

**Bonneville Power Administration
Energy Efficiency**

**Conservation Rate Credit (CRC)
and
Conservation Acquisition
Agreement (CAA)**

Implementation Manual

April 1, 2009*

****See list of key changes on page ii of this document***

"CRC Implementation Manual," as described in the BPA 2007 Wholesale Power Rate Schedule and GRSPs pertains to Conservation Acquisition Agreements.

Note

I am pleased with this version of the Implementation Manual. We have continued the efforts started a year ago to improve the layout and clarity of the Manual. More importantly, we made clarifications that should simplify insulation of small commercial buildings and expanded applications for geothermal heat pumps by allowing them to be connected with residential hydronic heating systems. We also added examples describing the range of costs eligible for dollar-for-dollar reimbursement for funds provided to Low Income agencies. We know this is an area that has created confusion. We do want customers, State and local agencies to know the full range of costs eligible for reimbursement as homes are weatherized.

We also increased the Willingness-To-Pay (WTP) for custom projects and selected deemed measures. As we look forward, there is the possibility of larger acquisition targets and, potentially, a change in the mix of measures composing the portfolio of savings delivered. The increase in WTP is expected to help meet the changing environment we are heading toward. Increasing our WTP is a reminder of two foundational Principles for the current CAA-CRC structure. These are: (1) Conservation is best achieved at the local level and (2) Conservation should be achieved at the lowest possible cost.

While customers may choose the incentive level to pay the end-user, BPA does expect the total of all reimbursements paid to be passed on to consumers. This is not to say reimbursements must be passed through on a one-for-one basis, we allow customers to set reimbursements based upon local conditions. We offer this flexibility to enable incentives to be designed to produce the most energy savings for the investment made. With this, BPA needs to be sure the benefits of conservation investments are realized; which requires certainty the energy savings are acquired and the funds tracked.

I would be remiss if I did not acknowledge the contributions of Jennifer Eskil, Steve Fucile, Lauren Gage, Sheila Gardner, Abigail Howard, Mark Johnson, Sarah Moore, Tim Scanlon, Gary Smith, Mira Vowels, Jillianne Welker and Grant Vincent. The contributions of all these individuals, working on various sections of the Manual, or in direct support thereof, have brought many pieces together in a short a rigorous schedule. It is with fond thoughts I extend a special note of thanks to Jean Oates. This Manual would not be what it is without her attention to detail, her dedication and her willingness to work with many to make this work for all.

Please keep those questions and comments coming in. I appreciate all the work BPA customers do to improve the region's energy efficiency.

Michael Rose
Manager, BPA Energy Efficiency Contract Administration

October 2008

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Implementation Manual April 2009 Changes Summary

This summary includes new changes only.

It does not include errata or updates issued after the last publication.

Title	Description	Page #
General		
Custom Projects	<ul style="list-style-type: none"> • The expected project simple payback (project Cost/Annual Energy Cost Savings) was changed from "one year or greater" to "six months or greater." • The Standard M&V Plan expected annual energy savings was increased from "75,000 kWh per year or greater" to "200,000 kWh per year or greater." • The Lite M&V Plan expected annual energy savings was increased from "less than 75,000 kWh per year" to "less than 200,000 kWh per year." 	5
Direct Acquisition	Customers may participate in Direct Acquisition through a process outlined in the Manual. Consent and Consent Plus Agreements are no longer required. Additionally, under the outlined process, customers now have the option to buy back savings procured under Direct Acquisition.	14
Energy Trust of Oregon Contributions	Customers may make contributions to Energy Trust of Oregon for any available initiatives in the Manual using any funding source available in the Manual. This has been placed under the header "Third Party Contributions," along with contributions to the Northwest Energy Efficiency Alliance.	16
Administrative Allowance (Performance Payment)	The Administrative Allowance is being replaced with a Performance Payment. Making this change eliminates the need for the Agreed Upon Procedures reporting and adjusts requirements for end-of-rate-period true-up. The percentage amount paid, methodology and allowable uses of funds remain unchanged.	31
Agricultural		
Green Motors Initiative	A section has been added to clarify that agricultural motors qualify for the Green Motors initiative.	40
Reimbursement levels for irrigation related measures: Table A-1	Adjustments have been made to three standard offer reimbursements (items 3, 5, and 7 on Table A-1) in the Irrigation-Related Measures. Increased reimbursements of \$1 per unit apply to these fixtures.	41
Scientific Irrigation Scheduling Light	This measure applies to farms with 1000 or less qualified acres. A deemed savings of 220 kWh over three years (75 kWh/acre/year) shall be accepted with an incentive of \$6 per qualified acre/year.	43
Variable Frequency Drives for Spud and Onion sheds	Customers with variable frequency drive needs in spud and onion sheds are now able to receive a deemed savings/reimbursement for installations. Incentive levels are 1,000 kWh/hp savings with	44

