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**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1744

In the Matter of
NORTHWEST NATURAL GAS
COMPANY, dba NW Natural
Emissions Reduction Program.

**NORTHWEST NATURAL GAS
COMPANY’S MOTION FOR LEAVE
TO FILE SUPPLEMENTAL
TESTIMONY**

I. INTRODUCTION

Northwest Natural Gas Company (“NW Natural”) submits this motion for leave to file the second supplemental testimony and exhibit of Andrew Speer (NWN/600 and NWN/601) in the above reference Docket. Good cause exists to file supplemental testimony because certain parties informally requested that NW Natural file additional information related to the Company’s identification of customer benefits from the Combined Heat and Power Solicitation Program (“CHP Program”).

NW Natural provided a draft of Exhibit NWN/601 to the parties on Monday December 14, 2015, and a draft of NWN/600 (supplemental testimony of Andrew Speer) on Wednesday December 16, 2015. Pursuant to OAR 860-001-0420(2), NW Natural has attempted to confer with the parties regarding the filing of this supplemental testimony and exhibit, and no party has indicated opposition.

II. MOTION

On June 24, 2015, NW Natural filed its application seeking authorization to establish a voluntary emission reduction program pursuant to ORS 757.539. The Company identified the customer benefits of the CHP Program as the additional throughput on NW Natural’s system, which will have the impact of lowering average system costs for the Company’s

1 customers. The Company estimated the incremental margin, or the benefit to customers,
2 under certain assumptions.

3 The parties have filed multiple rounds of testimony, conducted workshops, engaged
4 in settlement discussions, filed prehearing briefs, and an evidentiary hearing is scheduled
5 for December 18, 2015. Through further discussions with parties in this Docket, NW Natural
6 has been asked to supplement the record with additional information related to the customer
7 benefits expected from the CHP Program. Specifically, some of the parties have requested
8 that the Company identify whether NW Natural is expecting to invest in service line
9 extensions based on the assumed mix of CHP resources. Finally, the Company has been
10 asked to estimate the cost of service on any installed line extensions and how that
11 investment will impact the customer benefits.

12 The supplemental testimony and exhibit of Andrew Speer are intended to provide the
13 additional information requested by the parties. Specifically, Mr. Speer's testimony and
14 exhibit show the expected excess margin, or customer benefits, net of the cost of service of
15 any assumed line extensions. Mr. Speer's supplemental testimony and exhibit do not
16 advocate any resolution of issues in the case, but is simply informative and responsive to
17 the parties' request for additional information.

18 III. CONCLUSION

19 For the reasons described above, NW Natural respectfully requests leave to file
20 Andrew Speer's supplemental testimony and exhibit (Exhibits NWN/600 and NWN/601) in
21 this Docket.

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Respectfully submitted this 16th day of December, 2015.

NW NATURAL

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BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

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NW Natural

Second Supplemental Testimony of Andrew Speer

**UM 1744
Carbon Emission Reduction Program
Combined Heat & Power (CHP)
Cost Recovery**

December 16, 2015

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II. MARGIN CALCULATION 2

1 **I. INTRODUCTION**

2 **Q. Please state your name and position with Northwest Natural Gas Company**
3 **(“NW Natural” or the “Company”).**

4 A. My name is Andrew Speer. My business address is 220 NW Second Avenue,
5 Portland, Oregon 97209. My current position is Rates and Regulatory Analyst for
6 Northwest Natural.

7 **Q. Have you previously filed testimony to this docket?**

8 A. Yes. I filed testimony in NWN/200, supplemental testimony NWN/200-201, and
9 reply testimony NWN/400-404.

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my supplemental testimony is to provide information requested
12 by some of the parties related to the Company’s identification of customer
13 benefits from the Combined Heat and Power Solicitation Program (“CHP
14 Program”). In my direct testimony, NWN/200, the Company identified the
15 customer benefits of the CHP Program as the additional throughput on NW
16 Natural’s system, which will have the impact of lowering average system costs
17 for the Company’s customers. In my Direct Testimony, I calculated the marginal
18 system benefit from the incremental therms of CHP based on a single 10
19 megawatt (“MW”) CHP unit. (*NWN/200, Speer/2*). The margin from the 10 MW
20 CHP unit totaled \$136,647, under certain assumptions, including that the
21 program participant is a schedule 32 firm transportation customer. In my Reply
22 Testimony, I clarified that NW Natural does not expect to meet its base case of
23 240,000 metric tonnes of carbon dioxide equivalent (MTCO₂(e)) through

