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 PRE-HEARING BRIEF**

I. INTRODUCTION

Northwest Natural Gas Company ("NW Natural" or "Company") requests that the Oregon Public Utility Commission (the "Commission") approve its Combined Heat and Power ("CHP") Solicitation Program ("Program"). The CHP Program is consistent with Senate Bill ("SB") 844, the Commission's rules, and public policy because it allows NW Natural to implement a natural gas project in which the Company would not otherwise invest in the ordinary course of business, benefits customers, and reduces harmful emissions. The CHP Program likely provides the Commission with the best and least-cost opportunity to successfully implement the legislature's goal to use voluntary programs by natural gas companies to reduce anthropogenic greenhouse gas emissions that are contributing to climate change.

NW Natural designed the program to increase CHP investment by offering its customers payments for measured and verified emission reductions for installed CHP. NW Natural determined that a customer incentive of $30.00 per metric tonne of CO_2 equivalent ("$MTCO_2(e)$") would likely provide a lowest-cost, yet sufficient financial incentive for the customer to make this difficult and risky capital investment. All NW Natural customers will be eligible to propose projects at locations within the Company's Oregon service territory, and all customers will benefit from CHP installations that increase margins due to higher

natural gas throughput over the existing gas delivery system. No incentives, however, will be paid until after carbon emissions have been measured and verified, ensuring that customers only pay for actual emissions reductions. NW Natural intends to release its initial solicitation after Commission approval, and the program will be subject to a Commission review after it achieves a moderate level of success and has incentivized 240,000 $MTCO_2(e)$ reductions per year.

With limited exceptions, there is general support for some sort of carbon emissions reduction program that provides financial incentives to customers and NW Natural to install CHP. Most of the disputed issues between the non-electric utility parties are not whether there should be a CHP program, but how to ensure that the program succeeds and cost-effectively reduces greenhouse gas emissions. While NW Natural has some disagreements with these parties on the best way to incentivize CHP installations, the Company appreciates their active participation and efforts to improve the program. NW Natural, however, believes that many of the Staff and intervenors' program design recommendations fail to appreciate the difficulties and obstacles facing CHP installation, and could result in yet another failed Oregon effort to encourage CHP and reduce greenhouse gas emissions. Therefore, NW Natural recommends that the Commission adopt its proposed CHP Program, with the minor modifications identified in the Company's testimony and this brief.

II. BACKGROUND

The legislature passed SB 844 in 2013 to create a new environmental policy that requires the Commission to establish a voluntary emission reduction program to incentivize natural gas utilities to invest in projects that reduce emissions and benefit their customers. The Commission then adopted rules implementing SB 844 that allow natural gas utilities to propose projects or investments to reduce emissions that the utilities would not undertake in the normal course of business. *Re a Rulemaking to Implement SB 844*, Docket No. AR 580,

Order No. 14-417 (Dec. 3, 2014). NW Natural worked with interested stakeholders to develop the CHP Program, and filed its application on June 24, 2015.

III. ARGUMENT

A. NW Natural's $30 per $MTCO_2(e)$ Customer Incentive Payment Provides the Program with a Reasonable Opportunity to Succeed

In order to succeed, the CHP Program must pay an incentive that will actually encourage customers to install CHP. History has demonstrated that there are major obstacles to CHP development in Oregon that cannot be overcome without significant financial assistance. Based on exhaustive research and analysis, NW Natural proposed a $30.00 per $MTCO_2(e)$ payment as the minimum monetary incentive that could result in customers investing in CHP. While NW Natural is concerned that this incentive level may be too low, the Company believes that it at least provides the program with a reasonable opportunity to actually reduce carbon emissions.

NW Natural proposes to pay customers incentive payments for up to 40 operating quarters based on measured and verified performance, with a total benefit capped at $4.5 million annually per site. (*NWN/100, Summers/8*). Spreading the incentive over a ten-year period protects ratepayers and increases the chances of long-term CHP operations by requiring customers to operate to obtain full payments and offsetting customers' ongoing operations and maintenance ("O&M") costs. (*NWN/100, Summers/8*); (*NWN/300, Summers/8*).

NW Natural designed the program to utilize other available incentives to reduce the cost of achieving carbon reductions and increase the chance of success. (*NWN/100, Summers/8-9*); (*NWN/300, Summers/41-42*). Customers will be encouraged to utilize the Oregon Department of Energy's ("ODOE") energy incentives program, the Energy Trust of Oregon's ("ETO") CHP energy efficiency program, and the federal business investment tax credit. (*NWN/100, Summers/8-9*); (*NWN/101, Summers/5-10*). It is standard industry

practice to stack incentives to lower costs for similar renewable energy and conservation investments. (*NWN/300, Summers/41-42*). A higher payment from NW Natural would be necessary without the use of these multiple incentives. (*NWN/300, Summers/41-42*).

