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August 28, 2009 NWN Advice No. WUTC 09-7A

VIA ELECTRONIC FILING

Dave Danner, Executive Director & Secretary
Washington Utilities and Transportation Commission
1300 S. Evergreen Park Drive S.W.
P.O. Box 47250
Olympia, Washington 98504-7250

Re: Docket UG-091044 Substitute Filing
Schedules G, H and I, Energy Efficiency Programs

Dear Mr. Danner:

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or the "Company"), filed Advice No. 09-7 on June 30, 2009. The Company hereby files the following replacement tariff sheets to include clarifications and revisions recommended by WUTC Staff:

Second Revision of Sheet G.1,
Schedule G,
"Residential Weatherization and Energy Conservation Service Program,"

First Revision of Sheet G.3,
Schedule G,
"Energy Efficiency Services and Programs – Residential and Commercial,"

All other sheets remain as filed on June 30, 2009. The requested effective date of October 1, 2009, also is unchanged.

In its initial filing, the Company requested that an accounting order be issued to allow for the deferral and five-year amortization of the energy efficiency program's start-up costs, estimated to be $150,000. NW Natural hereby withdraws this request. After further consideration, the Company has concluded that recovering these costs in one year does not impose a material impact on rates. For a Schedule 2, residential customers, the average monthly bill impact of collecting program costs plus 1/5 of start-up costs is $0.89; this increases to $1.00 (a difference of $0.11) when start-up costs are recovered in one year. For a Schedule 3, commercial customer, the average monthly bill impact of collecting program costs plus 1/5 of start-up costs is $3.43; this increases to $3.97 (a difference of $0.54) when start-up costs are recovered in one year. Since the rate impact is immaterial, the EEAG prefers that the Company recover the start-up costs in on year rather than five.

Schedule G is revised to clarify the customers to whom this program is offered. Energy Efficiency services will be available to all Residential Customers served on Rate Schedules 1 and 2; and all Commercial Firm Sales and Interruptible Sales Customers served on Rate Schedules 3, 41 and 42. Schedule G programs will not be offered to commercial customers receiving transportation service. Demand side management is not a least cost option for transportation customers. Since the Company does not have to reserve capacity for these customers, their supply side needs are not considered in the Company's Integrated Resource Plan.

Schedule G is also modified to clarify the EEAG's ongoing advisory role. The Company must consult with the EEAG before it adopts program changes, such as modifications to customer-offered incentives.

Language is also added to Schedule G to clarify that quarterly and annual reports will be provided in accordance with the Company's Energy Efficiency Plan.

The Company's Energy Efficiency Plan is hereby attached to this filing. It is modified slightly from the original, which was included as a work paper in the Company's June 30, 2009, filing. Changes include the following:

- language is added clarifying the due dates for quarterly and annual reports (pages 1 and 2),
- Table 4 is explained in more detail (page 6),
- references to a five-year amortization of start-up costs are removed (page 8), and
- rate impacts are revised to reflect the decision to collect start-up cost in one year rather than over five (page 11).

The proposed Schedule G, energy efficiency program will result in an average monthly rate impact of $1.00 for residential customers and $3.97 for commercial customers. The WA-LIEE program will increase average monthly residential bill by about $0.07 and $0.27 for commercial customers. The combined monthly rate impact for both energy efficiency programs in the first year is forecast as being $1.07 for a typical residential customer and $4.24 for a commercial customer.

The Company currently offers a rebate for high efficiency, gas-fired furnaces but does not otherwise have a residential energy efficiency program, and its low income weatherization program has been inactive. The monthly impact of current energy efficiency activities results in an average monthly bill impact of $0.07 for residential customers and $0.25 for commercial customers. The total effect of replacing current programs with the proposed energy efficiency and WA-LIEE programs will result in an average residential bill impact of $1.00 and $3.99 for commercial customers.

The EEAG was advised of these changes in an August 21, 2009, teleconference.

The Company respectfully requests that the tariff sheets filed herein be approved to become effective with service on and after October 1, 2009.

A copy of the filing is available for public inspection in the Company's main office in Portland, Oregon and on its website at www.nwnatural.com.

As required by WAC 480-80-103(4)(a), I certify that I have authority to issue tariff revisions on behalf of NW Natural.

Please address correspondence on this matter to me with copies to the following:

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Please call me at (503) 226-4211 extension 3590 if you have any questions.

Sincerely,

/s/Jennifer Gross

Jennifer Gross
Rates & Regulatory Affairs

NW Natural's
Energy Efficiency Plan
For Washington

Background
This Energy Efficiency Plan was developed in consultation with the Energy Efficiency Advisory Group (EEAG), which is a group consisting of interested parties to the Company's 2008 rate case, formed in accordance with the stipulated agreement attached to Commission Order No. 04, in Docket UG-080546. The EEAG is comprised of representatives from NW Natural, Energy Trust of Oregon (Energy Trust), Washington Utility and Transportation Commission (WUTC) Staff, Washington Public Counsel, Northwest Industrial Gas Users (NWIGU), The Energy Project, and NW Energy Coalition. The EEAG discussed this plan during meetings on February 5, 2009 and April 17, 2009, and teleconferences held on May 7, 2009 and June 15, 2009.

Energy Trust of Oregon
The Energy Trust will deliver the Company's Washington programs for at least 12 months. Programs will be provided to all residential and commercial customers within the Company's Washington service territory.

First Year Metrics
In the first program year, the Energy Trust will strive to meet the following metrics

- 97,500 to 130,000 total therms saved
- $780,000 to $1,040,000 total program costs
- Average levelized cost for measures not to exceed $0.65 per therm
- First year therms cost less than $8 per therm
- At least 60% of total dollars spent are paid out in incentives[1]
- Total Resource Cost (TRC) and Utility Cost (UC) at the portfolio level are greater than 1.0

Reporting
The EEAG will serve as on-going advisors to the Company's Washington Energy Efficiency (EE) program. To that end, the Energy Trust will provide the EEAG with Quarterly and Annual Reports. These reports will include
(a) the Total Portfolio Cost (TRC),
(b) a Total Portfolio percentage of Incentive Dollars versus total program costs,
(c) total program costs,
(d) therms saved, and
(e) a total levelized cost for all program activities.
Quarterly reports will be provided no later than 55 days after the end of each calendar quarter (February 25, May 25, and August 25).

The first Annual Report will be provided on or before January 25, 2011. The report will provide the information for the October 1, 2009, through September 30, 2010 program year.

[1] Total program costs must be adjusted down by 15% to account for costs that a utility delivered program would be recovering through base rates.

It will give a total portfolio report of cost benefit ratios and measure lives. In the first program year, the Energy Trust will report on the following performance indicators:

- Number of new trade allies in the Clark County area that the Energy Trust trains and certifies
- Number of residential customers receiving Home Energy Reviews (HERs) in the first program year.
- Percentage of customers implementing an incentivized measure resulting from a HER
- A discussion of customer communications used to roll out programs.

These indicators are valuable in that they demonstrate market penetration and an earnest effort to connect with Washington customers.

If Energy Trust continues to administer NW Natural's programs beyond the first program year, reports will be based on a calendar year. Three quarterly reports will continue to be provided no later than 55 days after the end of each calendar quarter and Annual Reports will be provided on April 25th.

First Year Final Report

After one program year, the EEAG will evaluate the cost-effectiveness of the programs and decide if the Company should continue using the Energy Trust as its program delivery arm. This decision will be based on the Energy Trust's achievement of its first year metrics and the cost-effectiveness of the program using the benefit cost ratio tests, as defined in Schedule G. This decision will be based, in part, on the comparison of estimated costs for other DSM program delivery options such as delivering DSM programs in-house or using a third-party administrator located in Washington. To this end, NW Natural will provide the EEAG with a paper benchmarking its Energy Trust delivered program against other Washington utility-delivered DSM programs. The Company will use benchmarking efforts to extrapolate what it might cost the Company to deliver its own DSM program, as well as potential costs to use a Washington-based DSM program administrator. This report will be presented simultaneously with the first annual report.

Programs

In the first year, Energy Trust will offer Home Energy Reviews (HERs) to NW Natural residential customers in cooperation with Clark Public Utility District (Clark PUD).

Clark PUD will be working with the Energy Trust to provide combined gas and electric services. This effort will require that the Energy Trust Program Management Contractors (PMC) install compact fluorescent lamps during HERs. Clark PUD will then reimburse the PMCs for labor and material cost under a separate contract. Similarly, if domestic hot water is heated electrically, flow restricting shower heads and faucet aerators will be installed and the PMC would be compensated accordingly.

Energy Trust contractors will be available to provide HERs to NW Natural customers in Skamania and Klickitat counties, areas outside of the Clark PUD service territory.

Beyond HERs, residential rebates will be offered for retrofit and replacement high efficiency gas furnaces and domestic hot water heaters. Rebates will also be offered for energy efficient retrofits and replacements in the commercial sector/existing building sector. .

