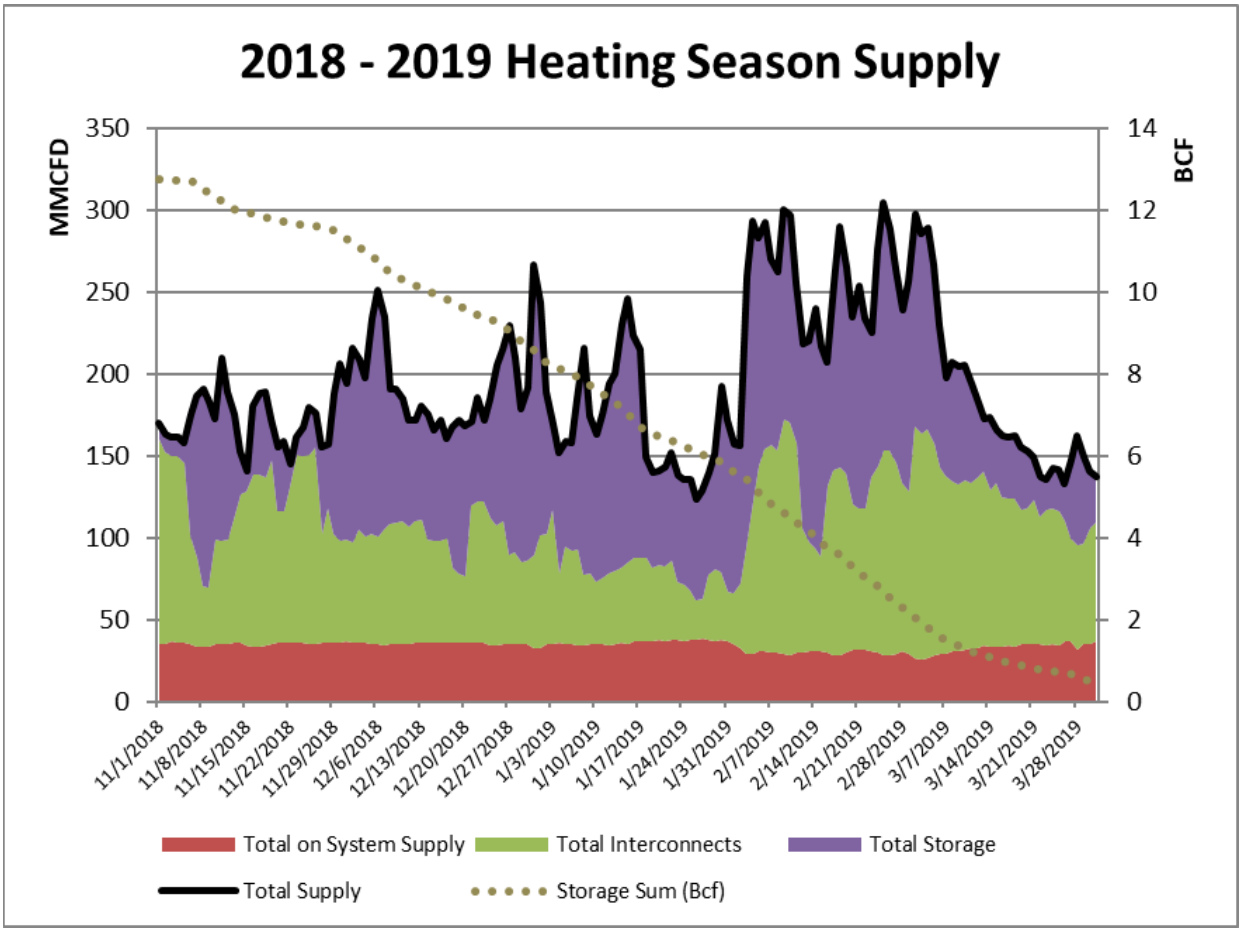
Table 1 Actual Total Supply Requirements 2010 – 2019

NorthWestern Energy Actual Total Supply Requirements (000's) Dekatherms of Natural Gas													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	3,269	3,468	3,798	2,110	1,482	876	553	425	448	1,204	2,234	2,832	22,702
2018	3,555	2,846	3,218	2,306	1,287	667	532	403	471	1,125	1,882	2,829	21,123
2017	3,888	3,060	2,154	1,517	1,023	586	433	417	789	1,525	2,274	3,110	20,776
2016	3,129	2,435	1,958	1,452	953	660	469	481	750	1,183	2,058	3,128	18,656
2015	3,007	2,487	2,016	1,402	955	579	431	469	608	1,088	2,187	3,273	18,502
2014	3,239	3,127	2,560	1,713	1,056	631	476	490	651	1,173	2,253	3,138	20,507
2013	3,110	2,684	2,172	1,644	1,092	654	471	417	739	1,422	2,404	3,185	19,994
2012	2,910	2,715	2,170	1,480	1,035	737	443	421	619	1,258	2,294	3,017	19,099
2011	3,321	3,124	2,634	1,856	1,281	792	498	430	571	1,202	2,252	3,112	21,073
2010	3,225	2,681	2,157	1,693	1,217	814	504	501	659	1,318	2,381	3,079	20,229
Average	**3,265**	**2,863**	**2,484**	**1,717**	**1,138**	**700**	**481**	**445**	**631**	**1,250**	**2,222**	**3,070**	**20,266**
% of Total	**16.1%**	**14.1%**	**12.3%**	**8.5%**	**5.6%**	**3.5%**	**2.4%**	**2.2%**	**3.1%**	**6.2%**	**11.0%**	**15.2%**	**100.0%**

Heating Season Loads

As noted earlier, over two-thirds of the annual 20 Bcf of supply is consumed between November 1 and March 31. Below is a chart showing 2018/2019 winter consumption (the most recent complete heating season), sources of supply, and the balance that was maintained in storage throughout that time period.

Chart 2 Heating Season Supply



Peak Day Supply Adequacy

Of utmost importance in the winter is ensuring there will be enough gas available to meet customer needs on a peak day. To determine what peak day volume is needed, NorthWestern's Gas Transmission reviews historical usage over the past 30 years, identifies the day when gas consumption was highest, makes adjustments for known and measurable differences, and calculates the necessary peak day volume, also referred to as the "Design Day". The Design Day is equivalent to the maximum system capacity. NorthWestern's Energy Supply function is then charged with ensuring it has enough natural gas supply lined up to meet Design Day needs. Table 2 below shows what the Design Day forecast was for the past winter as well as what it is for the next two winters. Core aggregation customers are third party transporters on the NorthWestern gas

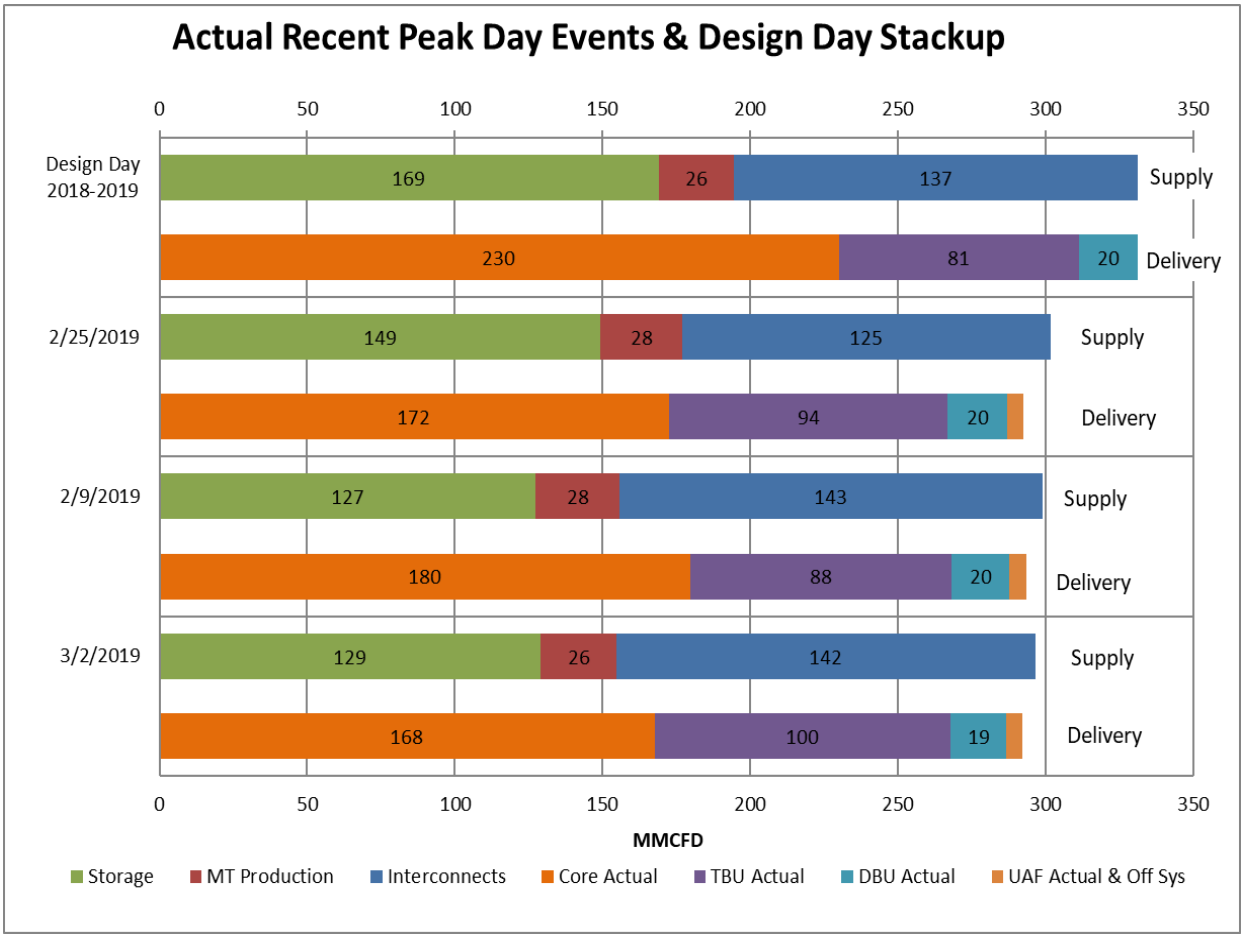
transmission and storage system, who procure their own commodity but are charged for their use of the transmission assets to move that commodity to serve their load.

Table 2 Design Day Forecast

	GTS Forecast 18-19 Heating Season			GTS Forecast 19-20 Heating Season			GTS Forecast 21-22 Heating Season		
	Flow (Mcfd)	With Fuel (Mcfd)	Energy (Dkt)	Flow (Mcfd)	With Fuel (Mcfd)	Energy (Dkt)	Flow (Mcfd)	With Fuel (Mcfd)	Energy (Dkt)
Core Volume	223,229	228,720	233,294	224,738	230,267	234,872	227,696	233,297	237,963
Core Aggregation	7,104	7,279	7,424	8,115	8,314	8,481	8,115	8,314	8,481
Non-Core	100,027	102,488	104,538	101,180	103,669	105,743	101,180	103,669	105,743
Total System	330,360	338,487	345,257	334,033	342,251	349,096	336,991	345,281	352,187

The chart below shows the three highest gas consumption days from last winter and how they compared to the Design Day forecast. The NorthWestern Transmission and Storage system is designed to take supply at a specific point and deliver the contracted firm gas to a specific delivery point. There is very little flexibility on a “Design Day” because it is equivalent to the maximum system capacity.

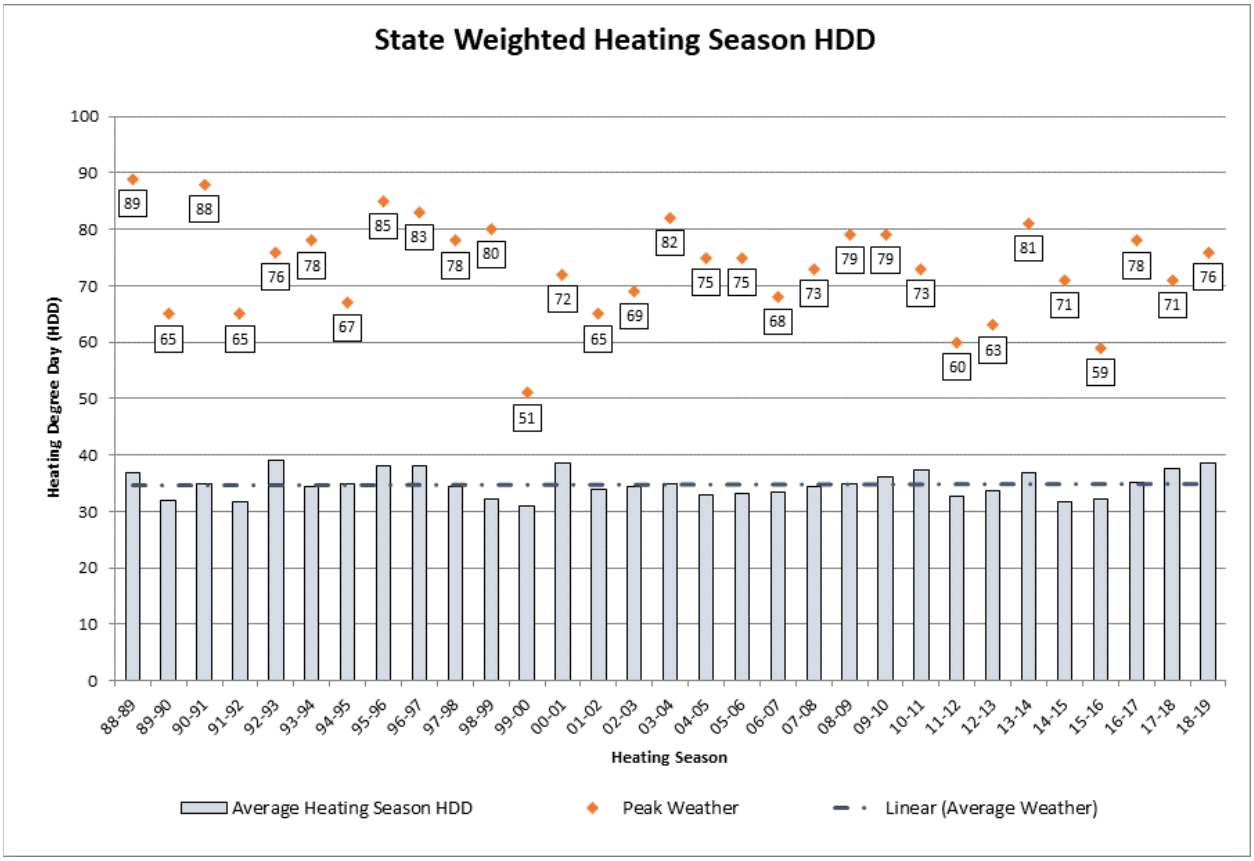
Chart 3 Peak Day Events and Design Day Stack Up



Below is a chart showing the average and peak day Heating Degree Day[3] ("HDD") over the past 20 years.

