

NORTHERN UTILITIES, INC.
NEW HAMPSHIRE DIVISION
ANNUAL 2019-2020
COST OF GAS ADJUSTMENT FILING

PREFILED TESTIMONY OF
FRANCIS X. WELLS

1 I. INTRODUCTION

2 Q. Please state your name and business address.

3 A. My name is Francis X. Wells. My business address is 6 Liberty Lane West, Hampton,
4 NH.

5 Q. What is your relationship with Northern Utilities, Inc.?

6 A. I am employed by Unitil Service Corp. (the "Service Company") as Manager of Energy
7 Planning. The Service Company provides professional services to Northern Utilities, Inc.

8 Q. Please briefly describe your educational and business experience.

9 A. I earned my Bachelor of Arts Degree in both Economics and History from the
10 University of Maine in 1995. I joined the Service Company in September 1996 and
11 have worked primarily in the Energy Contracts department. My primary
12 responsibilities involve gas supply planning and acquisition.

13 Q. Have you previously testified before the New Hampshire Public Utilities
14 Commission ("Commission")?

15 A. Yes. I have testified as Northern's gas supply witness before the Commission in
16 Northern's Cost of Gas Adjustment ("COG") proceedings.

17 Q. Please summarize your prepared direct testimony in this proceeding.

1 A. The purpose of my testimony is to present and support Northern's gas supply cost
2 forecast, which was used for the calculation of the proposed COG.

3 The 2019-2020 fixed, annual demand cost estimates are \$26,497,004, which is 26%
4 lower than the fixed, annual demand cost estimates provided for 2018-2019 in the
5 Annual COG initial filing. Estimated average delivered commodity rates for the 2019-
6 2020 Winter Period are \$3.84 per Dth, which is 12% lower than the average delivered
7 commodity rates estimated for the 2018-2019 Winter Period in the Annual COG.
8 Estimated average delivered commodity rates for the 2020 Summer Period are \$2.17
9 per Dth, which is 11% lower than the average delivered commodity rates estimated in
10 last year's Annual COG. I discuss reasons for these changes in gas supply cost in the
11 body of my testimony.

12 Northern projects 2019-2020 combined annual sales service and delivery service
13 distribution deliveries to be 8,802,986 Dth in the New Hampshire Division, which is an
14 increase equal to 0.6% compared to 2018-2019 annual weather-normalized distribution
15 deliveries and an increase equal to 3.4% compared to 2017-2018 annual weather-
16 normalized distribution deliveries. Of the 8,802,986 Dth of projected distribution system
17 deliveries, Northern projects that 4,477,977 Dth will be supplied by the Company through
18 Sales Service. In order to supply 4,477,977 Dth of supply to customer's retail meters,
19 Northern projects a city-gate requirement of 4,538,866 Dth. In addition, Northern
20 expects its Company-Managed Sales obligation to equal 154,045 Dth for the New
21 Hampshire Division, bringing the total projected New Hampshire sendout requirement to
22 4,692,911Dth for the upcoming annual period. The details behind these estimates are
23 contained in Schedules 16- and 17-FXW.

24 Schedule 19-FXW shows Northern's portfolio has a 135,344 Dth maximum daily quantity
25 of Pipeline, Storage and Peaking Capacity (each of these Capacity terms as defined in

1 the Company's Maine Division Delivery Service Terms and Conditions). I review the
2 portfolio in more detail in the body of my testimony.

3 I project Northern's total company (including the Maine Division) demand cost for the
4 November 2016 through October 2017 gas year to be \$26,497,004. (See Schedule 20-
5 FXW). Mr. Chris Kahl, who is employed by Unitil Service Corp. as a Senior Regulatory
6 Analyst, presents the allocation of the total annual demand cost to Northern's New
7 Hampshire Division and the portion of that allocation of annual demand costs to between
8 Winter and Summer Season COG rates. I project the demand revenue from the New
9 Hampshire Division's capacity assignment program to be \$3,007,397. (See Schedule
10 21-FXW). I also discuss the calculation of the updated capacity allocation factors and
11 Capacity Ratio pursuant to the current New Hampshire Division capacity assignment
12 program.

13 I project that Northern's total company (including the Maine Division) commodity cost to
14 provide sales service during the 2019-2020 Winter Period will be \$36,929,508 at an
15 average rate equal to \$3.84 per Dth and the 2020 Summer Period commodity costs to
16 be \$5,384,034 at an average rate equal to \$2.17 per Dth. (See Schedule 23-FXW). Mr.
17 Kahl calculates the allocation of these costs to the New Hampshire Division.

18 I provide the supporting calculations for the proposed Re-entry Rate, applicable to
19 Capacity Assigned Delivery Service customers who switch to Northern's Sales Service,
20 and the proposed Conversion Rates, applicable to Capacity Exempt Delivery Service
21 customers who switch to Northern's Sales Service. These rates have been calculated
22 consistent the New Hampshire Delivery Service Terms and Conditions.