	reimbursement of \$200/hp per VFD installation.	
Lighting	<ul style="list-style-type: none"> Lighting has been made consistent across all sectors. Customers should make sure the correct sector reference numbers are selected in the PTR system for projects. Industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings may be submitted as a CPP which will require an M&V Plan and Completion Report. Additional changes have been made for documentation requirements, specifications, etc. Beginning January 1, 2009, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later should use the new Lighting Calculator Spreadsheet (Version 1.7e). Projects with completion dates prior to January 1, 2009 should use the old version of the calculator (Version 1.6e). 	47
Commercial		
EnergySmart (Grocer) Program	The EnergySmart (Grocer) Program is now available as a Direct Acquisition initiative and will only be available as a Direct Acquisition initiative starting October 1, 2009.	57
Hospitality Initiative	Customers may participate in the Energy Trust of Oregon's (ETO) Hospitality Initiative by making contributions to ETO. Contributions will be used to support the installation of lodging and food service measures.	59
2009 Rooftop Unit Service Pilot	The 2009 Rooftop Unit (RTU) Service Pilot is a Direct Acquisition Initiative to improve the efficiency of RTUs.	60
Lighting	<ul style="list-style-type: none"> Lighting has been made consistent across all sectors. Customers should make sure the correct sector reference numbers are selected in the PTR system for projects. Industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings may be submitted as a CPP which will require an M&V Plan and Completion Report. Additional changes have been made for documentation requirements, specifications, etc. Beginning January 1, 2009, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later should use the new Lighting Calculator Spreadsheet (Version 1.7e). Projects with completion dates prior to January 1, 2009 should use the old version of the calculator (Version 1.6e). 	62
Industrial		
Technical Support	<p>Option 1: At the discretion of BPA, limited M&V assistance may be provided through the TSP process.</p> <p>Option 2: BPA does not provide technical support (e.g. support from BPA customer-dedicated engineer) for customers that have selected Option 2.</p>	69
Lighting	<ul style="list-style-type: none"> Lighting has been made consistent across all sectors. Customers should make sure the correct sector reference 	73

	<p>numbers are selected in the PTR system for projects. Industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings may be submitted as a CPP which will require an M&V Plan and Completion Report. Additional changes have been made for documentation requirements, specifications, etc.</p> <ul style="list-style-type: none"> Beginning January 1, 2009, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later should use the new Lighting Calculator Spreadsheet (Version 1.7e). Projects with completion dates prior to January 1, 2009 should use the old version of the calculator (Version 1.6e). 	
Green Motors Initiative	The energy savings acquired under the Green Motors Initiative (GMI) is not subject to decrement. The GMI service center acknowledges to end-user that the incentive in the form of a credit to their invoice is on behalf of their serving utility.	76
New Industrial Construction	Customers do not need to select an Industrial Option in order to receive the New Industrial Construction \$0.27/kWh or up to 70 percent of the incremental project cost incentive.	77
Small Compressed Air Systems 75 hp or less	Variable Frequency Drives (VFD) applied to a single air compressor of less than 75 hp may use the RTF approved small compressed air calculator spreadsheet for M&V for this CP. This measure is primarily Industrial, but it may be used across all sectors.	77
Residential		
Documentation requirements for Energy Star Appliances	To reduce burdensome documentation requirements, BPA has provided additional options for documentation of ENERGY STAR appliances.	80
Heat Pump Upgrades in Manufactured Homes	BPA will provide reimbursement for all Heat Pump Upgrades in Manufactured Homes, eliminating previous exceptions in HZ1.	85
Heat Pump Conversions	BPA will provide reimbursement for HVAC conversions from electric forced air furnace to an Air Source Heat Pump.	87
Documentation requirements for Energy Star Fixtures	To reduce burdensome documentation requirements, BPA has provided options for simplified documentation of ENERGY STAR fixtures.	97
Montana House add to New Construction Opportunities	BPA will provide reimbursement for new residential construction meeting specifications for the Montana House, as approved by the RTF.	102
New opportunity for insulation in HZ3	BPA will provide reimbursement for attic insulation up to R-49 in Heating Zone 3.	107
Prime Window Replacement WTP	BPA will provide a reimbursement of \$6 per square foot of glazing area of qualified windows replaced.	109

Acronyms and Abbreviations Used in this Document

(Definitions associated with the Renewables Option of the CRC are provided in section 9).

