BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1744

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In the Matter of	)
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NORTHWEST NATURAL GAS	)
COMPANY, dba NW NATURAL	)
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Application for Approval of an Emission	)
Reduction Program	)
	)

RESPONSE TESTIMONY OF THE

CITIZENS' UTILITY BOARD OF OREGON

08/28/2015

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In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL Application for Approval of an Emission Reduction Program	)))))))))	RESPONSE TESTIMONY OF THE CITIZENS' UTILITY BOARD OF OREGON

Our names are Jaime McGovern and Bob Jenks, and our qualifications are listed in CUB Exhibit 101.

I. Introduction

Pursuant to Senate Bill 844 (SB 844),[1] Northwest Natural Gas Company (NW Natural or Company) filed an Application for Approval of an Emission Reduction Program (Application), seeking approval for a voluntary Combined Heat and Power (CHP) program that would primarily target its larger customers with specific heat energy profiles.

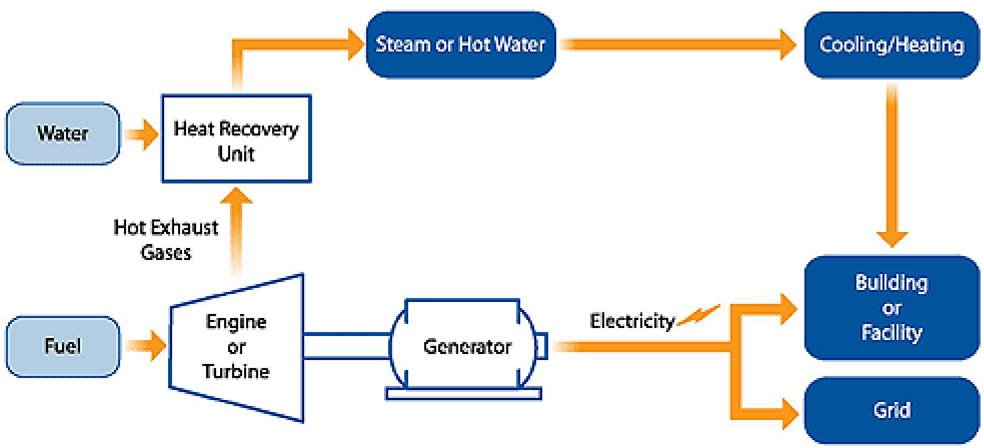
The Company describes CHP in the following way:

> CHP, also known as cogeneration, produces electricity and useful thermal energy in an integrated system. CHP systems can range in size from many megawatts in industrial, institutional and large commercial applications, down to a few kilowatts in small commercial and even residential

[1] S.B. 844, 77th Leg., Reg. Sess. (Or. 2013), later codified as ORS 757.539.

> applications. Combining electricity and thermal energy generation into a single process can save up to 35 percent of the total energy required to perform these tasks separately. The energy efficiency comes from the displacement of natural gas with what is otherwise "waste heat"-- recovered from on-site electricity generation for use in space and water heat and industrial processes.[2]

Visually: [3]



It is the "Heat Recovery Unit" in the graphic above that brings additional efficiencies to the table, through the use of excess or waste heat, in the case of cogeneration or CHP.

Although CHP is a well known technology, it has not been heavily deployed in Oregon. The Company proposes to change that with this Application. The Company requests recovery of costs and an incentive payment that would be contingent on the realization of carbon reductions.

CUB supported the passage of SB 844, and recognizes that there are carbon savings in the utility system that have yet to be realized. The proposed program is one potential method of reducing carbon emissions within the gas utility system. In evaluating the proposed program, the Commission must examine the projected benefits to

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[2] Application at pg. 3.
[3] http://www.epa.gov/chp/basic/

customers, projected rate impact of the program, and projected emissions reductions.[4] CUB believes, however, that the Commission should also consider the external impacts of the program, such as the effect this has on electric ratepayers, in considering the comprehensive benefits of the program.

CUB has concerns, including how the program would be implemented, the level of costs and incentives and the effects this program has on customers. We discuss these concerns in more detail below, but enumerate them here.

1. Quantification and Allocation of Benefits
2. Displacement of Carbon
3. Stacking of Incentives and Restrictions
4. Cost of Carbon Reduction
5. Rate Impact and Consistent Treatment
6. Earnings Test

[4] ORS 757.539(3).