23

1 **II. SALES AND SENDOUT FORECAST**

2 **Q. How does the Company forecast firm deliveries?**

3 A. For the residential, regular general, and large rate classes, the sales forecast is
4 developed by independently forecasting meter growth, base usage per meter, and a
5 weather-driven usage per meter assuming 'normal' weather (average degree days
6 during over the last 30 years) for the forecast period. Also forecasted is the Company's
7 meter read cycle. Business Development personnel are also consulted for comments on
8 significant usage changes. The forecast seeks to limit subjectivity and primarily relies on
9 historical trends.

10 **Q. Please provide the forecast distribution deliveries, meter counts and use-per-**
11 **meter figures utilized in this COG filing and a comparison of this forecast to**
12 **weather normalized data for prior periods.**

13 A. I have prepared Table 1, below, which provides a summary of the company's forecast of
14 total billed distribution deliveries for the upcoming 2019-2020 Winter and Summer
15 Period.

Table 1. 2019-2020 Winter New Hampshire Division Billed Distribution Service Volumes Forecast Compared to Prior Years							
Month	2019-2020 Forecast	2018-2019 Weather Normalized	2019-2020 minus 2018-2019	Percent Change	2017-2018 Weather Normalized	2019-2020 minus 2017-2018	Percent Change
Nov	723,907	718,435	5,472	0.8%	685,265	38,642	5.6%
Dec	939,084	964,517	-25,434	-2.6%	935,615	3,468	0.4%
Jan	1,319,986	1,253,072	66,914	5.3%	1,230,841	89,145	7.2%
Feb	1,234,360	1,302,243	-67,883	-5.2%	1,232,006	2,353	0.2%
Mar	1,114,724	1,079,882	34,842	3.2%	1,041,976	72,749	7.0%
Apr	870,735	844,381	26,354	3.1%	829,523	41,212	5.0%
May	563,702	583,725	-20,023	-3.4%	574,552	-10,850	-1.9%
Jun	422,532	400,920	21,613	5.4%	409,352	13,181	3.2%
Jul	378,065	370,564	7,502	2.0%	352,762	25,303	7.2%
Aug	375,733	376,603	-870	-0.2%	369,837	5,896	1.6%
Sep	382,839	368,608	14,230	3.9%	370,269	12,569	3.4%
Oct	477,319	488,525	-11,205	-2.3%	485,553	-8,234	-1.7%
Winter	6,202,795	6,162,530	40,265	0.7%	5,955,226	247,569	4.2%
Summer	2,600,191	2,588,943	11,247	0.4%	2,562,324	37,866	1.5%
Annual	8,802,986	8,751,474	51,512	0.6%	8,517,550	285,436	3.4%

16

1
2 I provide a detailed review of Northern's forecast of metered distribution deliveries, meter
3 counts and use-per-meter calculations for the 2019-2020 Annual Period in Schedule 16-
4 FXW. Page 1 of Schedule 16-FXW provides total data for the New Hampshire Division.
5 Pages 2, 3 and 4 provide data for non-heating residential rate class, heating residential
6 rate class and commercial and industrial rate classes, respectively. The top section of
7 each page provides the 2019-2020 Annual Period distribution deliveries forecast and a
8 comparison of that forecast to actual, weather normalized data for the 2018-2019 and
9 2017-2018 Annual Periods. The changes in the distribution deliveries from the prior
10 period are presented in terms of changes in meter counts and changes in use-per-meter.
11 The middle section of each page presents forecasts and a comparison to prior period
12 actual meter counts. The bottom section of each page of Schedule 16-FXW provides a
13 calculation of the use-per-meter, which has been calculated using the distribution
14 deliveries and meter count data presented in the top and middle sections of the page.

15 **Q. How does the Company forecast Sales Service deliveries?**

16 A. To forecast Sales Service deliveries, Northern identified those customers utilizing
17 Delivery Service as of July 2019. For small and medium Delivery Service customers
18 (G40, G50, G41 and G51 rate classes) Northern weather normalized the billed usage of
19 these specific customers. Northern forecasted usage for large Delivery Service
20 customers (G42, G52 rate classes and Special Contracts) based on prior year actual
21 usage data. The forecast billed usage of current Delivery Service customers was
22 subtracted from the billed distribution deliveries of the entire system, provided in
23 Schedule 16-FXW in order to estimate Sales Service deliveries.

24 **Q. Please summarize the Company's forecast of sales service deliveries and city-**
25 **gate receipts required to meet the projected sales service deliveries.**

1 A. I have prepared Table 2, below, which provides a summary of the Company's forecast of
2 Total Deliveries, Sales Service Deliveries, Company Managed Deliveries and City-Gate
3 Receipts to meet the Sales Service Deliveries¹ for the upcoming year.

