

2012 Conservation Budget Plan

Benton Public Utility District No. 1



Plug in the Benton PUD Savings

Table of Contents

Section 1: Executive Summary	3
Section 2: Operating Plan & Budget	4
Table 2-1: 2012 – 2013 Conservation Budget	4
Section 3: Bonneville Programs	5
Section 4: EIA Mandated Conservation Requirements	6
Energy Independence Act	6
Setting Conservation Targets	6
Option 1: Conservation Calculator	6
Option 2: Modified Conservation Calculator	7
Option 3: Utility Analysis	7
Table 4-1: 5 th Plan Conservation Target Calculator	8
Section 5: Conservation and its Effect on Load	9
Chart 5-1: Conservation Effect on Load	9
Section 6: Conservation Potential Assessment 2012 – 2021	10
Table 6-1: Cost Effective Conservation Potential MWh	10
Section 7: 2012 – 2013 Conservation Promotion, Funding & Reporting	11
BPA Conservation Funding	11
Northwest Energy Efficiency Alliance	11
Conservation Reporting	11
Section 8: Conservation Budget Plan Summary	13
Attachments	14
Attachment A: Conservation Programs 2012 – 2013 Communications (Draft)	14
Attachment B: Program Rebate List as of October 1, 2011	15

Section I: Executive Summary

Benton County PUD (District) has been engaged in conservation projects for 30 years with the programs funded through both the District and the Bonneville Power Administration (BPA). The District has been very active in regard to offering conservation incentive measures for residential, commercial, industrial and irrigation customers.

The District, through the BPA power sales agreement, may offer conservation programs. Over the last 30 years the conservation programs have become very popular with the District's customers and they continue to request assistance for energy savings. In 2006 Initiative 937 was passed resulting in the Energy Independence Act (EIA). Chapter 19.285 RCW requires that, "each qualifying utility pursue all available conservation that is cost-effective, reliable and feasible."

The District's Commission has established its EIA minimum conservation target for 2012 – 2013 at 24,144 MWh with a ten-year potential of 120,722 MWh. The 2012 conservation budget plan, however, will include an organizational stretch goal of 31,178 MWh for 2012-2013 to ensure we meet the EIA requirements. These additional conservation savings meet customer backlog from the last two years, mitigate risk for program uncertainty including large lumpy projects not being completed within the biennium, and mitigate uncertainty of market transformation savings from Northwest Energy Efficiency Alliance (NEEA).

Conservation savings will be from existing District residential, commercial/industrial program demands, plus Scientific Irrigation Scheduling. Indirect savings will be counted from NEEA. The savings from NEEA are from market transformation. NEEA works with federal and state governments as well as manufacturers and retailers to provide more efficient measures to the public through retail stores.

The District has also developed a conservation potential assessment (CPA) by using EES Consulting (EES) to determine the service area specific conservation potential. District customers were surveyed to gather customer class information that was fed into EES's model along with historical conservation achievements and Benton PUD's 20-year energy price forecast.

Section 2: Operating Plan & Budget

The District has established an EIA minimum biennial target of 24,144 MWh with a Benton PUD organizational stretch goal of 31,178 MWh. The stretch goal reduces the risk of not meeting EIA requirements due to variances in assumptions and volatility of market transformation. It also satisfies the strong residential customer request for conservation assistance. The District is committed to several large commercial/industrial projects that will be completed in 2012, plus there is a list of smaller conservation projects that have been waiting for funding.

In order to reach the stretch goal, the District will offer a variety of conservation programs to customers. Residential customers will be offered incentives to purchase more efficient appliances, insulation, windows and heat pumps along with duct air-sealing. Commercial/Industrial customers will be offered incentives for more efficient lighting and overall system operating improvements, and Irrigation customers will be offered Scientific Irrigation Scheduling (SIS). SIS determines the exact amount of water to apply to the field and the timing of application, reducing water and energy waste. SIS is a one year measure life and the savings will be acquired for the entire biennium.