II. CUB's Concerns

A. Quantification and Allocation of Benefits

The Company states that Senate Bill 844 "requires the Commission to establish a voluntary emission reduction program to incentivize natural gas utilities to invest in projects that reduce emissions, and to provide benefits to natural gas utility customers."[5] CUB is concerned about how the Company quantifies and allocates the benefits of its proposed program.

i. The Company's Position

The Company states that the "increased load from CHP will benefit all NW Natural customers by lowering average system costs and increasing system reliability."[6] Further, the Company believes that the "benefit accrues to all customers on NW Natural's system, and therefore NW Natural proposes to allocate costs to residential, commercial, and industrial customer classes on an equal percent margin basis."[7]

ii. CUB's Position

CUB has several concerns with this component of the application. CUB believes that it is incumbent upon the Company for any Carbon Emissions Reduction Program (CERP) under SB 844 to demonstrate that the "project benefit customers of the public utility."[8] Through a rulemaking proceeding, the Commission interpreted "project benefit" to mean "those benefits that accrue *to ratepayers* of the utility when such benefits can reasonably be attributed to the project."[9] Narrowly interpreted, at least some

[5] Application at pg. 1.
[6] Application at pg. 5.
[7] Application at pg. 6.
[8] *See* ORS 757.539(3)(c).
[9] OAR 860-085-0060(2)(b).

of NW Natural's ratepayers must benefit. CUB would argue for a more broad reading that all customers benefit, and that no customers be harmed.

CUB is concerned that the benefits to customers are not adequately quantified and that there is no mechanism to ensure that these benefits reach customers; that the Company's assumptions about participation fail to account for barriers to entry; and that the calculation of benefits ignores the fact that the customers of NW Natural are also the customers of the electric utility and will be impacted as electric customers.

a. Demonstration of lower average system costs

If the Company is citing lower average system costs as the identifiable benefit, then the Company should be able to give estimates of quantifiable benefits, with corresponding confidence intervals, or accuracy. In response to OPUC DR 3, the Company states "NW Natural is not able to predict the precise rate impacts associated with the availability of these revenues because the program assumes a 'solicitation' based approach, and therefore the number of customers, megawatts (MW), and incremental therms for may vary given the response level of the solicitation."[10]

The Company does give some hypothetical incremental revenues that may come from CHP customers equal to $136,283 per 10 MW installed capacity. [11] However, from the table on NWN/201/Speer/2, CUB is not clear how the benefits are enumerated. CUB sees the allocation of increased costs attributable to the CHP program (1.51% on average across all customer classes);[12] however, the reduction in average system costs, and therefore the reduction to consumer rates/bills, are not immediately clear. Therefore,

[10] CUB Exhibit 102.
[11] Table at NWN/200/Speer/2 (errata filed in July).
[12]NWN/101/Summers/54.

even when "benefits" are interpreted narrowly, CUB is not convinced of the material benefit even though the theoretical basis has been put forth.

CUB understands that the Company may see the upside with low risk, because the program is subscription based and the individual CHP customers are meant to make the capital investment, not NW Natural's ratepayers. However, the Company should recognize that there are embedded costs in the process, including the statutorily required stakeholder process and the management process, and therefore the amount of benefits expected to be realized are important. As such, penetration levels are relevant.

While NW Natural does not have a good projection of the benefits to customers of this project, it does have estimates of the cost of the program will vary depending on the number of CHP participants:[13]

Customer Class	Low Utilization Rate (2,000 MTCO2(e))	High Utilization Rate (2,000 MTCO2(e))
Residential	$0.02125	$0.04744
Commercial	$0.06376	$0.14233
Industrial	$0.08746	$0.19526

This is problematic. Both SB 844 and the Commission's rules implementing that legislation require "a showing of the Project benefits received and the allocation of benefits for reach type of ratepayer."[14]

b. NWN proposes a mechanism to pass costs to customers, but no mechanism to pass benefits to customers.

According to the Company:

> Pursuant to ORS 757.539(8), "[a] public utility may recover costs incurred and investments made from a type of ratepayer . . . only if the commission makes a finding that the type of ratepayer receives a benefit from the

[13] Application at pg. 13.
[14] OAR 860-085-0600(2)(b).

> project. If the commission makes a finding that more than one type of ratepayer receives a benefit from the project, the commission shall allow recovery from each type of ratepayer in an amount that is proportionate to the proportion of the benefit received, as determined by the commission, by the type of ratepayer." As explained in Section 1(A)(c) above the Program offers benefits to all customer classes because the implementation of CHP will increase the overall throughput in NW Natural's service territory.[15]

CUB agrees that SB 844 allows the Company to recover its costs only where the Commission has found that ratepayers "receive a benefit from the project." Regarding the issue of costs, NW Natural proposes they be recovered annually through the PGA. However, the Company's PGA proposal lacks a mechanism to pass the "lower average system costs" benefits that are created by the increased throughput to customers. Because this program is aimed at large customers that are not subject to the decoupling mechanism (decoupling would reduce other customer rates due to the throughput benefit), the increased load will have no effect on charges to other customers. While a throughput benefit of increased load reducing average system costs will likely exist, that benefit will flow to shareholders until the next general rate case reassigns fixed costs. While future customers could receive a benefit, current customers pay the costs of the program. The only current customers who would benefit are the individual large customers that install CHP.