Month	Total Distribution Service Deliveries (Dth)	Sales Service Deliveries (Dth)	City-Gate Receipts (Dth)	Company Managed Deliveries (Dth)	City-Gate Receipts (Dth)
Nov-19	853,999	457,787	464,012	23,490	487,502
Dec-19	1,120,902	677,747	686,963	26,625	713,588
Jan-20	1,316,722	825,615	836,841	30,153	866,994
Feb-20	1,143,630	693,745	703,178	24,471	727,649
Mar-20	1,058,103	611,576	619,892	24,809	644,701
Apr-20	709,438	340,453	345,082	4,257	349,339
May-20	500,781	180,604	183,060	3,410	186,470
Jun-20	383,206	124,961	126,660	3,300	129,960
Jul-20	364,383	105,017	106,445	3,410	109,855
Aug-20	377,842	106,703	108,154	3,410	111,564
Sep-20	388,638	113,215	114,754	3,300	118,054
Oct-20	585,341	240,554	243,825	3,410	247,235
Winter	6,202,795	3,606,923	3,655,968	133,805	3,789,773
Summer	2,600,191	871,054	882,898	20,240	903,138
Annual	8,802,986	4,477,977	4,538,866	154,045	4,692,911

4
5 The detailed calculations can be found in Schedule 17-FXW. On Pages 1 and 2 of
6 Schedule 17-FXW, I present calendar month and billed sales service deliveries by rate
7 class. The Sales Service deliveries for each rate class were summed to determine the
8 total Sales Service deliveries for the New Hampshire Division. On Page 3 of Schedule
9 17-FXW, I present forecast Sales Service meter data for each rate class.

10 On Page 4 of Schedule 17-FXW, I present my calculations of the city-gate receipts.
11 First, I estimated Company Use by multiplying the forecast Total Deliveries and the
12 estimated ratio of Company-Use to Total Deliveries. Then, I added Company Use to
13 the total Calendar Sales Service Deliveries, calculated on Page 1 ("Sales Service plus
14 Company Use"). Then, I added an estimate for Lost and Unaccounted for Gas. Each of
15 the estimates used in these calculations was based on the recent history of actual data,

¹ When I use the term "City-Gate Receipts to meet the Sales Service Requirements", I refer to the volume of gas needed to be received by the distribution system in order to deliver the projected volumes of sales service. These volumes are measured at the Company's interconnections with Granite State Gas Transmission, an affiliated pipeline, and Maritimes and Northeast, L.L.C and the Company's LNG facility.

1 which are presented in Schedule 18-FXW. Finally, I added Northern's projection of
2 Company Managed Sales pursuant to the New Hampshire Division's capacity
3 assignment program.

4 **Q. What are Company Managed Sales?**

5 A. Company Managed Sales are a form of Capacity Assignment. Capacity Assignment is a
6 means of transferring the demand cost responsibility for capacity contracts from
7 Northern to the retail marketers on its system. Whenever a retail marketer enrolls a
8 customer, who is "capacity assigned," the retail marketer assumes cost responsibility for
9 a pro-rated portion of the capacity contracts entered into by Northern, subject to the
10 capacity assignment provisions of each division. These capacity contracts can include
11 interstate pipeline contracts, underground storage contracts, peaking supply contracts
12 and on-site peaking facilities. Such transfer may be achieved by releasing capacity
13 directly to the retail marketer ("Capacity Release"), who may then purchase their own
14 supplies and utilize the released contracts to deliver supplies to their customers.
15 Pursuant to Northern's Delivery Service Terms and Conditions for its New Hampshire
16 Division, all upstream pipeline and underground storage capacity that delivers to
17 Northern's system is assigned via Capacity Release except for upstream pipeline and
18 storage capacity resources that require the Bay State Exchange Agreement. These
19 excepted pipeline and storage resources are assigned via Company Managed Supply.
20 On-system peaking capacity, such as Northern's Lewiston LNG plant, is also assigned
21 via Company Managed Supply. Under the Company Managed Supply form of capacity
22 assignment, Northern bills the retail marketer for a pro-rated portion of these capacity
23 resources at their respective actual costs and offers a city-gate delivered supply service.
24 Such city-gate supplies are priced in accordance with the capacity assignment

1 provisions of each division. Such arrangements are known as “Company Managed
2 Sales.”

3 **Q. Please explain the process used to project Company Managed Sales for the New
4 Hampshire Division.**

5 A. Company Managed resources for the New Hampshire Division include pipeline
6 (specifically Iroquois Receipts and Algonquin Receipts capacity paths) and on-system
7 peaking resources (Lewiston LNG plant). The maximum daily volume of each Company
8 Managed Supply, listed above, was estimated based on current capacity assigned
9 transportation customer data. Northern allows marketers to nominate their peaking
10 Company managed resources on a daily basis. In addition, marketers are required to
11 purchase pipeline baseload supplies that are associated with the Company Managed
12 pipeline resources. The Company Managed Sales forecast assumes that marketers will
13 utilize all pipeline and peaking Company managed supply available to them under the
14 capacity assignment program.