[3] A HDD is a tool used to estimate the energy required for heating. One heating degree day occurs for each degree the daily mean temperature is below 65 degrees Fahrenheit. Thus, the larger the HDD number, the colder the temperature and the higher the heating load.

Chart 4 State Weighted Heating Season HDD



Daily Planning

NorthWestern's load forecasts utilize weather-normalized loads. Load forecasts are computed utilizing the State Weighted HDD derived from 30 years of weather data. NorthWestern's Gas Transmission function uses this data to forecast the prospective system load for Core and Non-Core customers over a five-day period. Gas Transmission continues to monitor customer performance over this five-day period to ensure that sufficient supplies are scheduled into the system to meet forecasted loads.

Projected loads are adjusted, as part of operational management, as weather conditions become increasingly certain. If supply is not sufficient, NorthWestern's Gas Transmission uses the rules in its gas tariff to enforce performance to projected loads.

CHAPTER 4: EXISTING RESOURCES

As noted earlier, Energy Supply is responsible for procuring gas supply for its Core customers. Energy Supply fulfills its Core customers' demand requirements through a combination of three sources: 1. on-system production, 2. supply purchased from Canadian and Rockies interstate pipeline interconnections, and 3. NorthWestern-owned storage resources. The on-system production is a combination of Company-owned production fields and third-party supply that is also produced from those fields. The various pipeline interconnections deliver natural gas to NorthWestern's Transmission System that is purchased from both Alberta, Canada and Wyoming. Supply delivered from storage resources located both in northern and southern Montana account for almost half of Energy Supply's annual supply and two-thirds of the winter supply.

Current Supply Components

The single most important factor in maintaining a reliable supply is NorthWestern's ability to obtain gas supply contracts coupled with NorthWestern-owned production to provide sufficient volumes of flowing natural gas for its peak day, winter heating season, and total annual demands. Energy Supply can best manage against the risks presented by volatility in the market by maintaining a diversity of supply to meet the needs of its Core customers.

a. SUMMARY OF CORE NEEDS

However, as discussed above, Core customers' load can range from a low of about 13,750 Dth on a summer day to a peak of nearly 234,872 Dth on a winter day. On any day when customer demand is less than the contracted natural gas volumes, the difference is ordinarily placed into storage as an injection. Energy Supply procures and manages a natural gas portfolio of diverse flowing natural gas contracts and NorthWestern-owned production from various sources to assist in meeting the peak day winter load requirement. In order to ensure a reliable supply, the majority of its supply of flowing natural gas contracts must be firm in nature (i.e., interruptible contracts cannot be used for this purpose). Flowing natural gas supply is priced by reference to a market

index. NorthWestern-owned production is included in natural gas supply rates at the Commission-authorized regulated cost of service.

Peak Day Supply

NorthWestern's peak day obligation was 234,872 Dth/day for the 2018/2019 winter season. Total winter daily supply resources from flowing supply and interstate pipeline capacity are 122,367 Dth/day, and when combined with the daily storage deliverability of 117,991 Dth/day, NorthWestern is able to fulfill its design day requirement. Table 3 below details the resources NorthWestern will use to satisfy its peak day winter obligation.

Table 3 Total 2019 – 2020 Winter Supplies

2019/2020 Winter Supplies	Dth/day
Third Party On-system production	11,700
Owned On-system production	13,080
Storage	117,991
TransCanada contract supplies	82,587
CIG contract supplies	15,000
Total Supplies	240,358
Peak Day Core Supply Requirement	234,872
Balance (+Excess / -Short)	5,486

The charts below represent Core supply sources, on both an annual and a peak day basis:

Chart 5 Annual Energy Supply Sources

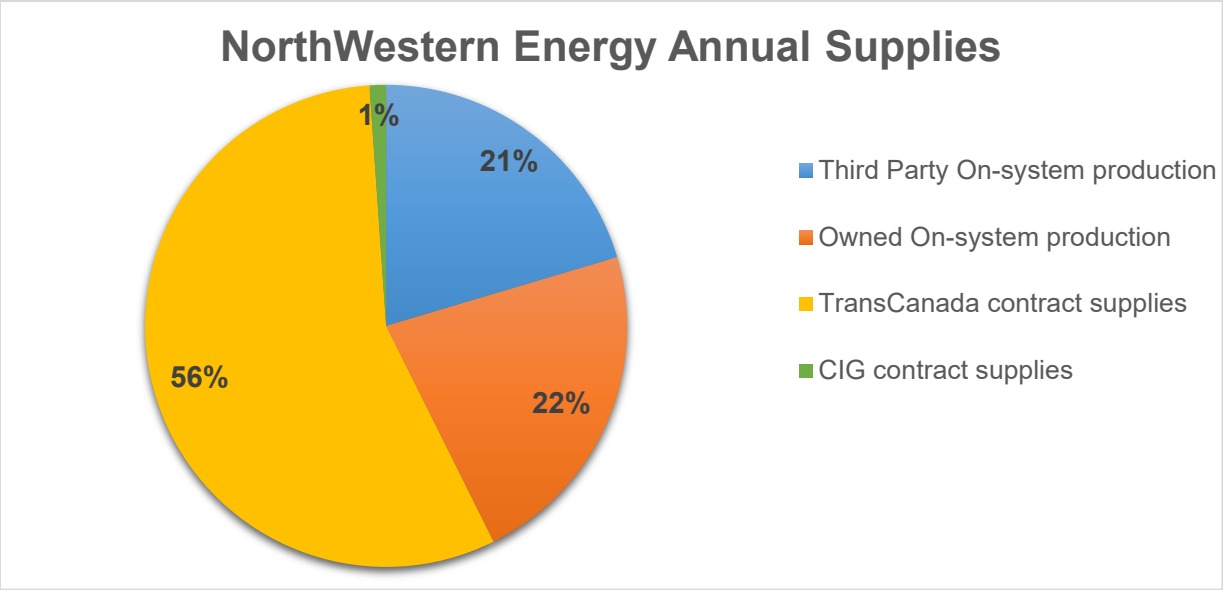
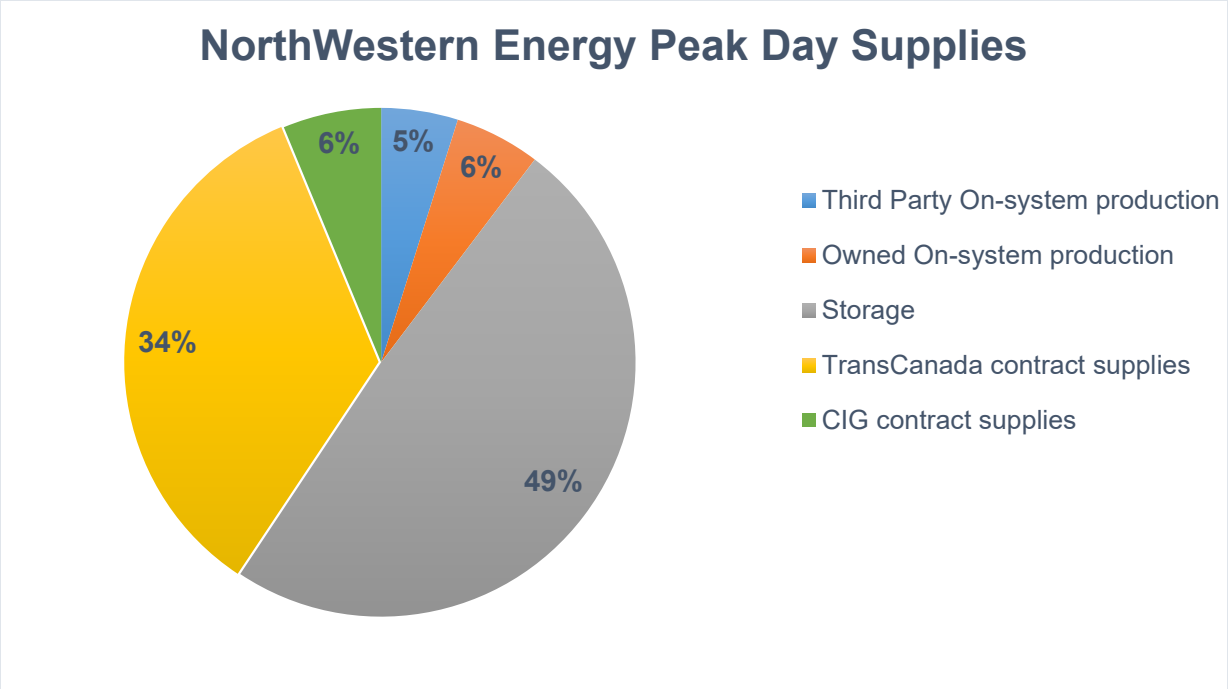


Chart 6 Peak Day Energy Supply Sources

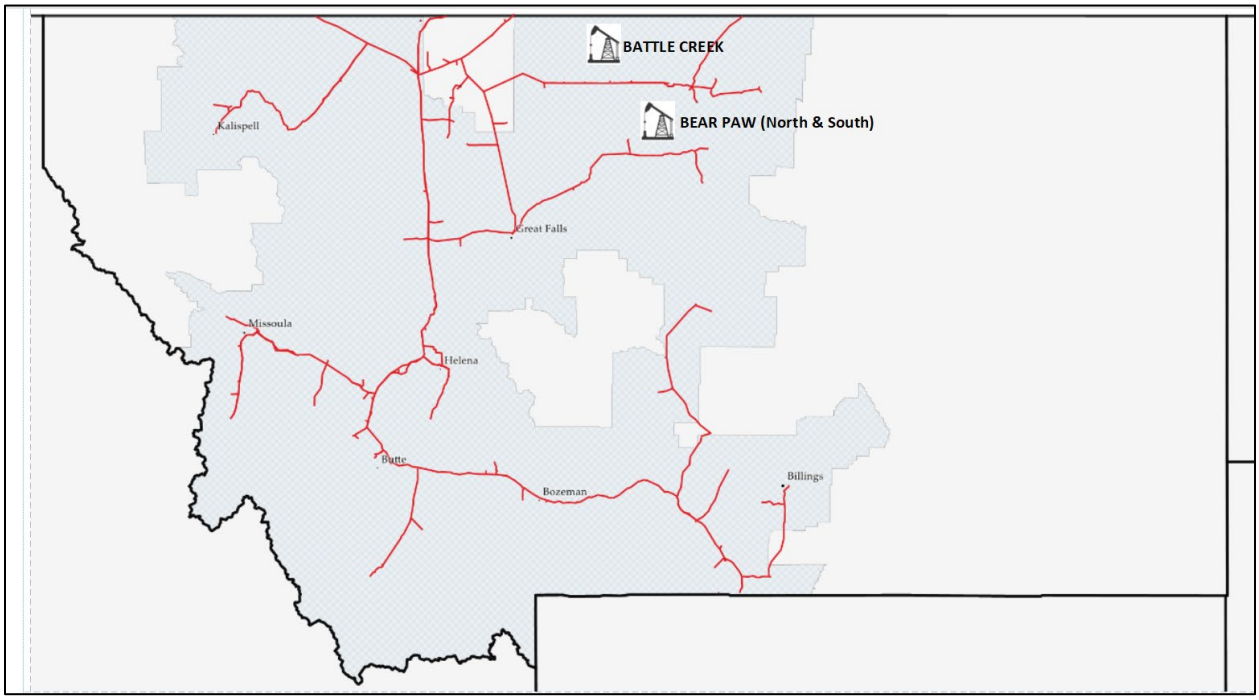


In Chart 5, storage is not represented as an annual supply category because the gas used for storage injections is sourced from one of the four supply points. Storage inventory is then used on withdrawal to meet winter conditions.

b. ON-SYSTEM PRODUCTION

On-system production is located in north-central Montana and southeast Alberta. Natural gas from these locations is transported to market by NorthWestern Energy's transmission pipelines. A map of the on-system production locations is below:

Figure 2 Production Areas



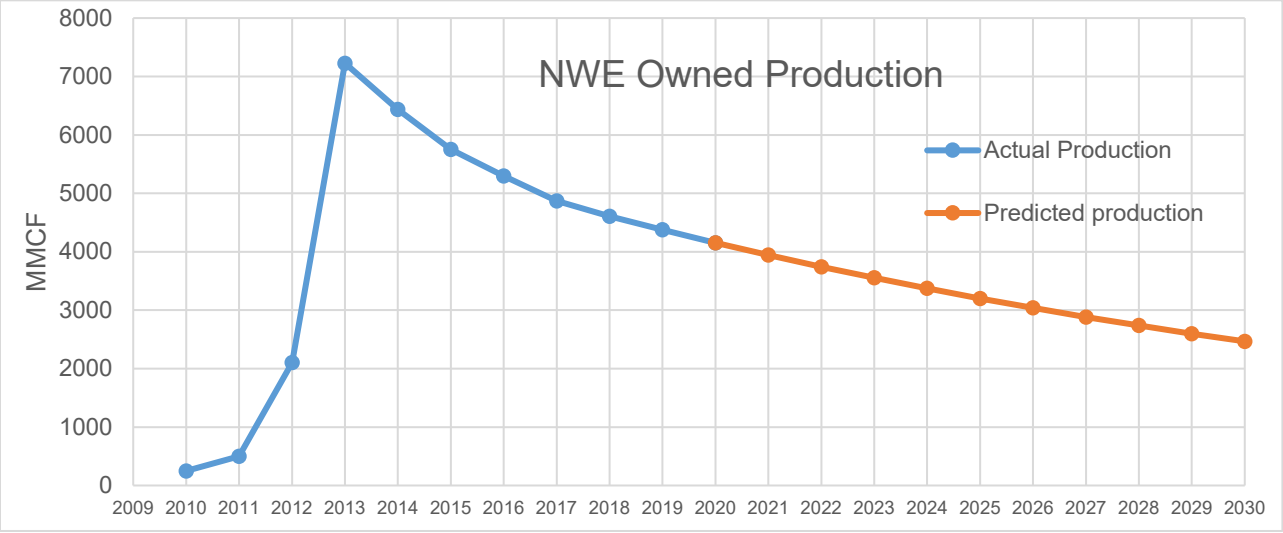
The production assets provide a long-term hedge against overall market trends protecting part of the overall natural gas procurement cost to customers from large increases in pricing and volatility. In order to effectively limit market exposure to changes in the natural gas pricing and take advantage of lower pricing, NorthWestern

sought to fill a range of 25% to 50% of the portfolio with owned resources that properly balance the benefits and risks of the market with the benefits of stable pricing.