NW Natural calculated the $30.00 per $MTCO_2(e)$ incentive using a financial model developed by the United States Department of Energy at Washington State University ("WSU") that was adapted for the Company's specific characteristics. (*NWN/100, Summers/9*). For all prototype sizes except the 45 MW unit, the CHP cost estimates in the model rely upon vendor supplied data and information from 281 monitored actual CHP sites gathered by the Energy Information Agency. (*NWN/500, Summers/13*). EIA data was not available for the 45 MW prototype unit. For the 45 MW prototype, WSU relied on data compiled by ICF International from vendor-supplied data published in the 2014 Catalog of CHP Technologies. The financial model then used different incentive levels to estimate "simple payback" periods and internal rate of returns ("IRR"), assuming ideal operating conditions. (*NWN/500, Summers/8*); (*NWN/100, Summers/9*).

NW Natural targeted a three to four-year simple payback, which resulted in the selection of the $30.00 per $MTCO_2(e)$ incentive. (*NWN/101, Summers/15*). NW Natural selected this approach because companies often start their process of evaluating investment risks using simple payback, and generally require a short period before making an investment. (*NWN/300, Summers/7-9*). Simple payback, however, only estimates how long it will take for a company to get its money *back* from an investment, assuming everything goes as planned. (*NWN/300, Summers/7-9*). No company makes risky capital investments just to break even. Additionally, it must be kept in mind that time for a company to be made whole from an investment does not account for a myriad of other factors and risks. Some of the additional costs and risks not accounted for in the simple payback calculation include:

- The cost of capital to make that investment,

- Taxes and interest expense,
- Uncertainty regarding cash flows,
- Ongoing O&M expenses,
- Other competing internal capital needs,
- The hurdles regarding investing in CHP instead of the core business, and
- Risks in changes to key cost elements like electricity prices, offset electrical purchases, natural gas prices, offset natural gas purchases, purchased fuel costs, operating hours, and outages.

(*NWN/300, Summers/7-9*).

The three to four year simple payback time period was selected because, as laid out in an ICF International assessment ("ICF Study"), it is at a level that may achieve a 30-40% penetration level of the potentially economic CHP installations that were identified in the study. (*NWN/100, Summers/6*); (*NWN/101, Summers/15*). ODOE engaged ICF International to assess the technical and economic viability of CHP in Oregon, which identified 1,457 MW of technical CHP potential, with 319 MWs of "economic" potential CHP. (*NWN/100, Summers/6*); (*NWN/101, Summers/57-65*). Economic potential meant CHP installations that could achieve an under ten-year payback, with only 87 MWs with a payback of under five years. (*NWN/101, Summers/60*). Despite the ICF Study identifying some Oregon CHP being considered potentially "economic," the current market environment, including existing incentives, has not been sufficient to encourage CHP installation. In contrast, market penetration could reach modest but real numbers if the payback period is reduced to three to four years. This will not occur in the absence of additional incentive payments.

In addition to simple paybacks, NW Natural evaluated IRR estimates when developing the recommended customer incentive level. (*NWN/500, Summers/8-9*); *(NWN/504, Summers/8-9*). Use of IRR for the purposes of determining the returns needs to be based on what a real customer would do to invest in CHP, which is a "far more

complex than a decision for an investor to invest in a bond." (*NWN/500, Summers/9*). For example, companies will only invest in CHP if their returns will be significantly larger than the returns that would attract investments in a regulated utility or fund low risk energy efficiency projects. (*NWN/500, Summers/12-13*). In addition, Companies need high forecasted returns because they have more potential investments than available capital, IRRs are not the same for all projects due to uncertain cash flows, and CHP represents significant risks associated with making a long-term investment outside of their core business. (*NWN/500, Summers/9*); *(NWN/503, Summers/11*).

In the end, NW Natural remains concerned that the $30.00 per $MTCO_2(e)$ may be too low to encourage potential customers to make this risky business decision. For example, many commercial and industrial customers will not make energy efficiency investments until the simple payback period is around 3 years. (*NWN/300, Summers/9-10*). Energy efficiency investments, however, are considered low risk, are well understood by customers, and do not face the other risks and obstacles facing CHP. (*NWN/500, Summers/11*). NW Natural strongly cautions against selecting a lower incentive that is not based on the rigorous and well supported cost information and financial calculations that underlie the $30.00 per $MTCO_2(e)$ payment.