Incentives will be offered for weatherization and other shell measures for both residential and commercial customers.

The energy efficiency measures offered in the first year will focus on residential and commercial retrofit opportunities and will mirror what is currently available to NW Natural's Oregon customers described in the Oregon programs in Attachment A. The offerings in Washington may differ in that one-time bonuses or coupon offers may be offered to Washington customers to supplement standard incentives. This will enable the Energy Trust to more rapidly adapt to the Washington market during the first year. It will also minimize costs required for making Washington specific forms and program marketing materials. The Company will offer the following programs during the first program year:

Residential Retrofit:

- Home Energy Reviews (HERs)
- Furnaces[2]
- Weatherization
- Duct Sealing
- Water Heaters (tank type)
- Water Heaters (tankless)

Commercial Retrofit:

- Boilers for small commercial
- Spray rinse valves for commercial kitchens
- Weatherization
- Commercial cooking measures

How First Year Programs were Determined

The Energy Trust currently offers programs in Oregon that can be leveraged and offered in Washington. Energy Trust began assessing which of their offerings in Oregon would be transferable to Washington.

Energy Trust considered Clark County demographics. NW Natural has approximately 60,500 customers in Washington: 56,000 are residential, 4500 are commercial and 35 are industrial[3].

With so few industrial customers in Clark County, Energy Trust decided that it would be wise to forestall offering Industrial programs and, rather, to focus dollars and efforts on penetrating the residential and commercial markets. After the residential and commercial markets are well established, NW Natural and Energy Trust will discuss with the EEAG the possibility of adding an Industrial EE program. However, this is not planned in the first year.

Since new construction starts have diminished significantly in 2008 as evidenced by census data for Clark County single family building permits, the Energy Trust does not plan to deliver new construction programs in Washington in the first program year. Costs would be incurred to launch this program-- additional contractors would be needed and marketing materials would have to be revised for Washington building codes. Making an investment with no clear

[2] *See* Attachment B for study results on the savings potential for the furnace measure.
[3] Numbers are rounded.

return would be unwise. However, Clark County has historically had above average housing starts per year and we want to enter the market as it recovers so as to avoid any lost opportunities associated with new construction. To balance these objectives, the Energy Trust will enter the market when the activity justifies the costs. They will closely monitor new housing starts through contractor networks active in Energy Trust's Oregon programs and by tracking Washington housing starts statistics. If Clark County building permits exceed 200 per quarter for two consecutive quarters, Energy Trust will begin offering programs. This trigger was determined by looking at historical building permits in Clark County as reported by the census bureau. Should the threshold be met, we will expect that total program costs will increase due to costs associated with program launch, enlisting additional contractors and developing new marketing materials.

Clark PUD staff would like to coordinate efforts in the commercial and residential new construction markets once the market shows indications of gaining momentum likely to occur in mid-2010. Clark PUD currently offer services through Energy Star New Homes program as does the Energy Trust. Clark PUD does not currently have a robust commercial new construction service offering and would like to benefit from coordinating with NW Natural when market indications warrant service offerings. The Company is hopeful that these opportunities to coordinate with Clark PUD will enhance its future cost effective DSM offerings.

Therms Saved

The savings goals are initially derived from the resource evaluation that was done in preparation for the Company's 2009 Integrated Resource Plan (IRP). The Energy Trust generally forecasts two scenarios: a stretch case and a conservative case. The stretch case in Table 1 below, which is taken from the Company's 2009 IRP, is an aggressive goal. Table 2 is the conservative case, which is 75% of the stretch case. While the stretch case in the IRP is useful in preparing a long-term, 20 year forecast, the conservative case is valuable for short term planning.

Table 1 – IRP Stretch Case Forecast, March 2009
Achievable DSM Therm Savings in NW Natural's Washington Service Territory

DSM Program	2009	2010	2011	2012	2013	2014
Res - New	14,088	14,088	28,176	42,264	42,264	42,264
Res - Retrofit	15,233	121,863	137,096	152,328	167,561	182,794
Res - Replacement	412	412	824	1,235	1,235	1,235
Res - Appliance Replacement	248	248	372	372	372	372
Res - Solar dhw	284	284	378	568	568	568
Comm - New	-	17,398	18,980	20,561	22,143	22,143
Comm - Retrofit	2,434	38,938	43,805	48,673	53,540	58,407
Comm - Replacement	2,151	38,725	43,028	47,331	51,634	55,936
Ind - Retrofit	590	9,444	10,624	11,805	12,985	14,166
Ind - Replacement	76	1,361	1,512	1,663	1,814	1,965
Residential Total	30,265	136,895	166,846	196,767	212,000	227,233
Commercial Total	4,585	95,061	105,813	116,565	127,317	136,486
Industrial Total	666	10,805	12,136	13,468	14,799	16,131
All DSM	35,516	242,761	284,795	326,800	354,116	379,850

Table 2 – IRP Conservative Case Forecast, March 2009
Achievable DSM Therm Savings in NW Natural's Washington Service Territory

DSM Program	2009	2010	2011	2012	2013	2014
Res - New	10,566	10,566	21,132	31,698	31,698	31,698
Res - Retrofit	11,425	91,397	102,822	114,246	125,671	137,096
Res - Replacement	309	309	618	926	926	926
Res - Appliance Replacement	186	186	279	279	279	279
Res - Solar dhw	213	213	284	426	426	426
Comm - New	1,825	29,204	32,854	36,504	40,155	43,805
Comm - Retrofit	-	13,048	14,235	15,421	16,607	16,607
Comm - Replacement	1,614	29,044	32,271	35,498	38,725	41,952
Ind - Retrofit	443	7,083	7,968	8,854	9,739	10,624
Ind - Replacement	57	1,020	1,134	1,247	1,361	1,474
Residential Total	22,698	102,670	125,134	147,575	159,000	170,424
Commercial Total	3,439	71,296	79,360	87,424	95,487	102,365
Industrial Total	499	8,103	9,102	10,101	11,100	12,098
All DSM	26,636	182,070	213,596	245,100	265,587	284,888

Savings goals for the Energy Trust's first program year are based on the conservative case deployment scenario presented above in Table 2. The first year metric is comprised of achievable potential for applicable residential and commercial retrofit and replacement programs for the fourth quarter of the 2009 potential, plus the first three quarters of 2010. No adjustments are made for economic conditions or for ramp up beyond those assumptions used when determining the achievable potential for the 2009 IRP.

Attachment C demonstrates different ways of assessing the achievable potential in the Company's Washington service territory. Sheet C-1 takes the savings experienced in NW Natural's Oregon service territory, multiples that by 11% to determine likely results in Clark County. Sheet C-2 shows the therm savings received in Cascade Natural Gas's Washington service territory, proportioned down to reflect the size of NW Natural's service territory. Neither worksheet is to be used as a measure-by-measure guide for savings targets, but when used together, these different perspectives verify that current market results are relatively consistent with the IRP's achievable potential for NW Natural's Washington customers.

Evaluation and Verification of Therms Saved

Deemed savings by measure will be used to determine total therms saved per program year. The deemed savings used in program analysis will reflect the findings in the most current verification study. Program impact and process evaluations will be completed on an ongoing basis. The EEAG will be notified if deemed savings by measure are modified.

As the program matures, when sufficient historical billing data becomes available, Energy Trust will periodically perform a pre- and post-billing analysis to verify savings for specific program measures. Pre- and post-billing analysis will not be done during the first program year because measures must be installed at least 12 months so that a meaningful pre- and post-billing analysis can be performed. These studies compare data for like seasons (i.e. – a January 2009 bill before a measure is installed is compared to a January 2010 bill after a measure is installed.) A study will not be performed until a significant number of measures have been installed for at a minimum of 12-months.

Incentive Dollars
The Company's energy efficiency tariff (Schedule G) is intentionally silent on incentive dollars. The Company would like the Energy Trust to change incentives offers as necessary to move the market. Before any changes are made to incentive amounts, the Company will seek EEAG for approval.

The following four tables give an overview of the costs and incentives paid for Energy Trust's Oregon gas programs as well as estimates for the Company's Washington program.

Table 3 shows the Energy Trust incentives for its 2008 Oregon programs as a percent of fully loaded cost by sector.

Table 3 - 2008 Gas incentives in Oregon as Percentage of Total Program Cost

Programs	Incentives	Total Program Costs	% Incentives
New homes and products	$1,038,491	$2,478,934	42%
Existing homes	$4,576,953	$8,202,591	56%
Existing buildings	$1,883,897	$3,312,031	57%
New buildings	$603,331	$1,087,379	55%
Production Efficiency	$27,922	$86,010	32%
Total	$8,130,594	$15,166,945	54%

In Oregon, the Energy Trust's percent of incentives to total program costs is below the 70% to 80% that other Washington utility programs report spending on incentives[4]. Possibly, this incongruity with Washington's programs may be because utility-delivered program do not account for costs that are otherwise rate-based, whereas all Energy Trust costs are considered incremental program costs. The Energy Trust will account for this by adjusting its total costs down by 15%, the amount that would be rate based if programs were delivered by the utility.