At its peak in 2014, NorthWestern supplied 32% of its customers' load from owned production taking advantage of the opportunities that were available to NorthWestern over the past several years. Because NorthWestern's ownership consists of mature proven and producing facilities, the annual production of these facilities continues to decrease year over year. The annual forecasted production is 22% of the NorthWestern load for the 2019/2020 tracking period.

The production from each of these wells experiences a natural decline as pressure is removed from the fields. The annual decline rate varies between 8% and 10.77%. The 2018/2019 production was approximately 27.4 MDth/day. This rate will decline to an estimated 17.3 MDth/day in 5 years and 10.9 MDth/day in 10 years. Because NorthWestern's load profile is not projecting a demand decline, the 16.5 MDth/day decline in production must be replaced over the next ten years by supply from some other source.

Chart 7 NorthWestern Owned Production



The replacement gas could come through additional drilling in the historical producing areas, increases in gas purchased from Canada at Carway or other pipeline

interconnects, increases in storage deliverability, or additional gas-producing assets purchased outside the on-system producing region. Sufficient drilling to impact the decline will not occur until the price of natural gas increases to a level where drilling becomes economic. Energy Supply has and will continue to contract for additional gas when available, and will utilize infrastructure built by Gas Transmission through its planning process to meet forecasted system demand requirements. .

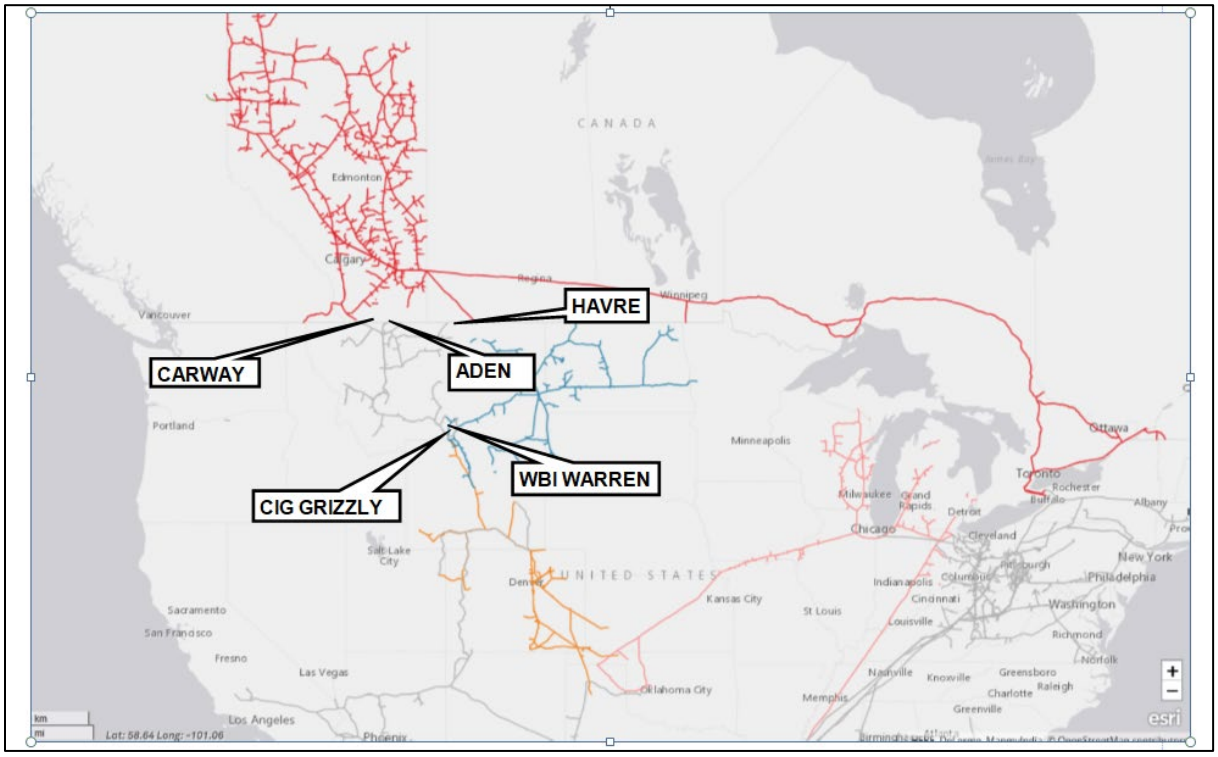
Challenges associated with production

On-system production, like all gas production, is subject to decline curves that limit the deliverability at a wellhead as the wellhead progresses towards the end of its life. Operationally, on-system production, like all gas production, may experience freeze-offs or other operational upsets as a result of extremely cold weather conditions. In the case of Company-owned production, NorthWestern operations' employees monitor and manage production to lessen the likelihood and impact of these freeze-offs, as production is a resource necessary to meet winter needs.

c. PIPELINE INTERCONNECTIONS

In addition to on-system production, NorthWestern transmission pipeline(s) have connections to major third-party pipelines, as shown in Figure 3 and listed in Table 4.

Figure 3 Map of Major Pipeline Interconnections



NorthWestern manages the contracts with its interconnecting pipelines in accordance with the Commission's planning requirements, by staggering the terms of its contracts and by maintaining supply diversity. NorthWestern Energy Supply, as part of its risk management strategy, has secured multiple counterparties with whom it contracts for flowing natural gas. In addition to counterparty diversity, these contracts also have a range of termination dates. Per NorthWestern's Risk Management Policy, potential counterparties are evaluated in terms of credit risk before contracts are executed and appropriate credit terms are applied.

The table below details the pipeline contracts that NorthWestern holds on its upstream pipelines to meet the needs of its Core customers.

Table 4 NorthWestern Pipeline Contracts

NWE Pipeline Contracts			
Pipeline	Connection Point	Energy Supply Contracted Dth/d	Termination Date
TC Energy (NGTL)	Carway	20,759	10/31/2025
TC Energy (NGTL)	Carway	10,346	10/31/2025
TC Energy (NGTL)	Carway	9,218	11/30/2023
TC Energy (NGTL)	Carway	5,783	11/30/2025
TC Energy (NGTL)	Carway	19,894	2/28/2024
TC Energy (NGTL)	Carway	16,587	11/30/2021
Aden	Aden Border	8,200	3/31/2020
Havre Pipeline	Blaine Co. #3 / #1	17,500	
Colorado Interstate (CIG)*	Grizzly	15,000	Winter Only - renewed annually
Williston Basin	Warren**	0	
* Interruptible capacity only. ** Delivery only to WBI			

In order to meet the needs of its Core customers, NorthWestern has recently contracted for an increase in capacity on the NGTL system upstream of its assets. This increase is slated to become effective in the 2022-2023 timeframe. This increase represents the maximum amount of capacity that NorthWestern can contract for before an expansion on the upstream system is required. NorthWestern cannot meet the forecasted demand of its Core customers by relying solely on the availability of increased capacity at its interconnecting pipelines unless the interconnecting pipelines expand their systems and increase the available capacity. These expansions would require NorthWestern to execute additional long-term capacity contracts with TC Energy, CIG, or Williston Basin Pipeline.

Challenges associated with Pipeline Interconnections

Gas delivered from pipeline interconnections is sourced from outside the state of Montana and is subject to supply disruption as it relies upon infrastructure (pipelines and compressor stations) that often span many hundreds of miles to get the gas from the point of production to the place where it is consumed. Gas delivered to NorthWestern from pipeline interconnections may be subject to supply scarcity. Often, cold weather events impact an entire region, and there is a significant regional need for the gas production. Finally, gas delivered at pipeline interconnections is subject to capacity constraints on the upstream pipeline. These constraints can impact NorthWestern's ability to find capacity or to negotiate contract rates on terms which are favorable to its customers. Carway, in particular, is a critical supply source for NorthWestern, delivering 34% of the Core customers' peak day need. A disruption at Carway could present significant supply reliability concerns. For example, NGTL's nearest compressor station is a solar turbine named Drywood and is located in southern Alberta. NGTL does not provide any back-up compression if Drywood were to fail for any reason. Compressors upstream of Drywood would continue to move gas toward NorthWestern's system, but at lower flow rates and at lower pressure. This would result in decreased supply from the NGTL interconnection. This loss in supply is not "theoretical," but has actually been experienced in recent years.

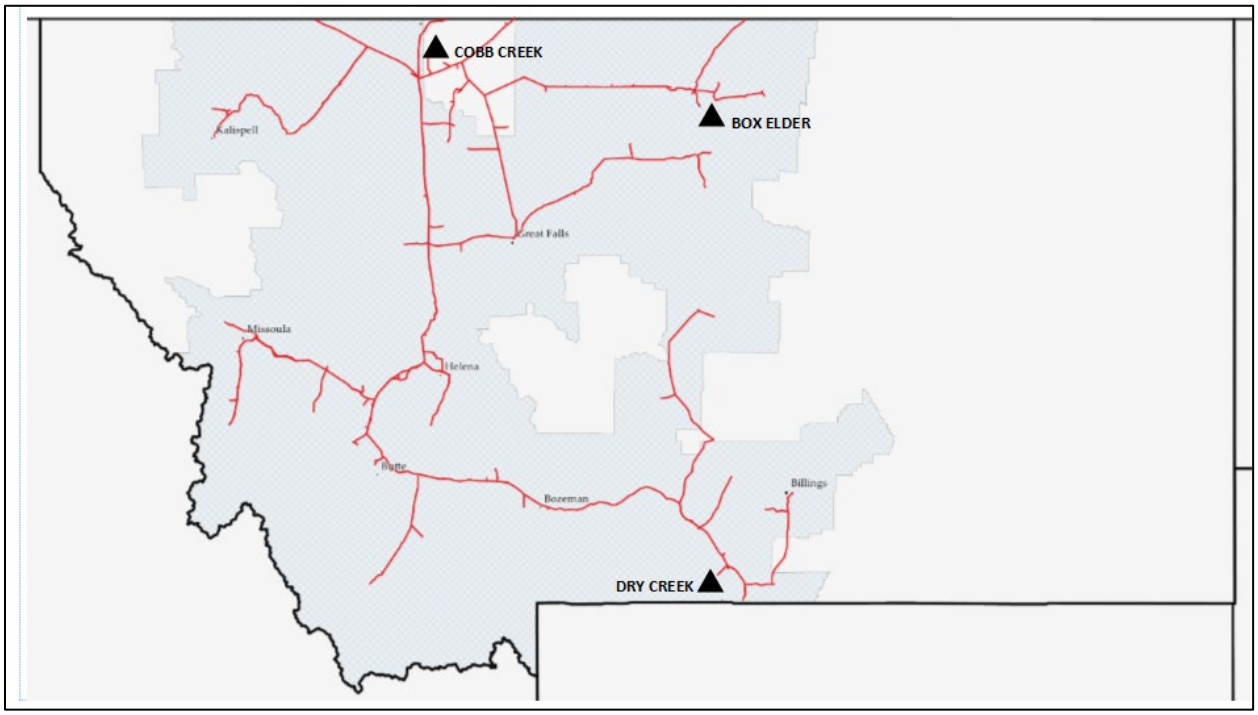
d. STORAGE

Energy Supply, as part of its portfolio approach to natural gas procurement, utilizes its natural gas storage to reliably meet peak day requirements; mitigate market price fluctuations through seasonal price diversity; and provide economic benefit to customers. Gas storage is a valuable asset to respond to regional market demand while avoiding seasonal price spikes.

Natural gas storage is a physical tool that allows NorthWestern to accumulate and store natural gas during periods when prices are sometimes lower than the forward prices for the following heating season (the injection season) and to withdraw the natural gas during periods when consumption and prices may be higher. Energy Supply enters into baseload natural gas contracts for flowing natural gas with multiple parties at specified

quantities for deliveries at points across its pipeline system. When not needed to serve load, this flowing natural gas is often injected into storage for later use (generally during the upcoming heating season) to ensure reliability and provide price stability. For each heating season, one-third of the Core customers' winter supply will come from flowing gas. The triangles on the map below represent Company-owned storage facilities.

Figure 4 Company-Owned Storage



The provision of peak-day reliability on the NorthWestern natural gas transmission and storage system depends in part on this on-system storage capacity. Operationally, this system is divided into two primary load zones. The north and west portion is one zone and the south and east portion is the other zone. This separation is due to the location of receipt points, which provide supply to meet customer load and storage injections, and the location of the load on the system. Each of the main storage fields is essential in maintaining reliability for customers within the respective load zones.

NorthWestern has three natural gas storage facilities, but the two primary natural gas storage fields are located at Cobb and Dry Creek. However, Energy Supply is allocated only a portion of the storage rights in each of these fields by NorthWestern Gas

Transmission. The remaining storage rights are either held by Non-Core customers under tariff-approved contracts to meet their demand or reserved, in part, by NorthWestern Gas Transmission to meet peak deliverability needs.