15 **III. NORTHERN’S GAS SUPPLY PORTFOLIO**

16 **Q. Please provide an overview of the gas supply portfolio that the Company uses to
17 supply its Sales Service customers and meet its Capacity Assignment obligations.**

18 A. I have prepared Table 3, below, which provides an overview of the sources of supply
19 available to Northern through its portfolio of contracts, including transportation contracts,
20 storage contracts, baseload and peaking supply contracts and an exchange agreement
21 with Bay State Gas Company.

Table 3. Northern Capacity Summary (Dth/Day)

<u>Pipeline Capacity Paths</u>	
Tennessee Zone 0 and Zone L Pools	13,109
Tennessee Niagara	2,327
Iroquois Receipts	6,434
Leidy Hub Supply (Texas Eastern, Algonquin)	965
Transco Zone 6, non-NY Supply (Algonquin)	286
Total Pipeline Capacity	23,121
<u>Storage Capacity Paths</u>	
Tennessee Firm Storage	2,644
Union Dawn Storage	39,863
Total Storage Capacity	42,507
<u>Peaking Capacity Paths</u>	
LNG - On-System	6,500
Maritimes Delivered Baseload	7,474
PNGTS Delivered Baseload (Dec-Feb)	7,474
Peaking Contract 1	39,860
Additional Granite Capacity	8,408
Total Peaking Capacity	69,716
Total Design Day Capacity	135,344

1

2

3

4

Table 3 presents a summary of the Pipeline, Storage and Peaking Capacity for the 2019-2020 Winter Period. Total Design Day Capacity is calculated by adding the total Pipeline, Storage and Peaking Capacity figures above.

5

6

7

8

Schedule 19-FXW includes capacity path diagram and capacity path detail for each of the supply sources listed above, showing the transportation, storage and supply contracts required to provide the Northern Deliverable Capacity listed for each source of supply.

9

10

11

12

13

14

Northern's portfolio of transportation contracts includes contracts with Granite State Gas Transmission, Inc. ("GSGT" or "Granite"), Tennessee Gas Pipeline Company ("TGP" or "Tennessee"), Portland Natural Gas Transmission System ("PNGTS"), TransCanada Pipelines Limited ("TransCanada"), Union Pipelines Ltd. ("Union"), Algonquin Gas Transmission Company ("Algonquin"), Iroquois Gas Transmission System, L.P. ("Iroquois") and Texas Eastern Transmission System, L.P. ("Texas Eastern" or

1 “TETCO”). The gas supply portfolio also includes long-term storage contracts with
2 Union and Tennessee. Northern’s gas supply portfolio for 2019-2020 includes a single
3 multi-year peaking contract. This peaking supply arrangement was procured through a
4 Request-For-Proposals (“RFP”) and has a delivery period November through March for
5 4 years beginning November 2019. Northern also owns and operates a Liquefied
6 Natural Gas (“LNG”) facility in Lewiston, ME, which Northern relies on to produce 6,500
7 Dth per day with a storage capacity of approximately 12,000 Dth of LNG. Also through
8 an RFP Northern has procured an LNG Contract for up to 5,000 Dth per day with an
9 annual contract quantity of up to 125,000 Dth beginning November 2019 and ending
10 October 2020 in order to supply this facility. Finally, as I mentioned previously, the gas
11 supply portfolio consists of an exchange agreement with Bay State Gas Company (“BSG
12 Exchange” or “Bay State Exchange Agreement”).

13 The capacity path diagrams and capacity path details in Schedule 19-FXW show how
14 Northern has combined its transportation, storage and peaking supply contracts, along
15 with the BSG Exchange, in order to move natural gas supplies from the sources of
16 supply listed in Table 3 to Northern’s distribution system. Each of these contractual
17 arrangements represents a segment in one or more capacity paths. The capacity path
18 diagrams show how each segment in the path is interconnected within the path. The
19 capacity path details provide basic contract information, such as product (transportation,
20 storage, peaking supply or exchange), vendor, contract ID number, contract rate
21 schedule, contract end date, contract maximum daily quantity (“MDQ”), contract
22 availability (year-round or winter-only), receipt and delivery points of the contract and
23 interconnecting pipelines with the contract delivery point.