Table 4 – Estimate of Washington Incentives as Percentage of Fully Loaded Costs

Program	Incentives	Program Costs	% Incentives
Existing Homes (Residential)	$268,950	$415,650	65%
Existing Buildings (Commercial)	$211,900	$277,100	76%
Total	$480,850	$692,750	69%

* Program costs do not include NW Natural's costs or start-up costs. Program costs are further reduced by 15% which represents Energy Trust's administrative costs that would be rate based were this an utility delivered program.

After the Energy Trust adjusts its total costs down by 15%, it expects incentives paid in the first year of its Washington programs will account for 69% of total costs which is inline with other Washington energy efficiency programs. Energy Trust believes the percentage of

[4] *See* Avista's "Triple E Report: January 1, 2008 through December 31, 2008."

incentives paid verses total costs will still be on the low end of the spectrum compared to the 70-90 percent experienced by other Washington DSM programs because NW Natural's program is not mature and does not currently include industrial customers, a customer class that is generally less costly to serve but has larger incentive pay outs.

The Energy Trust will track and report on the level of incentives paid. It is willing to respond to the market if program results suggest that incentive amounts are not appropriately set. Energy Trust is planning to use additional coupons for Washington customers which would offer more incentive dollars for specific measures for limited periods of time. Responsiveness to such campaigns will be tracked and Energy Trust will report if the campaigns prove to move the market more quickly.

Levelized Cost

Table 5 shows the type and activity level achieved by various gas EE programs in Oregon in 2008 for NWN. Table 6 shows the estimated activity for Company's first program year in Washington.

Table 5 - Gas efficiency savings in Oregon 2008 and OPUC Performance Metrics

Gas Efficiency Savings	NWN Therms	Cascade Natural Gas	Avista	Total Savings Therms	Expenses	$ / Therm	Levelized Cost/
Commercial	1,156,018	51,298	0	1,207,316	$4,399,409	$3.6	33 ¢
Industrial	12,600	0	0	12,600	$86,009	$6.8	53 ¢
Residential	1,260,916	82,505	9,793	1,353,214	$10,681,527	$7.9	54 ¢
Total Energy Efficiency Programs	2,429,534	133,803	9,793	2,573,130	$15,166,945	$5.9	45 ¢

Energy Trust predicts the per-therm cost and average levelized cost in Washington to be somewhat higher than the Oregon average. This deviation is due to a small industrial sector (approximately 35 customers) which the Company does not intend to serve in the first program year and a large residential retrofit sector which is the most costly to serve.

Table 6 – Estimate of Washington Efficiency Savings and Levelized Costs

Sector	Savings (Therms)	Fully Loaded Cost	$/Therm	Levelized Cost
Residential	58,500	$523,450	$8.9	$0.60
Commercial	71,500	$354,450	$5.0	$0.45
Total	**130,000**	**$877,900**	**$6.8**	**$0.52**

*** Expenses include Energy Trust administrative costs (15%), NW Natural Administration and 1/5 of the start-up costs ($30k)**

**** $/Therm and levelized cost calculations are based on achieving the stretch case scenario**

Start Up Costs

One-time start-up costs of $150,000 are estimated below in Table 7. Costs include the incremental labor costs for certain Energy Trust Employees who are temporarily working on the start up of NW Natural's Washington program.

Table 7 – Start Up Budget Summary

Legal	$	20,000
Information Technology	$	30,000
Planning & Evaluation	$	15,000
Finance & Accounting	$	10,000
HERs and ETO Home energy Services	$	30,000
Marketing and Communications	$	30,000
Existing Buildings Start Up Activities	$	15,000
TOTAL	**$**	**150,000**

Table 7 represents costs incurred by the Energy Trust. Start-up cost include setting up of new accounting and technical processes that will allow Energy Trust to separately track the Washington program; extending marketing efforts into Washington; making any forms or ads specific to Washington as building codes and available tax incentives differ; evaluating the DSM potential in more detail to set appropriate program metrics; amending existing contracts; developing trade ally agreements; and making the appropriate applications so that the Energy Trust can do business in Washington.

Start-up and ongoing costs will be captured and analyzed separately. Start-up costs will not be included in the annual cost effectiveness analysis.

Ongoing Costs

The ongoing program delivery phase will require approximately 1.75 full time Energy Trust employees (FTE) which will be included in the total cost per therm.

Energy Trust will carefully segregate costs associated with the delivery of programs in Washington and Oregon, ensuring that customers pay for delivery of their own programs.

Table 8 below shows the break out of the first year budget. The first year budget includes start-up costs which will be allocated over the first five years. NW Natural's costs are based on 10% of fully loaded costs for both a Grade 19 Consultant and a Grade 23 Manager. NW Natural's costs are allocated equally to both customer classes.

Table 8 – First Year Budget Summary

Budget	Residential	Commercial	Total
Incentives	$268,950	$211,900	$480,850
Delivery	$146,700	$65,200	$211,900
Energy Trust	$73,350	$48,900	$122,250
NW Natural	$16,450	$16,450	$32,900
Start Up Budget	$90,000	$60,000	$150,000
Total	**$595,450**	**$402,450**	**$997,900**

Washington Low Income Energy Efficiency Program

The Company's has modified its Washington Low Income Energy Efficiency program (WA-LIEE) in an effort to stimulate greater program participation. The program will be administered by Clark County Community Services and the Washington Gorge Action Program (agencies). WA-LIEE will mirror the low income program that the Company currently offers in Oregon. The current Oregon program was developed in April 2006 in a similar effort to serve more customers and to better use program funding. The changes adopted in Oregon have proved to be successful. Homes weatherized have increased from 253 in 2006 to 460 in 2008, and therm savings per home is up by 21% over the same time period. The Company is hopeful it will see similar success with its Washington Program.

The program will encourage the leveraging of other funding sources with WA-LIEE funds to increase the overall energy efficiency of low-income homes within the Company's Washington service territory.

Rebates paid under the WA-LIEE program will be based on the cost of the total group of measures recommended by energy analysis software that complies with the Department of Energy's standard for cost-effective energy efficiency. To qualify for a rebate, the total of all measures selected for each individual home must meet or exceed a Savings to Investment Ratio (SIR) of 1.0 or better. The rebate amount per home will be ninety percent (90%) of the documented installed cost of all measures, up to a maximum of $3,500 per home.

In addition to the qualifying rebate, the administrating agencies will be reimbursed for Health, Safety and Repair (HSR) costs, defined as home repairs that if not completed would adversely impact the safety and effectiveness of the energy efficiency measures or the health of the occupants. Standard efficiency furnace replacements may qualify for HSR funds if the existing furnace is broken, is found to produce an unsafe level of CO emissions, is back-drafting, or has a cracked heat exchanger and a high-efficiency furnace is not cost-effective or if it is physically impossible to install a high-efficiency furnace. HSR funds will be disbursed upon receipt of a completed reimbursement request. The maximum annual HSR disbursement available will be $440 times the actual number of homes treated by the agency in the Program Year.

The agencies will have discretion in the use of their HSR Allowance such that they may use more or less than the $440 on any one home. However, they must manage their HSR funds to ensure that the average HSR amount per home is not more than $440.

The program targets and achievements will be reviewed, and modified as necessary.

WA-LIEE Costs and Savings Projections

Table 9 below estimates WA-LIEE program costs and therm savings for the first program year.

Table 9

Estimated total qualifying homes:	6,960
Estimated homes served per year:	20
Estimated average cost per home:	$3,431
Estimated NWN administrative costs @ 5%	$3,431
Estimated total utility cost/year:	**$72,054**
Estimated therms saved/year*	4,380

*219 therms per home is based on the a 77% realization rate of RemRate's average of 285 therms saved per home. The Company's most recent impact evaluation performed on The Company's Oregon Low Income Energy Efficiency (OLIEE) Program in 2006 found RemRate results have a program realization rate of 77 percent.

Total Cost Recovery for Both EE Programs

The Company will use deferral accounts established in Docket Nos. UG-011230, UG-011231 and UG-080546 to track costs associated with these programs. The WUTC will perform an annual review before allowing the Company to amortize prudently incurred costs for recovery from Washington customers who may participate in the program. For the EE program, costs will be recovered from customers who can participate, which in the first year will be residential and commercial customers. WA-LIEE costs will be recovered from all firm sales customers. For both programs, costs will be collected on an equal percentage of margin basis.

In the first year, we expect the costs for the energy efficiency program to result in average monthly impact of $1.00 for residential customers and $3.97 for commercial customers.

The WA-LIEE program will result in average monthly impact of $0.07 for residential customers and $0.27 for commercial customers.