The Cobb storage field is on the north end of the system and is essential in serving peak day load requirements on the NorthWestern system. The Cobb field is a depleted production reservoir storage field with total working gas[4] capability of 12.75 Bcf and maximum daily withdrawal capability of 115,000 Dth/day. The Dry Creek storage field is a depleted production reservoir storage field that is located on the south end of the system. It has a total working gas capacity of 4.5 Bcf and maximum daily withdrawal capability of 44,000 Dth/day. Like the Cobb field, Dry Creek is also essential to augment the flowing natural gas supply to meet peak day load requirements and to enhance pressure mainly on the south end of the NorthWestern system.

The Cobb field is supplied from the north end of the system, from NorthWestern's interconnection with TransCanada's NOVA pipeline at Carway and from north end of Montana natural gas production. NOVA provides access to the very liquid natural gas trading hub, AECO, which is located in Alberta. As stated above, the Carway interconnection is essential to making sure that inventory is injected into Cobb for the winter heating season. The Dry Creek field can be supplied from either the north end or the south end of the NorthWestern system.

NorthWestern's third storage field is Box Elder. Box Elder is located in the Havre area and is primarily used to augment deliveries to the Havre area during cold weather events. It is a critical resource for load balancing in the Havre area, though its total impact on the balance of NorthWestern's system is minimal.

The total peak deliverability of the three on-system storage fields is approximately 169,000 Dth/day. However, Energy Supply only holds contractual rights to approximately

[4] Working gas is the term for natural gas that is injected, generally in the months from April through October, for withdrawal during the traditional heating season from November through March.

117,991 Dth/day of that deliverability. The total deliverability, max injection, and working gas capacity of each field is shown in Table 5 below.

Table 5 Storage Capacity

NorthWestern System Storage Summary				
Field	Deliverabilty (Dth/d)	Max Injection (Dth /d)	Working Gas Capacity (BCF)	Annual Baseline Core Numbers (BCF)
Cobb	115,000	101,400	12.75	7
Dry Creek	44,000	31,050	4.5	1.5
Box Elder	10,000	9,415	0.6	0.06
Total	169,000	141,865	17.85	8.56

While the working gas storage capability for the entire NorthWestern system is roughly 17.85 Bcf, the maximum working natural gas storage capacity allocated to Energy Supply is approximately 8.6 Bcf, or roughly 70%. NorthWestern's Gas Transmission is responsible for operating and maintaining the storage fields in order to ensure reliability of the system. Gas Transmission is also responsible for allocating the working gas capacity between Core and Non-Core customers.

It is important to recognize that physical limitations on the NorthWestern system and finite compression capacity at the storage fields will, at times, limit the maximum amount of natural gas that can be injected into storage on a daily basis. NorthWestern Energy Supply, like other storage contract holders, must comply with the standards as set forth by NorthWestern's Gas Transmission. The Energy Supply injection capability at Cobb ranges from 50,000 Dth/day up to 100,000 Dth/day, depending on the storage reservoir pressure and the level of injections by other parties who also hold storage rights. The injection capability at Dry Creek is approximately 25,000 Dth/day. Because of the potential for late-season injection limitations at Cobb, an Energy Supply storage plan in excess of 9 Bcf for the heating season necessitates a more consistent or layered injection plan throughout the injection season.

Energy Supply Storage Utilization

Energy Supply utilizes its allocated storage capacity in addition to flowing natural gas supply contracts in order to fulfill peak day requirements and provide gas cost savings to Core customers by taking advantage of the seasonality of gas prices. Storage utilization partially mitigates the impact of the low load factor of the energy supply market by taking advantage of seasonal price variations. Storage is filled in the summer during months of low demand. The low demand in the summer often leads to lower prices and provides a significant portion of economical supply to serve customers in the winter. Chart 8 below details the total monthly storage inventory levels on an annual basis. Chart 8 shows that Core customers exceeded their storage working gas withdrawal limits at the end of the 2018 heating season, thus dipping into "cushion" gas or gas in storage. This exceedance was corrected in the subsequent injection period. Furthermore, this exceedance matched the behavior of the storage withdrawals over the U.S. during that time period, as reported by the Energy Information Administration ("EIA") (see figure 5 below).

Chart 8 Total Storage Activity

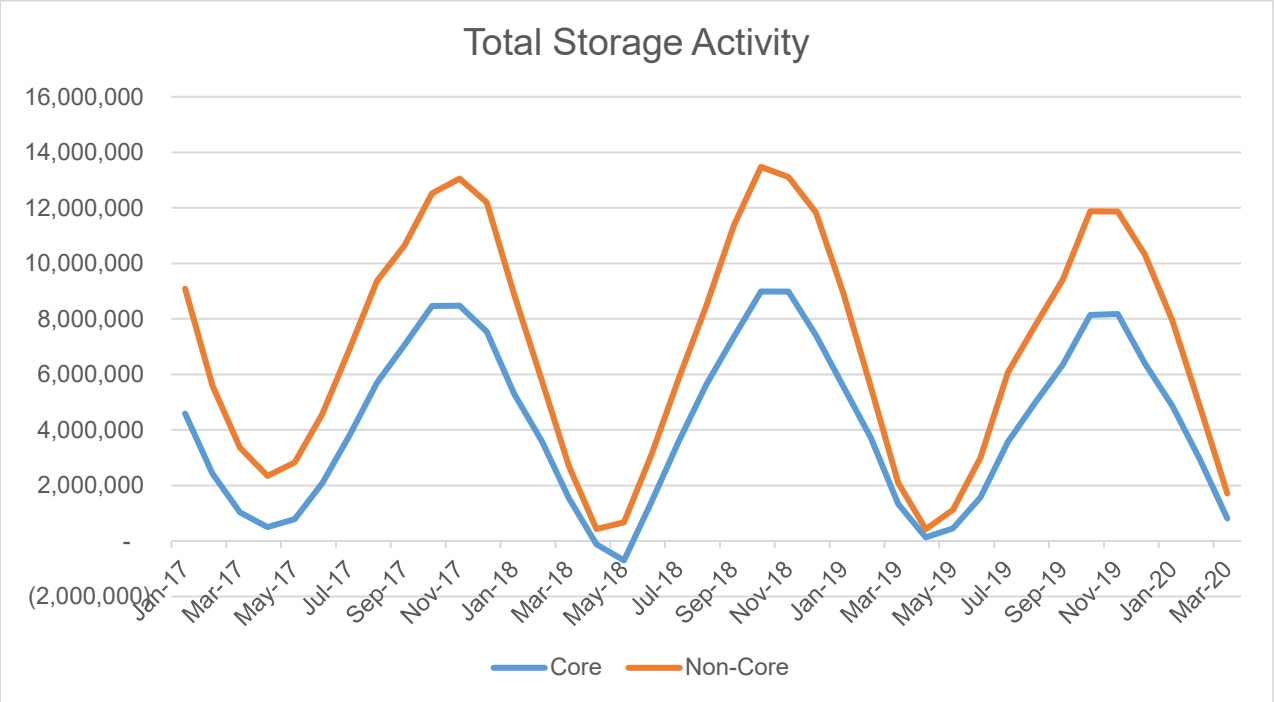
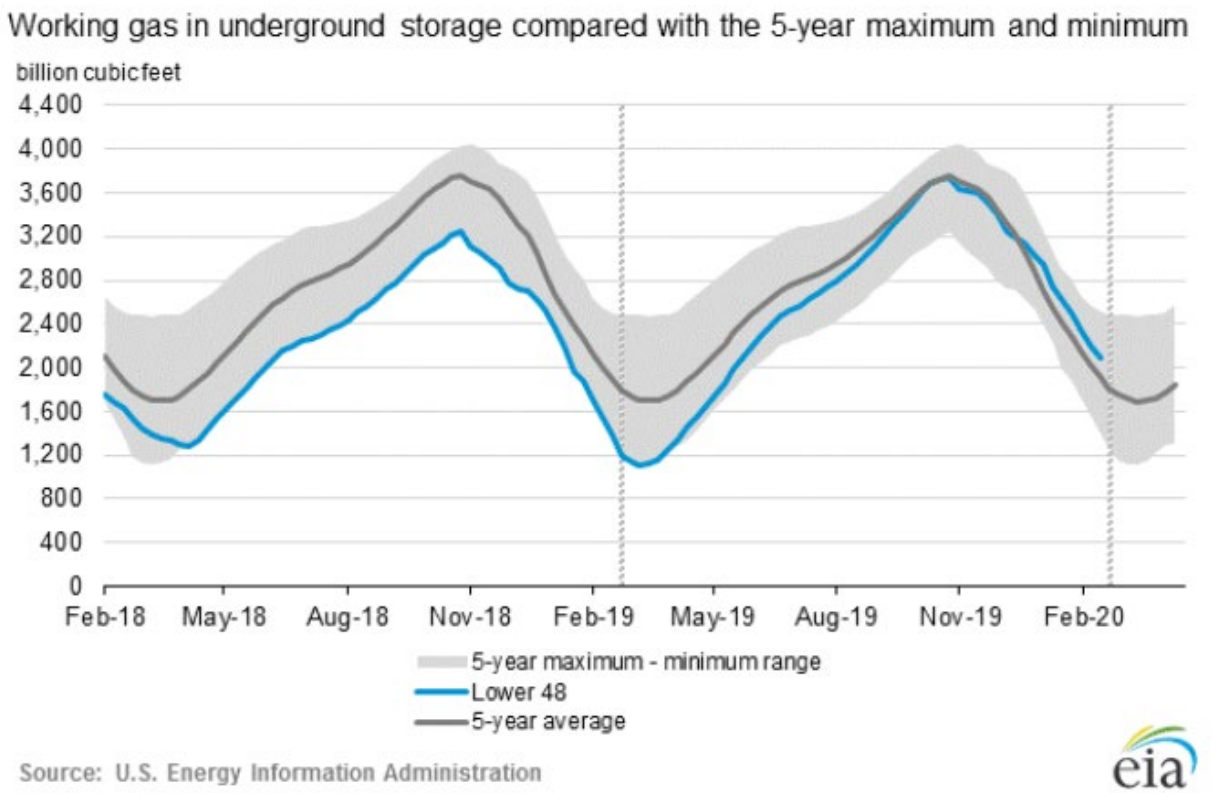


Figure 5 EIA Five Year Storage Activity



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2015 through 2019. The dashed vertical lines indicate current and year-ago weekly periods.

Challenges associated with Gas Storage

Gas storage follows a seasonal injection and withdrawal pattern throughout the country. One risk associated with gas storage is this pattern, when, as in the 2018/2019 heating season, high HDD days occurred when the gas had been withdrawn from the field, resulting in a lower deliverability pressure to meet demand.

Gas storage is also subject to unlikely risks of storage failure. In October 2015, the Aliso Canyon storage facility, owned by SoCal Gas in California, was taken offline due to a subsurface well gas leak, occurring 500 feet below the surface, caused by a damaged well casing.[5] The leak was impactful due to the location of Aliso Canyon in highly populated Los Angeles County, and prompted the temporary relocation of thousands of

[5] https://www.caloes.ca.gov/ICESite/Pages/Aliso-Canyon.aspx

residents of the Porter Ranch subdivision.[6] This leak prompted significant response among gas storage operators in the country. Pursuant to federal regulations, NorthWestern Gas Transmission has developed and implemented an Underground Storage Integrity Management Plan to bolster its storage fields' reliability, safety, and integrity.

[6] https://www.sandiegouniontribune.com/business/energy-green/sd-fi-aliso-restart-20161101-story.html

CHAPTER 5: PRICING

Natural gas has become abundant with advances in hydraulic fracturing technology, the so called “shale revolution”. Production from multiple shale basins within the United States and Canada has created a surplus of natural gas in North America. The EIA’s short-term energy outlook predicts that dry natural gas production in the United States will average 91 billion cubic feet per day (“Bcf/d”) in 2019, and the Canadian government anticipated that Canadian production will be greater than 16 Bcf/d. The increased production has led to a decrease in the commodity price, an increase in domestic consumption, and an increase in natural gas exports through pipelines and liquefied natural gas (“LNG”) terminals.

Prior to the shale gas revolution, natural gas was vulnerable to extreme price increases. The NYMEX price went from $6 per Million British Thermal Units (“MMBtu”) in 2005 to greater than $15 per MMBtu following Hurricane Katrina. Similarly, when the price of crude oil rose to $146 per barrel in 2008, natural gas escalated from $6 per MMBtu to $13 per MMBtu. However, with all of the supply and record daily production, prices have not escalated as quickly. Last year, when the winter began with the storage levels below normal and a cold winter anticipated, the highest that NYMEX traded was $4.83 MMBtu.

Increased demand has resulted from the shale revolution, both in the form of domestic consumption and exports to foreign markets in the form of LNG and by way of pipeline. The EIA reports that average daily consumption has increased from 60 Bcf/d in 2001 to 82 Bcf/d in 2018. The largest increase in consumption is from natural gas-fired power generation. Cheniere Energy’s Sabine Pass exported the first shipment of LNG from the United States in February 2016. Since that time, exports are almost 8 Bcf/d through LNG shipments to South America, Asia, and Europe. Exports to Mexico are also near 4 Bcf/d.

The EIA’s short-term energy outlook predicts that dry natural gas production in the United States will average 92.5 Bcf/d in 2020. The 1.5 Bcf/d growth in production is greater than the expected .2 Bcf/d growth in demand. This additional supply will help keep prices low

in the near term while supporting increased exports and consumption. Despite this outlook, the trend of average price decrease does not insulate the commodity market from volatility in short-term price changes that result from weather events or other regional disruptions in supply.

Canada

The Government of Canada reported that natural gas production would be around 16 Bcf/d in 2019 and of that supply Alberta will produce 10.5 Bcf/d. The majority of Alberta's production is from the Western Canadian Sedimentary Basin ("WCSB") in northwestern Alberta. With an average consumption of 4.5 Bcf/d, Alberta exports over half of its production.

