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July 16, 2015

**VIA ELECTRONIC FILING**

Public Utility Commission of Oregon  
Attention: Filing Center  
201 High Street SE, Suite 100  
Post Office Box 1088  
Salem, Oregon 97308-1088

**Re: UM 1744 – Emissions Reduction Program (SB 844)  
Supplemental Filing – Direct Testimony of Andrew Speer**

Northwest Natural Gas Company, dba NW Natural (NW Natural or Company), files herewith the following Direct Testimony of Andrew Speer (NWN/200, Speer 1-5 and Exhibit 201) as a replacement to the originally submitted application and testimony on June 24, 2015.

The purpose of the replacement filing is to provide additional detail for customers regarding the rate impact of the combined heat and power solicitation program (the “CHP Program”). In his original testimony, Mr. Speer described the rate impact of the CHP Program by customer class, through showing the additive effect of the incremental rate impacts for each rate schedule within a customer class. The replacement testimony and supporting Exhibit 201 describe the rate impact by rate schedule, in order to demonstrate the incremental rate impacts that would be experienced at an individual customer level.

The changes effected by this filing are limited to page 4, and the addition of Exhibit 201.

Should you have any questions, please feel free to contact me directly at 503.721.2476.

Sincerely,

*/s/ Mark R. Thompson*

Mark R. Thompson  
NW NATURAL

Attachments

BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON

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**NW Natural**

**Direct Testimony of Andrew Speer**

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

July 16, 2015

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**I. INTRODUCTION**

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

A. My name is Andrew Speer. My business address is 220 NW Second Avenue, Portland, Oregon 97209. My current position is Rates and Regulatory Analyst for Northwest Natural Gas Company, d/b/a NW Natural (“NW Natural” or the “Company”).

**Q. Please summarize your educational background and business experience.**

A. Prior to joining the Company as a Rates and Regulatory Analyst, I was employed at the Bonneville Power Administration (BPA) for five years and held similar positions as an Industry Economist in Power Policy & Rates, Risk Analyst in Enterprise Risk Management, and Account Specialist on BPA’s trading floor responsible for evaluating the economic impact of long-term power purchase transactions. I have both a BS and MS in Economics from Portland State University.

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

A. The purpose of my testimony is to describe the benefits associated with the addition of combined heat & power (CHP) to NW Natural’s system and to explain the proposed ratemaking related to the Company’s Application for Approval of NW Natural’s Combined Heat and Power Solicitation Program (the “CHP Program”).

**II. CHP SYSTEM BENEFITS AND COST TREATMENT**

**Q. What are the benefit(s) associated with the CHP Program?**

A. The installation of CHP units in NW Natural’s service territory will increase the Company’s system loads (or throughput) from the addition of incremental load

1 from CHP. The increased throughput will have the impact of providing a larger  
 2 base over which system costs can be spread, resulting in a reduction of average  
 3 system cost [total system cost / total system load]. Additionally, CHP units are a  
 4 high load factor load for the Company, and provide the Company with a reliable  
 5 load since the actual load is expected to coincide with the forecasted load. In  
 6 addition to the "System Benefits", individual participating customers may benefit  
 7 from the program through reduced energy costs they realize after the installation  
 8 of CHP.

9 **Q. Can you quantify the benefit associated with the additional throughput**  
 10 **from CHP?**

11 A. The actual benefit will depend on the amount of CHP installed, and the actual  
 12 usage for each CHP installation. The Company evaluated the marginal system  
 13 benefit assuming the installation of a CHP plant of 10 MW, which is in the mid-  
 14 range of evaluated potential plants, and incremental usage of 4,574,607 therms,  
 15 and assuming the customer is served under the firm transportation provision of  
 16 Rate Schedule 32. The analysis also assumes that the CHP participant is an  
 17 existing customer and already taking full gas service under blocks 1 & 2. The  
 18 calculated margin includes the margin rate for blocks 3, 4 & 5 as well as the firm  
 19 service distribution capacity charge. The system benefit is calculated assuming  
 20 the 10 MW CHP resource and illustrates the benefit (in the form of increased  
 21 margin and capacity charges that will offset system costs otherwise allocated to  
 22 other customers) that would result from usage at 4,574,607 level.

Installed Capacity (MW)	Incremental Usage	Total Margin
10	4,574,607	\$ 136,283

24  
 25 **Q. What class(es) of customers will benefit from the CHP Program?**

1 A. Residential, commercial, and industrial customer classes will all benefit from the  
2 increased throughput on NW Natural's system because the additional throughput  
3 on the system will reduce the average system costs for all rate classes.