24 **Q. Please describe the Company’s process for procuring its gas supply commodity**
25 **supplies.**

1 A. Northern's practice is to secure most of its gas supply and asset management services
2 through an annual RFP for terms beginning April 1 and running through March 31 each
3 year. In March Northern has recently completed its annual RFP for the delivery period of
4 April 1, 2019 through March 31, 2020. Northern has entered into asset management
5 agreements for its Iroquois Receipts capacity path, Algonquin Receipts capacity path,
6 Niagara capacity path, its Tennessee Zone O/L capacity path and its Union Dawn
7 Storage capacity path. Northern also entered into baseload supply agreements through
8 this RFP. Northern has also completed its RFP process for off-system peaking supplies
9 and LNG supplies for the upcoming winter.

10 **Q. Please describe any changes in Northern's portfolio for the upcoming 2019-2020**
11 **Winter Period compared to the portfolio relied upon for the 2018-2019 Winter**
12 **Period.**

13 A. Northern has replaced the short-term peaking contract for the 2018-2019 Winter with a
14 multi-year peaking contract with similar volumes. Otherwise, Northern's gas supply
15 portfolio for the 2019-2020 Winter is very similar to the 2018-2019 Winter portfolio. The
16 most notable change for the upcoming Winter Period is that Maine Capacity Assigned
17 customers will be assigned capacity reflective of 100% of their design day demands,
18 rather than 50%. Overall, the Company expects to assign higher volumes of capacity to
19 Maine and New Hampshire retail marketers this upcoming annual period because of this
20 change.

21 **Q. Please provide an update on any portfolio changes anticipated beyond the 2019-**
22 **2020 Winter Period.**

23 A. Northern expects Atlantic Bridge to go into service effective November 2020. Through
24 its Precedent Agreement with Algonquin, Northern has committed to contract for 7,500

1 Dth per Day of additional pipeline capacity, allowing it to receive gas in either Ramapo or
2 Mahwah, New Jersey and transport it to Northern's system.

3 Northern also expects Portland XPress to go into service effective November 2020.

4 Through its Precedent Agreement with PNGTS, Northern has committed to contract for
5 10,000 Dth per Day of additional pipeline capacity, allowing it to receive gas at the Dawn
6 Hub in Ontario, Canada and transport it to Northern's system.

7 Northern has also entered into precedent agreements with PNGTS, TransCanada and
8 Enbridge to participate in Phase III of the Westbrook XPress expansion project, which
9 will result in 10,000 Dth per Day of additional pipeline capacity, allowing it to receive gas
10 at the Dawn Hub in Ontario, Canada and transport it to Northern's system. Northern is
11 currently seeking approval of these Precedent Agreements and the resulting
12 transportation contracts from both the Commission and the Maine Public Utilities
13 Commission in Dockets No. DG 19-116 and 2019-00101, respectively.

14 Northern's Least Cost Integrated Resource Plan, filed with the Commission in Docket
15 No. DG 19-126, includes each of these pipeline capacity commitments to reduce the
16 Company's reliance on the availability of delivered supplies.

17 **IV. GAS SUPPLY COST FORECAST**

18 **Q. Please provide an overview of the Company's estimated gas supply costs that you**
19 **provided to Mr. Kahl to calculate the 2018-2019 Annual COG.**

20 **A.** I have provided Mr. Kahl the following cost estimates for the period November 2019
21 through October 2020, which he used to calculate the proposed COG.

- 22 • Northern's fixed demand costs, including revenue offsets due to capacity
23 release and asset management activities

- 1 • New Hampshire Division Capacity Assignment program demand revenues
- 2 • Northern’s commodity costs

3 The allocation of Northern’s fixed demand and commodity costs to the New Hampshire
4 Division was performed by Mr. Kahl. The figures I present in my testimony relate to total
5 company costs, inclusive of both the New Hampshire and Maine Divisions.

6 **Q. Please provide Northern’s demand cost forecast.**

7 A. Please refer to Table 4, below, titled, “Estimated Gas Supply Demand Costs.”

Table 4. Estimated Gas Supply Demand Costs November 1, 2019 through October 31, 2020			
Line	Description	Amount	Reference
1.	Pipeline Demand Costs	\$ 5,511,017	Schedule 20-FXW, Page 3 - Pipeline Allocated Cost
2.	Storage Allocated Pipeline Demand Costs	\$ 19,060,623	Schedule 20-FXW, Page 3 - Storage Allocated Cost
3.	Storage Demand Costs	\$ 2,965,107	Schedule 20-FXW, Page 4 - Annual Fixed Charges
4.	Peaking Allocated Pipeline Demand Costs	\$ 2,186,690	Schedule 20-FXW, Page 3 - Peaking Allocated Cost
5.	Peaking Contract Costs	\$ 11,234,167	Schedule 20-FXW, Page 5, Annual Fixed Charges
6.	Asset Management and Capacity Release Revenue	\$ (14,460,600)	Schedule 20-FXW, Page 6 - Total Asset Management and Capacity Release Revenue
7.	Total Demand Costs	\$ 26,497,004	Sum Lines 1 through 6.