The WCSB is a formation in western Canada covering parts of Manitoba, Saskatchewan, British Columbia, Alberta, and the Northwest Territories. It is primarily for oil exploration with many of the oil wells producing natural gas as a by-product. This associated natural gas production is produced even if the price of natural gas is low because the economics of the wells are based on the price of crude oil. This is significantly different than conventional gas wells whose economics rely only on the price of natural gas. As a result, Canadian natural gas competes with U.S. gas supplies and can be subject to takeaway pipeline constraint, further driving down prices.

TransCanada's Nova Gas Transmission Ltd. ("NGTL") pipeline takes Alberta's WCSB production and delivers supply to TransCanada Mainline Pipeline, Foothills Pipelines, and other borders, such as Carway. TransCanada Mainline transports supply to Canadian and U.S. markets east of Alberta. Foothills British Columbia Pipeline delivers natural gas to the U.S. border at Kingsgate, which helps serve the California, Oregon, and Washington markets. Foothills Saskatchewan Pipeline exports gas to TransCanada's Northern Border Pipeline, which serves the U.S. Midwest markets.

Canada's export markets have been reduced with increased U.S. shale production. TransCanada's Mainline used to supply a majority of the U.S. East Coast natural gas.

The Marcellus formation, located in Pennsylvania, now produces 18 Bcf/d and has reduced the need for TransCanada's Mainline supply. Foothills Saskatchewan is designed to deliver 2.5 Bcf/d of Alberta natural gas to Northern Border, but in 2019 half of that supply will come from the Bakken formation in North Dakota. The increase in renewables in California, Oregon, and Washington have also reduced the demand for Alberta supply. The reduced market for Canadian supply has depressed the price of Alberta natural gas.

Nearly 70% of NorthWestern's Montana annual supply is delivered from Alberta. The majority of the Canadian supply is delivered on TransCanada's NGTL system, which enters Montana at Carway. The remaining supplies are delivered from conventional gas wells through an interconnection at Aden.

The decline in the price of natural gas has made it difficult for companies that own and operate conventional natural gas wells because the production from horizontal drilling is much higher and is accompanied by higher value oil. An example of this is Trident Exploration, an Alberta-based natural gas company that filed for bankruptcy in early May, abandoning 4,700 wells.

Conventional natural gas wells represent a majority of NorthWestern's on-system and Aden supply and are vital in NorthWestern's ability to fulfill our customers' peak day demands. Without a long-term solution for conventional natural gas, there is a significant risk of these supplies being shut in.

Rockies

There was a time that Rockies dry gas production from western Colorado, western Wyoming, and eastern Utah led the nation in production growth. Rockies supply was used to serve markets in the mid-continent and West Coast. This abundant supply led to regional takeaway pipeline constraints. This resulted in the construction of the Rockies Express Pipeline ("REX"), which transported Rockies gas to Ohio and TransCanada's Bison Pipeline, which then transported the gas to an interconnection on Northern Border

Pipeline. REX was brought online in 2008 and has been subsequently expanded, as discussed below. Bison pipeline was brought online in 2011.

As the shale revolution unfolded, gas producers moved away from the Rockies to focus on larger shale producing basins such as the Marcellus, Haynesville, Permian, Bakken, Niobrara, Denver-Julesberg ("D-J"), and others. The production in the Marcellus region became so prolific that the REX pipeline was turned around and brought Marcellus gas back to the Rockies. REX now has a capacity of 4.4 Bcf/d. Prolific production from western Canada and the Bakken formation has left the Bison Pipeline nearly empty, and TransCanada has been exploring the possibility of reversing the flow of that pipeline as well to transport Bakken and AECO gas to the Cheyenne Hub. The West Coast has also reduced its need of Rockies gas due to expansion of renewable energy initiatives.

Shale formations in the Niobrara located primarily in eastern Colorado and eastern Wyoming have helped offset much of the decline in dry gas production. The EIA reports that the Niobrara and D-J basins produce over 5.5 Bcf/d, and the D-J basin produces 2.3 Bcf/d. The dry gas is associated with unconventional oil production. Total Rockies production is greater than 9 Bcf/d compared to 4 Bcf/d of demand.

Production in the DJ Basin in Colorado is expected to face challenges in 2020 and beyond. Colorado Governor Jared Polis's (D) signing of Senate Bill ("SB") 181 in April 2019 gives local control over the time, place, manner, and method of oil and gas exploration and production companies to local authorities. This increased authority for local communities may lead to fracking bans and make the permitting process more difficult. Permitting activity has fallen in many of the counties in Colorado since the passing of SB 181, and Adams County has halted new licenses for six months. Leading up to SB 181, many large oil and gas exploration and production companies obtained drilling permits in advance and will be working off the backlog of drilling permits.

The combination of the limited market for Rockies natural gas, but lower production anticipated in the future has kept the futures price of the Rockies natural gas flat for the

next couple of years. However, the Rockies supply is currently the most expensive source for NorthWestern Energy's customers and is used only in peaking conditions. The figure below depicts select gas trading hubs in Canada and the United States. The chart directly below that details the settle prices for the two major hubs where NorthWestern sources its supply, AECO and CIG Rockies, versus the U.S. Henry Hub benchmark price. This chart shows how much lower the AECO and Rockies prices are from NYMEX. It further shows the decrease in AECO prices from the Canadian oversupply created by the shale revolution, and how AECO was somewhat isolated from recent seasonal price spikes.

Figure 6 Map of Select Gas Trading Hubs

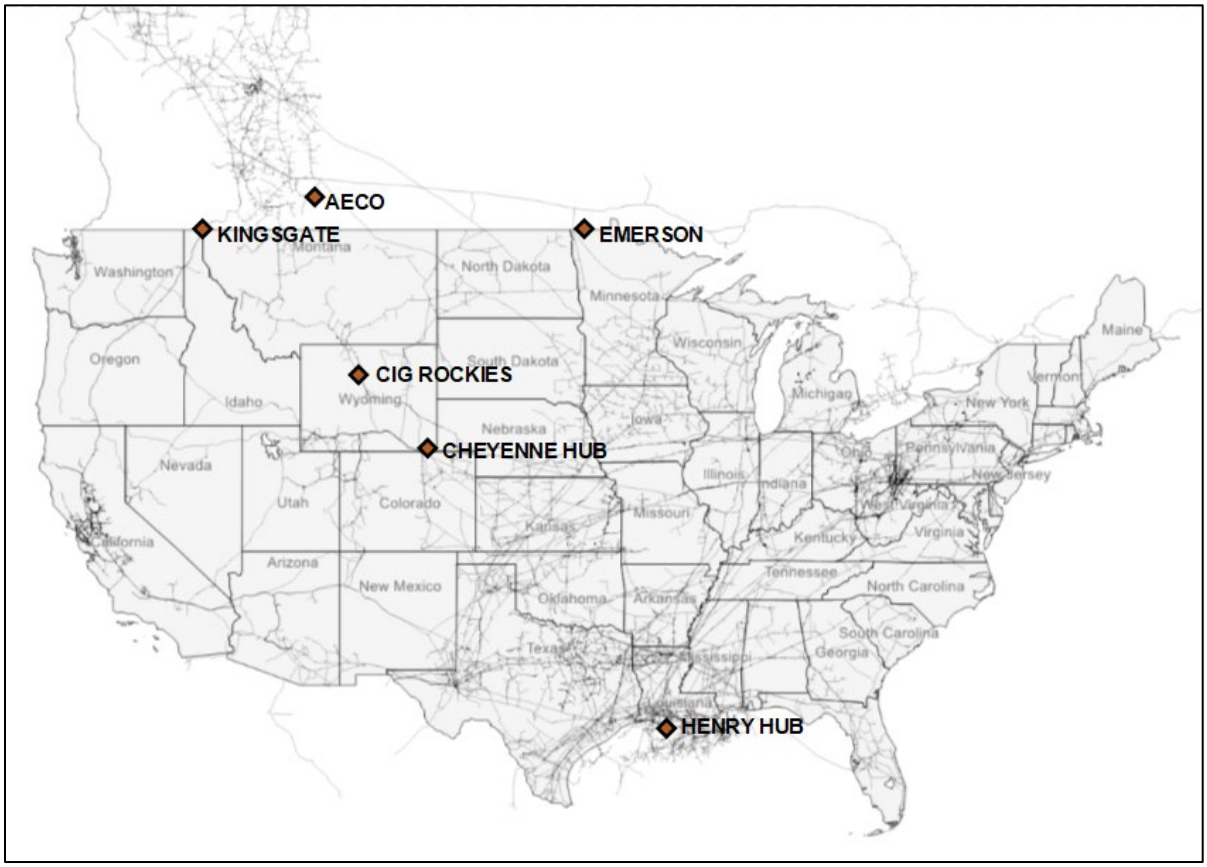
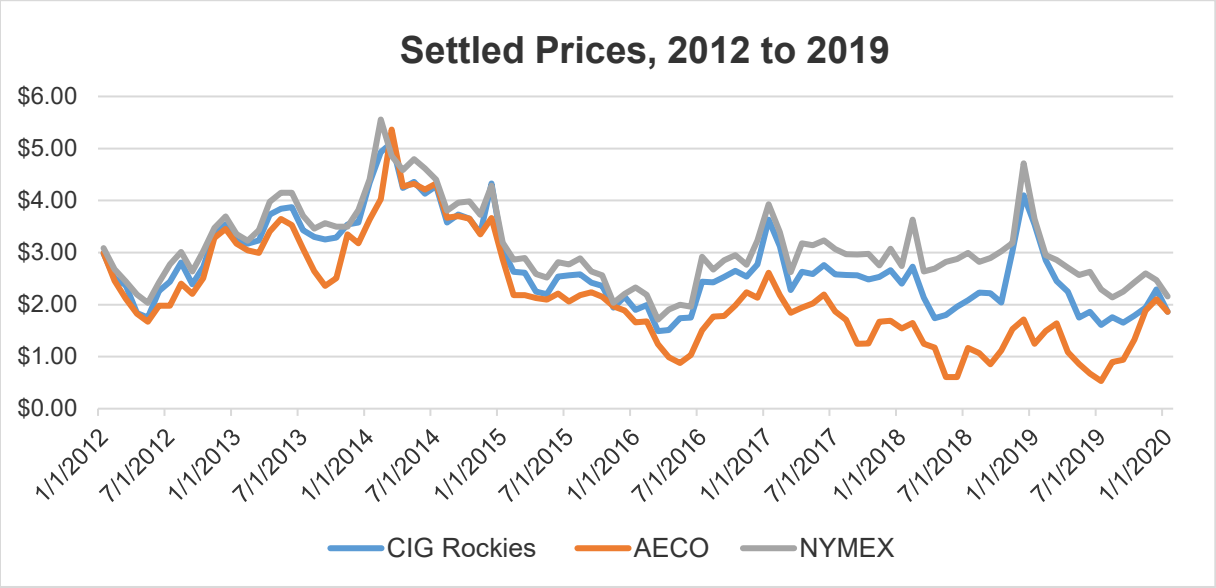


Chart 9 Settled Prices



Planning Criteria

Regarding the use of modeling for portfolio planning and natural gas procurement, the *Guidelines* state:

1. The utility's natural gas supply portfolio planning and resource procurement and decision-making processes should incorporate cost-effective computer modeling and analyses.

2. The modeling employed by the utility should contribute to prudent and informed judgments in the portfolio planning and resource acquisition process.[7]

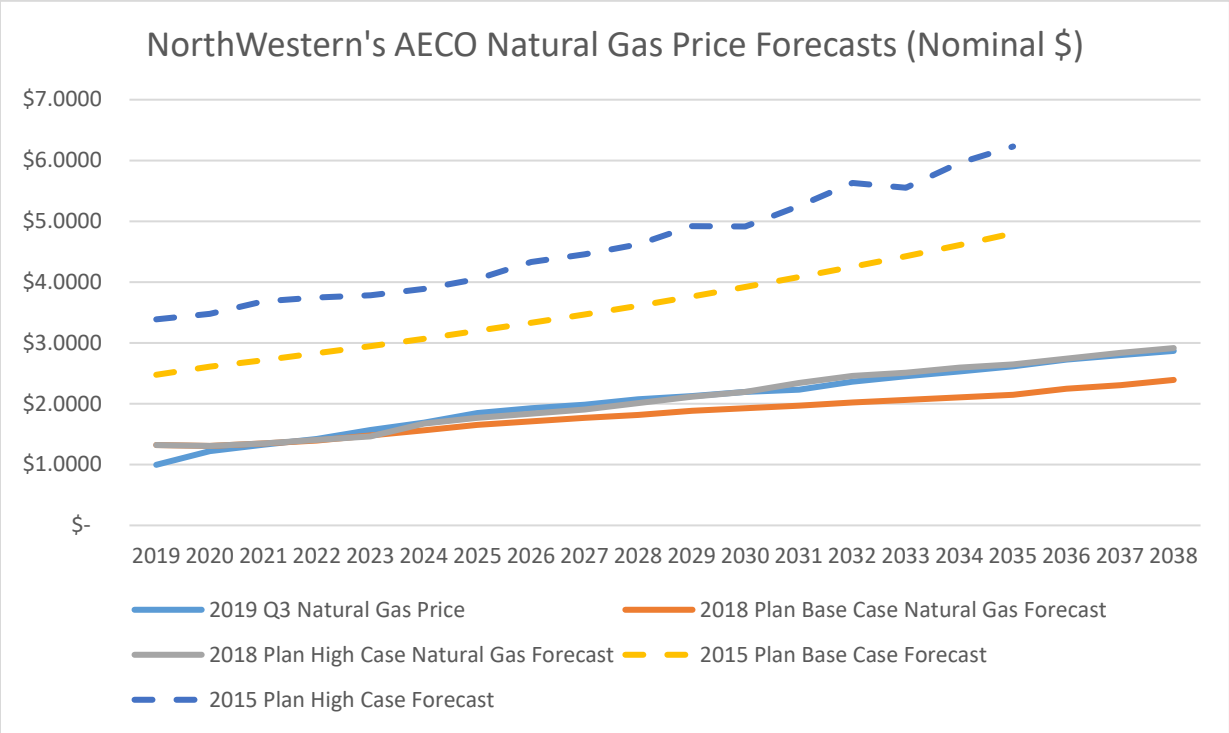
The nature of NorthWestern's natural gas supply has many characteristics that reduce the amount and type of modeling that must be performed as NorthWestern carries out the Energy Supply function. Two key characteristics associated with meeting Energy Supply's customer obligations are natural gas load growth stability and natural gas market liquidity.