Finally, NW Natural encourages the Commission to evaluate what incentive is necessary to encourage real customers in the Company's Oregon service territory to install CHP instead of carbon markets in other states or countries. Carbon prices in other jurisdictions vary widely, will be influenced by local regulatory requirements and market conditions, and may not be related to actual projects. (*NWN/300, Summers/4-5*) (*Staff/300, Klotz/5-6*). In contrast, NW Natural's CHP Program "is based on the cost to reduce carbon emissions in actual natural gas related programs in its service territory," which is consistent with SB 844's goal of obtaining real carbon emissions reductions. (*NWN/300, Summers/5*).

B. Environmental Protective Agency's ("EPA") eGRID Methodology Will Most Accurately Calculate Carbon Emissions Reductions

The EPA's Emissions and Generation Resource Integrated Database ("eGRID") should be used to determine the carbon emissions reductions that result when CHP operates and displaces electric generation that would otherwise serve the customer's load. The installation of CHP results in carbon emissions reductions because CHP is more efficient, reduces distribution and line losses, and displaces electricity with a higher carbon footprint. While there are multiple ways to calculate the carbon emissions of displaced electric generation, eGRID is simply the most credible option at this time to estimate which resources are most likely not to run when new CHP is added.

EPA has specifically recommended that eGRID be used to quantify greenhouse gas emissions associated with power displaced by CHP. (*NWN/300, Summers/19*); (*NWN/101, Summers/27, 47*). The Commission and the parties do not need to (and should not) design a new methodology, use data that was intended for a different purpose, or rely upon opaque utility-specific models that can be easily biased one way or another depending on the inputs and utility-determined assumptions. Instead, the Commission should use eGRID because it is a transparent methodology that was developed by a credible source (the EPA) for precisely the purposes of estimating CHP's impact on lowering the carbon emissions. (*NWN/101, Summers/27, 47*).

eGRID determines CHP's carbon emissions reductions by calculating the marginal resources that will be displaced when CHP operates. (*NWN/101, Summers/47*). eGRID starts with the most comprehensive plant-level electric power generation available in the nation, including plant-specific heat rates that derive from over forty fuel types. (*NWN/101, Summers/48-49*). As there is no single marginal resource that will be displaced, eGRID then estimates emissions reductions over the course of year. (*NWN/101, Summers/47-48*).

EPA's model relies upon data from an appropriate regional geographic scope. Broad regional information should be used because state- and utility-specific data is insufficient, and US average and aggregate levels do not reflect regional variation. EPA does not support using a single state or electric utility's information because there is no national consistent or comprehensive utility-specific data that can be used to accurately calculate the carbon emissions reductions that occur from CHP installations. (*NWN/300, Summers/19*). Utility-specific information may be able to determine greenhouse gas emissions associated with the utility's average operations; however, this type of "information is not designed to help decision makers understand which resources are most likely not to run when a new CHP resource is added." (*NWN/300, Summers/19*). In comparison, eGRID is designed to estimate marginal resource displacement and drops out all high capacity factor baseload resource that are unlikely to be impacted by new CHP installations. (*NWN/300, Summers/19*).

EPA's model appropriately calculates emissions reductions based on the Northwest Power Pool subregion that includes regional resources likely to be displaced by new CHP. (*NWN/500, Summers/4-6*). States inside and outside of the Northwest should be used to estimate CHP-related carbon emissions reductions because Oregon is part of an interconnected electrical system with geographically distant marginal peaking units that serve our loads. (*NWN/101, Summers/48-49*); (*NWN/500, Summers/4-6*).

eGRID is also the most transparent and trusted source of information available. Other potential options, including those from the electric utilities and the Northwest Power and Conservation Council ("NWPCC"), use complex or proprietary models and data sets that are designed for other purposes and are not easily reviewed by all stakeholders or the public. (*NWN/500, Summers/2-4*).

Another important factor in favor of using eGRID is that it is currently available. (*NWN/500, Summers/6-7*). For example, the NWPCC does not have a methodology to

calculate regional carbon emissions related to CHP installations, and it is unclear how long this potentially controversial process of creating a model may take. (*NWN/500, Summers/6-7*). Similarly, revising and adapting utility-specific models would likely lead to significant delays and disputes without better results.

eGRID will be regularly updated, which ensures greater accuracy over the life of the CHP Program. (*NWN/500, Summers/3*). The latest eGRID updates occurred in 2014 and 2015. New participating CHP customers will have their greenhouse gas emissions reductions numbers used based on the most recent eGRID carbon emissions value. (*NWN/300, Summers/21-22*). In contrast, the NWPCC methodology, whenever it is finalized, may be updated as infrequently as every five years. (*NWN/500, Summers/3*).