Table 2-1: 2012 – 2013 Conservation Budget

Conservation Customer Classes	CY 2012		CY 2013	
	MWh's	Cost	MWh's	Cost
Residential	2,845	\$ 955,000	2,845	\$ 955,000
Commercial/Industrial	8,759	\$ 2,249,712	973	\$ 250,000
Irrigation	-	\$ 258,000	11,755	\$ 258,000
Internal Costs		\$ 600,000		\$ 600,000
Total Program Costs	11,605	\$ 4,062,712	15,573	\$ 2,063,000
Planned BPA/EEI Credit		\$ (3,000,000)		\$ (951,189)
Net Costs		<u>\$ 1,062,712</u>		<u>\$ 1,111,811</u>
Market Transformation - NEEA	2,000		2,000	
Annual Total Savings	13,605		17,573	
Total Biennial Savings			<u>31,178</u>	

Section 3: Bonneville Programs

The Bonneville Power Administration collects from the District, through BPA wholesale rates, funds to pay for its conservation program. Approximately thirty percent of the funds collected are used for BPA internal conservation costs and the balance may be returned to the Benton PUD conservation program.

BPA has supported conservation for many years and continues to do so by utilizing information from the Northwest Power and Conservation Council (Council). Every five years the Council develops a regional conservation potential plan that guides BPA and details a strategy to meet future demand for electricity in a manner that assures an adequate, economic, affordable, and reliable power supply. In February 2010 the Council adopted the 6th Power Plan. The energy efficiency targets in the 6th Power Plan more than doubled from those called for in the 5th Power Plan. BPA has committed to acquiring the aggressive 6th Power Plan targets.

BPA directs, and utilities can participate in, a regional wide conservation program. The conservation program specifications developed by BPA are outlined in their October 1st 2011 Energy Efficiency Implementation manual (Manual). The Manual provides requirements on how to plan and implement energy savings projects and includes approaches and options to further the regional energy efficiency partnership with BPA. To qualify for return of BPA conservation portion of wholesale rates, the District will follow and comply with the requirements listed in the Manual.

Third party providers and consultants are also used to provide expertise for programs and measures such as SIS (agriculture sector) and Cascade Engineering (commercial/industrial sector). They work with BPA, the District and the District's customers to acquire additional conservation.

Section 4: EIA Mandated Conservation Requirements

Energy Independence Act

Chapter 19.285 RCW requires that, “each qualifying utility pursue all available conservation that is cost-effective, reliable and feasible.” The timeline for requirements of the EIA are detailed below.

- By January 1, 2010, identify achievable cost-effective conservation potential through 2019 using methodologies consistent with the Council’s most recently published regional power plan.
- At least every two years thereafter, review and update this assessment for the subsequent ten-year period.
- Beginning January 2010, establish and make publicly available a biennial acquisition target for cost-effective conservation that is no lower than the utility’s pro rata share for that two-year period of its cost-effective conservation potential for the subsequent ten years.
- By June 1, 2012, and annually thereafter, each utility shall report to the Department. The report shall document the utility’s progress in the preceding year in meeting the targets.

There are two primary components of the EIA related to Section 19.285.040: 1) documenting the development of conservation targets (i.e., setting the targets), and 2) documenting the savings (i.e., demonstrating how the targets are being met). If conservation targets are not met, utilities may be required to pay a \$50/MWh (2007 dollars) penalty on the shortfall unless they have documented lack of customer participation despite offering to pay an incentive in an amount equal the utility's full avoided cost over the lifetime of measures.

Setting Conservation Targets

In order to set the conservation targets, utilities can use one of three options:

- **Option 1:** The Council’s conservation calculator
- **Option 2:** A modified version of the calculator
- **Option 3:** Utilities can perform their own custom analyses

Each of these approaches is further described below.

Option 1: Conservation Calculator

If a utility chooses to calculate conservation potential using the Council’s calculator, the biennial target and ten-year potential values from the calculator become the utility targets. In this case, utility is said to have effectively documented the requirement for customer conservation.