The combined monthly rate impact for both energy efficiency programs in the first year is forecast as being $1.07 for a typical residential customer and $4.24 for a typical commercial customer.

Attachment D demonstrates the amortization of assumed program costs presented in Tables 6 and 7.

ATTACHMENT A

PROGRAM A

1. Existing Buildings Lodging and Foodservice Equipment Incentives

Equipment	Efficiency Rating	Unit Incentive
Dishwasher, High Temp under-counter	ENERGY STAR®	$200 each
Dishwasher, High Temp single tank door/upright	ENERGY STAR	$400 each
Dishwasher, Conveyor, High/Low Temp	ENERGY STAR	$500 each
Gas Fryer	ENERGY STAR	$1000 each
Gas Convection Oven	Full-sized oven 6 ft^3 or > interior	$1000 each
Vent Hood	Variable Speed Drive	$300 per horsepower
Energy Management System	Approved by ENERGY TRUST	$2,750 each
Commercial Laundry Washers, Gas	ENERGY STAR	$100 each
Showerhead	2.0 GPM	$6 each (20 unit minimum)

NOTE: Energy efficiency measures not listed may still be eligible for custom incentives of up to 50% of the incremental cost between standard and high-efficiency equipment not to exceed $1.00/therm saved.

2. Existing Buildings Premium Natural Gas Equipment Incentives

Gas Equipment	Measure Description	Efficiency Type for Qualification	Unit Incentive
HVAC Unit Heater	High-Efficiency-Non-Condensing with Electronic Ignition	Minimum 86% AFUE	$1.50/kBtu/hr in
Warm-Air Furnace < 225,000 kBtuh	High-Efficiency Condensing Furnace	Minimum AFUE 91%	$3.00/kBtu/hr in
Radiant Heating	Direct-fired Radiant Heating	None	$6.50/kBtu/hr in
Insulation	Attic Insulation	Minimum R-19	$0.20/sq. ft.

Insulation	Roof Insulation	Minimum R-11	$0.20/sq. ft.
Insulation	Wall Insulation	Minimum R-11	$0.20/sq. ft.
Domestic Hot Water Tanks	Condensing Tank	Minimum 91% AFUE or 91% Thermal Efficiency	$2.50/kBtu/hr in
Domestic Tankless/Instantaneous Water Heaters	With Standing Pilot	Minimum 70.8% Energy Factor	$1.50/kBtu/hr in
Domestic Tankless/Instantaneous Water Heaters	With Electronic Ignition	Minimum 73.8% Energy Factor	$2.00/kBtu/hr in
Boiler	High-Efficiency-Condensing Boiler with Electric Ignition	Minimum 90% AFUE and 500 kBtuh input	$4.00/kBtu/hr in
Boiler Vent Damper	Boiler Vent Damper	Minimum 1,000 kBtuh input	$1,000/vent damper
Steam Traps	Steam System Traps	Operate less than 12 hrs/day with 15-200 psig	$100/trap

3. Existing Buildings Insulation Incentives – Gas Heat

Measure	Description	Efficiency Rating	Unit Incentive
Attic Insulation	No existing insulation	Minimum R-19	$.20 per square foot
Roof Insulation	No existing insulation	Minimum R-11	$.20 per square foot
Wall Insulation	No existing insulation	Minimum R-11	$.20 per square foot

Note: Incentives exceeding $5,000 require pre and post install inspections.

Business Energy Solutions—Production Efficiency (Industrial)

Natural Gas Equipment Incentives
Customers on a limited set of NW Natural Gas rate schedules are eligible for incentives on natural gas equipment. Incentive amounts are $1.00/annual therm saved or 50% of project costs, whichever is less. The maximum incentive is $500,000. For more information, visit www.energytrust.org/pe.

PROGRAM B

1. New Buildings Natural Gas Equipment Incentives

Measure	Min. Eff. Criteria	Eff. Type for Qualification	Basis of Incentive	$/Units
Domestic Hot Water				
Condensing Tank	91%	Thermal Eff or AFUE	kBtuh Input	$2.50
Tankless/Instantaneous w/Standing Pilot	70.8%	Energy Factor	kBtuh Input	$1.50
Tankless/Instantaneous w/Electronic Ignition	73.8%	Energy Factor	kBtuh Input	$2.00
Heating Equipment				
High-Efficiency Unit Heater - Non-Condensing with Electronic Ignition	86%	AFUE	kBtuh Input	$1.50
High-Efficiency Condensing Furnace	91%	AFUE	kBtuh Input	$3.00
Direct-Fired Radiant Heating	N/A	None	kBtuh Input	$6.50
Boiler Vent Damper	1,000	kBtuh Input	No. Dampers	$1,000
High-Efficiency Condensing Boiler with Electronic Ignition	90%/500 min	AFUE/kBtuh Input	kBtuh Input	$4.00
Cooking				
Gas Fryer	50%	ENERGY STAR	each	$1,000
Infrared Gas Griddle	3 min/20 max	Ft Long / kBtuh/ft	each	$500
Gas Convection Oven	Preheat 11 kBtu, Idle 12 kBtu, Eff 40%	Full-sized oven (cooking capacity 6 cubic feet or more)	each	$1,000

2. New Buildings Solar Energy Incentives

Measure	Incentive by Utility	Max

Solar Water Heating	**NWN**	
Combined with Standard, Custom or ENERGY STAR Track	$6.00 per Therm	35% cost
Combined with USGBC LEED® NC Track	$5.20 per Therm	35% cost
Solar Pool Heating	**NWN**	
Combined with Standard, Custom or ENERGY STAR Track	$1.50 per Therm	35% cost
Combined with LEED NC Track	$0.70 per Therm	35% cost

3. New Buildings Foodservice Incentives

Measure	**Min. Efficiency**	**Efficiency Type**	**Basis of Incentive**	**$ Per Unit**
Gas Fryer (same as equipment in "Gas Equip." worksheet)	50%	ENERGY STAR®	each	$1,000
Gas Convection Oven (same as equipment in "Gas Equip." worksheet)	Preheat 11 kBtu Ideal 12 kBtu Effy 40%	Full-Sized Oven (cooking capacity 6 cubic feet or more)	each	$1,000
Restaurant Energy Management System	N/A	Approved by Energy Trust	each	$2,750
Commercial Dishwasher, High Temp under counter, Gas	See list of qualifying products on ENERGY STAR Web site	ENERGY STAR	each	$200
Commercial Dishwasher, High or low temp single tank door/upright, Gas	See list of qualifying products on ENERGY STAR Web site	ENERGY STAR	each	$400

Commercial Dishwasher, Single Tank Conveyor, High or Low Temp, Gas	See list of qualifying products on ENERGY STAR Web site	ENERGY STAR	Each	$500

4. New Buildings Multifamily and Lodging Incentives

Measure	Min. Efficiency	Efficiency Type	Basis of Incentive	$ Per Unit
Commercial Clothes Washer	MEF 2.0/ WF 6.5 Gas DHW/Dryer	Installed in either commercial laundry or a multi-family building	each	$100
Showerheads – gas DHW	Rated at 2 GPM	Installed in either a residential multifamily or public assembly setting	Each	$12
Aerators – gas DHW	Bath aerators rated at 1.5 GPM and Kitchen Aerators rated at 2.0 GPM	Installed in either a residential or public assembly setting	Each	$5
Clothes washers 2.0-2.19 gas or electric with gas or electric dryer	See list of qualifying products on website	Installed in a residential multifamily setting	Each	$75
Clothes washers 2.2+, gas or electric DHW with gas or electric dryer	See list of qualifying products on website	Installed in a residential multifamily setting	Each	$100

PROGRAM C

Home Energy Solutions—Existing Homes Incentives

Existing Site-Built and Manufactured Homes (gas and electric heat)		
Maximum Incentive	**Potential Tax Credits Available?**	**Energy Saving Measure**
$.25/sq. ft.		Ceiling/Attic insulation (insulate to R-38; incentive shall not exceed cost)
$.45/sq. ft.		Floor insulation (Insulate to R-30 or fill cavity; incentive shall not exceed cost)
$.30/sq. ft.		Wall insulation (insulate to R-11 or fill cavity; incentive shall not exceed cost)
$.30/ sq. ft.		Knee Wall insulation (insulate 2x4 cavities to R-15; insulate 2x6 cavities to R-21; cover attic side of wall with vapor permeable air barrier)
50% of cost up to $100		Duct insulation (insulate to R-11; incentive shall not exceed cost; ducts must be sealed before insulating)
$0.50/linear ft.		Boiler Pipe Insulation (insulated to R-8; incentive shall not exceed cost)
$50		Duct Leakage Test (must be performed by an Energy Trust certified contractor)
$400	Yes (50% leakage reduction req.)	Duct sealing - $1 per CFM reduction; min. 100 CFM reduction; not to exceed $400
$50		Air Leakage Test (blower door test required)
$400		Air sealing ($1.00 per CFM reduction, up to $400 minimum; 200 CFM reduction; minimum ventilation level: 8 ACH @ 50Pa; blower door test required)
$2.25/sq. ft.		Windows (Must be installed with another complete* measure. Duct/Air Leakage Test, Duct Insulation, Boiler Pipe Insulation and Tanked Water Heater excluded.) • *U-value = 0.30 or less*
$150 (plus $50 bonus through 4/30/09)	Yes	New high efficiency gas furnace (back-up excluded) • *Minimum efficiency 90% AFUE* • *90% AFUE + ECM Motor*
$100		Direct Vent Gas Unit Heater • Minimum efficiency 80% AFUE or greater

$70		High efficiency gas fireplace (80% AFUE or greater with direct vent and sealed combustion on new units or fireplace inserts)
$200		Gas Boiler (88% or greater AFUE)
$35	Yes	Gas water heater (0.62 EF or greater)
Up to $1,500		Gas solar water heater (average incentive is $500); must be OG 300 certified

* Insulation measures (attic/ceiling, floor and/or wall) must be upgraded to program specifications and requirements to qualify as a complete measure with windows. Duct/Air Sealing must meet maximum incentive amount to qualify as second measure.