It is important to note that, while emissions reductions numbers should be updated for new participating customers, they must remain constant for a customer once they start in the program. (*NWN/300, Summers/21-22*). Incentive payments need to be fixed or "locked in" throughout the life of the project to ensure that customer can count on a specific payment based on its operating plans and assumptions because of the significant capital investment required under the program. (*NWN/300, Summers/21-22*).

Finally, the Commission should recognize the interdependent nature of the incentive payments and the carbon emissions reductions methodology selected. Customers are paid a specific monetary incentive based on an established level of carbon savings per kWh and therm. The customer's economics would change if the Commission were to significantly alter the carbon savings methodology, but leave the per-tonne incentive the same. Rather, if the Commission were to adjust the methodology, the incentive payment on a per-tonne basis should be adjusted accordingly for the program to remain effective. This would also occur if the ETO, ODOE, or federal incentives were for some reason no longer available. (*NWN/300, Summers/41-42*).

C. The CHP Program Will Cost-Effectively Reduce Greenhouse Gas Emissions.

NW Natural has designed the CHP Program to minimize the cost impacts on customers, and has made revisions to provide more certainty regarding the potential level and variation in costs. NW Natural's program should incentivize CHP installations in a low cost manner that provides the best opportunity to successfully reduce greenhouse gas emissions.

Program costs are fundamentally based on participation levels and the types of CHP installed. While there are measurement, verification, and program administrative costs, the vast majority of the costs are incentive payments that vary based on the levels of carbon emissions reductions achieved. (*NWN/100, Summers/14-16*); (*NWN/101, Summers/52-55*); (*NWN/300, Summers/11*). In other words, the more successful the program, the higher the costs. Given these variabilities, it is impossible to precisely predict what the program's costs will be. As explained above, NW Natural has sought to set the customer incentive level as low as the Company believes is realistic to encourage actual CHP installations.

NW Natural understands that the Commission may be concerned that the actual cost impact cannot be known because it is unclear how much (if any) CHP will be installed. To address this concern, NW Natural has revised the CHP Program to: 1) seek re-authorization to continue the program if the "base case" customer participation level is reached; and 2) make a full and comprehensive informational report after three years, regardless of participation amounts. (*NWN/300, Summers/11*).

The original CHP Program included low, base, and high forecasted participation levels, with the base case assuming a target of 240,000 $MTCO_2(e)$ per year and 80-120 MWs of installed CHP capacity depending on operations. (*NWN/300, Summers/11*); (*NWN/101, Summers/52-53*). The expected cost under the base case is 1.511% of NW

Natural's total revenues, and would result in an average monthly residential bill impact of $0.99. (*NWN/300, Summers/11*); (*NWN/101, Summers/54*); (*NW Natural/400, Speer/4*).

NW Natural proposes to seek Commission authorization to continue the program, if the program is able to reach the base case level of CHP installations and emissions reductions. This provides greater certainty regarding the level of costs, and a set opportunity to evaluate the program. This full and comprehensive review should not be an opportunity to re-litigate all policy or legal issues resolved in this proceeding, but should evaluate whether the CHP Program has been successful, whether any changes should be made, and if the program should be continued.

NW Natural seriously investigated the possibility of using a reverse auction to determine if it could lead to additional CHP installations or carbon reductions at lower costs. (*NWN/101, Summers/10-11*); (*NWN/300, Summers/5*). A "reverse auction" process is unlikely to successfully lower costs, but could instead reduce participation, result in lower emissions reductions, and potentially increase costs. Specifically, NW Natural concluded that there are major reasons a reverse auction would not be an appropriate part of the program, including:

- CHP installations are ill-suited for an auction process because they are long and complicated, and compete for other customer capital investments, which requires customers to have a high level of certainty before assessing their costs, risks, and benefits.
- The timing of an auction will likely reduce participants.
- An auction process would raise an additional barrier, which should not be done when there already is such a low level of historic Oregon CHP.
- Auctions are intended to drive prices down to a single award, while the CHP Program is designed to award multiple customers and achieve broad participation, up to the base case.
- It could increase costs by discouraging participation, and causing participants to maximize payments.

(*NWN/300, Summers/6*); (*NWN/101, Summers/10-11*); (*NWN/500, Summers/16-18*); (*NWN/505*). None of these potential problems exist with NW Natural's program design, which provides best chance for success at a low cost.

D. The CHP Program Should Include a Reasonable Company Incentive.

Under OAR 860-085-0600(2)(c), a utility may request an incentive payment for an emissions reduction project, and may propose an incentive structure with its initial project proposal that can be used for future projects. Through the Company's CHP Program application, NW Natural has proposed to receive an incentive of $10.00 per measured and verified reduction in $MTCO_2(e)$ emissions. This is an appropriate incentive for the CHP Project and as a baseline for future emissions reduction projects because it is lower than what the Company is allowed under the Commission's rules, rewards the Company for seeking out the most cost effective greenhouse gas emissions reductions program, and provides a fair baseline for future SB 844 projects. *(NWN/100, Summers/17)*.