1 customers all installing 10 MW CHP units. NW Natural believes a more plausible
2 mix of resources to meet its base case would include two 45 MW, two 4.3 MW,
3 and one 21.7 MW CHP units. (*NWN/403, Speer/1*). The Company estimated the
4 incremental margin, or the benefit to customers, to be \$680,463 annually, for
5 years that the CHP Program reaches the base case carbon emissions, under
6 certain assumptions associated with those units and the rate schedules under
7 which they took service. (*NWN/404, Speer/1*).

8 Through further discussions with parties in this docket, parties have
9 requested that NW Natural supplement the record with further testimony related
10 to the customer benefits expected from the CHP Program. Specifically, parties
11 have requested that the Company identify whether NW Natural is expecting to
12 invest in service line extensions based on the assumed mix of CHP resources.
13 Further, if the Company expects to invest in service line extensions, parties have
14 requested that the Company identify the cost of service on those line extensions
15 and how that investment will impact the “excess margins,” or customer benefits,
16 available to customers through the CHP Program.

17 18 **II. Margin Calculation**

19 **Q. Does the Company expect to install line extensions for new CHP**
20 **customers?**

21 A. Some CHP installations may have a line extension associated with them. The
22 attached exhibit shows a plausible mix of resources that the Company could
23 expect to meet the base case: two 45 MW unit plants, two 4.3 MW unit plants,

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1 and one 21.7 MW unit. Based on this scenario, NW Natural assumes that both
2 45 MW units will require a line extension, that one of the 4.3 MW units will require
3 a line extension, and that the 21.7 MW unit will require a line extension. Further,
4 the Company estimates that each line extension will cost \$100,000. While the
5 Company believes that all of these assumptions are reasonable, these estimates
6 are not certain.

7 Whether or not a new CHP unit will require a line extension will be a case-
8 by-case determination. Likewise, the \$100,000 cost estimate was determined by
9 reviewing the cost of line extensions for Rate Schedule 32 customers over 5
10 years. Each project will have unique specifications that could be greater than or
11 less than the Company's \$100,000 cost estimate.

12 **Q. Would NW Natural finance the costs of the line extensions, or would**
13 **individual customers pay for them?**

14 A. Under its Schedule X tariff, the Company provides customers with a construction
15 allowance of five times the expected margin that will be produced by the
16 customer. To the extent a line extension cost exceeds that allowance, the
17 individual customer would pay for the excess amount of the line extension up
18 front, through a construction contribution. In the case of CHP units, the
19 Company expects that 45 MW units and the 21.7 MW unit would have high
20 enough usage, and create enough margin that the company's construction
21 allowance will be sufficient to cover the investment in the line service. This
22 means that the company would finance the cost of the investment. The
23 assumptions underlying the 4.3 MW unit are such that it will not have sufficient

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1 throughput to meet this standard, and therefore, that customer would be required
2 to contribute to the construction of the line extension.

3 **Q. Please describe what Exhibit NWN/601 shows?**

4 A. The exhibit shows the expected excess margin, or customer benefits, net of the
5 cost of service of any assumed line extensions. Column F shows the expected
6 total incremental margin in the first year, over a ten year period, and over a thirty
7 year period. Column H shows the cost of service on the investment for the first
8 year, and Column E (43-54) shows the cost of service over a ten year period,
9 and over a 30 year period. In cell I-38, the exhibit shows the amount of \$623,551
10 as the excess margin net of cost of service, or the net customer benefit, in the
11 first year of service. Cell F-47 shows the amount of \$6.3 million as the net
12 margin over a ten year period. Over a thirty year time frame, the Company
13 expects \$19.4 million of net margin, shown in cell F-56. The net margin
14 increases on a year-over-year basis because the cost of service declines over
15 time due to depreciation and deferred tax effects.