Existing Mobile Homes (for gas heated homes)		
Maximum Incentive	**Potential Tax Credits Available?**	**Energy Saving Measure**
$150 (plus $50 bonus through 4/30/09)	Yes	New high efficiency Gas Furnace • Minimum efficiency 90% AFUE • 90% AFUE + ECM Motor
$.45 per sq. ft.		Floor insulation (Insulate to R-30 or fill cavity; incentive shall not exceed cost)
Free		Duct Leakage Test[1] (minimum 50 CFM reduction for payment)
Free		Duct sealing[1] (on a park-by-park basis; minimum 50 CFM reduction for payment)
Free		Complex duct repair[2]
Free		Air sealing[1] (on a park-by-park basis; minimum 50 CFM reduction for payment)
$35		Gas Water Heater (0.62 EF or greater)
$200	Yes	Tankless Water Heater (0.80 EF or greater)
Free		Low flow water aerators & showerheads

[1]Must be performed by a Energy Trust certified contractor. Available to qualified participants.
[2]For duct sealing, complex is defined as extra work due to exterior furnace closets, ceiling and floor return systems, and/or cross-over ducts.

Existing Small Multifamily Homes (2-4 units) – Gas		
Maximum Incentive	**Potential Tax Credits Available?**	**Energy Saving Measure**
$.45 per sq. ft.	Yes	Floor insulation (insulate to R-30 or fill cavity)
$.30 per sq. ft.	Yes	Wall insulation (insulate to R-11 or fill cavity[1])
$.25 per sq. ft.	Yes	Ceiling/Attic insulation (insulate to R-38)
$.30 per sq. ft.		Knee Wall insulation (Insulate 2x4 cavities to R-15; insulate 2x6 cavities to R-21; cover attic side of wall with vapor permeable air barrier)
$100	Yes	Duct insulation (insulate to R-11; 50% of cost up to $100; incentive shall not exceed cost; ducts must be sealed before insulating)
$.50 linear ft.	Yes	Boiler pipe insulation (insulate to R-8; incentive shall not exceed cost)
$50		Duct Leakage Test (must be performed by an Energy Trust certified contractor)
$400	Yes (50% leakage reduction req.)	Duct sealing - $1 per CFM reduction; min. 100 CFM; incentive shall not exceed cost
$50		Air Leakage Test (blower door test required)
$400		Air sealing ($1.00 per CFM reduction; minimum reduction 200 CFM; minimum ventilation level: 8 ACH @50Pa; incentive shall not exceed cost)
$2.25 per sq. ft.		Windows (U-Value = 0.30 or less; up to $7,500; must be installed with another complete[2] measure. Duct/Air Leakage Test, Duct Insulation, Boiler Pipe Insulation and Gas Water Heater excluded.)
$150 (plus $50 bonus through 4/30/09)	Yes	New high efficiency gas furnace (backup excluded) • *Minimum efficiency 90% AFUE* • *90% AFUE + ECM Motor*
$100		Direct Vent Gas Unit Heater • Minimum efficiency 80% AFUE
$70		High efficiency gas fireplace (80% AFUE or better with direct vent & sealed combustion on new units

		or fireplace inserts)
$200		Gas Boiler (88% or greater AFUE)
$35		Gas water heater (0.62 EF or greater)
$200	Yes	Tankless water heater (0.80 EF or greater)

[1]Insulating around windows alone does not qualify as wall insulation.
[2]Insulation measures (attic/ceiling, floor and/or wall) must be upgraded to program specifications and requirements to qualify as a complete measure with windows. Duct/Air Sealing must meet maximum incentive amount to qualify as second measure.

PROGRAM D
Multifamily Home Energy Solutions Incentives

Measure	Existing	To	Incentive (amounts may vary)
For Gas Heated Buildings (NW Natural)			
Windows[1]	Single or Double Glazing	U-.32 or lower U-.30 or lower	$1.75/sq. ft. (10-15% of project cost) $2.25/sq. ft.
Commercial Grade Boiler Pipe Insulation	R-2 or less	R-8	$.50 linear foot
Boiler Vent Damper & Tune-up	No Vent Damper	Automatic vent damper	$150/boiler
Duct Insulation	R-2 or less	R-11	50% of cost up to $100
Gas Furnace		90% or greater AFUE	$150 (plus $50 bonus through 4/30/09)
High-Efficiency Condensing Boiler with Electronic Ignition		Minimum 90% thermal efficiency and 500 kBTUh input	$4.00 per kBTUh
For Electric and Gas Heated Buildings			
Insulation – Attic	R-0 to R-18	R-38	$0.25/sq. ft.
Insulation – Wall	R-0 to R-4	R-21 or fill cavity	$0.30/sq. ft.
Insulation – Floor	R-0 to R-11	R-25 or fill cavity	$0.45/sq. ft.
Duct Leakage Test	Must be performed by an Energy Trust certified contractor.		$50
Duct Sealing	PTCS certified contractor and ODOE Duct Sealing/Duct Repair Worksheet Required. Min. 50 CFM reduction for payment.		$1 per CFM reduction, up to $400
Exterior Doors	R-2	R-5	$25 per door
Other Heating Systems			Custom

Gas Water Heater		EF .62 or greater	$35
Tankless Gas Water Heater	Standard hot water heater	Minimum EF .80	$200
Commercial Gas Water Heater		Min 91% AFUE or thermal efficiency	$2.50 per kBTUh
Commercial Tankless Gas Water Heater		Min EF .738 and electronic ignition only	$2.00 per kBTUh
Commercial Clothes Washer – Gas DHW	Standard top or front loading	Top or front loading – MEF 2.0, WF 6.0 or better	$200 per washer
In-unit Clothes Washer – Electric & Gas DHW	Standard top or front loading	Top or front loading – MEF 2.0, WF 6.5 or better	$100 per washer

[1]Window-only installations are permitted only when existing floor insulation is equal to or greater than R-11 and attic insulation is equal to or greater than R-19. If either of these conditions is not met, then floor insulation or attic insulation must be installed to recommended levels.

PROGRAM E

New Homes Incentives

Base Case Incentives (choose one)	Gas Only	Full Territory
ENERGY STAR Qualified Home – Gas with A/C	$350	$550
ENERGY STAR Qualified Home – Gas without A/C	$350	$450
NW ENERGY STAR *Plus* Federal Tax Credit - Gas	$700	$1,000

Upgrade Measures (optional)	Gas Only	Full Territory
2.0 MEF ENERGY STAR Qualified Clothes Washer	$75	$75
Lighting (15 additional CFL bulbs or 100% of all bulbs, whichever is less) Could do this with Clark PUD	n/a	$75
.81 EF Tankless Water Heater (gas model only)	$100	$100
80% AFUE High Efficiency Gas Fireplace	$70	$70
95% AFUE Gas Furnace	$150	$150
Solar Water Heating System	$1,000	$1,000
Solar Electric System (incentive varies with size)	n/a	Up to $10,000

Verification Incentive	Gas Only	Full Territory
Builder Incentive for Homes (If you use the sampling protocol, your incentive will vary. Ask your BOS for details.)	$100	$150

Solar Incentives	Incentive Amount
Solar Water Heating	$1,000
Solar Electric	Up to $10,000

Offered through Energy Trust's Solar Program. Ask your Builder Outreach Specialist for details.

Qualifications:

- The primary heating system is the only equipment eligible for incentives. Secondary or back-up heat sources do not qualify as part of the New Homes program.