AE	BPA Power Account Executive
Alliance (or NEEA)	Northwest Energy Efficiency Alliance
aMW	Average megawatt of electricity. An average measure of the total energy delivered in one year -- 8,760,000 kilowatt-hours per year
BPA	Bonneville Power Administration
CAA	Conservation Acquisition Agreement
CEC	California Energy Commission
CEE	Consortium for Energy Efficiency
C/IL	Commercial and Industrial Lighting
COTR	BPA Contracting Officer's Technical Representative
Council	Northwest Power and Planning Council
CP or CPP	Custom Project or Custom Project Proposal
CRC	Conservation Rate Credit
Customer	A utility or certain other regional entity that purchases power from BPA
CVR	Conservation voltage regulation
Deemed Measure	A measure for which savings per unit can be estimated because of a history of measured results and ability to replicate savings
DA	Direct Acquisition
DHP	Ductless Heat Pump
DSEI	Customer distribution system efficiency improvements
EE	BPA Energy Efficiency
EER	BPA Energy Efficiency Representative
End-user	Ultimate consumer of product(s).
ENERGY STAR®	ENERGY STAR is the registered name for a joint national energy efficiency program of the U.S. Environmental Protection Agency and the U.S. Department of Energy.
EPP	Environmentally Preferred Power rate schedule
ETO	Energy Trust of Oregon
Evaluation	The testing of the assumptions made in planning when measures are installed by real people and used by real people (generally not part of oversight, does not affect payments and is used to refine or confirm the planning assumptions for future use)
FAF	Forced air furnace
Fiscal Year (FY)	The BPA fiscal year is from October 1 through September 30.

HP	High performance, heat pump, OR horsepower, depending on context
HVAC	Heating, ventilation, and air conditioning
HZ	Heating zone
Incremental cost	The full cost of some measures, especially in retrofit situations or when a measure is completely incremental to standard practice. It is generally defined as the “energy efficiency improvement related costs above what would be required by standard practice or code.” It is often called “qualifying costs of the measures.”
IOU	Investor-owned utility
kWh	Kilowatt-hour – measure of electric energy
LED	Light-emitting diode
Low-Income	As defined for the Federal Weatherization Assistance Program, 150 percent of the poverty income levels posted on the program Web site: http://www.waptac.org/ (If a statewide definition has been approved for the federal low-income weatherization program in that state, that level will substitute for the default level provided above.)
M&V	Measurement and verification
Measurement	Measurements taken to establish energy use or improvements in energy use, such as testing duct leakage or measuring loading factors and run time in factories. (It usually involves post and/or pre-post measurement. Large end-users often measure to make sure that they are getting what they pay for or to better understand their system operations. The prevalence of required measurement for audits or for payment has varied in the field of energy efficiency, but the general rule is: the more uncertainty, the greater the risk of performance, the greater the need for actual measurement. BPA will require some level of M&V for projects for which the reimbursement is established by the savings achieved.)
MF	Multifamily home
MH	Manufactured home
MSO	Multisector Standard Offer (replaces sector-specific standard offers)
Multifamily	Five or more dwelling units within the same structure. (<i>Multifamily housing above three stories is considered commercial.</i>)
MW	Megawatt – measure of electric energy
MWh	Megawatt-hour – measure of electric energy
NEEA (or Alliance)	Northwest Energy Efficiency Alliance
NEMA	National Electrical Manufacturers Association
NR	New Resource Firm Power rate schedule
Oversight	A contract management activity, designed to assure the government that it is getting what it pays for with some level of certainty
PF	Priority Firm rate schedule

PTCS™	Performance Tested Comfort Systems certification for duct sealing and heat pump commissioning
PTR system	Planning, Tracking, and Reporting system for customers to report conservation activity
PV	Photovoltaic (solar)
RD&D	Research, development, and demonstration
REC	Renewable Energy Credit
Regional Technical Forum (RTF)	An advisory committee established in 1999 to develop standards to verify and evaluate conservation savings. (Members of the RTF are individuals experienced in conservation program planning, implementation and evaluation and are appointed by the Northwest Power and Conservation Council.)
Reimbursement	A term representing monetary incentive levels for the installation of energy efficiency measures; includes monetary amounts allocated against a customer's Conservation Rate Credit as well as reimbursements under a customer's Conservation Acquisition Agreement
RO	Renewables Option of the Conservation Rate Credit
RTF	Regional Technical Forum
SEER	Seasonal Energy Efficiency Ratio
Single Family (SF)	Less than five dwelling units within the same structure or site built home
SIS	Scientific Irrigation Scheduling
TRC	Total resource cost
TRCs	Tradable Renewable Certificates
TSP	Technical Service Proposal
Utility	A public customer that purchases power from BPA
VAR	Volt-amperes-reactive (reactive power)
Verification	This is a responsibility to inspect actual presence and proper operation of an installed measure. This is a level of quality control. It is often a function performed by the customer before paying rebates. Some turn-key program operators do it to make sure that their employees are following the specs. BPA may, during an oversight visit, review measures which have been verified by the customer or a turn-key program operator.
Wheel-Line Leveler	Self leveler which automatically keeps the sprinkler heads on an Irrigation wheel line in a steady upright position
Willingness to Pay (WTP)	Willingness to Pay - the amount BPA is willing to reimburse for measures installed in accordance with applicable specifications, manufacturer's requirements and, as applicable commissioned to ensure proper operation.
Working day	Monday, Tuesday, Wednesday, Thursday and Friday, excluding federal holidays or other days federally deemed to be non-working days