By tying the $10.00 per $MTCO_2(e)$ incentive to the amount of carbon reduced by the Program, the Company's interests are aligned with the goals of SB 844 – to reduce greenhouse gas emissions. *(NWN/100, Summers/17).* The $10.00 amount was designed in connection with the Commission's Rules that provide that a utility's incentive cannot exceed 25 percent of the total SB 844 program costs, which is capped at 4 percent of the utility's last approved retail revenue requirement. ORS § 860-085-0700; OAR § 860-085-0750. NW Natural estimates that the cost of carbon for the CHP Program will be $42.59 per $MTCO_2(e)$ ($30 of which is paid to customers as an incentive for measured and verified reduction in carbon emissions). Based on the Company's research into potential SB 844 programs, the CHP Program likely represents some of the lowest cost carbon reduction measures that a gas utility can undertake under SB 844. *(NWN/100, Summers/18).*

The Company's $10.00 per MTCO2(e) incentive is fair and appropriate based on the specific characteristics of the CHP Program. The Commission's rules allow utility incentives to "vary depending on whether a Project is recovered as an expense or an investment placed in rate base." OAR § 860-085-0750(3)(b). The CHP Program does not provide the Company with an opportunity to invest in rate base, which warrants a higher incentive (all else being equal). The incentive at this level is also appropriate because the incremental margin associated with increased throughput on the NW Natural's system will be shared 50/50 with customers in between rate cases and will flow 100% back to customers at the effective date of the Company's general rate cases. (NWN/300, Summers/39). As the 50/50 sharing is designed to simply make NW Natural whole for capital investments related to line extensions, the CHP Program provides no monetary benefits other than an incentive. NW Natural should also be rewarded for seeking out and starting with the lowest cost natural gas related emissions reductions in the market.

The incentive is also a reasonable baseline for consideration of future carbon emissions programs. While the $10.00 baseline incentive would fall slightly below 25% of the cost of carbon for the CHP Program, it is highly unlikely that the Company would ever reach the cap on incentives. This is because future programs will likely be more costly, which will result in $10 per MTCO2(e) incentive representing far less than 25% of future program costs. A baseline incentive structure that is tied to the SB 844 framework and the Commission rules provides the appropriate economic signal to the Company to maximize the reduction of the lowest cost carbon now and in the future. For new carbon emissions programs, the $10.00 baseline incentive could be adjusted upward or downward depending on the level of rate base investment involved with the program, potential for market transformation, or other appropriate project specific considerations

Staff and NW Natural's customers, the Citizens' Utility Board of Oregon ("CUB") and the Northwest Industrial Gas Users ("NWIGU"), all now agree that it is reasonable to

provide the Company with an incentive. Staff originally suggested that it may not be appropriate for NW Natural to receive any incentive because of the potential for higher revenues due to the increased throughput. Staff's original position was misplaced because it failed to account for the fact that all of the increased margin from CHP will eventually flow back to customers. Based on the testimony of NWIGU, Staff now supports a $5-6 incentive for NW Natural.

E. The Program Provides Quantifiable Benefits to NW Natural's Customers.

NW Natural identified the increased throughput from CHP as a benefit to the Company's customers. *(NWN/200, Speer/1-2).* The increased throughput will have the result of lowering average system costs for all of the Company's rate classes. *(NWN/200, Speer/1-2).* NW Natural cannot identify with certainty the exact benefits of CHP because it is a solicitation based program, and the benefits passed back to customers is dependent upon the incremental therms generated from CHP usage, which will vary depending on the actual CHP units installed and performance of operations. *(NWN/200, Summers/14)*. To provide a level of certainty to the customer benefits, NW Natural proposes to seek approval of the "base case," which will cap the emissions reduction target at 240,000 $MTCO_2(e)$. *(NWN/200, Summers/15)*. If the Company reaches this level of carbon reductions, the Company estimates that about $700,000 in system benefits would be passed back to customers on an equal percent of margin basis on an annual basis. (*NWN/300, Summers/15).*

CUB raised the valid point that customers will not receive the benefit of the increased throughput until the Company's next general rate case when the Company's fixed costs are reassigned. *(CUB/100, Summers/7).* In response to this point, NW Natural proposes to separately track in a deferred account the incremental margin related to the increased throughput from CHP and share these benefits on a 50/50 basis between customers and

the Company until the next general rate case. *(NWN/300, Summers/16-17).* NW Natural proposed the 50/50 sharing to account for potential capital investment associated with the installation of CHP, which would ordinarily be recouped by a utility in part between rate cases from the margin associated with the incremental usage. *(NWN/300, Summers/17).* Following the next rate case, customers will receive 100% of the benefits associated with the increased throughput from CHP. *(NWN/300, Summers/17).*