4 **Q. How are program costs treated for rate making purposes?**

5 A. The program design and costs have no associated capital costs or investments.  
6 All costs are considered 'O&M' related costs which receive no rate of return. As a  
7 result, the deferral and amortization of program costs will allow full recovery of  
8 the costs.

9

10

### **III. RATE SPREAD AND IMPACT**

11 **Q. How will the Company allocate CHP costs?**

12 A. Because all customer classes benefit from the CHP Program, CHP costs will be  
13 allocated to all rate schedules and customer classes.

14 **Q. What is the methodology used to allocate CHP program costs to rate  
15 schedules?**

16 A. The Company proposes using equal percent of margin to allocate annual CHP  
17 costs to individual rate schedules. The equal percent of margin calculation  
18 allocates incremental revenue by calculating a percent of margin (margin by rate  
19 schedule divided by total margin) 'scalar' and multiplying the margin scalar by the  
20 total incremental revenue. The Company utilizes an equal percent of margin  
21 methodology to allocate costs annually. This is a common ratemaking  
22 methodology, which is also used to develop certain rates for the Purchased Gas  
23 Cost Adjustment (PGA) filing. Because the benefit will be experienced through a  
24 reduction to the margin that needs to be collected from all customers, allocating  
25 out the costs on an equal percent of margin to all customer classes/rate  
26 schedules is appropriate.

1 **Q. What program years did the Company analyze for CHP costs and rate**  
2 **impact?**

3 A. In Appendix C of the CHP Business Plan (see *NWN 100/Summers/52-55*), the  
4 Company analyzed the Program's highest year spend given baseline case  
5 assumptions to evaluate what the greatest incremental impact to customer rates  
6 would be in any single year over the life of the CHP Program. For purposes of  
7 this filing, the rate impact analysis included the CHP Program costs at year 4,  
8 which under the Company's forecast, is the peak of the program costs on an  
9 annual basis.

10 **Q. Based on the Program's highest spend year and baseline assumptions,**  
11 **what is the incremental rate impact by rate schedule and block?**

12 A. The rate impact by rate schedule is in Exhibit 201 of this testimony and shows  
13 the incremental rate increase by rate schedule and block for all Oregon rate  
14 schedules (See *NWN/201, Speer/2*). The rate impact analysis in the Exhibit  
15 reflects a total dollar amount of program costs of \$10,177,178.00 in the CHP  
16 Program's highest spend year.

17

18

#### IV. COST RECOVERY

19 **Q. How does the Company propose to recover expenses of the CHP Program**  
20 **in rates?**

21 A. The Company proposes to defer the expenses related to the program on an  
22 annual basis for later recovery in rates. Upon approval of the CHP Program, the  
23 Company will file a deferral application for CHP Program costs. NW Natural  
24 believes that recovery of the deferred expenses can be accomplished by  
25 including the amortization of deferred amounts in rates coincident with its annual

1           PGA filing. Amounts deferred would be subject to review during the normal PGA  
2           process, when other deferred accounts are reviewed.