- The qualifying ***gas*** provider is NW Natural. Incentive amounts vary depending on the type of territory:
    - **Gas only:** Homes with a qualifying gas provider and non-qualifying electric provider

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PROGRAM F

New Homes – Multifamily Incentives

ENERGY STAR Base Case Multifamily Incentives (choose one)	Gas Only	Full Territory
ENERGY STAR Multifamily – Ducted Gas (with or without A/C) – Path 1	$300	$300
ENERGY STAR Multifamily – Ductless Gas Heat with Zonal Electric	$300	$300
ENERGY STAR Multifamily – Hydronic Gas System – Path 4	$300	$300
Multifamily NW ENERGY STAR *Plus* Federal Tax Credit – Gas	$550	$700

Upgrade Measure Incentives (optional)	Gas Only	Full Territory
2.0 MEF ENERGY STAR Qualified Clothes Washer	$75	$75
1.8 MEF ENERGY STAR Qualified Clothes Washer – Gas	$180	$180
.81 EF Tankless Water Heater (gas model only)	$100	$100
80% AFUE High Efficiency Gas Fireplace	$70	$70
95% AFUE Gas Furnace	$150	$150

Verification Incentive	Gas Only	Full Territory
Builder Incentive for Homes (If you use the sampling protocol, your incentive will vary. Ask your BOS for details.)	$75	$100

Solar Incentives (optional)	Incentive Amount
Solar Water Heating	$1,000
Solar Electric	Up to $10,000

Qualifications:

- Homes must be built to New Homes Multifamily requirements and verified by an Energy Trust-approved verifier.

- The primary heating system is the only equipment eligible for incentives. Secondary or back-up heat sources do not qualify as part of the New Homes program.
- The qualifying ***gas*** provider is NW Natural. Incentive amounts vary depending on the type of territory. Incentive amounts vary depending on the type of territory:
    - **Gas only:** Homes with a qualifying gas provider and non-qualifying electric provider.

PROGRAM G

New Manufactured Homes Incentives

Base Incentive	Required Utility	Incentive amount
ENERGY STAR Gas Home (gas and electric territory)	NW Natural	$500

ATTACHMENT B

Energy Trust commissioned a survey of gas furnace installers and distributors in Clark, Co., Washington[5]. The survey team interviewed three installers and three distributors.

The results show that in 2008, 1,000 out of 1,700 total furnaces sold in NW Natural's Clark County gas service territory were high efficiency furnaces (less than 60%). By contrast, these same interviewees sold high efficiency furnaces in Oregon more than 67% of the time. (More than 2,000 of their 3,000 sales of furnaces in Oregon were high-efficiency.)

The percentage of high-efficiency units sold has increased significantly over the past five years. The percentage of units sold in each efficiency category is fairly similar to the percentages in NW Natural's Oregon service territory but in the 90-94% efficiency category, a higher percentage of units are sold in NW Natural's Washington service territory than its Oregon service area.

Weighted and Un-weighted Average Percentage of Units Sold in 2004 and in 2008 in Each Efficiency Category in NWN Clark County

Efficiency Category	2004 Percentage of Total Units		2008 *Percentage of Total Units*	
Weighted/ Un-weighted Averages	*Un-weighted*	*Weighted*	*Un-weighted*	*Weighted*
80-89% AFUE:	62%	77%	36%	36%
90-94% AFUE:	30%	22%	52%	59%
95% AFUE or higher:	8%	1%	12%	5%

**The percentages of units sold with an ECM motor are shown in Table 4 and 5 of the Appendix.*
Source: Summit Blue interviews of furnace vendors in NWN Clark County service territory

Note: The unweighted percentages reflect the sample taken. The weighted values are estimates of the population percentages calculated by using the relative fractions of the sample found in the population to adjust the sample to the population.

AFUE is the Annual Fuel Utilization Efficiency (AFUE) rating

[5] Survey is available upon request.

Table 5. Percentage of units in the AFUE category in 2008.

2008									
Respondent	Total # of units sold in 2008	Percentage of units in each category				Percentage of units in each category with an ECM motor			
		Less than 80%	*80-89% AFUE*	*90-94% AFUE*	*95% AFUE or higher*	*Less than 80%*	*80-89% AFUE*	*90-94% AFUE*	*95% AFUE or higher*
1	0	?	?	?	?	?	?	?	?
2	25	0%	30%	55%	15%	0%	0%	30%	30%
3	100	0%	20%	70%	10%	0%	10%	60%	100%
4	500	0%	50%	40%	10%	0%	20%	20%	20%
5	1001	0%	30%	70%	0%	0%	15%	15%	0%
6	55	0%	50%	25%	25%	0%	0%	100%	100%
Average	**1,681**	**0%**	**36%**	**52%**	**12%**	**0%**	**9%**	**45%**	**50%**
Weighted Average		**0%**	**36%**	**59%**	**5%**	**0%**	**15%**	**22%**	**16%**

Note: numbers for ECM motors are percentages of the percentage of units in that AFUE category.

Although the survey respondents represent a small sample of installers and distributors, they account for a high percentage of the furnaces installed. It appears that the gas furnace market is in the process of being transformed in Clark County, as it is in Oregon. Therefore, niche markets need to be studied further to determine where additional opportunities for market transformation exist.

In Washington, the housing stock is quite new: nearly 80% of homes were built after 1990. Of these, 47% (over 17,000 units) were built from 1990-94 and these furnaces will reach the end of their life in the next 10 years. In contrast, the Oregon housing stock (see Table III.2) shows approximately 50% of single family homes were built in the 1980's.

ATTACHMENT C

ATTACHMENT C-1 – NW Natural's Oregon DSM Savings Proportioned to Demonstrate the DSM Potential in NW Natural's Washington Service Territory.

attachment c-1		11%		immature program factor ===>		0.75	
ratio OR/WA	**2008 NWN OR Actuals**	**NWNOR/ NWNWA**	**NWN WA Mature Program Estimate**	**NWN WA**	**Immature Program Estimate # of Units**	**Working Therms per Unit**	**Total Annual Therms**
RESIDENTIAL MEASURES							
furnace	5,781	11%	614	furnace	461	70	32,240
tankless	860	11%	91	tankless	69	65	4,454
tank type	72	11%	8	tank type	6	16	93
Wall Insul	633	11%	67	Wall Insul	50	52	2,644
Ceiling Insul	1,911	11%	203	Ceiling Insul	152	64	9,811
Floor Insul	1,077	11%	114	Floor Insul	86	61	5,272
Air sealing	1,172	11%	124	Air sealing	93	26	2,384
Duct sealing	1,173	11%	125	Duct sealing	93	21	1,999
HER showerhead	2,537	11%	270	HER showerhead	202	22	4,348
HER Aerator	4,894	11%	520	HER Aerator	390	6.1	2,378
SUB TOTAL RESIDENTIAL						**Therms**	**65,622**
COMMERCIAL MEASURES		**9%**					
Custom Chillers	5	9%	0	Custom Chillers	0.3	5,872	1,984
Custom Building Controls	23	9%	2	Custom Building Controls	1.6	5,998	9,321
Custom Ducting/Filters	5	9%	0	Custom Ducting/Filters	0.3	749	253
Custom Economizers	10	9%	1	Custom Economizers	0.7	608	411
Custom Gas Boiler	4	9%	0	Custom Gas Boiler	0.3	15,745	4,255
Custom Heat Recovery	4	9%	0	Custom Heat Recovery	0.3	6,463	1,747
Custom HVAC	8	9%	1	Custom HVAC	0.5	416	225
Custom Other	120	9%	11	Custom Other	8.1	293	2,380
Custom VAV System	9	9%	1	Custom VAV System	0.6	1,188	722
Custom VFDs	19	9%	2	Custom VFDs	1	2,882	3,700
Attic Insulation (per SQFT)	205724	9%	18534	Attic Insulation (per SQFT)	13900	0.18	2,433
Roof Insulation (per SQFT)	470901	9%	42424	Roof Insulation (per SQFT)	31818	0.19	5,954
Wall Insulation (per SQFT)	73787	9%	6648	Wall Insulation (per SQFT)	4986	0.20	997
PT Heat Pump	418	9%	38	PT Heat Pump	28	7	203
Showerhead Gas	300	9%	27	Showerhead Gas	20	7	142
Steam Traps, Small Commercial,	2156	9%	194	Steam Traps, Small Commercia	146	139	20,249
Direct-Fired Convection Oven	164	9%	15	Direct-Fired Convection Oven	11	543	6,021
Condensing Tank	25	9%	2	Condensing Tank	2	678	1,145
High Efficiency Unit Heater - No	9	9%	1	High Efficiency Unit Heater - N	1	170	103
Infrared Gas Fryer	31	9%	3	Infrared Gas Fryer	2	548	1,148
Direct-fired Radiant Heating	160	9%	14	Direct-fired Radiant Heating	11	367	3,971
High Efficiency Condensing Boil	229	9%	21	High Efficiency Condensing Bc	15	171	2,640
High Efficiency Condensing Furr	27	9%	2	High Efficiency Condensing Fu	2	96	176
Domestic Tankless/Instanaeous V	16	9%	1	Domestic Tankless/Instanaeous	1	620	671
Commercial dishwashers	15	9%	1	Commercial dishwashers	1	334	338
SUB TOTAL COMMERCIAL						**Therms**	**71,189**
TOTAL RESIDENTIAL and COMMERCIAL						**Therms**	**136,811**

Notes:
Unless otherwise noted, all estimates for NWN WA are ratioed down fro NWN OR actuals in 2008; res uses ratio of households, commercial uses ratios of loads.