Sector Definitions

Agricultural:	<p>Electrical energy used by a farm business of which the primary purpose is land cultivated for food production, land used for breeding or raising of domestic live stock (including fish, oysters, etc.) or any land involved in major irrigation loads, regardless of the purpose.</p> <p>The distinction between the agricultural and industrial sector generally rests with the property line. On-farm processes are agricultural (with the exception of major processing of farm products on-site); off-farm processes are industrial.</p> <p><u>Examples:</u></p> <ul style="list-style-type: none"> • Dairies and storage of milk while on farm are agricultural; pasteurizing, homogenizing, dehydrating, and bottling of milk, ice cream, cheese and butter are industrial. • Fruit and vegetable storage (such as potatoes, onions, apples) on-farm is agricultural; storage at a co-op, middle-man, or processor is industrial. • Pumping for fish farms and refrigeration of fish before shipping is agricultural; freezing, storing and canning fish is industrial. • Wineries where grapes are grown, stored, pressed and wine is cooled and bottled on the farm are agricultural; wineries with storage and processing performed off-site are industrial.
Commercial:	<p>The Commercial Sector includes electrical energy used in service-providing facilities and equipment of businesses; federal, state, and local governments; and other private and public organizations.</p> <p>The commercial sector is generally defined as non-manufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, and health, social and educational institutions.</p>
Industrial:	<p>The Industrial Sector includes electrical energy used for any fixed equipment, building or complex for the production of goods in connection with, or as part of, any process or system and, in general, within which the majority of energy use is not devoted to HVAC or to meet the potable hot water energy load requirements of a facility.</p> <p>Also included are electric distribution systems, conservation voltage regulation (CVR), and water/waste-water systems.</p> <p>Any storage, processing (transportation), or other activities involving farm products off the farm is considered industrial food processing.</p>
Residential:	<p>The Residential Sector includes electrical energy used in a residential setting. This includes single family residences, multifamily residential structures (up to 3 stories high), and manufactured homes.</p> <p>Excluded are temporary residences such as hotels, motels, nursing homes, dorms, or any other generally temporary quarters.</p> <p><i>(Multifamily housing above three stories is considered commercial.)</i></p>

1. Introduction

Two major conservation initiatives were developed for the Bonneville Power Administration's (BPA) fiscal year 2007 - 2009 Conservation Portfolio of Programs -- the Conservation Rate Credit (CRC) and Conservation Acquisition Agreements (CAA). These initiatives replaced the Conservation and Renewables Discount (C&RD) and Conservation Augmentation (ConAug) initiatives.

CRC and CAA are separate conservation-funding mechanisms with many common and complementary features. Both initiatives use the Regional Technical Forum's (RTF) Planning, Tracking, and Reporting (PTR) system (ptr.nwcouncil.org), its list of qualifying measures, verification protocols, and custom project (CP) approval processes. The CRC credit appears on customers' monthly power bills. The credits are substantiated by acceptable reports submitted by the customer. The CAA reimbursement is based on acceptable invoices submitted by the customer.

The basis for this document is the "Final Post-2006 Conservation Structure" (June 28, 2005) posted on the BPA Energy Efficiency Web site¹ at www.bpa.gov/Energy/N/archives/pdf/post06_program_structure.pdf.

In addition, limited renewables measures are available to assist customers and BPA in continuing to be major supporters of renewable generation in the Pacific Northwest.

Organization of the Manual

Section 1 introduces the CRC & CAA and provides general information about these initiatives.

Section 2 contains information specific to the CRC.

Section 3 contains information specific to the CAA.

Section 4 contains general requirements, including information on performance payments, small customer requirements, and federal due diligence requirements.

Sections 5 through 8 contain information about specific sectors (Agricultural, Commercial, Industrial and Residential). Each section contains the following information:

- Definition and general description of the sector
- Measure descriptions including requirements and specifications, additional documentation requirements and reimbursement strategies and levels

Section 9 contains information about the Renewables Option of the CRC.

¹ Materials referenced on the BPA Energy Efficiency Conservation 2007 - 2009 Web site are located at: www.bpa.gov/Energy/N/projects/post2006conservation unless otherwise noted. Customers without Internet access should contact their Energy Efficiency Representative for more information or for copies of the referenced materials.