As such, CUB proposes that as each new CHP project is developed, the Company identify the throughput benefits associated with the increased load reducing average system costs and deduct these from the costs that are deferred before amortization. This can be done by deferring the benefits as well as the costs or by limiting amortization to

[15] Application at pg. 12.

the net costs. Doing so would ensure that the costs would not be charged to customers without the benefits also flowing to the same customers.

c. Barriers to entry and penetration levels

If the CHP customer is large enough, then, theoretically, one customer could justify this entire process in savings alone. However, a realistic understanding of program participants is important to understanding any expected carbon emissions reductions. It is clear that by the Company's own attestation, adoption of CHP is minimal and exclusive.[16] The Company "is not aware of any economic CHP adoption in its service territory."[17] Moreover, although the Energy Trust of Oregon (ETO) already "offers an incentive payment to CHP customers based on the energy efficiency and cost-effectiveness of the installed CHP system of $.08 per annual kilowatt hour,"[18] this has not driven CHP adoption to date. Despite these understandings, the Company fails to incorporate hurdles to penetration in its analysis.

For example, in response to OPUC DR 11, the Company identifies that some CHP customers will need to invest in compression, but admits that it is "not aware of the number of participants or the percentage of participants that will need compression."[19] This information is important because compression will add costs, and is therefore a barrier to entry. NW Natural estimates the cost of compression as follows: 45 MW - $2 million; 21.7 MW - $1.2 million.[20]

As a second example, NW Natural recognizes that approximately 10% of customers will need a new meter set and distribution main extension, which will cost $0.5

[16] NWN/101/Summers/7.
[17] Application at pg. 10.
[18] NWN/100/Summers/8.
[19] CUB Exhibit 103.
[20] *Ibid*.

million.[21] Yet, the Company admits that it "has not directly factored in the need of potential participants to extend or expand service or request compression service into NW Natural's adoption rate assumptions."[22] These costs are material, and because no CHP customer will incur negative adoption costs, on average, adopting CHP customers bear a cost additional to the capital cost of the equipment and internal management. More importantly, if these adoption costs are positively correlated with the size of the CHP project, then some of the most significant customers (in reaching the goal) may be the ones that face the most significant costs and self select out of the program.

d. Demonstration of lower average system costs inclusive of load shifting effects.

An important value determinant in this application is the chosen definition of benefits. If the Company defines the benefits as a "reduction of average system cost,"[23] then CUB believes that we are tasked with considering the full costs to the customer. That is, if, within Oregon, adoption of CHP by a NW Natural customer means that a high load factor customer increases throughput on NW Natural's system, by a symmetric argument, that same high load factor customer removes its load from its electricity provider (PGE or PacifiCorp -- in the following example, we use PGE). Two effects may occur. First, load shifting from PGE to NW Natural will reduce throughput and increase PGE's average system cost associated with distribution. Second, if the customer is large (by design, that is likely), it can have the effect of negatively impacting the overall load factor shape for PGE. While these impacts are offset on the PGE system by the energy efficiency benefit – PGE avoids the cost of producing power for this load – that offset represents the energy efficiency benefit that flows to PGE's customers.

[21] *Ibid.*
[22] *Ibid.*
[23] NWN/200/Speer/2.

For consistency and clarity, the Company should, in positing benefits to customers, consider the impact to the customer in the case that the customer were originally both a customer of an Oregon electric utility and NW Natural. This approach would consider the overall impact to the customer and address any bias that may arise from load shifting. In addition, if the throughput benefit on NW Natural's system is less than the throughput harm on PGE's system, the only real customer benefits, other than the benefit to the CHP customers, is the energy efficiency benefit to PGE. But if this is the benefit that is really being incented, then the cost of this program should be included in the Total Resource Cost Test for PGE's CHP program.

B. Displacement of Carbon

Of course, at the central focus of a program that might incentivize a utility to reduce carbon emissions is the question of exactly how much carbon is displaced by the program. Key to that discussion is the method of calculation.[24] Heuristically, we have a customer of NW Natural, which, under this program, chooses to move from service under its electric company to providing its own power (and heat) through CHP, which requires it to purchase natural gas from NW Natural. In this sense, load is removed from its electricity provider, and therefore, in theory, the electric utility's carbon emitting plants may produce less power, and therefore produce fewer carbon emissions. How much less power, and from which plants, are central questions. The Company and stakeholders recognize this as relevant question.

i. The Company's Position

The Company chooses to calculate a reduction in emissions in the following manner:

> Avoided MTCO2(e) emissions from electricity generation will be the difference between monitored and verified MTCO2(e) emissions from the CHP system and the calculated MTCO2(e) emissions if the same volume of electricity had been purchased from the grid. The calculated MTCO2(e) emissions relies on the baseline recommended by the EPA for CHP sited in the State of Oregon: EPA's most recent eGrid Nonbaseload carbon emissions value for the Northwest Power Pool (NWPP) subregion.[25]

This approach, in that it utilizes non-baseload emissions, considers marginal, not average resources, and their associated emissions.