16 The exhibit also shows the Company's expected equity return on the
17 investment in line extensions. Under the Company's assumed mix of resources,
18 the Company expects an equity return of \$17,581 in the first year of service (cell
19 J-38), \$145,143 over ten years (cell G-47), and \$269,913 over thirty years (G-
20 56).

21 **Q. How does the Company propose to allocate customer benefits coming**
22 **from the increased margin to its ratepayers?**

1 A. Between program implementation and a rate case, NW Natural has proposed to
2 allocate customer benefits from increased margin through using a deferral
3 mechanism, and then allocating a credit to customers on an equal percent of
4 margin basis. This is the same methodology through which the Company has
5 proposed to include the program costs in rates. Once NW Natural's rates are
6 reset through a rate case, the benefits of increased margin from then-existing
7 CHP units would be taken into account as additional revenues in that case, and
8 thus be passed through to customers without the need for a deferral after that
9 time.

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

11 A. Yes.

5 – SECOND SUPPLEMENTAL TESTIMONY OF ANDREW SPEER

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

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NW Natural

Exhibit 601 of Andrew Speer

UM 1744

**Carbon Emission Reduction Program
Combined Heat & Power (CHP)**

Cost of Service and Customer Benefit

December 16, 2015

| Margin and Service Investment Scenario Table (Expected \$100k of Investment) | | | 5x Margin Test | | 1 Year | | | | |
|--|----------------------------------|---|--------------------|-----------------------------------|---------------------|------------------------|---------------------------------------|---------------|----------------------|
| MW Capacity per Unit | Number of Units in the Base Case | Number of Units that Require Investment | 5x Margin per Unit | Investment Exceeds 5x Margin Test | Margin per Customer | Total Base Case Margin | Expected Program COS ^{1,2,3} | Excess Margin | Common Equity Return |
| | | | | | | | \$ 15,146 | | |
| 45 | 2 | 2 | 1,303,828 | No | \$ 260,766 | \$ 521,531 | \$ 30,292 | \$ 491,239 | \$ 9,358 |
| 4.3 | 2 | 1 | 75,758 | Yes | \$ 15,152 | \$ 30,303 | \$ 11,474 | \$ 18,829 | \$ 3,545 |
| 21.7 | 1 | 1 | 643,140 | No | \$ 128,628 | \$ 128,628 | \$ 15,146 | \$ 113,482 | \$ 4,679 |
| 1.6 | 0 | | N/A | N/A | \$ 6,182 | \$ - | \$ - | \$ - | \$ - |
| Total | | | | | | \$ 680,463 | | \$ 623,551 | \$ 17,581 |

| | | | 10 Year | | | |
|----------------------|----------------------------------|---|------------------------|----------------------|---------------|----------------------|
| MW Capacity per Unit | Number of Units in the Base Case | Number of Units that Require Investment | Total Base Case Margin | Expected Program COS | Excess Margin | Common Equity Return |
| | | | | | | |
| 45 | 2 | 2 | \$ 5,215,314 | \$ 260,883 | \$ 4,954,430 | \$ 77,253 |
| 4.3 | 2 | 1 | \$ 303,034 | \$ 98,821 | \$ 204,213 | \$ 29,263 |
| 21.7 | 1 | 1 | \$ 1,286,279 | \$ 130,442 | \$ 1,155,837 | \$ 38,627 |
| 1.6 | 0 | | \$ - | \$ - | \$ - | \$ - |
| Total | | | \$ 6,804,627 | | \$ 6,314,481 | \$ 145,143 |

| | | | 30 Year | | | |
|----------------------|----------------------------------|---|------------------------|----------------------|---------------|----------------------|
| MW Capacity per Unit | Number of Units in the Base Case | Number of Units that Require Investment | Total Base Case Margin | Expected Program COS | Excess Margin | Common Equity Return |
| | | | | | | |
| 45 | 2 | 2 | \$ 15,645,941 | \$ 551,376 | \$ 15,094,565 | \$ 143,663 |
| 4.3 | 2 | 1 | \$ 909,102 | \$ 208,857 | \$ 700,245 | \$ 54,418 |
| 21.7 | 1 | 1 | \$ 3,858,837 | \$ 275,688 | \$ 3,583,149 | \$ 71,832 |
| 1.6 | 0 | | \$ - | \$ - | \$ - | \$ - |
| Total | | | \$ 20,413,880 | | \$ 19,377,959 | \$ 269,913 |