The conservation calculator provides an estimate of each utility's share of the regional conservation target based on its share of regional load. The calculator utilizes utility-specific data for the various sectors of retail sales in MWh: residential, commercial, industrial and irrigated agriculture.

Option 2: Modified Conservation Calculator

This second option allows for the modification of customer base data in order to arrive at targets lower than a utility's share of regional conservation. Modifications that can be made are the following:

- Add or deduct measures as they apply to the service area
- Modify the number or ratio of applicable units (percent of homes with electric heat)
- Increase or reduce per unit incremental resource savings
- Changes in forecasted program costs
- Changes in retail sales growth rates
- Changes in avoided distribution capacity cost savings

Option 3: Utility Analysis

This last option uses the Council's method to establish targets, but allows utilities to calculate the savings, costs, and applicability of measures for their service areas. Detailed below are the requirements of the utility analysis option from RCW 19.285.040:

- (i) Analyze a broad range of energy efficiency measures considered technically feasible.
- (ii) Perform life-cycle cost analysis of measures or programs, including the incremental savings and incremental costs of measures and replacement measures where resources or measures have different measure lifetimes.
- (iii) Set avoided costs equal to a forecast of regional market prices, which represents the cost of the next increment of available and reliable power supply available to the utility for the life of the energy efficiency measures to which it is compared.
- (iv) Calculate the value of the energy saved based on when it is saved. In performing this calculation, use time differentiated avoided costs to conduct the analysis that determines the financial value of energy saved through conservation.
- (v) Conduct a total resource cost analysis that assesses all costs and all benefits of conservation measures regardless of who pays the costs or receives the benefits. The NWPC identifies conservation measures that pass the total resource cost test as economically achievable.
- (vi) Identify conservation measures that pass the total resource cost test, by having a benefit/cost ratio of one or greater as economically achievable.
- (vii) Include the increase or decrease in annual or periodic operations and maintenance costs due to conservation measures.
- (viii) Include deferred capacity expansion benefits for transmission and distribution systems in its cost-effectiveness analysis.

Benton PUD selected **Option 1**, the Council's 5th Power Plan Conservation Calculator, Version 1_8 to establish its EIA ten-year potential and biennial target.

The 5th Power Plan Calculator calculated a ten-year achievable potential of 120,722 MWh. RCW 19.285.040 1(b) States in part, "At a minimum, each biennial target must be no lower than the qualifying utility's pro rata share for that two-year period of its cost-effective conservation potential for the subsequent ten-year period." Table 4-1 identifies the District's ten-year achievable potential of 120,722 MWh. The biennial 2012 – 2013 target of 24,144 MWh was calculated on the pro rata share (20%) of the ten-year achievable potential.