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[24] NWN/101/Summers/48.
[25] Application at pg. 7.

ii. CUB's Position

CUB believes that NW Natural's proposed approach is reasonable. CUB agrees that in many cases, a marginal resource is an appropriate resource to identify as a proxy for carbon emission reduction. In particular, in the case of PGE, as the example of an electricity provider, PGE dispatches its resources to market. Therefore, under the assumption that PGE's resources were "in the money,"[26] PGE would be dispatching (either to market or to serve load). If PGE's customer removes its load by CHP adoption, this does not affect the economic dispatch of PGE's resources.[27] For example, regardless of CHP adoption (or not) by any customer of PGE's, it is highly unlikely that PGE would not continue to run its low cost hydro resources. Therefore, PGE will continue to dispatch its plant. In that case, there is a question of whether there is a carbon reduction at all. However, viewed from a complete markets perspective, there would be a reduction in overall demand for power in the market that would flow through to wholesale levels. In this sense, we can view this self generation through CHP as creating a decrease in the need for electricity generation. Then the question becomes: what plant, or plants would reduce generation? Or more generically, what *type* of resource would be ramped down if electricity were not needed by the CHP customer? CUB thinks it is reasonable to believe that in a closed system, the electric utility would ramp down its least economic resource, or its marginal resource. In an interconnected market, it is reasonable to assume that non-baseload resources within that market would see their production reduced.

CUB recognizes that other parties in this docket are uniquely situated to have information as to the operation of plants and economic dispatch in this region. We

[26] When a resource can produce at a lower marginal cost than market.
[27] Unless the Customer is so large that it impacts wholesale market prices.

believe that this information could be valuable in assessing other potentially reasonable approaches to calculating the carbon reduction.

C. Stacking of Incentives and Restrictions

Current incentives from the ETO have not generated a large distributed adoption of CHP in the region. The Company plans for its program to increase adoption.

i. The Company's Position

The Company recognizes an Energy Trust (ETO) incentive of \$.08/kwh[28] and Business Investment Tax Credit (ITC) of 10%.[29] The Company proposes to pay CHP adopters \$30/MTCO2.[30,31] Oregon Department of Energy (ODOE) offers additional incentives. In summary:[32]

	Energy Trust of Oregon	Oregon Department of Energy	NW Natural
Efficiency Requirement	10% more efficient than CCGT Heat Rate	10% more efficient than CCGT Heat Rate	10% more efficient than CCGT Heat Rate
Basis for Incentive	Energy Efficiency	Capital Investment	Carbon Reduction
Incentive	\$0.08 per annual kilowatt hour up to 50 percent of eligible project cost up to \$500K (proposed to increase to \$0.25 per annual kilowatt hour with same limitations).	35% of project cost over 5 years (28.5% NPV). Limited budget. (WSU modeled \$5 Million maximum per project.)	\$ 30/MTCO2MTCO2(e) CO2 up to \$4.5 Million per year
M&V Requirement	Common reporting to the ETO and NW Natural. Short term M&V at time of project completion.	Not Required	Common reporting to the ETO and NW Natural. M&V basis for payment of carbon incentives up to 40 operating quarters.

It is NW Natural's hope that its incentive program would tip, over the edge, potential CHP adopters that have resisted thus far, for economic reasons or otherwise, and adoption in the region would increase, thereby reducing carbon emissions.

[28] NWN/100/Summers/8.
[29] NWN/100/Summers/9.
[30] Metric Ton of Carbon Dioxide.
[31] NWN/100/Summers/8.
[32] NWN/101/Summers/21.

ii. CUB's Position

It is clear from the chart above and the Company's testimony that potential CHP customers are eligible for multiple incentives. Therefore, CUB is concerned about the economic and policy implications of rules set around incentive stacking. For example, the ETO incentive is clearly aimed at electricity (as it is denoted in kwh), and therefore, one might argue that any carbon offsets associated with the energy efficiency program would be eligible to become tradable Emission Rate Credits (ERCs)[33] under the EPA's Clean Power Plan. CUB's preliminary understanding of the Clean Power Plan is that verified energy efficiency programs create ERCs. However, if this Commission decides that the carbon reduction associated with CHP is the result of NWN's SB 844 program and independent of PGE's energy efficiency program, would it still count as an ERC for the electric system? And if it does not, does this mean that electric energy efficiency associated with a NW Natural's carbon reduction programs would have less value to the electric utility than other energy efficiency? While it is unclear whether this program will affect the ERC value of the electric utility's energy efficiency investment, it is clear that the carbon offset is not tradeable for NW Natural:

[33] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units, Federal Register publication forthcoming. Accessed at http://www2.epa.gov/cleanpowerplan/clean-power-plan-final-rule, pg. 1546.

> Gas fired CHP projects do not generate marketable credits such as Renewable Energy Credits (RECs) or Renewable Identification Number (RINs) for alternative fuels. While it is technically possible that carbon benefits from these projects could be traded into the carbon offset market, the Company does not to expect to trade any carbon benefits from these projects, and NW Natural will require contract provisions with the plant owner that will prohibit them from trading carbon benefits into the voluntary offset market.[34]

NW Natural's proposed CHP program stacks incentives from NW Natural's customers, electric utility customers, and Oregon's taxpayers. Nearly all of NW Natural's customers happen to be in all three categories. For the purposes of its incentive payment, NW Natural attributes all the carbon savings to its incentive, which would mean that the other incentives do not produce carbon savings. However, NW Natural cannot monetize the carbon savings, while electric utilities may be able to do under the Clean Power Plan.