9 I present the detailed calculations of this demand cost forecast in Schedule 20-FXW.
10 Page 1 of Schedule 20-FXW provides the summary data presented here in Table 4. On
11 page 2 of Schedule 20-FXW, I have calculated the annual demand cost forecast for
12 Northern’s portfolio of transportation contracts. On page 3 of Schedule 20-FXW, I
13 designate each transportation contract as a Pipeline, Storage or Peaking Capacity and
14 allocate transportation costs based upon these designations. Pages 4 and 5 of Schedule
15 20-FXW provide my calculations of demand costs for storage and peaking supply
16 contracts, respectively. On page 6 of Schedule 20-FXW, I forecast the capacity release
17 and asset management revenue the Company expects to receive for the 2019-2020

1 Annual Period. Support for the transportation, storage and supply demand rates used in
2 Schedule 20-FXW are found in the Schedule 30-FXW, Supplier Prices.

3 **Q. How do 2019-2020 Winter COG estimated annual demand costs compare with the**
4 **2018-2019 Winter COG estimated annual demand costs?**

5 A. 2018-2019 Winter COG forecasted annual demand costs were equal to \$35,735,528.
6 2019-2020 Winter COG forecasted annual demand costs are equal to \$26,497,004,
7 reflecting a decrease in estimated annual demand costs equal to \$9,238,524 or
8 approximately 26%.

9 This change in projected demand cost is explained by the following.

10 1. Decrease in projected pipeline and storage demand contract costs by \$3,144,890.

11 Lower projected pipeline contract costs are attributable mostly to a decrease in
12 TransCanada pipeline demand costs, which took place in February 2019. These lower
13 rates will remain in effect through December 2020. Lower demand rates achieved
14 through FERC rate settlements with Tennessee and Iroquois are also reflected in the
15 forecast.

16 2. Increase in projected Asset Management Agreement revenue credits by \$7,439,000.

17 Higher AMA revenue reflects the results of Northern's annual request-for-proposals
18 process, reflecting higher overall value obtained through asset management
19 agreements.

20 3. Increase in projected Peaking Supply Contracts equal to \$1,345,367. The projected
21 increase reflects the results on Northern's multi-year off-system peaking RFP and its
22 annual LNG RFP.

23 **Q. Please provide Northern's forecast of Capacity Assignment Demand Revenues for**
24 **the New Hampshire Division.**

1 A. When a retail marketer enrolls one of Northern's New Hampshire Division customers,
2 the retail marketer is assigned a portion of Northern's capacity. I present the detailed
3 calculations of the demand revenues from capacity assignment in Schedule 21-FXW.
4 On page 1 of Schedule 21-FXW, I present a summary of the Company's forecast of
5 Maine Division capacity assignment demand revenues. On pages 2 through 6 of
6 Schedule 21-FXW, I present the Company's detailed calculations for each component of
7 capacity assignment, itemized on page 1 of Schedule 21-FXW. The 2019-2020
8 Capacity Assignment Demand Revenue forecast for the New Hampshire Division is
9 projected to be \$3,007,397.

10 **Q. Have you calculated the proposed Peaking Service Demand Charge to be billed to**
11 **retail marketers for the period November 2017 through April 2018?**

12 A. Yes. The calculation of Peaking Service Demand Charge rate is provided on page 6 of
13 Schedule 21-FXW. The proposed Peaking Service Demand Charge is equal to \$65.41
14 per Dth, as shown in Schedule 21-FXW and presented in the proposed revised
15 Appendix A (Page 153) to the Delivery Service Terms and Conditions. The Proposed
16 Peaking Service Demand Charge rate is applicable only to capacity assignment of the
17 Company's on-system LNG plant.

18 **Q. Please provide the Capacity Allocation Factors and Capacity Ratio to be used for**
19 **Capacity Assignment under the New Hampshire Division Delivery Service tariff for**
20 **effect November 1, 2019.**

21 A. The Capacity Allocation Factors are provided in the proposed tariff sheet, Page 168,
22 which is Appendix C to the New Hampshire Division's Delivery Service Terms and
23 Conditions. The calculation of the Capacity Allocation Factors is found on Schedule 22-
24 FXW. These Capacity Allocation Factors reflect a Capacity Ratio equal to 0.987, which

1 is equal to Total Design Day Capacity of 135,344 Dth divided by the projected Total
2 Design Day Planning Load of 137,096 Dth.