Attachment C-2 –Cascade Natural Gas's DSM Savings Proportioned to Demonstrate Potential Therm Savings in NW Natural's Washington Service Territory

Attachment C-2

immature program factor ===> 0.75

ratio CNG/NWN WA	2008 CNG WA Actuals	NWNWA/ CNGWA	NWN WA Mature Program Estimate	Measures	NWN WA Immature Program Estimate # of Units	Working Therms per Unit	Total Annual Therms
RESIDENTIAL MEASURES							
furnace	652	0.375	245	furnace	425	70	29,750
tankless	250	0.375	94	tankless	70	43	3,023
tank type	87	0.375	33	tank type	24	13	318
E* clothes washer	507	0.375	190	E* clothes washer	143	6	856
Wall Insul	126	0.375	47	Wall Insul	35	52	1,858
Ceiling Insul	284	0.375	107	Ceiling Insul	80	64	5,148
Floor Insul	328	0.375	123	Floor Insul	92	61	5,668
Aerator	656	0.375	246	Aerator*	185	17	3,137
Showerhead	2960	0.375	1110	Showerhead*	833	31	25,808
				SUB TOTAL RESIDENTIAL		**Therms**	**75,565**
COMMERCIAL MEASURES							
Warm-air Furnace < 225 kBtu/hr	31	0.375	12	Warm-air Furnace < 225 kBtu/hr	9	111	966
Radiant heating	7	0.375	3	Radiant heating	2	526	1,035
Attic Insulation	3	0.375	1	Attic Insulation	1	329	278
Roof Insulation	6	0.375	2	Roof Insulation	2	2745	4,632
Wall Insul	5	0.375	2	Wall Insul	1	566	795
Domestic Hot Water	3	0.375	1	Domestic Hot Water	1	158	133
Domestic Tankless	15	0.375	6	Domestic Tankless	4	184	777
Boiler	6	0.375	2	Boiler	2	1093	1,844
Gas Convection Oven	10	0.375	4	Gas Convection Oven	3	564	1,586
Clothes Washer	3	0.375	1	Clothes Washer	1	90	76
custom measures	28	0.375	11	custom measures	8	5312	41,833
				SUB TOTAL COMMERCIAL		**Therms**	**53,954**
				TOTAL		**Therms**	**129,519**

Note: *Showerheads and Aerators make up over 1/3 of CNG's residential savings and were achieved through a mail out kit. ETO will acquire these measures through HERs, in collaboratio with Clark PUD and expects a much lower volume compared to a mass mailing of kits.

ATTACHMENT D

NW Natural
Rates & Regulatory Affairs
Estimated Ratemaking for Washington Energy Efficiency (GENERAL)
Calculation of Increments Allocated on the EQUAL PERCENTAGE OF MARGIN BASIS

													WA Energy Efficiency - General 1st Year				
				Billing	WACOG &	Temps from						Proposed Amount:	997,900 Temporary increment			Average	Average
			Volumes	Rate from	Demand from	Temporary	MARGIN	Volumetric	Customer	Jun 09	Total	Revenue Sensitive Multiplier:	4.390% revenue sensitve factor			Monthly Bill	Monthly Bill
			09-10 PGA	Jan 09 Filing	08-09 PGA	Increment page, Jan 09 Filing	Rate	Margin	Charge	Customers	Margin	Amount to Amortize:	1,043,719 to Res and Comm Sales			Impact ($)	Impact (%)
							E=B-C-D						Multiplier	Allocation to RS	Increment		
	Schedule	Block	A	B	C	D	E	F = E * A	G	H	I = (G*H*12)+ F		J	K	L		
7	1R		101,410	1.66307	0.98056	(0.00011)	0.68262	69,224	$3.47	566	92,792		1.0	2,931	0.02890	$0.43	1.5%
8	1C		48,246	1.66405	0.98056	0.00091	0.68258	32,932	$3.47	24	33,931		1.0	1,072	0.02222	$3.72	1.3%
9	2R		43,901,818	1.39618	0.98056	0.00219	0.41343	18,150,329	$7.00	61,371	23,305,493		1.0	736,270	0.01677	$1.00	1.1%
10	3 CFS		16,481,447	1.40065	0.98056	0.00251	0.41758	6,882,323	$15.00	5,188	7,816,163		1.0	246,929	0.01498	$3.97	1.0%
11	3 IFS		363,461	1.40092	0.98056	0.00279	0.41757	151,770	$15.00	19	155,190		0.0	0	0.00000	$0.00	0.0%
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23	27		189,882	1.23727	0.98056	0.00329	0.25342	48,120	$6.00	350	73,320		1.0	2,316	0.01220	$0.55	0.9%
24	41 Firm Sales	Block 1	1,611,917	1.16859	0.86464	0.00308	0.30087	981,770	$250.00	75	1,206,770		1.0	38,124	0.01168	$45.24	1.0%
25		Block 2	1,873,983	1.13307	0.86464	0.00333	0.26510						1.0		0.01029		
26	41 Firm Trans	Block 1	0	0.29910	0.00000	(0.00167)	0.30077	0	$500.00		0		0.0	0	0.00000		
27		Block 2	0	0.26353	0.00000	(0.00147)	0.26500						0.0		0.00000		
28	41 Interr Sales	Block 1	0	1.17828	0.86464	0.01287	0.30077	0	$250.00		0		0.0	0	0.00000		
29		Block 2	0	1.14271	0.86464	0.01307	0.26500						0.0		0.00000		
30	42C Firm Sales	Block 1	879,928	0.98658	0.86464	0.00370	0.11824	141,916	$1,300.00	12	329,116		1.0	10,397	0.00866	$74.71	0.8%
31		Block 2	343,178	0.97433	0.86464	0.00385	0.10584						1.0		0.00775		
32		Block 3	19,113	0.94996	0.86464	0.00415	0.08117						1.0		0.00595		
33		Block 4	0	0.93392	0.86464	0.00435	0.06493						1.0		0.00476		
34		Block 5	0	0.91254	0.86464	0.00461	0.04329						1.0		0.00317		
35		Block 6	0	0.88581	0.86464	0.00494	0.01623						1.0		0.00119		
36	42I Firm Sales	Block 1	658,175	0.98679	0.86464	0.00392	0.11823	126,527	$1,300.00	14	344,927		0.0	0	0.00000	$0.00	0.0%
37		Block 2	421,909	0.97452	0.86464	0.00405	0.10583						0.0		0.00000		
38		Block 3	50,028	0.95011	0.86464	0.00431	0.08116						0.0		0.00000		
39		Block 4	0	0.93404	0.86464	0.00447	0.06493						0.0		0.00000		
40		Block 5	0	0.91262	0.86464	0.00469	0.04329						0.0		0.00000		
41		Block 6	0	0.88584	0.86464	0.00497	0.01623						0.0		0.00000		
42	42 Firm Trans	Block 1	329,943	0.11748	0.00000	(0.00070)	0.11818	272,210	$1,550.00	4	346,610		0.0	0	0.00000		
43		Block 2	517,603	0.10516	0.00000	(0.00063)	0.10579						0.0		0.00000		
44		Block 3	560,000	0.08064	0.00000	(0.00048)	0.08112						0.0		0.00000		
45		Block 4	1,403,304	0.06452	0.00000	(0.00038)	0.06490						0.0		0.00000		
46		Block 5	969,699	0.04301	0.00000	(0.00026)	0.04327						0.0		0.00000		
47		Block 6	0	0.01612	0.00000	(0.00010)	0.01622						0.0		0.00000		
42	42 C Interr Sales	Block 1	279,524	0.99651	0.86464	0.01365	0.11822	117,336	$1,300.00	4	179,736		1.0	5,678	0.00572	$136.04	0.5%
43		Block 2	468,165	0.98420	0.86464	0.01374	0.10582						1.0		0.00512		
44		Block 3	255,210	0.95972	0.86464	0.01393	0.08115						1.0		0.00393		
45		Block 4	216,251	0.94361	0.86464	0.01405	0.06492						1.0		0.00314		
46		Block 5	0	0.92213	0.86464	0.01421	0.04328						1.0		0.00209		
47		Block 6	0	0.89529	0.86464	0.01442	0.01623						1.0		0.00079		
48	42 I Interr Sales	Block 1	608,097	0.99651	0.86464	0.01365	0.11822	250,749	$1,300.00	9	391,149		0.0	0	0.00000	$0.00	0.0%
49		Block 2	923,755	0.98420	0.86464	0.01374	0.10582						0.0		0.00000		
50		Block 3	449,398	0.95972	0.86464	0.01393	0.08115						0.0		0.00000		
51		Block 4	687,602	0.94361	0.86464	0.01405	0.06492						0.0		0.00000		
52		Block 5	0	0.92213	0.86464	0.01421	0.04328						0.0		0.00000		
53		Block 6	0	0.89529	0.86464	0.01442	0.01623						0.0		0.00000		
54	42 Inter Trans	Block 1	233,254	0.11753	0.00000	(0.00065)	0.11818	333,529	$1,550.00	6	445,129		0.0	0	0.00000		
55		Block 2	534,051	0.10520	0.00000	(0.00059)	0.10579						0.0		0.00000		
56		Block 3	382,673	0.08067	0.00000	(0.00045)	0.08112						0.0		0.00000		
57		Block 4	2,067,323	0.06454	0.00000	(0.00036)	0.06490						0.0		0.00000		
58		Block 5	1,947,170	0.04303	0.00000	(0.00024)	0.04327						0.0		0.00000		
59		Block 6	0	0.01613	0.00000	(0.00009)	0.01622						0.0		0.00000		
60	43 Firm Trans		0	0.00496	0.00000	(0.00003)	0.00499	0	$38,000.00		0		0.0	0	0.00000		
61	43 Interr Trans		0	0.00496	0.00000	(0.00003)	0.00499	0	$38,000.00		0		0.0	0	0.00000		
62	Intentionally blank																
63																	
64	Totals		79,777,516					27,558,735		67,642	34,720,326		33,037,321	1,043,717			
65																	
66																	