1.1. Policy for Measure Changes/Additions

BPA updates the CRC and CAA Implementation Manual (Manual) every six months, on October 1 and April 1. BPA reserves the right to make changes to policies or measures.

Customers will be given at least six months notice for changes that decrease a measure reimbursement, increase requirements or delete an existing measure in the CRC and CAA.

Changes that increase a measure reimbursement, decrease requirements, or add a new measure may be implemented any time of year without notice. In these cases, the Energy Efficiency Web site acts as an extension to the Manual, allowing BPA to communicate positive changes to existing measures and eligibility and requirements for new measures before publication of the next Manual. At publication of the subsequent Manual, these changes will be incorporated into the newly published version of the Manual.

1.2. Official Interpretations

Only the BPA Contract Administration Manager or Energy Efficiency Implementation Manager may issue interpretations, determinations and findings related to the CRC or CAA that are binding and/or have implications across the program, unless delegated to other BPA staff (e.g., COTRs). Such decisions shall be provided to the customer in writing. Only written statements (including e-mail) by BPA officials acting within the scope of their authority in administering the CRC and the CAA shall be considered to be official BPA statements.

1.3. Reimbursement Strategies and Levels

The BPA Reimbursement Strategies and Levels (RS&L) are the core element of the CRC and CAA. These strategies and levels set forth the BPA Willingness to Pay (WTP). Measure-specific RS&Ls are grouped with related measure information in sections that are separated by sector.

1.3.1 Influences on the BPA Willingness to Pay (WTP)

The BPA reimbursement to the customer for savings achieved is based on busbar savings, which is generally 7.625 percent above the site savings.² This is consistent with how the BPA aMW targets and its WTP are set.

The reimbursement is also based on estimated or verified energy savings that will persist over the life of the measure. The BPA WTP and the savings estimates are derived from program evaluations and research projects that are directly related to the standards and quality assurance processes embodied in the programs.

² Decrementing customers will receive site savings plus 5 percent distribution line losses, unless otherwise agreed to by BPA.

1.4. Key Features of the Conservation Rate Credit and Conservation Acquisition Agreement

Key features of the CRC and CAA³ initiatives include the following:

- a. Power customers can voluntarily choose whether and to what extent to participate.
- b. CRC funding is proportional to the amount of power purchased from BPA. CAA funding levels are negotiated for each CAA contract.
- c. The intent of both funding initiatives is to achieve conservation at the lowest possible cost.
- d. BPA agreements are between the customer and BPA, not between the customer's end-users and BPA. Customers design and run programs and BPA designs reimbursement rules and levels for participating customers.
- e. Local control and accounting simplicity will be reflected in the BPA WTP for achieved and measured conservation at set levels of reimbursement (deemed reimbursement, or cents per kilowatt-hour [kWh] up to a cap), allowing customers to determine how to design and operate their own programs to deliver the savings.
- f. Performance payments will be allowed to assist customers for planning and implementation of conservation programs.
- g. Credit levels in the CRC are generally consistent with the reimbursement levels in the CAA.
- h. CRC credits and CAA reimbursements are available for cost-effective conservation measures in all sectors (e.g., residential, commercial, industrial and agricultural).
- i. Information on individual customer expenditures and achievements resulting from BPA funding will be made available to the public, as appropriate.
- j. Investor-owned utilities (IOUs) cannot at this time receive funding through the CRC.

³ References made in this Manual to CRC and CAA requirements include and are applicable to Customer Self-Funded measures reported to BPA that are countable toward the High Water Mark pursuant to the Long-Term Regional Dialogue Policy.

Table 1: CRC - CAA Process Chart

	CRC	CAA
Qualifying Customers	BPA Priority Firm Power (PF), Industrial Power (IP), and New Resource Firm power customers (IOUs do not qualify.)	Any BPA public utility customer and non-smelter Direct Service Industries (DSIs)
Funding Source	Customers receive a rate credit on their monthly power bills over the course of the rate period based on the net load placed on BPA.	Customers are reimbursed for measures according to the BPA WTP. CAA standardized offers provide reimbursements for a wide variety of cost-effective, deemed measures and a streamlined process for BPA purchase of custom projects.
Funding Amount	CRC funding is proportional to the amount of power purchased from BPA.	CAA funding is negotiated on a contract by contract basis.
Application Process	Early Start available with notice to BPA.	To initiate a CAA, customers must submit a written request.

1.5. Federal Agency Program

In addition to using the CAA and CRC as the primary mechanisms for delivering energy savings from participating customers, the BPA portfolio of energy efficiency programs includes the acquisition of energy savings from projects implemented under Interagency Agreements, primarily with directly-served federal agency customers. These additional federal energy savings contribute to achieving the regional conservation goals at the lowest possible cost.