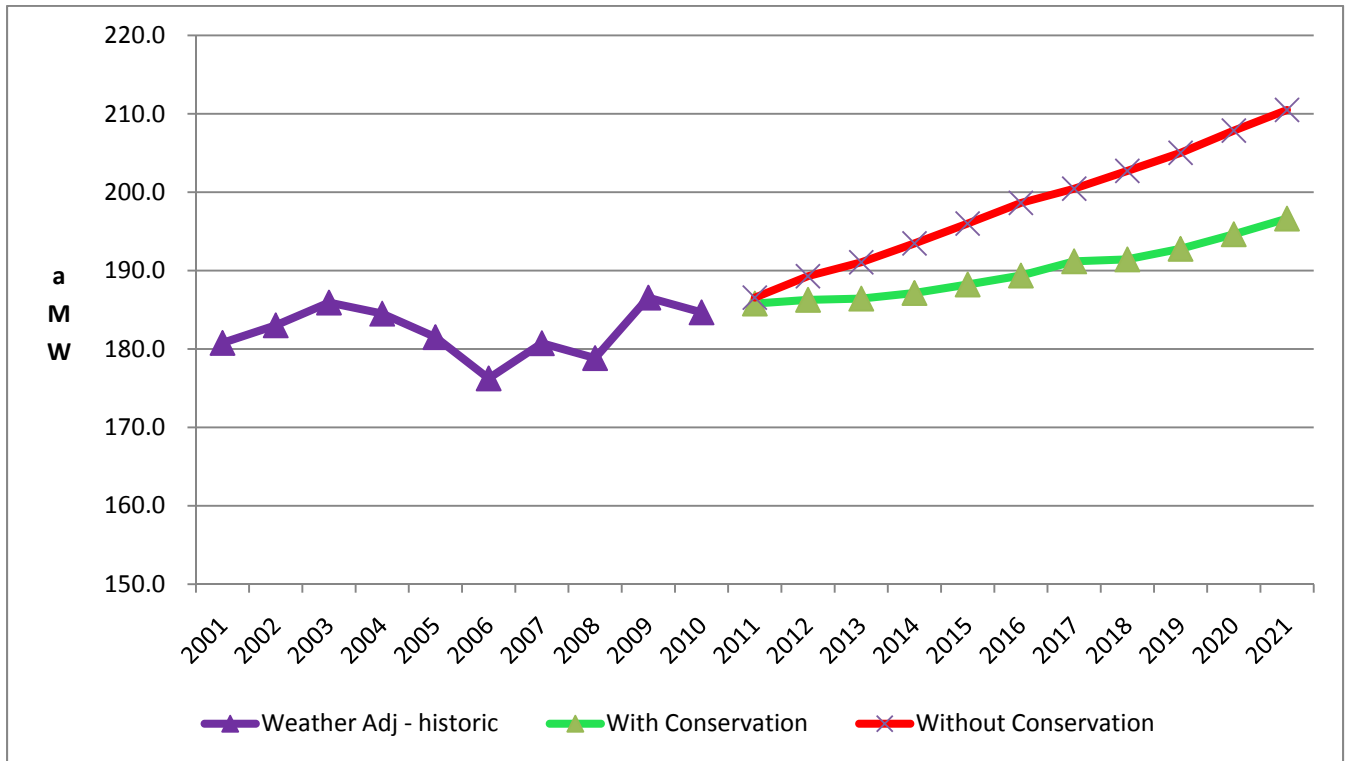
Table 4-1: 5th Plan Conservation Target Calculator

5th Plan Conservation Target Calculator												
<p>Introduction: The purpose of this calculator is to provide utilities with a simple means to compute "their share" of the Northwest Power and Conservation Council 5th Plan's regional conservation target. This calculator is intended to provide utilities with an "approximation" of the level of conservation they should target in order to be consistent with the Council's regional goals. The Council does not formally assign individual utility targets in its planning process. Individual utility conservation goals are best established through utility integrated resource planning processes which can better account for local conditions and legal requirements. Nevertheless, the results of this calculator can be used as rough guidance for utility conservation program planning until such time as a utility completes its own integrated resource plan or other similar process.</p>												
<p>Instructions: Select utility from the pull-down menu in row 12. Three options are provided to calculate individual utility shares of the 5th Plan's conservation target. Option 1 is best suited for larger utilities whose retail sales across residential, commercial and industrial sectors reasonably match those of the entire region. Option 2 is best suited for any utility regardless of size that does not have significant retail sales to irrigated agriculture. Options 1 and 2 do not require any input data. Users only need to select the utility service territory of interest. Option 3 requires that the user enter the utility's 2005 retail sales to the irrigated agriculture sector (cell i38). Option 3 is the preferred approach since it best accounts for differences in both the resource potential and the 5th Plan's targets across sectors. The results for Option 3 are not valid unless a utility's irrigation sector retail sales have been entered by the user. <i>Note: Utilities that serve multiple states must add each states results together to determine their totals.</i></p>												
Version Number =>		Last Revised =>					1/25/2010					
Option 1 - Target Based on Utility Share of Total Regional Retail Sales												
Select Utility Service Area		Annual Conservation Target (aMW)										Total 2012 - 2021
<input type="text" value="PUD No 1 of Benton County - WA"/>		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Total - All Sectors		1.67	1.72	1.77	1.82	1.77	1.11	1.01	1.01	0.96	0.96	13.8
		Annual Conservation Target (MWh)										Total 2012 - 2021
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Total - All Sectors		14,592.8	15,035.0	15,477.2	15,919.4	15,477.2	9,728.5	8,844.1	8,844.1	8,401.9	8,401.9	120,722.1

Section 5: Conservation and its Effect on Load

Chart 5-1 shows the forecast effect of conservation potential on load growth.