In addition to the benefits of increased throughput, Staff also identified other benefits of CHP including more reliable and fixed power costs for CHP customers and the indirect benefit of an improved economy. NW Natural agrees that there are other benefits than increased throughput associated with the CHP Program, but only attempted to identify the benefits that were quantifiable and directly related to NW Natural's utility service for the Commission. NW Natural's testimony summarizes the numerous less tangible benefits, including more reliable power sources, job creation, economic development, improved electric reliability, and reduced pollution. NW Natural's customers will receive significant economic and non-economic benefits beyond the increased margins. (NWN/300, Summers/12-14).

F. The CHP Program Does Not Result in Fuel Switching.

The CHP Program does not result in fuel switching because it is replacing one form of electric generation (off site utility owned plants) with another form of electric generation (on site customer owned CHP). Simply because NW Natural supplies natural gas to the CHP customer does not change the fact that the customer's load will continue to be served by electric energy.

In addition, even if the CHP Program resulted in fuel switching, there is no reason why this should be an obstacle to any greenhouse gas reduction program under SB 844.

Fuel switching occurs when there is a substitution of one type of energy or fuel for another. *See* OAR 860-027-0310(1)(b). A CHP facility generates electric energy to meet

the power needs of end use customers. (*NWN Natural/100, Summers/2-3*). Similar to a CHP customer, electric utilities also use natural gas to generate electricity to serve their customers' loads. (*NWN/300, Summers/32*). This means that the CHP Program will not substitute gas for electric energy, but instead substitutes central station electric generation with distributed electric generation. (*NWN/300, Summers/32*). The key physical differences are that CHP is located on site, and is more efficient because it captures and utilizes waste heat. (*NWN/300, Summers/32*). The only reason why the Commission may need to address the fuel switching issue in this proceeding is because end use customers, and not electric utilities own CHP facilities. (*See NWN/300, Summers/32*).

The Commission does not need to decide whether CHP installations are fuel switching, because SB 844 authorizes fuel switching to reduce emissions. SB 844 and the Commission's implementing rules allow natural gas companies to implement programs that are designed to reduce greenhouse gas emissions within a defined boundary that would not otherwise occur. ORS § 757.539; OAR § 860-085-0500. Nothing in this definition bars fuel switching. As explained by Staff, if the "legislature [had] been concerned with fuel switching it would have been addressed either in statute, legislative history, in the Commission rules or during the public process the Commission engaged in while promulgating the rules." (*Staff/300, Klotz/27*).

The Oregon Department of Justice ("DOJ") and the Commission have already concluded that investments in CHP are not impermissible fuel switching, but are legitimate conservation programs that can be paid for by electric ratepayer pubic purpose funds. The DOJ concluded that fuel switching is not a bar to investing electric ratepayer funds in CHP. *(See DOJ Interoffice Memo; PGE/100, Barra/101)*. As explained by CUB, "the Commission has traditionally looked at CHP as an energy efficiency program, not a fuel switching program…." (*CUB/200, McGovern/2*). For example, the Energy Trust of Oregon's ("ETO") CHP conservation program has been available to fund CHP facilities

since 2002. (*NWN/300, Summers/32*). Due to CHP's higher efficiencies, CHP results in an overall reduction in both electric usage and greenhouse gas emissions. Essentially, there is no fundamental difference between NW Natural's and the ETO's CHP programs on the issue of "fuel switching." (*NWN/300, Summers/32*); (*CUB/200, McGovern/2*).

In the end, there is no legitimate reason why "fuel switching" should be a bar to a greenhouse gas emissions reduction program under SB 844. "Fuel switching" is not "a reason to put a stop to a program designed to reduce GHG emissions in the State." (*NWN/300, Summers/32*); (*Staff/300, Klotz/27-28*). The focus should be on whether the program will benefit customers and cost effectively reduce greenhouse gas emissions, and not who owns the electric generation resource or where it is located.

G. An Earnings Test Will Stifle the Development of Voluntary Programs.

As a matter of policy, NW Natural believes that subjecting a gas utility's incentive, or its ability to recover prudent program expenses, to an earnings test will discourage gas utilities from developing voluntary carbon emissions reduction programs. *(NWN/300, Summers/38).* The financial characteristics of emission reduction projects will vary project-by-project, and some projects, such as the CHP Project, will provide little financial motivation for the Company to put forth the significant effort to develop and implement a program outside of its core business without an economic incentive. As such, for emission reduction programs where the Commission approves the recovery of an incentive, the Company should have certainty that it will recover the incentive so that it can move forward with the project without having questions lingering whether the project still makes financial sense.