When BPA funds are used to pay for electric energy savings from federal facilities, only cost-effective conservation, as defined by the total resource cost (TRC) test in the Northwest Power and Conservation Council’s (Council) most recent Power Plan approved by BPA, will be eligible for such reimbursement. In addition, the CRC and CAA Manual procedures and methods, generally equivalent to those used in CRC/CAA customer relationships, will be used for federal agency project relationships, including applicable M&V and oversight procedures.

Post-2006 TRC Test Compliance

Before any new federal conservation acquisition capital budget request is prepared, the proposed project(s) or measures will be subjected to the TRC test using the same assumptions and test format used for proposed custom customer kWh savings projects. If the present value total energy cost savings/present value project cost benefit/cost ratio is greater than 0.5, using the regional Planning, Tracking, and Reporting (PTR) system’s TRC calculator, the

project/program funding budget request may be submitted for review and approval.

Positive program TRC results do not assure that the proposed project funding request will be approved. All other due diligence review requirements must be fulfilled before determining that BPA Energy Efficiency should purchase the savings from the project.

1.6. Methods of Determining CRC Credit or CAA Reimbursement Level and General Requirements

BPA will review reports for the CRC credit and CAA reimbursement to determine whether they meet the requirements contained in this document.⁴

There are two methods to determine the CRC credit and CAA reimbursement level:

- a. Deemed: For some measures BPA has deemed the CRC credit or CAA reimbursement level. The deemed credit or reimbursement level was determined by (1) multiplying the RTF deemed estimate of busbar energy savings by a set dollar amount or (2) BPA setting the reimbursement levels for individual measures based on the BPA WTP. For other measures with a deemed reimbursement, the PTR system may require additional calculations to arrive at energy savings. When this occurs, the measure is referred to as "calculated," but is still a deemed measure.
- b. Custom Projects (CP): These are measures or projects where there is not a deemed method of determining the reimbursement. In these cases, the reimbursement is determined by multiplying the accepted, verified energy savings⁵ by the BPA WTP. Measures for which this method is used to determine the reimbursement must meet the specification and funding source requirements for certain sectors or other measurement guidelines as applicable. Custom projects are discussed in detail below.

1.7. Custom Projects

Subject to acceptability of other requirements, BPA will approve CRC/CAA-funded Custom Projects (CP) initiated prior to October 1, 2009, which are expected to have installation dates after September 30, 2009. In the event a rate credit is not available, BPA will provide reimbursement for those CPs accepted by BPA prior to October 1, 2009, through the bilateral contract mechanism. The following criteria apply to the CP process.

- a. Unless otherwise stated herein, all measures or projects for which BPA has not deemed a reimbursement level, deemed energy savings, or for which cost-effectiveness has not been determined,

⁴ The measure list in the PTR system indicates if a measure is cost-effective. BPA funded measures may be claimed regardless of cost-effectiveness, while non BPA funded measures may only be claimed as utility self-funded.

⁵ Included in the custom project template available in the PTR system.

must be submitted as Custom Project Proposals (CPPs) and meet all of the CP requirements.

- b. BPA will strive to provide the customer a written response within 10 working days of receiving a CPP or a CP completion report.
- c. All measures presented for CRC credit or CAA reimbursement must be installed in the Pacific Northwest, as defined by the Act, in service areas of participating customers.
- d. Individual CPPs with TRC B/C ratio of less than 1.0 are eligible. BPA will manage the B/C ratio at a program level⁶ and reserves the right to reject individual CPPs with B/C ratios of less than 1.0 to ensure the aggregate B/C ratio for all CPPs remains 1.0 or greater.
- e. To ensure the aggregate Benefit/Cost (B/C) Ratio for all CPPs remains 1.0 or greater, BPA is currently requiring that individual CPPs have a B/C Ratio of at least 0.5.
- f. If a CPP has been approved by BPA and equipment has been ordered, purchased or installed, the reimbursement rate in place at the time the M&V Plan was approved will apply, and the CP cannot be canceled and resubmitted under a higher reimbursement rate.

1.7.1 Custom Project Guidelines and Review Process

In order to receive reimbursement for a CP, a customer must perform the following over the life of the project:

1. Submit CPP (including M&V Plan).
2. Secure BPA review and comment.
3. Create Completion Report.
4. Secure BPA acceptance of CPP (including M&V Plan) and Completion Report.

1. Submit CPP (including M&V Plan).

- a. The customer is required to screen all CPs using the following eligibility requirements (as noted in the CPP template in the PTR system) prior to submitting the CPP to BPA:
 - Deemed savings or deemed reimbursements are not eligible for inclusion in CPPs.
 - The proposed measures have not been ordered, purchased or installed.
 - The project does not result in fuel switching.
 - The measures are designed to result in improvements in the energy efficiency of electricity distribution or use.