Chart 5-1: Conservation Effect on Load



As seen in the chart above, due to conservation the District's need to add new energy resources is greatly reduced. The District's forecast for gross load growth in its service area and the effects on load growth of all the ten-year conservation potential, if accomplished, is demonstrated in the chart.

Section 6: Conservation Potential Assessment 2012 – 2021

A CPA was developed to determine the District’s service area specific ten-year conservation potential by customer class.

In the fall of 2010, the District hired EES to develop a CPA. EES has completed a number of CPA’s for small and large Pacific Northwest utilities and has experience working with the Council’s Regional Technical Forum and with BPA.

As part of the CPA, customer surveys were performed to obtain more accurate conservation potential and develop a better understanding of the District’s customer and customer class characteristics.

The CPA determined, by customer class, the amount of conservation that can be achieved in the District’s service area. Approximately 1,500 energy efficiency measures were analyzed utilizing District service territory characteristics, such as the number of electrically heated homes and saturation of previous conservation programs. The estimated savings from the measures were accumulated to provide the total conservation potential estimates specific to the District’s service area.

Table 6–1 shows the high-level results of this assessment. The pro rata (20%) two-year conservation potential is 33,884 MWh and the ten-year potential is 169,418 MWh. These estimates include energy efficiency achieved through the District’s, BPA’s, and NEEA’s programs.

Table 6-1: Cost Effective Conservation Potential MWh

	2 Year Pro Rata Share (20%)	10 Year
Residential	18,834	94,170
Commercial	7,288	36,442
Industrial	2,032	10,162
Distribution Efficiency	3,346	16,732
Agriculture	2,383	11,914
TOTAL	33,884	169,420

Section 7: 2012 – 2013 Conservation Promotion, Funding & Reporting

Benton PUD customers pay the full cost of conservation through their rates. BPA conservation costs are included in the BPA wholesale power costs charged to the District. BPA collects the money received from the District and makes it available to the District in the form of conservation implementation credits. Additional required funding to meet EIA requirements is collected through retail rates.

The District projects annual budgets for conservation activities by customer class. Only measures that qualify for EIA conservation requirements are included. At the end of each year, conservation program achievements are evaluated to determine if funding by customer class should be increased or decreased. It is difficult to project actual expenditures and kWh savings by customer class and it is expected that actual expenditures will vary from projections. Very large commercial and industrial projects are uncommon and especially prone to budget and timing variances, but provide significant energy savings when they do occur. When needed, the District will provide a broad marketing and advertising campaign through a variety of resources including, television, radio, web page, brochures, customer meetings, etc. (See Attachment A for marketing plan)

BPA Conservation Funding

BPA provides funding for cost-effective conservation measures and have provided conservation budgets to utilities since 1981. The District will comply with BPA's October 1, 2011 Energy Efficiency Implementation Manual. The BPA funding for this two-year fiscal period is approximately \$1.9 million for 2012 and \$2.1 million for 2013.

Northwest Energy Efficiency Alliance

Benton PUD receives a share of savings from NEEA. The energy savings share is based on the District's share of total BPA load. NEEA's savings are from the retail sales of measures more efficient than current code and recommended code changes. NEEA works with federal and state governments, as well as manufacturers and retailers, to provide more efficient measures to the public through retail stores. These measures include high efficient Energy Star TV's, appliances, and desk top PC's. The savings from NEEA vary from year to year and can be counted toward EIA target levels.