Without a better understanding of how stacked incentives affect carbon reduction trading, it is unclear whether NW Natural's program produces additional customer costs associated with the lost value of carbon reduction credits to the electric utility's energy efficiency programs.

Stacked incentives are not a new issue. It is an issue that has been associated with renewable resources, where many projects are eligible for ETO funds, along with tax credits, and third party contributions. Renewable Energy Credits (RECs) are tradable, like ERCs. In the renewable world, we have allocated the RECs to various parties based on their contribution to the project. It may be necessary to allocate the carbon reduction benefits between PGE customers and NW Natural customers.

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[34] Application at pg. 8.

D. Cost of Carbon Reduction

At a fundamental level, SB 844 is intended to stimulate measures that result in carbon emission reduction. A fundamental question here is what is the cost of that stimulation, and what impacts does it have? That is, are there just one time carbon reductions, or are there long term market transformations and economies of scale in carbon reduction that are realized?

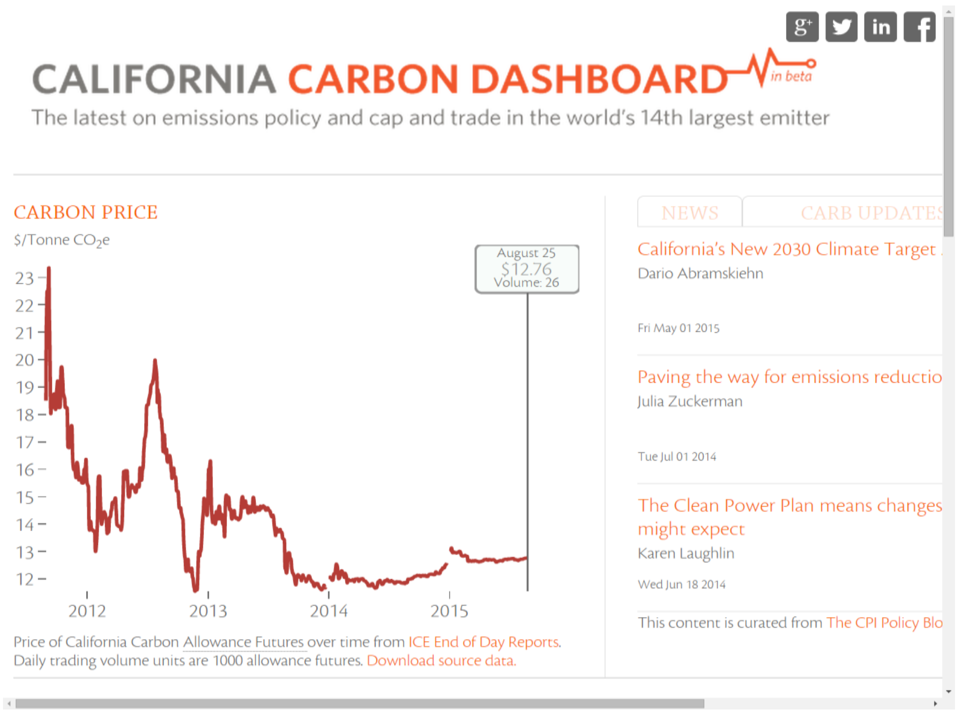
i. The Company's Position

The Company expects, for the CHP Solicitation Program, the cost of carbon to be $42.59[35] with the Company incentive at $10.[36] The Company expects this CHP program to be the least costly of all its future projects, on a per MTCO2 basis.[37] The Company points out that this means that if future incentives were held at $10/MTCO2, then as a percentage of program cost, the incentive percentage would decline.

[35] Application at pg. 9.
[36] At $10, the proposed incentive lies very close to the 25% cap.
[37] Application at pg. 9.

ii. CUB's Position

CUB is keenly interested in carbon reduction, and the long term impact of projects implemented under SB 844. However, we are concerned about the disparity of the carbon cost through NW Natural compared with other, potentially more established markets. For example, California:[38]



At the very highest point in the last several years, in California carbon was trading for half of the cost that NW Natural is proposing in this docket. This is concerning to CUB, especially given such a large part of the cost to customers will be the incentive to NW Natural's shareholders. CUB considers SB 844 to be an experiment to see whether voluntary carbon reduction with incentive payments is a useful tool to gain significant carbon reduction, in a way that existing market structures have not been able to reach. In that sense, consider NWN/201/Speer/2, which denotes "% of CHP Costs of Total Revenue." On average, this particular program is expected to be approximately 1.516%

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[38] http://calcarbondash.org/

of NW Natural's total revenue requirement. Given that NW Natural, in total for all SB 844 programs, may not collect more than 4% of its annual revenue requirement,[39] this program represents about 1/3 of that cap. In addition, as we noted above, NW Natural expects this program to be its least expensive one. This is expensive carbon reduction, and knowing that additional carbon reduction will cost even more, makes CUB very concerned about NW Natural's attempt to propose that a $10 per ton incentive to the Company should serve as a model for this and additional programs.