In the Commission's Rulemaking for emissions reduction programs, the Commission stated that the "determination of whether a project's incentive payments should be included in a utility's earnings test" will be made on a case-by-case basis. *OPUC Order 14-417 at 6*. Focusing on the specifics of the CHP Program, NW Natural will receive little

benefit from the program without an incentive. The costs related to the CHP Program are driven by incentive payments to customers and payments to consultants. The CHP Program does not provide the Company with an opportunity to invest in rate base and the incremental margin associated with increased throughput on the NW Natural's system will flow back to customers at the effective date of the Company's general rate cases. *(NWN/300, Summers/39).* For these reasons, neither the incentive nor the non-incentive program costs for the CHP Program should be subject to an earnings test.

CUB argues that the Commission should adopt an earnings test for the CHP Program. *(CUB/100, McGovern-Jenks/20-22).* CUB believes that the CHP Program should be subject to the PGA earnings test and a separate deferral earnings test. *(CUB/100, McGovern-Jenks/21)*. The PGA earnings test is based on the Company's results of operation for the year and is currently set at 150 basis points over the Company's authorized return on equity. *(NWN/300, Summers/39).* In addition to the PGA earnings test, CUB argues that an earnings test for the Company's carbon solutions programs deferral, which includes costs of the CHP Program, should be established and set at the Company's ROE plus its incentive level for the Program. *(CUB/100, McGovern-Jenks/22)*. Under this proposal, NW Natural could only recover its incentive for the Program if the Company's current rates were not sufficient to cover the incentive. *(CUB/100, McGovern-Jenks/22).* Additionally, CUB would have all of the Program costs subject to the earnings test. *(CUB/100, McGovern-Jenks/22).*

CUB's position disincentives gas utilities from developing emission reduction projects. Furthermore, CUB's position on the earnings test does not differentiate between normal utility activities and emission reduction projects. According to CUB, if the Company can absorb the cost of the CHP Program and still earn a reasonable rate of return, then an earnings test should apply. *(CUB/100, McGovern-Jenks/22).* This conclusory reasoning fails to analyze the impact of the application of an earnings test to a

voluntary program, and further, fails to analyze whether an earnings test is justified for the particular project proposed by the Company.

Put simply, utilities may be better off financially if they were to *not* participate in these voluntary programs under CUB's proposal. For these reasons, the Commission should reject CUB's proposal.

H. The Company Should Not Be Required to Bear the Risk of the Program because the Costs of the Program Are Proportional to Its Success.

Staff argues that the Company should share in the costs of the Program to the extent the Program is poorly administered or mismanaged. (*Staff/300, Klotz/4).* Staff also is vague about what risks or penalties could be imposed upon NW Natural, which adds unnecessary uncertainty to a voluntary program designed to benefit customers and contribute to Oregon's efforts to stop or minimize the harmful impacts of climate change. NW Natural should not be punished for rising to meet the legislature's challenge of developing a natural gas program to reduce greenhouse gas emissions.

Penalizing NW Natural is also inconsistent with the structure of the Program that only allows NW Natural to benefit if the CHP Program is successful. NW Natural will only pay customer incentives for measured and verified carbon savings. (*NWN/500, Summers/19*). If there is concern about the M&V process, NW Natural hopes that those concerns are alleviated by NW Natural's proposal to provide Staff access to all of the measurement and verification data at substantially the same time that NW Natural receives the data from the third-party hired to perform M&V work. *(NWN/300, Summers/27-28).* Lastly, our ratepayers' exposure to risk in this Program is limited. If, for any reason, the CHP Program is not as successful as planned, our customers will not be on the hook for the entire "base case" costs of 240,000 $MTCO_2(e)$. Rather, the Program's cost recovery will

only be proportional to the actual carbon savings. *(NWN/500, Summers/19).*

I. All Carbon Emissions Reductions and Incentive Payments Will Be Measured and Verified

NW Natural has proposed a rigorous and comprehensive measurement and verification plan ("M&V Plan") that will approve customer-specific plans, and monitor and verify emissions reductions and incentive payments. (*NWN/100, Summers/14-16*); (*NWN/101, Summers/38-40, 82*); (*NWN/300, Summers/26-31*). The purpose of the M&V Plan is to have an independent third party review any CHP installation proposals, document all savings and payments, and provide the Commission with timely and thorough information.