⁶ Program level means all custom projects accepted by BPA over the rate period.

- The expected life of the energy savings for each measure is one year or greater.
 - The proposed baseline for each measure is documented and provides a basis for establishing energy savings.
 - The expected project simple payback (Project Cost/Annual Energy Cost Savings) is six months or greater.⁷
- b. Once a CPP is submitted to BPA the proposal is “locked” while BPA completes its review.
- c. A customer may request technical advice from BPA regardless of the size of the project or the requirement for review and comment unless it has selected Option 2 under the industrial reimbursement level (see the New Industrial Construction measure listing).
- a. The CPP must include an M&V Plan showing how energy savings will be verified. See the “M&V Guidelines,” below, for additional information.

M&V Guidelines

There are two types of M&V Plans, the Standard M&V Plan and the Lite M&V Plan, each discussed below.

Standard M&V Plan

- a. The Standard M&V Plan is intended for projects of an expected annual energy savings of 200,000 kWh per year or greater. Typically, this means direct measurement of pre and post-measure installation energy consumption and other significant variables. Engineering calculations based on simplifying assumptions are usually insufficient for standard projects. Direct metering is not explicitly required for standard projects, but it does set the standard of rigor. At a minimum, the M&V Plan should include the following sections and address the points listed below.
1. Approach

Outline the verification approach and why it was chosen. Detailed guidance for preparing an M&V Plan is included in several standard references:

 - The International Performance Measurement & Verification Protocol, at www.evo-world.org.
 - The RTF Appendix P Energy Savings Verification
 - Site Specific Verification Guidelines, May 1992, BPA, at bpa.gov/Energy/N/projects/cr_discount/pdf/site_specific_verification.pdf
 2. Protocols

⁷ The Simple Payback formula applied to distribution customer CVR custom projects is revised. The energy savings component used in the formula will now be five percent of the total energy savings from the project.

- ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings
- Direct measurement of pre and post-energy consumption and other significant variables preferred

3. Assumptions

Explain the assumptions made and state the sources of all assumed values. Show the overall significance of these assumptions to the total expected savings and describe the uncertainty inherent in the assumptions.

Identify the significant variables that affect energy use and categorize each as “assumed” or “to be measured.” Assumed values are only acceptable if they have a well documented basis in fact, and an analysis shows that plausible errors from the assumption will not significantly affect the overall reported savings. When using assumed values, use conservative assumptions.

4. Metering Plan

For metered verifications, include a description of what will be measured, the measurement duration and the data sampling intervals, and the instrumentation to be used. Also, include details on who will perform verification and when it will be performed. If applicable, include a one-line diagram showing proposed metering locations both before and after the installation. Explain how short term measurements will be extrapolated to an annual basis.

If measurement is not possible or practical, provide an explanation.

5. Calculations

Show or describe the calculations to be used. Include and describe calculations to account for significant changes in production, weather, loads, hours-of-operation, set points, manual operation, occupancy, or other factors that affect the annual savings over the expected life of the measure.

6. Quality Assurance

Describe activities planned to ensure good data and accurate calculations. Describe inspections, tests, commissioning, etc., to ensure that the proposed systems function as planned.

Lite M&V Plan

The Lite M&V Plan may be allowed for projects where the expected annual energy savings are less than 200,000 kWh per year. The value of the energy savings for these projects may not be great enough to support direct measurement of savings. If the reviewing BPA engineer does not believe the Lite M&V Plan is appropriate for a project, the Standard M&V Plan may be required. The BPA reviewing engineer may allow the Lite M&V Plan for larger projects (greater than 200,000 kWh per year) where

the engineer finds it appropriate. At a minimum, the M&V Plan should include the following sections and address the points listed below.

1. Approach

The primary method for determining the verified annual energy savings for each measure is engineering calculations. The measure(s) installed under this approach should have defensible annual energy savings values that are calculated based on commonly accepted engineering practices and reasonable assumptions.

2. Calculations and Assumptions

Show or describe the calculations to be used. The engineering calculations should use known variables specific to the project combined with defensible assumptions. Assumptions should be based on independent third party information such as case studies, prototype testing, metering and evaluation reports, and/or scientific research. Document the source(s) of all assumptions.

- Energy Savings Limits

Since many of the inputs to the engineering calculation are assumed, a best-case and worst-case calculation should be made to help determine a reasonable and conservative value for energy savings. For each significant assumption, it is important to determine a realistic error boundary in order to calculate the best and worst case scenarios. In the best case calculation, all significant assumed variables should be those that are realistic and, when occurring together, provide the highest savings. In the worst case calculation, the significant variables that provide the least amount of savings expected should be examined. In the worst case calculation, it is not uncommon to have no savings, or even negative savings. The final estimated energy savings value must be defensible and reasonable.