Under California's cap-and-trade system, the current price of carbon is $12.76 (chart above). By asking for a company incentive that is $10 dollars, NW Natural is expecting customers to pay it an *incentive* that is almost as much as the total cost of a tonne of carbon reduction under a cap-and-trade system. The actual cost is greater than $40/tonne.

CUB believes that it would not be wise to decide on an incentive level that applies to future projects when only one project has been proposed. In addition, CUB believes that $10/tonne is likely too high. CUB proposes that the incentive be set at $5/tonne for this first project, which will keep the overall cost of carbon reduction below $40/tonne.

This is an expensive program. This does not mean that NW Natural's proposal does not reflect the costs of incentivizing a gas utility to reduce its emissions. But it may be an indication that voluntary emission reductions programs offered with an incentive payment are an expensive way to reduce carbon. If a mandatory economy-wide cap-and-trade program, such as California's, produces carbon reduction at a cost of 1/3 to 1/4 of the cost of this program, then the lesson of SB 844 may be that the way to achieve carbon savings at the least cost to customers is to mandate it.

[39] OAR 860-085-0700.

E. Rate Impact and Consistent Treatment

The percentage of total revenue for the program, is on average 1.51%, and is 1.65% for residential customers.[40] Who incurs the cost of the program and accrues the benefits is an important question.

i. The Company's Position

The Company asserts that:

> ORS 757.539(8)(a) specifies that costs of emissions reduction programs are allocable to a class of ratepayer only if the Commission finds that "the type of ratepayer receives a benefit from the project." Based on this, and the customer benefits identified above, NW Natural proposes that the costs of the CHP Solicitation Program be allocated to all customer classes, on an equal percent of margin basis.[41]

ii. CUB's Position

The average rate increase of 1.5% is significant. This is larger than the rate hike associated with NW Natural's last general rate case, which was a 1.24% increase for customers.[42] At issue, then, when looking at these not-insignificant costs is how they should be allocated. By the Company's assertion above, deeper into that question is the identification of where the benefits flow. This can only be determined if the benefits can be identified, and ideally, quantified. In its proposal here, the Company determines that the benefits can be quantified by lower average system costs. CUB agrees that lower average system costs, if quantified and passed through to customers, are appropriately identified as benefits, in particular system benefits. Given appropriate rate treatment, these benefits can flow to all customers. However, CUB is aware that in the docket UM 1713, a very similar question is at stake. In that docket, parties are investigating the

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[40] NWN/101/Summers/54.
[41] NWN 101/Summers/26.
[42] OPUC Order No. 12-437, page 1.

treatment of energy efficiency funding under SB 838, where "direct benefits" have been historically treated and classified as limited to the incentive payments. CUB believes that lower system costs are to the benefit of all customers of the utility system, and that the Commission should adopt an approach that treats this issue consistently across the electric and gas sectors.

F. Earnings Test

i. The Company's Position

The Company proposes that the costs associated with this program be deferred and be amortized through the PGA on an annual basis.[43]

ii. CUB's Position

As CUB has already stated above, CUB believes that only the net cost should be amortized onto customers. The benefits associated with the increased load reducing average system costs needs to also flow to customers. In addition, the net cost should be subject to an earnings test.

There are two earnings tests at issue: the PGA earnings, test which looks at whether the utility is significantly overearning and shares a portion of that overearning with customers, and the deferral earnings test, which is designed to see if rates need to be adjusted for a utility to absorb a certain cost.

In the rulemaking for this docket, the Commission explicitly retained the authority to determine whether the incentive should be included in the earnings tests:

> We agree with the intent of Staffs draft proposed rule language, which required the utilities to include incentive payments in their annual results of operations report, but provided the Commission the discretion to exclude the incentive amounts from an earnings test associated with a

[43] NWN/200/Speer/4-5.

> PGA or related deferral. We do not, however, adopt this language because it does not represent a change to our current PGA policy, and thus does not need to be set out in a rule.
>
> For each application, we will make a case-by-case determination of whether a project's incentive payments should be included in a utility's earnings test. We find that a case-by-case determination is consistent with the overall program, as individual emission reduction projects may vary significantly in their costs, emissions reduced, and implementation timelines. These factors, as well as pre-application stakeholder involvement, will likely influence which cost recovery method the utility proposes in its application, as well as any incentive payments the utility requests. Moreover, the statute does not require that we grant any incentive payments, and it is thus reasonable for the Commission to determine in its review whether incentives should be granted in addition to cost recovery, and whether incentives should be excluded from the utility's earnings test.[44]

First, it should be noted that the Commission order suggests that on a case-by-case basis, the Commission can consider whether the incentive should be "excluded" from the earnings test, but does not contemplate excluding the non-incentive costs from the earnings test. These costs clearly belong in both earnings test.