NW Natural hired an independent third party, Energy350, to develop and implement the M&V Plan. This third party will have no financial stake in the performance of the CHP systems, be paid based on time and materials, and be free to identify and raise any and all concerns with the CHP Program. (*NWN/300, Summers/29-31*). Energy350 was selected because they have a strong track record of providing these services, and they are the contractor for the ETO's CHP program, which will result in standardization and cost savings. (*NWN/300, Summers/30*).

The M&V Program requires the third party to conduct a thorough technical assessment of the potential CHP system and its estimated performance, approve the project specific measurement and verification, and recommend whether NW Natural should approve the project. (*NWN/100, Summers/15*); (*NWN/300, Summers/26-28*). Custom analysis will be performed to ensure that complex facilities will result in verifiable emissions reductions. (*NWN/300, Summers/28-29*).

Consistent with best measurement and verification practices, the third party will conduct periodic inspections following installation. (*NWN/100, Summers/14-15*). First,

there will be a pre-operational inspection and report to validate the installed system, the measurement and verification equipment, and the method of reporting. (*NWN/300, Summers/27*). Second, there will be ongoing site inspections to ensure performance is being correctly reported. (*NWN/100, Summers/15-16*); (*NWN/300, Summers/27*). This will include a post-operational memorandum outlining the project specific methodology used to evaluate performance, and summarize the recommended emissions reductions and payments. (*NWN/300, Summers/27*). In addition to project reporting, NW Natural will provide annual reporting on participants, CHP size and technology, and incentive and program amounts spent. (*NWN/100, Summers/23*); (*NWN/300, Summers/27*). Finally, as explained above, there will be a comprehensive program review after three years.

NW Natural's M&V Plan was reviewed by the Climate Action Reserve ("CAR"), which is an internationally recognized organization that ensures integrity, transparency, and financial value in evaluating greenhouse gas emissions. The M&V Plan met or exceeded the standards of CAR or the United Nations Clean Development Mechanism. (*NWN/100, Summers/16*); (*NWN/101, Summers/67-73*).

In reply testimony, NW Natural proposed minor changes in the M&V Plan to ensure that the Commission will be provided information more expeditiously. (*NWN/300, Summers/27-28*). NW Natural will provide the Commission with all M&V information promptly after the independent third party provides it to NW Natural. (*NWN/300, Summers/27*). NW Natural's goal is to report information to the Commission at whatever intervals Staff and the Commission prefer, and can provide information less frequently if desired. (*NWN/300, Summers/27*). NW Natural is also willing to make reasonable changes to the independent third party M&V in the future (no party has proposed any specific changes in this proceeding). (*NWN/300, Summers/30*). While NW Natural believes the M&V plan meets or exceeds state, national, and international best practices, the Company is open to making changes, if the Commission believes any are warranted.

J. The Pre-Filing Stakeholder Process Improved the CHP Program.

NW Natural actively sought the engagement of interested stakeholders, including Commission Staff, residential and industrial customers, environmental and climate change organizations, electric utilities, the ODOE, ETO, and WSU. In addition to informal conversations and meetings during the program development process, NW Natural hosted three stakeholder engagement workshops for interested parties. (*NWN/100, Summers/21-22*); (*NWN/101, Summers/72-81*). At these workshops, the Company provided drafts of the CHP Program, financial models, and analysis by CAR and WSU regarding the M&V Plan, emissions analysis, and incentive structures. (*NWN/100, Summers/21-22*).

NW Natural utilized the stakeholder process as a way to inform interested parties, consider potential changes to the program, and incorporate changes that improved the CHP Program. For example, at the request of stakeholders NW Natural analyzed various incentive structures; the impact of including upstream emissions; and solicited an independent review of its M&V plan by the CAR. NW Natural made a number of beneficial changes recommended by stakeholders, including minor revisions to the M&V Plan, and adding the NW Natural incentive over the same 40 operating quarters as the customer incentive. (*NWN/100, Summers/13, 22*). NW Natural appreciates the efforts made by the stakeholders before and after filing the CHP Program, and believes that they have improved the program and will increase its chances of success.

IV. CONCLUSION

Combined heat and power provides the best opportunity for NW Natural to maximize carbon reduction under SB 844. By incentivizing the installation of CHP with a $30.00 per tonne incentive, the program provides the appropriate incentive to attract investment in CHP, which has, until now, failed to take hold in Oregon. The CHP Program will give companies considering CHP the confidence to invest in CHP while also giving the

Company's ratepayers the assurance that their money will only be used if the CHP installations result in actual measured and verified carbon savings. The Company believes this framework strikes the balance intended by SB 844, and therefore, respectfully requests the Commission to approve the CHP Program.

Respectfully submitted this 12th day of November, 2015.

NW NATURAL

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