Conservation Reporting

The District uses the BPA Energy Efficiency Central (EE Central) reporting system to capture and maintain all District conservation savings.

On a quarterly basis, savings are reported to the Commission through the District's Performance Measures, and on an annual basis as a special commission action.

An annual report will be submitted to the Washington State Department of Commerce by June, beginning 2012. The report will document the District's progress in meeting the conservation biennial target.

Section 8: Conservation Budget Plan Summary

The District's conservation budget plan cost are \$4.1 million for the calendar year 2012 and \$2.1 million for calendar year 2013.

The District has identified an organizational stretch goal of 31,178 MWh to mitigate risks of not meeting minimum required targets.

The EIA minimum conservation target was established by the District under Resolution No. 2416 as 24,144 MWh for calendar years 2012 – 2013, and a ten-year potential of 120,722 MWh.

Attachments

Attachment A: Conservation Programs 2012 – 2013 Communications (Draft)

Residential and Commercial Rebate Program

- Develop and update general information and forms (handouts and website) Ongoing
- Frequency Asked Questions Ongoing
- Contractors Newsletter Ongoing
- Local Utilities Workshop As Required
- Residential Customer Newsletters Quarterly
- Contact Realtors Offices TBD
- Bill insert for appliance rebates (Has been annually) TBD
- Produce and run TV and radio advertising As Required
- Develop lobby display (have posters in lobby) TBD
- Senior Day November
- Insert to Chamber Newsletter (Commercial Program) TBD
- Key Accounts Monthly E-newsletter (Commercial Program) Ongoing
- Update Website (information, forms and promotion) Ongoing
- Update brochures As needed

Due to the high backlog of conservation projects and existing strong demand no aggressive communication plan has been identified as needed.



Attachment B: Program Rebate List as of October 1, 2011

***Residential Energy Efficiency Program
Program Overview***

Offer valid through September 30, 2013 or until funding expires

Measure	Description	Rebate
Water Heaters	Electric Water Heaters 50-80 Gallon. Water heaters are qualified by Energy Factor ratings as follows: 50 gal =.93, 65 gal =.91, 80 gal =.91	\$25
ENERGY® STAR Refrigerators & Freezers <i>www.energystar.gov/</i>	Must be Energy Star Rated Must be 7.75 cubic feet or greater	\$15
Refrigerator and Freezer Recycling	To schedule a refrigerator/freezer pick up call 1-866-899-5539 Must be a working unit between 10 and 27 cubic feet	\$30
ENERGY® STAR Clothes Washer <i>www.energystar.gov/</i>	Energy Star MEF of ≥ 2 and WF<6 w/electric water heater Energy Star MEF of ≥ 2 and WF<6 w/ gas heater	\$30 \$20

Measures below must be performed by contractors that have been approved for the program

Energy Star Homes Northwest	Rebates paid to ES builders. Homes must have electric heat, comply with program requirements and be certified by a NW Energy Star Homes verifier.	\$1000
Energy Star Homes Northwest Manufactured Homes	Homes must have electric heat as primary heating source and must have Certificate of Compliance from manufacturer.	\$750
PTCS Ground/Water Source Heat Pump*	Any existing electric heating to PTCS Ground/Water Source Heat Pump. (Manufactured homes and homes with existing Ground/Water Source heat pump excluded).	\$2,000
PTCS Air Source Heat Pump*	Replace a zonal electric heating system or an existing heat pump with a High Efficiency Heat Pump. (9.0 or better HSPF and 14 or better SEER)	\$500
PTCS Air Source Heat Pump Conversions*	Replace existing electric forced air furnace with a heat pump. (9.0 or better HSPF and 14 or better SEER)	\$1,000
Ductless Heat Pump Program	Single family (SF), multi-family (MF) and manufactured homes (MH) with zonal electric heat are eligible.	\$1500
PTCS Heat Pump Commissioning & Controls	New heat pump installations only. No minimum HSPF or SEER ratings required.	\$300
PTCS Duct Sealing	Any electric forced air system with ductwork located *** outside of the conditioned space. No minimum HSPF or SEER ratings required.	\$400
PTCS Heat Pump Commissioning & Controls with PTCS Duct Sealing	Any new heat pump installation with ductwork located *** outside of the conditioned space. No minimum HSPF or SEER ratings required.	\$750
Window Replacements- Stick Built or Manufactured home	Homes must have electric heat. Must replace single pane, single pane w/ storm or dbl pane w/ metal frame windows. Increasing window area is not allowed. NFRC Rating of U.30 or lower (weighted average) Sliding glass & French doors \leq U-35 not counted against weighted average	\$6 / sq. ft.