Footnotes:

- 1) 1.6 MW unit does not require additional service or main facilities
- 2) Each investment case assumes the 1 - 21.7, 2 - 45 and 1 - 4.3 MW units would require delivery facilities work
- 3) Investment is evaluated such that it does not exceed the "5x Margin" requirement of Sch X

Other Assumptions:

- 1) Assumes Investment of \$100k (\$30k meter/regulator plus \$70k service line) resulting in a first year cost of service of \$15,146.
- 2) The 4.3 MW plant's investment is \$75,758 resulting in a first year cost of service of \$11,474.

| 32 Firm Trans | Therms per Block | Base Rate | Base Rate Adj | Total Temp Adj | Billing Rate | Margin Rate |
|--------------------------------------|------------------|-------------|---------------|----------------|--------------|-------------|
| Block 1 | 10,000 | 0.09385 | 0.00099 | 0.00004 | 0.09488 | 0.09484 |
| Block 2 | 20,000 | 0.07975 | 0.00085 | 0.00004 | 0.08064 | 0.08060 |
| Block 3 | 20,000 | 0.05632 | 0.00059 | 0.00006 | 0.05697 | 0.05691 |
| Block 4 | 100,000 | 0.03286 | 0.00034 | 0.00007 | 0.03327 | 0.03320 |
| Block 5 | 600,000 | 0.01877 | 0.00020 | 0.00009 | 0.01906 | 0.01897 |
| Block 6 | | 0.00941 | 0.00010 | 0.00008 | 0.00959 | 0.00951 |
| | Rate | MDDV Volume | | | | |
| Dist Capacity Charge (based on MDDV) | 0.15748 | 126,930 | | | | |

| | Annual (Therms) | Monthly |
|---|-----------------|-----------|
| Incremental therms from an assumed 5 expected CHP customers | 46,329,610 | 3,860,801 |

Note:

See NWN Oregon Rate Schedule 32 Firm Transpiration rate schedule tariff.
[https://www.nwnatural.com/uploadedFiles/2532ai\(7\).pdf](https://www.nwnatural.com/uploadedFiles/2532ai(7).pdf)

Assumptions:

- Margin evaluated as a 32 firm transportation customer only.
- It is assumed that customers are already currently taking gas service at blocks 1-5.
- The same volumetric margin is used for all incremental therms.
- Incremental therm usage is taken from the WA State model which takes into account baseline usage of the existing customer.
- Pre-taxed marginal revenue.
- No incremental investment.
- Installed CHP MW capacity mix is consistent with the resource mix as identified in the Company's response to OPUC IR 10.

| Incremental Monthly Therms by Block | Incremental Margin |
|--------------------------------------|--------------------|
| - | \$ - |
| - | \$ - |
| - | \$ - |
| - | \$ - |
| - | \$ - |
| 3,860,801 | \$ 36,716 |
| Volumetric Revenue | \$ 36,716 |
| Dist. Capacity Revenue | \$ 19,989 |
| Total Monthly Margin | \$ 56,705 |
| Total Annual Margin | \$ 680,463 |
| Total Program Margin (10 yrs) | \$ 6,804,627 |

NW Natural
Determination of Cost of Service

| Input Capital Costs and Rates | | | |
|---|----------------|-------|---------------|
| Cost of Capital | % of Capital | Cost | Weighted Cost |
| Debt | 50.00% | 6.06% | 3.03% |
| Preferred Equity | 0.00% | 0.00% | 0.00% |
| Common Equity | 50.00% | 9.50% | 4.75% |
| | <u>100.00%</u> | | <u>7.78%</u> |
| State Tax Rate | | | 7.60% |
| Federal Tax Rate | | | 35.00% |
| Revenue Sensitive Rate (held to franchise rate/reg com fee) | | | 2.55% |
| Depreciation Rate | | | 2.50% |
| Property Tax Rate | | | 1.50% |
| Incremental O&M | | | 0.0 |
| Inflation Rate | | | 1.00% |
| Bonus Tax Depreciation toggled (1 = yes, 2 = no) | | | 2 |
| Investment | | | 100,000 |