3 **Q. Please describe Northern's process for forecasting commodity costs.**

4 A. I base the Company's commodity cost forecast on Northern's projected city-gate receipts
5 for sales service customers, which I calculated in Schedule 17-FXW, and the supply
6 sources available to Northern, which I presented in Schedule 19-FXW. I forecast supply
7 prices at each supply source, utilizing NYMEX natural gas contract price data and a
8 forecast of the adder to NYMEX for the price of supply at each supply source available
9 to Northern through its portfolio. To the extent that Northern's supply contract for a
10 particular supply source provides for a fixed adder to the NYMEX Last Day Settlement,
11 the contract prices are used to forecast the adder. If Northern's supply contract for a
12 particular supply source does not provide for a fixed adder to the NYMEX Last Day
13 Settlement, an estimate of the adder is based on the basis futures prices, through the
14 Intercontinental Exchange ("ICE"). I also forecast variable fuel retention factors and
15 rates for Northern's transportation and storage contracts. Then, I utilized the Sendout[®]
16 natural gas supply cost model to determine the optimal use of Northern's natural gas
17 supply resources to meet its projected city-gate requirements.

18 **Q. Please present the Company's commodity cost forecast for the 2019-2020 Winter**
19 **Period.**

20 A. I have summarized Northern's commodity cost forecast for the upcoming Winter Period
21 in Table 5, below.

Table 5. Estimated Delivered City-Gate Commodity Costs and Volumes November 2019 through April 2020			
Supply Source	Delivered City- Gate Costs	Delivered City- Gate Volumes	Delivered Cost per Dth
Pipeline Resources	\$ 12,250,370	4,268,420	\$ 2.870
Storage Resources	\$ 7,896,736	3,302,510	\$ 2.391
Peaking Resources	\$ 17,749,019	2,307,356	\$ 7.692
Total Commodity Costs	\$ 37,896,125	9,878,286	\$ 3.836
Company Managed Revenue	\$ (966,617)	(261,760)	\$ 3.693
Net Sales Service Commodity Costs	\$ 36,929,508	9,616,526	\$ 3.840

1
2 In summary, net projected delivered commodity costs equal approximately \$36.9 million
3 at an average delivered rate of \$3.84 per Dth. In support of this forecast, I prepared
4 Schedule 23-FXW to show the monthly forecasted commodity cost by supply option.
5 Page 1 of Schedule 23-FXW provides forecasted delivered variable costs, including
6 commodity charges, transportation fuel charges, and transportation variable charges by
7 supply option. Page 2 of Schedule 23-FXW provides monthly delivered volumes (Dth)
8 by supply source. Finally, Page 3 provides monthly delivered cost per Dth by supply
9 source. Each page provides summary data for all supply sources.

10
11 I have also prepared Schedule 24-FXW, which provides a seasonal summary of
12 commodity costs, by supply source, ranked from lowest to highest on the basis of
13 Delivered Cost per Dth.

14
15 The detailed calculations of the delivered commodity cost are found in Schedule 24-
16 FXW. For each supply source, I have provided the detailed monthly calculations for
17 supply cost, fuel losses and variable transportation charges, which will be incurred by
18 Northern in order to deliver its supplies to Northern's city-gates for ultimate consumption
19 by our customers. Support of the supply prices and variable transportation charges
20 found in Schedule 24-FXW are found in the Schedule 30-FXW, Supplier Prices.

1 **Q. How do 2019-2020 COG forecasted Winter Period (November through April)**
 2 **commodity costs compare with the 2018-2019 COG forecasted Winter Period**
 3 **commodity costs?**

4 A. As show in Table 5, above, the 2019-2020 Winter COG forecasted Winter Period
 5 commodity costs are equal to \$36,929,508 at an average delivered rate of \$3.840 per
 6 Dth. The 2018-2019 Winter COG forecasted Winter Period commodity costs were equal
 7 to \$38,891,608 at an average delivered rate of \$4.341 per Dth. 2019-2020 forecasted
 8 Winter Period average unit commodity costs are 12% lower than forecasted for the
 9 2018-2019 Winter Period. The 2019-2020 projected delivered volume is 7% higher than
 10 was projected in 2018-2019. Projected NYMEX prices are 16% lower heading into the
 11 2019-2020 Winter Period (averaging \$2.45 per Dth), compared to projected NYMEX
 12 prices heading into the 2018-2019 Winter Period (averaging \$2.92 per Dth). The
 13 Company's unit cost forecast reflects these lower NYMEX prices.

14 **Q. Please present the Company's commodity cost forecast for the 2020 Summer**
 15 **Period.**

16 A. I have summarized Northern's commodity cost forecast for the 2020 Summer Period in
 17 Table 6, below.

Table 6. Estimated Delivered City-Gate Commodity Costs and Volumes May 2020 through October 2020			
Supply Source	Delivered City-Gate Costs	Delivered City-Gate Volumes	Delivered Cost per Dth
Pipeline Resources	\$ 5,417,731	2,509,626	\$ 2.159
Storage Resources	\$ -	-	
Peaking Resources	\$ 44,024	11,040	\$ 3.988
Total Commodity Costs	\$ 5,461,755	2,520,666	\$ 2.167
Company Managed Revenue	\$ (77,721)	(39,528)	\$ 1.966
Net Sales Service Commodity Costs	\$ 5,384,034	2,481,138	\$ 2.170

18
 19 Schedule 23-FXW provide monthly support by supply source for this forecast, in the
 20 same manner as for the Winter Period. Additionally, Schedule 26-FXW provides

1 detailed calculations in the same manner as Schedule 25-FXW does for the Winter
2 Period.