[7] Order 6683d, p. 5.

the base case natural gas price forecast developed for the 2019 Electricity Supply Resource Procurement Plan ("ESRPP") is based on a 15 calendar day average of available forward price strips at AECO from July 1, 2018 through July 15, 2018. This averaged price strip was used through December 31, 2021, when the power market was deemed illiquid. Beginning January 1, 2022, prices for gas were escalated using the U.S. EIA's 2018 Annual Energy Outlook for natural gas prices.

In order to consider deviations from a base case forecast, a high natural gas price case was developed for the 2015 and 2019 ESRPP. For the 2019 ESRPP, the high gas price case used the Northwest Power and Conservation Council's 7th Power Plan Midterm Assessment[8] "High" forecast made public in January 2019. Chart 10 below shows the natural gas price forecasts from the 2015 and 2019 ESRPPs and 2019 Q1 for comparison purposes.

Chart 10 AECO Delivered Price Forecast



[8]https://www.nwcouncil.org/sites/default/files/7th%20Plan%20Midterm%20Assessment%20Final%20Cncl%20Doc%20%232019-3.pdf

Although long-term natural gas forecasts have inherent limitations, the information shown above provides NorthWestern another set of reference price trajectories to consider in its resource acquisition decision-making process. Natural gas price assumptions are important for natural gas acquisition planning. However, both long- and short-term uncertainties make over-reliance on these tools problematic if not considered in the context in which they were created.

NorthWestern understands that its acquisition strategies must take uncertainty into account. In fact, short-term uncertainties and price volatility are factors that argue strongly for a systematic purchasing approach such as the one NorthWestern describes in Chapter 8. Actual resource acquisition decisions, while utilizing some perspectives from long-term forecasts, are based more on short-term fundamentals.

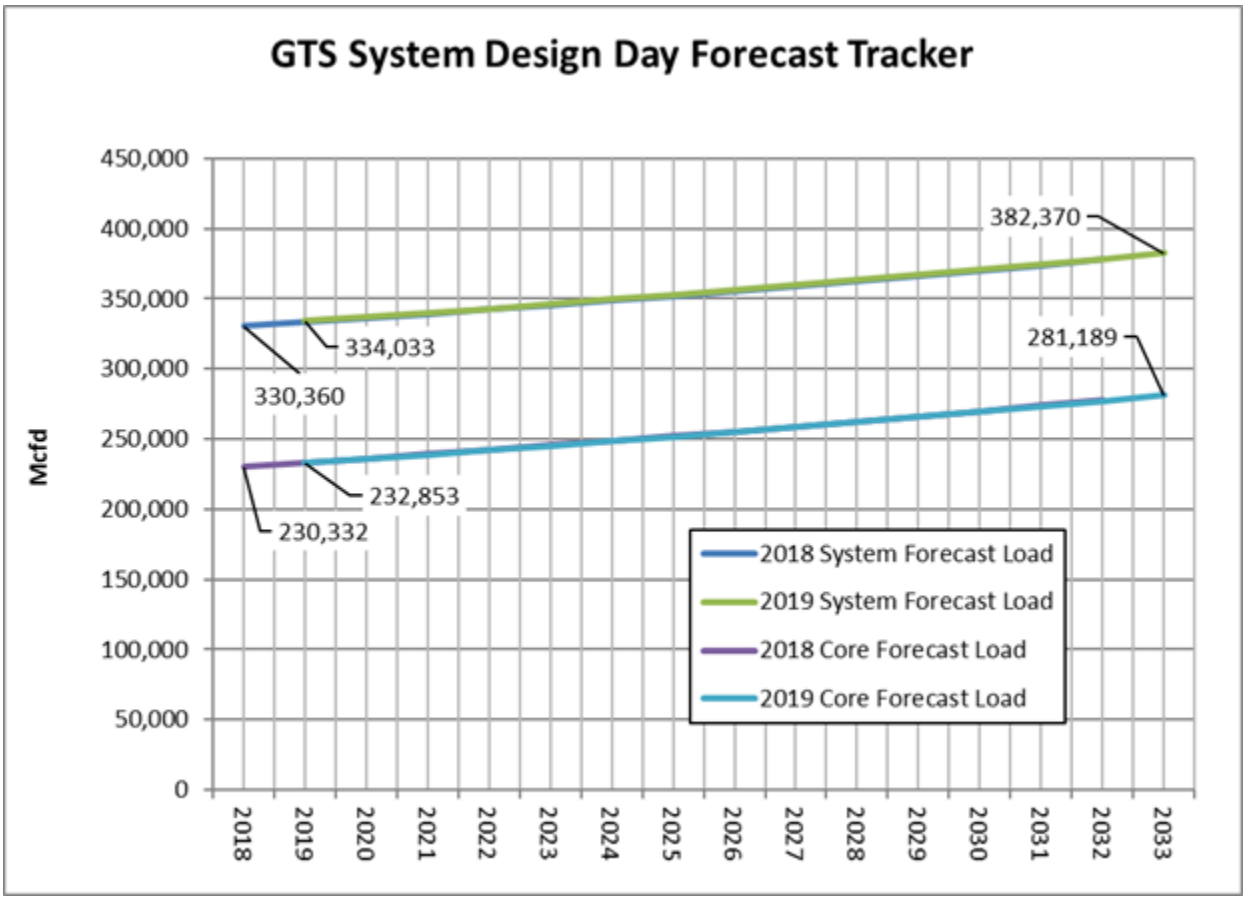
NorthWestern also uses natural gas forward market prices to observe the prices at which market participants are willing to transact for delivery in future months. This provides information, but only at a particular point in time. Forward prices augment the information provided in the longer-term fundamental natural gas.

CHAPTER 6. CUSTOMER LOAD GROWTH AND DSM

Core load growth on NorthWestern's system occurs through additional customers connecting to the system. The chart below shows forecasted Design Day needs over the next 12 years based on the estimated load growth.

The Core Design Day flow is estimated annually as additional customer numbers, customer usage, and system performance is acquired from NorthWestern Transmission.

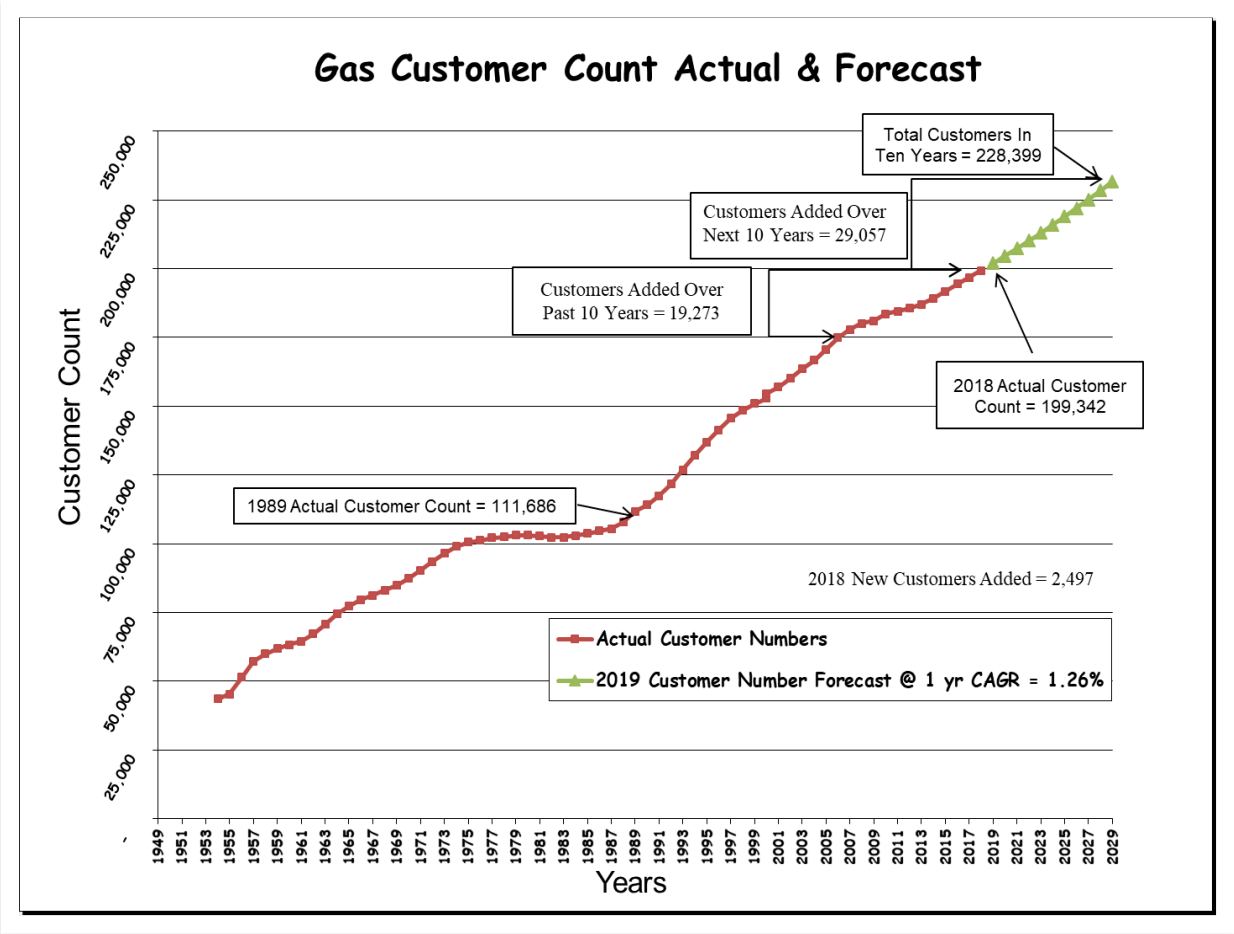
Chart 11 System Growth



a. CUSTOMER GROWTH

Below is a chart depicting actual and forecasted gas customers from 1953 – 2029:

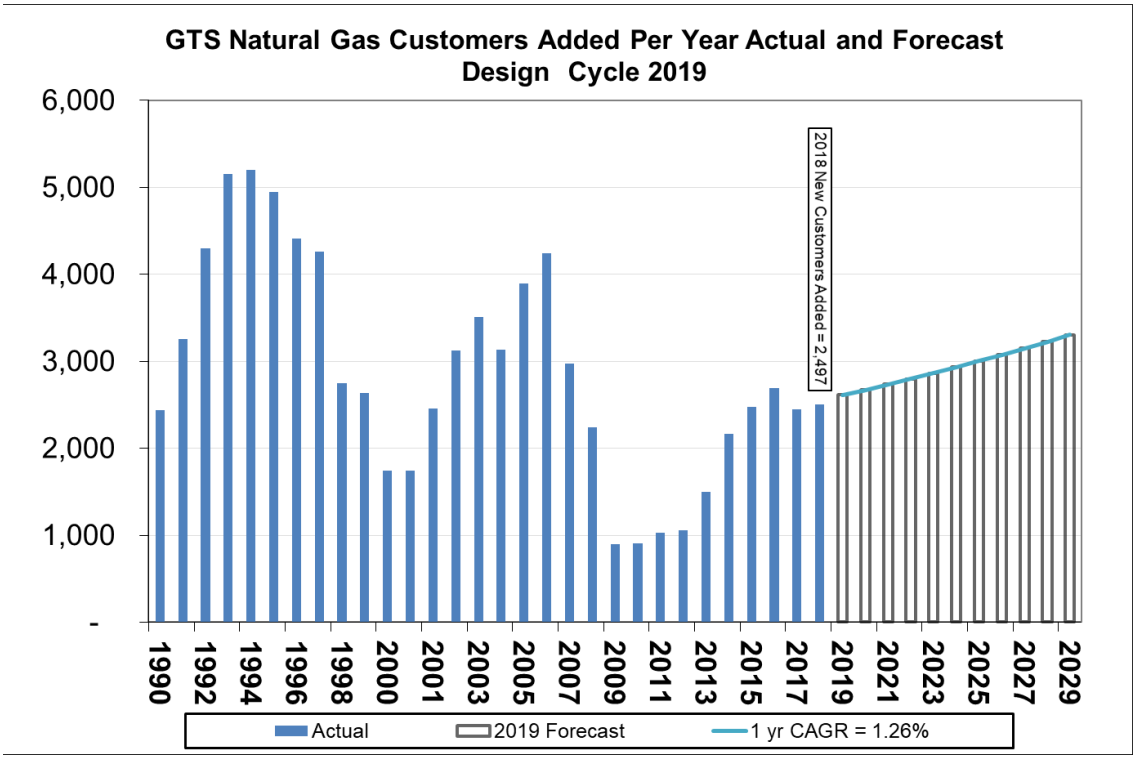
Chart 12 Core Customer Count



This chart shows that the slope of forecasted customer growth is steady and that customer additions over the next ten years is predicted to be almost 1.5 times what we have seen in the previous ten years. This is mostly due to low customer growth from 2009 - 2013 when economic conditions in America were less favorable than today. CAGR stands for Compound Annual Growth Rate.

Below are the numbers of customers added each year since 1990 as well as the forecasted growth through 2029:

Chart 13 Gas Customer Additions



The weather-normalized load forecast does not indicate appreciable load growth in the short term. However, while annual loads have been (and are expected to be) relatively flat, growth in the number of customers on the system adds to the peak day requirement.

Even though NorthWestern uses a 1.26% CAGR, its customer growth does not occur steadily across its entire system. Below is a table showing the distribution of this growth.