Measures below must be performed by contractors that have been approved for the program

Measure (Homes must have electric heat as primary heating source)	Description	Rebate
Single Family Attic Insulation	R0 to R19	\$.59 / sq. ft.
Single Family Attic Insulation	R19 to R38	\$.21 / sq. ft.
Single Family Attic Insulation	R0 to R38	\$.80 / sq. ft.
Single Family Attic Insulation	R19 to R49	\$.26 / sq. ft.
Single Family Attic Insulation	R0 to R49	\$.85 / sq. ft.
Single Family Attic Insulation	R38 to R49	\$.05 / sq. ft.
Single Family Floor Insulation	R0 to R19	\$.65 / sq. ft.
Single Family Floor Insulation	R19 to R30	\$.12 / sq. ft.
Single Family Floor Insulation	R0 to R30	\$.77 / sq. ft.
Single Family Wall Insulation	R0 to R11	\$.61 / sq. ft.
Single Family Replacement Windows	≤ U-.30	\$6 / sq ft
Multi/ Family Attic Insulation	R0 to R19	\$.58 / sq. ft.
Multi/ Family Attic Insulation	R0 to R38	\$.70 / sq. ft.
Multi/ Family Attic Insulation	R19 to R38	\$.11 / sq. ft.
Multi/ Family Floor Insulation	R0 to R19	\$.37 / sq. ft.
Multi/ Family Floor Insulation	R0 to R30	\$.43 / sq. ft.
Multi/ Family Floor Insulation	R19 to R30	\$.07 / sq. ft.
Multi/ Family Wall Insulation	R0 to R11	\$.67 sq. ft.
Multi/ Family Replacement Windows	≤ U-.30	\$6 / sq ft
Manufactured Home Floor Insulation	R0 to R11	\$.24 / sq. ft.
Manufactured Home Replacement Windows	≤ U-.30	\$6 / sq ft

Benton PUD recommends weatherization of home prior to heat pump installation and that heat pump sizing correlate with the post weatherization heating and cooling loads.

**A duct system is considered to be “inside” if less than 50% of the duct work is outside of the heated space. Ducts located in heated basements and in between heated floor levels are “inside”.

*** A duct system is considered to be “outside” if at least 50% of the duct work is outside of the heated space. Ducts in attics, garages, crawlspaces and unheated basements are “outside”.

If you have any questions about Benton PUD’s Residential Energy Efficiency Program, please call us at 509-582-1234.

Commercial Energy Efficiency Program

Program Overview

Commercial Lighting - includes rebates for deemed savings on energy efficient lighting.

Custom Projects - includes rebates for special projects that improve efficiency or process related systems including, but not limited to, compressed air, variable frequency drives, industrial lighting, refrigeration, and motors over 500 horsepower.

Agriculture - includes incentives for sprinklers, nozzles, replacement of 25 to 500 horsepower pump motors and variable frequency drives installed in onion and potato sheds.

Low Flow Pre Rinse Spray Washers – includes complimentary installations of energy efficient low flow pre rinse spray washers for our business customers with electric water heaters. We will replace your existing spray washer with a new energy efficient model, saving your business up to \$900 a year on energy costs.

Rebates are valid through September 30, 2013 or until funding expires.

For more information about our Commercial Energy Efficiency Program, please contact Kevin Fischer at 509-585-5395.