3 **Q. How do 2019-2020 COG forecasted 2020 Summer Period (May through October)**
4 **commodity costs compare with the 2018-2019 COG forecasted 2019 Summer**
5 **Period commodity costs?**

6 A. The 2020 Summer COG forecasted average unit commodity costs are equal to \$2.170
7 per Dth, which is 11% lower than the 2019 forecasted Summer Period average unit
8 commodity cost. This decrease is explained primarily by lower NYMEX natural gas
9 futures prices, which are projected to be \$2.32 per Dth for the 2020 Summer Period and
10 were projected to be \$2.65 per Dth for the 2019 Summer Period, a decrease equal to
11 11%.

12 **Q. Please provide a summary of capacity utilization by supply source projected for**
13 **the upcoming year.**

14 A. Please refer to Schedules 31-FXW, 32-FXW and 33-FXW. Schedule 31-FXW provides
15 monthly supply volumes for Northern's normal year weather scenario. The data in
16 Schedule 31-FXW is also found in Schedule 23-FXW. Schedule 32-FXW provides
17 monthly supply volumes for Northern's design cold year weather scenario. Schedule 33-
18 FXW calculates the capacity utilization of all supply resources in both normal and design
19 cold weather scenarios.

20 **Q. Please provide Northern's Design Day Report for the upcoming Winter Period.**

21 A. Northern's Design Day Report is found in Schedule 34-FXW.

22 **Q. Please provide Northern's 7-Day Cold Snap Analysis for the upcoming Winter**
23 **Period.**

1 A. Northern's 7-Day Cold Snap Analysis is found in Schedule 36-FXW.

2 **Q. Please provide the Company's monthly projections of storage inventory balances**
3 **for the upcoming year.**

4 A. Please refer to Schedule 10-CAK. These results are based upon the Company's
5 Sendout[®] analysis.

6

7 **V. PROPOSED RE-ENTRY AND CONVERSION SURCHARGES**

8 **Q. Please describe the Re-entry Surcharge and the Conversion Surcharge.**

9 A. The Re-entry Surcharge is applicable to all Capacity Assigned Delivery Service
10 customers, who switch from a retail marketer to Northern's Sales Service and the
11 Conversion Surcharge is applicable to all Capacity Exempt Delivery Service customers,
12 who switch from a retail marketer to Northern's Sales Service. I have prepared
13 proposed updated Re-entry and Conversion Surcharges to be effective for the 2019-
14 2020 Winter Period. Customers electing to migrate and purchase their supply from
15 Northern shall be required to continue purchasing Northern's Sales Service until April 30,
16 2020. After this time, such customers may elect to either switch to a retail marketer or
17 continue purchasing Sales Service from Northern under the normal cost of gas rates.

18

19 **Q. Please provide the proposed Re-entry Surcharge and the proposed Conversion**
20 **Surcharge.**

21 A. Proposed Page 158, which is Appendix D to the Delivery Service Terms and Conditions,
22 provides the Re-entry Surcharge and the Conversion Surcharge. The Re-entry

1 Surcharge and Conversion Surcharge will be applied as a surcharge in addition to the
2 normal cost of gas rates. These surcharges shall only be applicable to customers
3 switching from Delivery Service to Sales Service.

4 **Q. Please provide your calculations for the Re-entry Surcharge and the Conversion**
5 **Surcharges.**

6 A. Please refer to Schedule 37-FXW. Page 1 shows the calculations for the Re-entry
7 Surcharge for both the Winter Period and Summer Period. The Re-entry surcharge
8 reflects the removal of any prior period credits, such as an over-recovery due to
9 incumbent Sales Service Customers.

10 Page 2 shows the Conversion Surcharge calculations for the Winter Period. The
11 Conversion Surcharge reflects the removal of prior period credits due to incumbent
12 Sales Service customers plus the incremental cost to serve the customers, based on
13 estimated incremental commodity prices. Conversion customers will have a floor price
14 equal to the cost of gas rates applicable to Low Load Factor customers, removing prior
15 period credits. The Conversion Surcharge is equal to the Re-entry Surcharge during the
16 Summer Period.

17 Page 3 is the Incremental Commodity Price Worksheet. Pages 4 through 10 are the
18 Load Shape Price Factor Worksheet. Page 11 is the projected city-gate sendout
19 forecast of Delivery Service loads that are not currently subject to Capacity Assignment.

20 **Q. Does this conclude your testimony?**

21 A. Yes it does.