CUB believes that with respect to the PGA earnings test, all costs plus the incentive should be included. The earnings threshold is high enough that the Company can earn above its authorized ROE, collect this incentive and still be under the threshold. The more difficult question concerns the deferral earnings test. This earnings test grows out of concern about providing a utility with better results than that utility would recive in a general rate case. Rate cases set rates to allow a utility to recover its costs and earn a return on its shareholder investment. An earnings test attempts to prevent a utility from using a deferral to get rate recovery that it would not get in a rate case. The earnings test asks the simple question, can the utility, at its current rate level, absorb the cost and still earn a reasonable return? If the answer is yes, then there is no reason to increase rates.

[44] OPUC Order 14-417 at 6 (internal citation omitted).

CUB believes that it is possible to apply a deferral earning test to the incentive by placing the earnings test threshold at the level of the Company's ROE plus its incentive level. We are then asking if the Company's current rates are high enough to recover all of its costs (including the cost of the SB 844 program and the incentive on that program) and still earn a reasonable amount (defined as ROE plus the incentive). If the rates are sufficient, then there is no basis to raise rates.

III. Conclusion

CUB supports the reduction of carbon emissions and innovative programs that may be required to reach those goals. CUB commends NW Natural for aiming to lead in this respect and appreciates the Company's interest in an incentive towards pursuing socially beneficial programs. However, CUB is concerned about details of this program: it is an expensive form of carbon reduction, its system benefits have not been adequately quantified, it contains no mechanism to actually pass the benefits on to customers and it is not clear how its incentive stacking will affect the value of electric energy efficiency.

CUB recommends that, if the Commission adopts this program, it include the following two adjustments:

*Offset the costs that are being deferred with the system benefits, so customers are only being charge the net costs of this program.

*Apply both the PGA and the deferral earnings tests to the program, including the incentive.

Even with these adjustments, and CUB's general support for carbon reduction, CUB cannot recommend this project at this time. As stated above, CUB is concerned about the high costs, including the significant incentive payment. CUB is also concerned that the stacked incentives could affect the value of ERCs derived from electric utility's energy efficiency program.

At the same time, CUB is not recommending the Commission reject the program. CUB would like to read the analysis of the PUC Staff and other parties, and read NW Natural's response to our concerns before making a final recommendation.

WITNESS QUALIFICATION STATEMENT

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EXPERIENCE:	Provided testimony or comments in a variety of OPUC dockets, including UE 88, UE 92, UM 903, UM 918, UE 102, UP 168, UT 125, UT 141, UE 115, UE 116, UE 137, UE 139, UE 161, UE 165, UE 167, UE 170, UE 172, UE 173, UE 207, UE 208, UE 210, UG 152, UM 995, UM 1050, UM 1071, UM 1147, UM 1121, UM 1206, UM 1209, UM 1355, UM 1635, UE 233, UE 246, UE 283, UM 1633, and UM 1654. Participated in the development of a variety of Least Cost Plans and PUC Settlement Conferences. Provided testimony to Oregon Legislative Committees on consumer issues relating to energy and telecommunications. Lobbied the Oregon Congressional delegation on behalf of CUB and the National Association of State Utility Consumer Advocates. Between 1982 and 1991, worked for the Oregon State Public Interest Research Group, the Massachusetts Public Interest Research Group, and the Fund for Public Interest Research on a variety of public policy issues.
MEMBERSHIP:	National Association of State Utility Consumer Advocates Board of Directors, OSPIRG Citizen Lobby Telecommunications Policy Committee, Consumer Federation of America Electricity Policy Committee, Consumer Federation of America Board of Directors (Public Interest Representative), NEEA

WITNESS QUALIFICATION STATEMENT

NAME:	Jaime McGovern
EMPLOYER:	Citizens' Utility Board of Oregon
TITLE:	Senior Economist
ADDRESS:	610 SW Broadway, Suite 400 Portland, OR 97205
EDUCATION:	PhD, Economics W.P. Carey School of Business Arizona State University Masters of Science, Economics Arizona State University Bachelors of Arts, Economics and Mathematics Arizona State University
EXPERIENCE:	Provided testimony or comments in a number of OPUC dockets, including UE 262, UE 283, UM 1633, and UM 1654. Worked as Utility Analyst at the Oregon Public Utility Commission from 2006-2008, providing advice on rate cases, analysis in meetings with the Bonneville Power Administration and performing benchmarking studies regarding telecom and electric competition in the state of Oregon. Economics professor at Mesa Community College and the State University of New York from 2004–2010.

NW Natural

Rates & Regulatory Affairs

UM 1744
Emissions Reduction Program

Data Request Response

Request No. UM 1744-OPUC-IR 3**:** Due 08-12-2015
On page six of the NW Natural's Application, the company states "increased throughput will effectively reduce average system costs and will thereby lower incremental rates for all customers." Provide the anticipated throughput and the expected monthly bill impact for residential, commercial and industrial ratepayers for the program period. If this information has already been provided please cite to where Staff can find the information requested.

Please provide the answer in electronic spreadsheet format with cell references and formulae intact.