Table 6 Customer Growth

Location	Percent of System Load	Percent of Current Growth
Bozeman	27%	53%
Butte	10%	2%
Great Falls	16%	1%
Havre	6%	1.7%
Helena	11%	7.6%
Kalispell	10%	15.9%
Lewistown	2%	<1%
Missoula	18%	19%

b. DEMAND SIDE MANAGEMENT

NorthWestern evaluates Demand Side Management ("DSM") opportunities for cost-effectiveness with natural gas avoided costs as a primary determinant. Consistent with previous years, NorthWestern uses the Total Resource Cost ("TRC") test to evaluate DSM cost-effectiveness. The TRC test is a ratio of benefits (the avoided cost value of energy saved) to the total program costs (utility program implementation costs and estimated customer costs). Typically, a TRC benefit-to-cost ratio of 1.0 or greater indicates that a DSM measure or program is cost-effective.

NorthWestern has used a 10% factor as a surrogate to recognize DSM-related environmental benefits. The inclusion of this environmental benefits factor resulted in a TRC benefit-to-cost ratio of 0.90 as the cost-effectiveness benchmark NorthWestern has used for natural gas DSM in the 2004-2005 through 2019-2020 tracker years.

Since the 2012 Plan, natural gas avoided costs have generally declined, and as a result, NorthWestern has discontinued many of the Efficiency Plus (E+) natural gas DSM programs previously offered. However, NorthWestern will continue to evaluate program opportunities to determine if cost-effective stand-alone natural gas programs can be designed and implemented.

Funding for E+ natural gas DSM program activities comes primarily from natural gas supply rates. Currently, these supply rates fund NorthWestern's E+ Natural Gas Business Partners Program, detailed below. Other natural gas DSM activities that complement and add energy savings to NorthWestern's natural gas DSM effort include Northwest Energy Efficiency Alliance ("NEEA") initiatives (funded by electric supply rates) and Universal System Benefits ("USB") funded activities including the E+ Free Weatherization Program, the E+ Energy Audit for the Home or Business Program, and the Building Operator Certification Program.

NorthWestern continues to offer a customized approach to acquiring commercial sector energy efficiency by contracting with firms to provide services in support of the E+ Natural Gas Business Partners Program, a custom incentive program where each project is evaluated on its specific merits. NorthWestern currently contracts with six firms concentrating on the commercial and small industrial sectors:

- CTA Architects Engineers
- Energy Resource Management, Inc. ("ERM")
- McKinstry Essention
- CLEAResult Consulting, Inc.
- National Center for Appropriate Technology ("NCAT")
- Associated Construction Engineers ("ACE")

NorthWestern compensates these contractors on a performance basis, with payment based on a percentage of the energy efficiency resource value of each individual project that is completed with the contractor's involvement.

These contractors are supported by NorthWestern's program implementation contractor, DNV GL, whose employees have responsibility for communicating information about E+ programs to commercial/small industrial customers in an effort to identify, qualify, and cultivate energy saving projects for follow-up by the contractors. Services provided by these contractors include marketing to architect/engineering firms and trade/industry associations in Montana, direct contact with candidate businesses with energy savings potential, surveys and assessments of buildings and facilities, technical assistance for building owners, assistance with required engineering analysis and modeling, and assistance to customers with forms, contracts, and other paperwork used in and necessary for participation in the program.

NEEA is a regional non-profit organization supported by electric utilities, public benefits administrators, state governments, public interest groups, and energy efficiency industry representatives. Through regional leveraging, NEEA encourages "market transformation" or the development and adoption of energy efficient products and

services in Montana, Washington, Idaho, and Oregon. NEEA's regional market transformation activities target the residential, commercial, industrial, and agricultural sectors. NorthWestern funding for NEEA comes from electric supply DSM. Natural gas supply DSM funding is not used for NEEA, but natural gas savings have resulted from NEEA. For example, the NEEA energy code initiatives for residential single-family and multi-family homes and commercial facilities resulted in natural gas savings.

The following table summarizes the reported natural gas DSM savings for the 2018 – 2019 tracker period. As previously mentioned, natural gas DSM offerings are evaluated for cost effectiveness where natural gas avoided costs are a primary determinant. When natural gas avoided costs are depressed, the likelihood of a natural gas DSM measure or program being cost effective lessens, since natural gas DSM cost effectiveness is calculated using the TRC test as described above.

Table 7 2018 – 2019 DSM Adoption

Programs	Annualized Energy Savings[1]		
	USB	Natural Gas Supply DSM	Total
	Dkt	Dkt	Dkt
E+ Energy Audit for the Home or Business (Natural Gas)	10,112	-	10,112
E+ Business Partners Program (Natural Gas)	-	-	-
Builder Operator Certification	567	-	567
Northwest Energy Efficiency Alliance (NEEA)	-	50,605	50,605
E+ Free Weatherization Program & Fuel Switch	12,162	-	12,162
E+ Residential EX Gas Rebate Program	-	3,973	3,973
E+ Commercial EX Gas Rebate Program	-	653	653
Totals	22,841	55,231	78,072

Note 1: Annualized energy savings are based on 12 months of actual savings (July - June).

USB + DSM savings acquired in 2018-19 Tracker Period (Dkt):	78,072

CHAPTER 7: SYSTEM EXPANSION OPTIONS

As discussed above, NorthWestern will face a supply shortfall based upon the natural decline of gas production and reserves and will need to increase its supply to meet forecasted Core customer demand. NorthWestern also must ensure that it has adequate physical system capacity to move this increased supply to its customers. It must fill this shortfall to meet the needs of its Core customers. The following section details available strategies to meet this shortfall, presented at a high level. The NorthWestern Gas Transmission system is at or very near capacity to serve its peak demand. What does that mean? There may be supply available at either a storage facility or at an interconnection, but there may not be any pipeline capacity available to move the gas to where our customers need it on the system. Importantly, any specific project identified to meet a capacity shortfall will be evaluated carefully against alternatives (including DSM) to ensure the best solution is selected to meet the capacity need.

Expansion of Gas System

The next 10-year planning horizon brings many of NorthWestern's compressor facilities to the limits of not only their horsepower, but their pipeline capacity within the compressor yards as well. The yard piping limitations make it difficult and expensive to add capacity at Meriwether Road, Mainline #1, and Mainline #3. It is difficult to reconfigure or expand a compressor station within an existing yard. Increased demand requires adding or changing of yard piping to stations that must remain operational. NorthWestern must make a substantial capital investment in its transmission and storage assets to meet the needs of its customers over the next ten years. This will result in an additional 40 million cubic feet per day ("MMcf/d") capacity increase.

Expansion of Pipeline Interconnections

There are three potential sources of increased deliverability and supply from pipeline interconnections: The North, the West, and the South.

The North

There are plans in place to increase the amount of contracted supply into the NorthWestern system from NGTL at Carway, from 109 MMcf/d to 151 MMcf/d. To increase capacity beyond this limit will require infrastructure expansion on the NGTL system and the NorthWest Pipeline system.

There are a few infrastructure expansion options that could bring additional gas in from the north, all of which assume the availability of capacity on the NGTL system. The first and most obvious choice is to continue building capacity at the Carway interconnection. This includes installing compression in Alberta and/or Montana as well as significant pipeline looping on the Carway line, the Cut Bank to Morel line, and replacement of the Morel to Butte line. Additionally, significant yard piping and compression work will need to be done at Meriwether Road, Mainline #1, and Mainline #3.

The West

Currently NorthWestern does not have a supply source at the west end of its system. During the early late 1990s, The Montana Power Company, the predecessor to NorthWestern, was faced with a choice of building additional capacity on the Carway and Kalispell lines or looked at a solution called the West Feed Project. The West Feed Project would take supplies from the NGTL system west of Carway at Elko, British Columbia. The pipeline would feed into Kalispell from the north and west and then continue south to Missoula. The West Feed would tie into the existing system at Kalispell and Missoula, effectively looping the Kalispell and Missoula lines for capacity and reliability. NorthWestern has similarly investigated this option and found that it is not the preferred approach due to cost and time constraints, though it would provide an opportunity to increase load growth along the proposed pipeline route. This project would also increase reliability to Missoula, Kalispell, and the western portion of the GTS system. This proposal would provide capacity increases during design day conditions since two significant load centers, Kalispell and Missoula, are taken off the Cut Bank to Morel pipeline, thus eliminating the need for expensive pipeline looping, compression, and yard piping modifications.

The Loomis line could also be used to bring in additional supplies. This line is capable of 40 MMcf/d with the addition of compression at Station 100. The line is a logical choice to feed new and existing third-party customers in the Great Falls area as well as offset declining production from the Havre area.

The South

CIG, an interstate pipeline owned by Kinder Morgan, is also a likely candidate as a solution to growth and reliability on the NorthWestern system, to meet the growth needs of Butte, Bozeman, and east to Billings. As mentioned above, NorthWestern Core customers currently contract for 15,000 Dth/d a day of winter only capacity delivered at CIG Grizzly, while Non-Core customers contract for 25,000 Dth/d at CIG Grizzly. NorthWestern could increase deliverability at this interconnect to meet future system need. The final interconnection is with Kinder Morgan on their CIG system at Elk Basin, Wyoming. This interconnection is subscribed at 20 MMcf/d, and CIG estimates the available capacity of the Wind River Lateral at 80 MMcf/d or 60 MMcf/d more than we currently take. Moving the additional 60 MMcf/d would take a significant infrastructure expansion on NorthWestern's system.

Expansion of Gas Storage Inventory

Gas storage is currently fully contracted at 169 MMcf/d by the Core and Non-Core customers. There is a need for the 10-year Core plan to increase the delivery capacity at Cobb by about 8 MMcf/d by increasing the cushion gas slightly, i.e. 0.6 Bcf. This is intended to be a short-term increase, and the cushion gas would be used after the TransCanada capacity enhancements are completed. The reason this is intended to be a short-term fix is there is no pipeline capacity available to move the “extra” Cobb 8 MMcf/d to a market. This 8 MMcf/d does have potential with infrastructure improvements.

There is a need to increase the Box Elder delivery by 10 MMcf/d by increasing the cushion gas by nearly 1.9 Bcf and making some piping and operations changes at Blaine County #1. This could be challenging from a regulatory perspective using Havre Pipeline

Company compression and piping on NorthWestern Gas Transmission system. The storage gas deliverability increases discussed are needed in the 10-year Core plan and are intended to be a long-term solution since there is sufficient pipeline capacity to move this gas into the Havre and Great Falls markets as production declines are experienced in the Havre area.

NorthWestern continues to evaluate the expansion potential at Dry Creek. A number of projects are underway to improve the pipeline gathering system and compression at this facility. Potential projects are under consideration to improve well deliverability from a downhole perspective.

System Expansion related to Electric Generation

Electric generation is considered Non-Core load on the NorthWestern Gas Transmission and Storage system. As mentioned in its 2019 ESRPP,[9] NorthWestern is short electric capacity and will need capacity resources in the near future to meet its needs. Some of this capacity may occur at DGGS. This, combined with existing facilities at Basin Creek, may significantly increase the demand for natural gas deliveries in the Butte/Anaconda area. This area is located in the middle of the NorthWestern Gas Transmission system, far away from potential supplies, and may require investment on the NorthWestern Gas Transmission and Storage system in order to deliver additional natural gas to this location.

[9] Docket No. 2019.08.052

CHAPTER 8: PORTFOLIO ADDITIONS STRATEGY

This Plan will guide purchasing activities focusing on having adequate low cost supply to meet Core customer needs in the upcoming winter heating season and those to follow. The Plan provides guidance, structure, and discipline to the natural gas supply procurement function. With this procurement timeframe stabilized and functioning properly, attention should be focused on long-term hedging strategies, meaning locking in a portion of each year's supply for a long period of time at known fixed prices. The goal of short-term hedging is to dampen volatility, but it does not provide protection against overall market price trends and movements. Long-term price volatility mitigation, meaning transactions covering anywhere from five to 30 years, provides protection against overall upward price movements or trends by locking in future prices based on market conditions known at the time the transactions are entered into. Such long-term hedging is in addition to price stability already provided by short-term hedging. In building a portfolio to meet the needs of its Core customers, NorthWestern has determined that ownership of natural gas reserves and production at appropriate prices is the preferred form of long-term hedging, and it will continue to pursue reasonable opportunities within the Montana PSC-approved regulatory structure.

NorthWestern has completed three major gas facility and reserve purchases over the last ten years to manage the supply needs of its Core customers. The table below summarizes those purchases.

Table 8 NorthWestern Historical Gas Production and Reserve Acquisitions

Field Name	Year Purchased	Asset Description
Battle Creek	2010	Interest in 170 wells, gathering system and compressor site, 8.4 BCF of gas reserves
Bear Paw - NFR	2012	Interest in 475 wells. Two gas compression stations and associated gathering systems that deliver gas to Havre Pipeline are included. Interests in nine producing oil wells acquired (Oil wells were sold after closing). 13.4 BCF of gas reserves
South Bear Paw - Devon	2013	Interest in 914 wells. 88 miles gas transmission pipeline, 576 miles gathering lines, 21 compressors. 82.22% membership interest in Havre Pipeline. 63.0 BCF of gas reserves
Black Hills Energy Producers	2015	Interest in 263 wells, 25% interest in Lodge Creek, LLC and Willow Creek, LLC pipelines which gave NWE 100% interest in both pipelines. 1.22 BCF reserves, 6700 net bbls
Various	2015 - 2018	Consolidation of working interests, gas reserves and royalty interest purchases, Willbanks, Supreme Petroleum, MTWY field

NorthWestern strives to streamline its operational costs while maintaining safe and reliable systems, so, from time to time it will make small purchases within the fields it owns and operates to be consistent with this goal. This could include, for example, buying out a working interest owner in a well within its fields to reduce administrative costs.

Ownership of Natural Gas Reserves and Production

As pressures on usage and supply change over time, a sound supply strategy will include limiting the upside risk associated with unforeseen future changes while taking advantage of the current low market prices. Maintaining an appropriate balance between long- and short-term hedging will provide customers with stable, affordable pricing.

NorthWestern's interests in natural gas production are in mature facilities. In mature production fields, the production from the wells decreases year over year unless investments in additional development are made over time. NorthWestern is working with other partners whose expertise is natural gas development that could assist in cost-effective development and minimizing risk to customers. The timeliness of cost-effective development and limited opportunities have produced very little to offset the declining production in today's market.