67 Note: Allocation to rate schedules or blocks with zero volumes is calculated on an overall margin percentage change basis.

NW Natural
Rates & Regulatory Affairs
Estimated Ratemaking for Washington Energy Efficiency (WA-LIEE)
Calculation of Increments Allocated on the EQUAL PERCENTAGE OF MARGIN BASIS

													WA-LIEE 1st Year				
				Billing	WACOG &	Temps from						Proposed Amount:	72,054	Temporary increment		Average	Average
			Volumes	Rate from	Demand from	Temporary	MARGIN	Volumetric	Customer		Total	Revenue Sensitive Multiplier:	4.390%	revenue sensitve factor		Monthly Bill	Monthly Bill
				Rates page,	Rates page,	Increment page,	Rate	Margin	Charge	Customers	Margin	Amount to Amortize:	75,362	to all sales classes		Impact ($)	Impact (%)
				Column A	Column F+G+H	Column G	E=B-C-D						Multiplier	Allocation to RS	Increment		
	Schedule	Block	A	B	C	D	E	F = E * A	G	H	I = (G*H*12)+ F		J	K	L		
7	1R		87,647	1.66307	0.98056	(0.00011)	0.68262	59,830	$3.47	573	83,690		1.0	187	0.00213	$0.03	0.1%
8	1C		10,234	1.66405	0.98056	0.00091	0.68258	6,986	$3.47	24	7,985		1.0	18	0.00176	$0.06	0.1%
9	2R		43,174,069	1.39618	0.98056	0.00219	0.41343	17,849,455	$7.00	61,125	22,983,955		1.0	51,229	0.00119	$0.07	0.1%
10	3 CFS		15,724,299	1.40065	0.98056	0.00251	0.41758	6,566,153	$15.00	5,147	7,492,613		1.0	16,700	0.00106	$0.27	0.1%
11	3 IFS		583,391	1.40092	0.98056	0.00279	0.41757	243,607	$15.00	19	247,027		0.0	0	0.00000	$0.00	0.0%
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22	Intentionally blank																
23	27		992,074	1.23727	0.98056	0.00329	0.25342	251,411	$6.00	389	279,419		1.0	623	0.00063	$0.13	0.0%
24	41 Firm Sales	Block 1	1,872,227	1.16859	0.86464	0.00308	0.30087	1,087,396	$250.00	81	1,330,396		1.0	2,965	0.00082	$3.25	0.1%
25		Block 2	1,976,986	1.13307	0.86464	0.00333	0.26510						1.0		0.00072		
26	41 Firm Trans	Block 1		0.29910	0.00000	(0.00167)	0.30077	0	$500.00		0		0.0	0	0.00000		
27		Block 2		0.26353	0.00000	(0.00147)	0.26500						0.0		0.00000		
28	41 Interr Sales	Block 1		1.17828	0.86464	0.01287	0.30077	0	$250.00		0		1.0	0	0.00065		
29		Block 2		1.14271	0.86464	0.01307	0.26500						1.0		0.00058		
30	42C Firm Sales	Block 1	990,865	0.98658	0.86464	0.00370	0.11824	156,236	$1,300.00	11	327,836		1.0	731	0.00055	$5.66	0.0%
31		Block 2	362,026	0.97433	0.86464	0.00385	0.10584						1.0		0.00050		
32		Block 3	9,350	0.94996	0.86464	0.00415	0.08117						1.0		0.00038		
33		Block 4	0	0.93392	0.86464	0.00435	0.06493						1.0		0.00030		
34		Block 5	0	0.91254	0.86464	0.00461	0.04329						1.0		0.00020		
35		Block 6	0	0.88581	0.86464	0.00494	0.01623						1.0		0.00008		
36	42I Firm Sales	Block 1	1,325,515	0.98679	0.86464	0.00392	0.11823	280,657	$1,300.00	13	483,457		1.0	1,078	0.00045	$7.16	0.0%
37		Block 2	949,688	0.97452	0.86464	0.00405	0.10583						1.0		0.00041		
38		Block 3	248,846	0.95011	0.86464	0.00431	0.08116						1.0		0.00031		
39		Block 4	49,892	0.93404	0.86464	0.00447	0.06493						1.0		0.00025		
40		Block 5		0.91262	0.86464	0.00469	0.04329						1.0		0.00017		
41		Block 6		0.88584	0.86464	0.00497	0.01623						1.0		0.00006		
42	42 Firm Trans	Block 1	319,936	0.11748	0.00000	(0.00070)	0.11818	286,721	$1,550.00	1	305,321		0.0	0	0.00000		
43		Block 2	520,870	0.10516	0.00000	(0.00063)	0.10579						0.0		0.00000		
44		Block 3	520,870	0.08064	0.00000	(0.00048)	0.08112						0.0		0.00000		
45		Block 4	1,443,245	0.06452	0.00000	(0.00038)	0.06490						0.0		0.00000		
46		Block 5	1,337,833	0.04301	0.00000	(0.00026)	0.04327						0.0		0.00000		
47		Block 6	0	0.01612	0.00000	(0.00010)	0.01622						0.0		0.00000		
48	42 Interr Sales	Block 1	1,428,621	0.99651	0.86464	0.01365	0.11822	603,515	$1,300.00	14	821,915		1.0	1,832	0.00036	$11.86	0.0%
49		Block 2	2,479,569	0.98420	0.86464	0.01374	0.10582						1.0		0.00032		
50		Block 3	1,108,566	0.95972	0.86464	0.01393	0.08115						1.0		0.00025		
51		Block 4	1,256,801	0.94361	0.86464	0.01405	0.06492						1.0		0.00020		
52		Block 5	15,805	0.92213	0.86464	0.01421	0.04328						1.0		0.00013		
53		Block 6	0	0.89529	0.86464	0.01442	0.01623						1.0		0.00005		
54	42 Inter Trans	Block 1	161,315	0.11753	0.00000	(0.00065)	0.11818	241,814	$1,550.00	3	297,614		0.0	0	0.00000		
55		Block 2	382,636	0.10520	0.00000	(0.00059)	0.10579						0.0		0.00000		
56		Block 3	393,050	0.08067	0.00000	(0.00045)	0.08112						0.0		0.00000		
57		Block 4	1,674,972	0.06454	0.00000	(0.00036)	0.06490						0.0		0.00000		
58		Block 5	963,280	0.04303	0.00000	(0.00024)	0.04327						0.0		0.00000		
59		Block 6	0	0.01613	0.00000	(0.00009)	0.01622						0.0		0.00000		
60	43 Firm Trans		0	0.00496	0.00000	(0.00003)	0.00499	0	$38,000.00	0	0		0.0	0	0.00000		
61	43 Interr Trans		0	0.00496	0.00000	(0.00003)	0.00499	0	$38,000.00	0	0		0.0	0	0.00000		
62	54		0	1.84563	0.98056	0.00035	0.86472	0	$0.00	0	0		0.0	0	0.00000		
63																	
64	Totals		82,364,476					27,633,781		67,400	34,661,228		33,811,266	75,363			
65																	
66																	

67 Note: Allocation to rate schedules or blocks with zero volumes is calculated on an overall margin percentage change basis.