Response:
Under the program design NW Natural filed for CHP, the incremental increase of throughput is realized without an associated capital investment being borne by other customers, and therefore the revenues from the increased throughput would be available to be credited against other costs that are otherwise included in rates.

NW Natural is not able to predict the precise rate impacts associated with the availability of these revenues because the program assumes a 'solicitation' based approach, and therefore the number of customers, megawatts (MW), and incremental therms for may vary given the response level of the solicitation. For financial budgeting purposes, NWN set the estimated number of customers expected to join the program; however, the number of MWs installed per customer is unknown.

Since the installed capacity is unknown, NW Natural evaluates the incremental therm usage, for purposes of responding to this data request, based on an estimated CHP plant size of 10 MWs. The therm usage for a 10 MW CHP plant is estimated to be 4,574,607 therms per year. NW Natural used the estimated therm usage assumption to evaluate the incremental margin gained from the additional throughput of 4,574,607 therms per year under rate schedule 32 transportation[1]. See OPUC IR 3 Attachment-2.

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[1] Analysis assumes that the customer installing CHP is currently an active customer taking service as a RS 32 transportation at block 1 & 2 volume (30,000 therms per month) levels.

The annual marginal revenue gained from a rate schedule 32 transportation customer adding 4,574,607 therms per year is $136,647. Under the program design assumption, there is no incremental investment associated with the gain in marginal revenue; therefore, at the time of a rate case (all else being equal) the additional margin from incremental therms included in the rate case will lower any revenue increase sought in the Company's revenue requirement.

In order to evaluate the rate impact of additional throughput from CHP installation, Staff may use the above rule of thumb to estimate various scenarios (i.e. a 10 MW CHP plant may provide $136,647 of benefit per year).

The rate impact analysis for the CHP program itself was included in the Company's original filing and was also provided at CHP workshops. On July 16, 2015, NW Natural provided updated testimony to NWN/200 Speer original filing and added an exhibit NWN/201 Speer that includes the rate impact by rate schedule and block. Since the time of the revised testimony filing for NWN/200-201, NW Natural made updates to the CHP budget workbook which revises slightly the rate allocation by block. See OPUC IR 3 Attachment-1.

NW Natural

Rates & Regulatory Affairs

UM 1744
Emission Reduction Program

Data Request Response

Request No. UM 1744-OPUC-IR 11: Due 08-12-2015
On page 10 beginning line 17 of Direct Testimony of Barbara Summers, Ms. Summers states, "Individual CHP customers will bear the costs of system expansion or extension as well as any compression, similar to how this would be done under NW Natural's Schedule H "Large Volume Non-Residential High Pressure Gas Service (HPGS) Rider."

a. How will this additional cost change the payback period for participants?
b. How many participants or what percentage of participants will need expansion, extension and/or compression of service?
c. What is the average cost of expansion, extension and compression?
d. Has NW Natural factored in the need of potential participants to extend or expand service or request compression service into NW Natural's adoption rate assumptions?

Response:

a. Additional costs of system expansion or extension or compression will increase the payback period for participants with this need. The table in OPUC IR 11 Attachment-1.xlsx shows for each prototype the impact on payback if compression and distribution system upgrades/extensions are required.

b. NW Natural is not aware of the number of participants or the percentage of participants that will need compression. The need for compression and distribution system upgrade or extension is highly dependent on the existing service at the site and the configuration of the CHP system. For example, reciprocating engines would not require compression. Compression is expected to be required for the 45 MW prototype units, may be required for the 21.7 MW prototype, and is not expected to be required for the 4.3 MW or the two 800 kW Prototype.

   NW Natural estimates that approximately 10% of the customers identified with potential CHP requirements above 1 MW are expected to require distribution system upgrades/extensions. Distribution system upgrades (eg, new meter) and extension is not size dependent but may be required depending on the existing service at the site and the configuration and location of the CHP system. For example, a new meter set may be required if the CHP system is located in a new area or requires a pressure rating higher than the existing meter.

c. NW Natural estimates the cost of compression as follows:
45 MW - $2 Million
21.7 MW - $1.2 Million
4.3 MW Reciprocating Engine - $0
(2) 800 kW "Reciprocating Engines - $0

NW Natural estimates a new meter set and distribution main extension to be $0.5 Million.

d. NWN has not directly factored in the need of potential participants to extend or expand service or request compression service into NW Natural's adoption rate assumptions. Compression and distribution system upgrade or extension is highly dependent on the existing service at the site and the configuration of the CHP system and will not be required at most sites. In general, it is the larger systems that may require this type of investment. The target goal of 240,000 per MTCO2(e) per can be met with a penetration of 25%-38% of economically viable and 5%-8% of technically viable projects identified by ICF. (To meet the program goal of reducing environmental emissions by 240,000 MTCO2(e) requires a penetration of 25 percent of ICF *economic* and 5 percent of ICF technical potential at the average of 3,000 MTCO2(e) per MW per year and 38 percent and 8 percent, respectively at 2,000 MTCO2(e) per MW per year.)