In order to maintain an appropriate mix of long- and short-term natural gas supply positons, NorthWestern must continue to look for prudent purchase opportunities and supply strategies. This section addresses the process which NorthWestern will follow to evaluate, purchase, and recover these prudent purchase opportunities, and it also addresses the Commission's concerns identified in the most recent natural gas rate review. These concerns included the loss of opportunity to purchase from the market during the period after NorthWestern makes purchases. In the years since NorthWestern has added natural gas assets to its portfolio, natural gas prices have continued to decline. Coupled with the market price decline, the price Core customers pay for natural gas from NorthWestern's production assets has decreased from approximately $1.04 per thousand cubic feet ("Mcf") in the ground for assets purchased in 2010 through 2013, to $0.367 per Mcf for assets purchased in 2015, and to $0.124 for assets purchased in 2018. The continued low natural gas prices present an asymmetrical risk when purchasing producing assets. Under this asymmetrical risk, the magnitude of the downside price consequences on Core customers is more significant than the cost of price mitigation. Based on data reviewed by NorthWestern, it believes that the impact of increases to potential future gas prices will exceed benefits from continued price decreases.

A substantial volume of natural gas is produced in close proximity to NorthWestern's transmission pipeline system in Montana. NorthWestern also has additional pipeline interconnections with NOVA, Pine Cliff, Havre Pipeline, CIG, and WBI that provide access to natural gas reserves and production in Wyoming, Alberta, Saskatchewan, and British Columbia.

Prior to the 2016 natural gas rate review, NorthWestern analyzed a number of properties and extended several formal offers, with some accepted and others rejected. Offers that were accepted have been added to rate base. The natural gas acquisition process includes short timelines to submit bids, acquire the assets, and complete the closing of the transactions.

In the summer of 2010, NorthWestern successfully acquired a majority interest in the Battle Creek Natural Gas Field located in north central Montana. In the summer of 2012, NorthWestern successfully acquired the interest from NFR Energy in the Bear Paw Natural Gas Field located in north central Montana. In early 2014, NorthWestern was able to acquire a majority interest in the Bear Paw Basin gas production by purchasing production assets from Devon Energy. Together, these acquisitions represented just under one-third of the forecasted baseload usage of NorthWestern's customers in 2014. NorthWestern continues to analyze and pursue additional opportunities to acquire natural gas production resources.

In Docket No. N2010.12.111 regarding NorthWestern Energy's December 2010 Natural Gas Biennial Procurement Plan, the Commission did not take a position in its comments on NorthWestern's actual or potential acquisitions of natural gas reserves or producing properties. However, the Commission was very specific with regard to NorthWestern's potential pursuit of the acquisition of major natural gas reserves going forward, which states:

> *Should NWE pursue the acquisition of major natural gas reserves, it must strive to find transactions which provide compelling customer benefit over buying natural gas at market prices. The main factors that NWE needs to evaluate are volumes, price, and term. Given that a large amount of capital will be required to purchase significant natural gas reserves, the Commission notes that such a transaction will be best presented to the Commission in the form of a stipulated agreement concerning the acquisition between NWE and MCC.*[10]

In Docket No. D2016.9.68, Order No. 7522g, ¶ 54 regarding NorthWestern's acquisition of additional natural gas production assets, the Commission found

> that NorthWestern will file some type of procurement plan or some similar filing well in advance of any further acquisition in order for the Commission and interested parties to provide comments … .

[10] Commission Comments, ¶ 49 (July 27, 2011).

Given this background, NorthWestern proposes to utilize the following distinct components in its process for review and acquisition of natural gas production resources:

Acquisition Properties Criteria

NorthWestern will pursue, evaluate, and attempt to purchase additional interests in natural gas properties operated by NorthWestern and natural gas properties that are strategically located to its system, meaning in close geographic proximity to the markets served by NorthWestern. This includes natural gas reserves that have traditionally been relied upon to supply natural gas Core customers that are directly connected to NorthWestern's natural gas transmission pipeline, or that are easily transported to NorthWestern's natural gas transmission pipelines via available third-party transport capacity at economical rates. Such properties should provide a long-term available and reliable supply of natural gas from previously developed proven natural gas production resources, which satisfy the following general criteria and/or characteristics:

A. Natural Gas Producing Properties that are located within these areas:

   i. Montana, Alberta, Saskatchewan, and British Columbia if properties are physically connected to the existing NorthWestern natural gas transmission system or if they could be connected with the installation of new natural gas gathering or transmission pipelines, to the extent it would be economically feasible, and

   ii. Montana, North Dakota, Wyoming, the Rockies and Canada, realizing that the purchase of properties in these areas may require gas swaps or transportation agreements with other entities.

B. Properties with the following characteristics:

   i. At least 80% of the gas reserves' value in the proved producing category;
   ii. At least 80% of the gas reserves' value attributed to natural gas;
   iii. Well-established, mature production history of greater than 5 years, and
   iv. At least 15 years of remaining estimated production life.

NorthWestern will consider acting as the operator in acquisitions where it has a

majority interest and the expertise exists, but will also consider purchases in which another entity operates the properties.

Analytical Evaluation Approach (Financial Modeling)

NorthWestern has developed a model that is acceptable for use in analyzing the economics of each potential natural gas production resource acquisition.

The model establishes a proposed purchase price guided by the net present values ("NPVs"), in total dollars, of (1) the estimated future stream of annual revenue requirements of the purchased and rate-based natural gas reserves, given the proposed purchase price, expected operating costs and taxes, and the projected annual depletion rate of the particular property being evaluated; (2) the purchase of the equivalent amount (both timing and volume) of natural gas at the current annual natural gas market price forecast;[11] and (3) the valuation of any other attributes of material value, which may also factor into a determination of the ultimate bid.

Natural gas production resource acquisitions will only be considered when:

(1) the NPV of the estimated future stream of annual revenue requirements for the entire estimated useful life is less than the NPV of the estimated future stream of purchased natural gas costs at the then-current natural gas market prices;

(2) the estimated production or volume weighted 20-year levelized unit revenue requirement of the owned reserves is less than the 20-year levelized natural gas market price, based on the natural gas market price forecast at the time of bidding; and

(3) the estimated future cost of service of the natural gas production resource, in dollars per Dth, is approximately equal to or less than the estimated future natural gas market price, in dollars per Dth, based on the natural gas market price forecast at the time of bidding, within three to five years of the acquisition, as specified in Paragraph 5, Table 9, below.

If the production resource acquisition under consideration satisfies these three requirements, it should meet the "*compelling customer benefit over buying natural*

[11] Forecasted on an AECO or a CIG Natural Gas Trading Prices Basis.

gas at market prices" objective that is contained in the Commission's Comments in Docket No. N2010.12.111.

Volume of Owned Natural Gas Production (Bcf)

NorthWestern's natural gas acquisitions are divided into the following two categories:

(1) Strategic natural gas acquisitions of up to 10 Bcf of the natural gas required on an annual basis to serve NorthWestern's Core Natural Gas Customers' loads; and

(2) Natural gas acquisitions of up to 5 Bcf on an annual basis to be used by NorthWestern's existing Electric Utility natural gas-fired generation facilities.

Such volumes may be considered collectively as part of NorthWestern's natural gas acquisitions.

NorthWestern may use a pro-rata allocation of natural gas production resource acquisitions that will serve both its Core customers and Electric Utility natural gas-fired generation. NorthWestern will designate such an allocation at the time of signing an Asset Purchase Agreement.

Natural Gas Production Resource Acquisition Thresholds to Serve Core Customers

Future natural gas acquisitions will be subject to specific thresholds, based on the estimated future unit revenue requirements of the production and the natural gas market price forecast at the time of bidding. These natural gas acquisition thresholds, established above, are shown in the table below:

Table 9 Acquisition Thresholds

Natural Gas Utility Acquisition Thresholds to Serve Core Customers			
20-Year Levelized Unit Revenue Requirement In Part 3 Above	**Future Unit Revenue Requirement/ Market Price Crossover – In Years**	**Percent of Natural Gas Volume In Part 4, Item 1 Above**	**Natural Gas Utility Annual Bcf Levels**
Less than $2.04	5 or Less	75%	15.0
$2.05 to $2.69	4 or Less	50%	10.0
$2.70 to $4.14	3 or Less	25%	5.0

Due to changes in the natural gas forward strips between 2012, when the last plan was filed, and today, NorthWestern revisited the appropriate price thresholds for proposed acquisitions. The thresholds above were determined by taking two financial quarters of natural gas forward strips at AECO, which is where NorthWestern receives the majority of its natural gas supply. A 15-trading day average of the AECO strip was used for each quarter to avoid inadvertently picking a trading day with abnormally high or low pricing. NorthWestern added the costs of AECO gas transmission, escalated by the Energy Information Administration ("EIA") 2020 Annual Energy Outlook ("AEO") escalation rates, to these average prices, and looked at the price traunches in quartiles for a 20-year period. The above thresholds will replace the 20-year revenue requirement established based on the future natural gas market prices and shape of the forward curve at the time NorthWestern and the Montana Consumer Counsel ("MCC") were drafting the Stipulation Agreement that was filed and approved by the Commission in Docket No. D2012.3.25, because the forward market has changed since this time and NorthWestern wanted to use a methodology consistent with its other resource planning criteria. To the extent future natural gas market prices are greater than the ranges established in Table 9 above and NorthWestern believes a purchase is still warranted, it will discuss this and any other attributes that may have

material value as part of such a purchase determination with the MCC in advance of finalizing a purchase.

Several model analyses were run on a production asset to test the crossover point sensitivity to initial gas purchase price and annual escalation. The model varied the initial gas purchase price between $1 and $4/Dth and varied the annual gas purchase price escalation between 1% and 4%. Results using the lower escalation rates correlate with the established use of a five-year crossover point and corresponding 20-year unit revenue requirement and NPV showing a benefit to the customer. The models with the higher escalation rates found a crossover point longer than five years when the customer benefit was realized with the 20-year unit revenue requirement and the NPV data. But, with a decrease of less than 10% in the offered purchase price, the 5-year crossover point could be realized. This approach does not automatically assume a rate review each year, but instead captures the prospective production characteristics of any acquisition.

Additionally, these thresholds only apply to the associated natural gas production and any gathering/delivery assets. They do not apply to any natural gas transmission or distribution pipeline assets that may be part of a purchase.

Finally, any changes in the basic fundamentals of the natural gas market that may alter the prices, terms, and quantities of the above thresholds may require that they be modified.

Natural Gas Reserve Acquisitions

The larger natural gas acquisitions will start with an Economic Forecast developed on behalf of the seller by an independent professional consulting engineer. The software they use is an industry standard such as “Aries” which is a Schlumberger product. Forecast of future production, prices, taxes, and operating expenses are used to estimate the remaining natural gas reserves, economic life, and a discounted value for the acquisition.

An independent registered professional engineer would be hired to prepare a similar Economic Forecast by NorthWestern for confirmation and comparison. This evaluation will use a price forecast developed by NorthWestern's Energy Risk Management Team. Adjustments may also be made to the forecasted expenses based on knowledge of the asset.

Results selected from the Economic Forecast are then used to populate a Company-developed Excel spreadsheet model that estimates what the rate base, return, and expenses would be if the natural gas reserves are owned by a utility rather than an oil and gas company.

NorthWestern's model compares the cost to the customer of purchasing the natural gas reserves in the ground and producing the gas versus purchasing the natural gas from the market based on the natural gas price forecast developed by NorthWestern. It is this comparison that will demonstrate a benefit to the customer of owning the reserves versus purchasing from the market at an agreed-upon acquisition price.

Purchases of smaller reserve interest such as royalty interests will use a production forecast developed by NorthWestern engineers and the same comparison to the market gas to demonstrate a benefit to the customers.

Transparency and Documentation

NorthWestern believes this Natural Gas Procurement Plan provides a clear and transparent description of the approach Energy Supply will take in serving Core customers' needs. Energy Supply will follow this Plan unless NorthWestern, using its judgment, believes modifications are necessary. The procurement environment is highly complex -- developments can be swift and often require experience to properly interpret -- and transactions are numerous. That said, any deviations from this Plan will be clearly documented by Energy Supply and communicated to stakeholders. The importance of documentation in the regulatory process is clear.

NorthWestern has attempted to provide a clear and defined acquisition strategy in this Plan and awaits feedback from the Commission concerning its strategies. Discussions with the Commission and MCC about the Plan, strategies, and actions have been ongoing. NorthWestern believes this method of communication should continue and will schedule discussions throughout the upcoming plan period.

CHAPTER 9: NEXT STEPS

As this Plan details, NorthWestern faces both a near-term supply constraint and a near term physical infrastructure constraint that will challenge its ability to meet the needs of its Core customers.

Supply Constraint

As noted previously, the ability to meet the Design Day peak load is of the utmost importance, and the needs of meeting the peak load is integral to the natural gas procurement plan. Over the next ten years, the combination of estimated growth and the estimated natural decline of local production will result in a supply need for an additional 40 MMcf/day.

A plan is in place to secure the additional 40 MMcf/day of supply deliverability through small increases in storage deliverability and increased takes from CIG. The majority of the added supply deliverability will be secured through purchase contracts on the Carway line in Alberta. NorthWestern is continually evaluating other options to maintain supply diversity and increase capacity on its system. The added deliverability will require capital investments on NorthWestern's Gas Transmission system to move the gas to the market points.

NorthWestern will continue to look at future purchases of gas-producing assets to aid in balancing the production decline and load growth. Existing owned wells and gathering systems are being researched in an effort to increase or maintain current production levels.

Infrastructure Constraint

As detailed in Chapter 7, the NorthWestern system faces near-term limitations on the ability of its physical infrastructure to meet the needs of the customers it will add to its system. NorthWestern will continue to monitor its options relative to this growth and will execute a plan that will meet this need.

The plan to meet design day load is very fluid. Projects change as more information on growth/decline is acquired and the need to focus on where the growth is occurring. Changes in market fundamentals and upstream pipeline conditions also drive planning criteria. The estimated costs of projects and availability of materials and gas also fluctuate over time.