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

4   A.   Yes.



BEFORE THE  
PUBLIC UTILITY COMMISSION OF OREGON

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**NW Natural**

**Exhibit 201 of Andrew Speer**

**UM 1744**

**Carbon Emission Reduction Program  
Combined Heat & Power (CHP)  
Rate Impact by Rate Schedule & Block**

	A	B	C	D	E	F
1	<b>Carbon Solutions - CHP Filing</b>					
2	<b>Program Budget and Rate Impact Analysis</b>					
3	<b>Appendix C - CHP Financial Plan Budget Rate Impact</b>					
4						
5	<b>CHP Proposal Rate Impact Analysis by RS</b>					
6	Customer Incentive: \$ 30					
7	NWN Incentive: \$ 10					
8						
9	Scenario Case: Base					
					<b>% of CHP Costs</b>	
			<b>Total Revenue by</b>	<b>Allocation of CHP</b>	<b>of Total</b>	<b>Incremental</b>
10			<b>RS</b>	<b>Costs to RS</b>	<b>Revenue</b>	<b>Rate Increase</b>
11	<i>Schedule</i>	<i>Block</i>				<i>\$/Therm</i>
12	2R		\$ 408,263,428	\$ 6,758,536	1.655%	0.01895
13	3C Firm Sales		\$ 154,604,491	\$ 2,099,744	1.358%	0.01329
14	3I Firm Sales		\$ 4,241,361	\$ 52,952	1.248%	0.01137
15	27 Dry Out		\$ 806,030	\$ 12,074	1.498%	0.01516
16	31C Firm Sales	Block 1	\$ 17,120,128	\$ 271,693	1.587%	0.01313
17		Block 2	\$ 14,372,723	\$ 143,723	1.000%	0.01199
18	31C Firm Trans	Block 1	\$ 189,532	\$ 6,219	3.281%	0.01599
19		Block 2	\$ 83,775	\$ 2,790	3.330%	0.01461
20	31I Firm Sales	Block 1	\$ 3,177,304	\$ 47,075	1.482%	0.01128
21		Block 2	\$ 5,854,187	\$ 50,232	0.858%	0.01019
22	31I Firm Trans	Block 1	\$ 81,097	\$ 2,654	3.273%	0.01607
23		Block 2	\$ 114,515	\$ 3,787	3.307%	0.01452
24	32C Firm Sales	Block 1	\$ 10,363,534	\$ 114,327	1.103%	0.00691
25		Block 2	\$ 3,297,737	\$ 17,638	0.535%	0.00265
26		Block 3	\$ 543,346	\$ 2,156	0.397%	0.00187
27		Block 4	\$ 110,869	\$ 271	0.244%	0.00109
28		Block 5	\$ -	\$ -	0.000%	0.00082
29		Block 6	\$ -	\$ -	0.000%	0.00041
30	32I Firm Sales	Block 1	\$ 2,618,224	\$ 26,818	1.024%	0.00619
31		Block 2	\$ 2,550,633	\$ 13,526	0.530%	0.00526
32		Block 3	\$ 844,309	\$ 3,321	0.393%	0.00371
33		Block 4	\$ 230,618	\$ 557	0.242%	0.00217
34		Block 5	\$ -	\$ -	0.000%	0.00124
35		Block 6	\$ -	\$ -	0.000%	0.00062
36	32 Firm Trans	Block 1	\$ 2,284,736	\$ 74,860	3.277%	0.00656
37		Block 2	\$ 1,254,603	\$ 41,388	3.299%	0.00557
38		Block 3	\$ 520,634	\$ 17,148	3.294%	0.00394
39		Block 4	\$ 528,279	\$ 17,339	3.282%	0.00230
40		Block 5	\$ 405,898	\$ 13,234	3.260%	0.00131
41		Block 6	\$ 25,193	\$ 809	3.211%	0.00066
42	32C Interr Sales	Block 1	\$ 3,640,693	\$ 35,834	0.984%	0.00585
43		Block 2	\$ 4,062,657	\$ 22,075	0.543%	0.00497
44		Block 3	\$ 2,048,573	\$ 8,264	0.403%	0.00351
45		Block 4	\$ 2,463,572	\$ 6,117	0.248%	0.00205
46		Block 5	\$ 105,391	\$ 154	0.146%	0.00117
47		Block 6	\$ -	\$ -	0.000%	0.00059
48	32I Interr Sales	Block 1	\$ 4,387,308	\$ 43,433	0.990%	0.00591
49		Block 2	\$ 4,748,395	\$ 25,773	0.543%	0.00502
50		Block 3	\$ 2,434,090	\$ 9,809	0.403%	0.00354
51		Block 4	\$ 4,678,913	\$ 11,601	0.248%	0.00207
52		Block 5	\$ 1,748,259	\$ 2,561	0.146%	0.00118
53		Block 6	\$ 73,447	\$ 55	0.075%	0.00059
54	32 Interr Trans	Block 1	\$ 1,815,423	\$ 59,423	3.273%	0.00663
55		Block 2	\$ 1,283,229	\$ 42,240	3.292%	0.00563
56		Block 3	\$ 660,444	\$ 21,707	3.287%	0.00398
57		Block 4	\$ 1,005,315	\$ 32,923	3.275%	0.00232
58		Block 5	\$ 1,097,435	\$ 35,707	3.254%	0.00133
59		Block 6	\$ 768,414	\$ 24,631	3.205%	0.00066
60	33		\$ -	\$ -	0.000%	-
61						
62	<b>TOTALS</b>		<b>\$ 671,508,740</b>	<b>\$ 10,177,178</b>	<b>1.516%</b>	