Since the engineering calculations will vary with the measure application, there is not one specific analysis tool to recommend. The US DOE is one source of potentially useful software calculation tools such as PSAT, FSAT, and MotorMaster. Using a Microsoft Office Excel[®] spreadsheet for engineering calculations is an easy way to document the calculations and assumptions.

3. Quality Assurance

Describe inspections, tests, commissioning, spot or short-term measurements at the component or system level, etc., to ensure the proposed systems function as planned. Energy savings values must be adjusted prior to submitting a project completion report if the Quality Assurance tasks reveal the as-built, as-installed and/or as-operated conditions are significantly different than originally estimated.

2. Secure BPA review and comment.

- a. CPPs for which the expected first year energy savings are over 200,000 kWh require BPA review and comment in addition to BPA acceptance of the M&V Plan.
- b. BPA will review the CPP submitted by the customer to determine if the submitted project contains any weakness or concerns which would impact the project's ability to deliver the estimated savings, to come in at the estimated project costs, or the ability of the project to be measured and verified. BPA may also identify possible risks related to the implementation of the project and its impact on the technical process. BPA may warn the customer about potential risks and may suggest improvements, but the ultimate decision to accept comments and proceed with the project will be up to the customer and its end-users, subject to BPA acceptance of the M&V Plan.

3. Create Completion Report.

- a. A completion report must be submitted after the project is installed and energy savings measured according to the M&V Plan approved in the CPP, before a customer can include the CP in a CRC report or submit an invoice for CAA reimbursement. The completion report template, which is similar to the original report, is available in the PTR system. The customer fills out the form and submits it to BPA electronically. Actual project costs and verified energy savings must be entered into the completion report. Any changes to the approved M&V Plan need to be noted in the completion report. The template will calculate the reimbursement.
- b. Reimbursement for CPs is based on the accepted completion report data.
- c. Claims for CRC reimbursement for Completion Reports accepted by BPA are attributable to the rate period in which they are accepted by BPA..

4. Secure BPA acceptance of CPP (including M&V Plan) and Completion Report.

- a. BPA must accept the M&V Plan of a CPP and the Completion Report for a CP before a reimbursement can be made. Unless otherwise agreed to in writing by BPA, the CPP must be submitted and accepted before the project is begun. "Begun" means the measure *has been* ordered, purchased or installed.
- b. If the CPP is not complete or needs additional work, the CPP may be rejected or returned for modification and the customer notified.
 - BPA may reject a CPP for failure to provide an adequate M&V Plan.
 - BPA may return a CPP for changes to improve the adequacy of either the project description or the M&V Plan. If a CPP is

returned for modification, it may be resubmitted, in which case the 10 working day response time will restart.

- BPA shall make the final decision as to whether any CPP meets the eligibility requirements and criteria stated in this Manual and whether or not to accept the M&V Plan for that CPP. Customers will be notified in writing when BPA accepts a CPP. The CPP will receive a reference number from the PTR system. This reference number is the tracking number for the CPP and will be tied to the completion report. Only projects with a reference number are eligible to submit a completion report, which is required before a customer can claim a CRC credit or a CAA reimbursement.

1.8. Role of the RTF

The RTF collects, reviews, and distributes protocols for the verification, evaluation and development of new methods of achieving conservation savings.

Regional Conservation Tracking:

- a. The RTF has developed standardized forms and data definitions for use by retail electricity distribution customers, state and local low-income weatherization service providers, and renewable resource developers.
- b. The RTF compiles data submitted and publishes an annual regional summary, which it presents to the Council. This summary compares the level of activity and expenditures reported with the Comprehensive Review's "public purpose" goals. In addition, the RTF assesses what has been accomplished through those expenditures - electricity savings achieved, low-income end-users served, renewable resource production achieved - and at what cost.

Specifically, the RTF makes recommendations to BPA regarding:

- a. Cost-effective conservation measures and estimated savings associated with those measures
- b. Changes in technology and standard practices through which customers can demonstrate that different savings and value estimates should apply
- c. A set of protocols by which the savings and system value of measures/programs not on the list could be estimated including complex commercial or industrial projects
- d. Criteria for renewable resource projects
- e. Protocols for measurement and evaluation of savings or production

The RTF is independent of BPA. The RTF recommendations to BPA are for advisory purposes only and reflect the legal requirement that decisions affecting BPA rates must ultimately be made by BPA. Consequently, BPA will decide whether to accept, reject or modify the recommendations of the RTF.

Customers may petition the RTF to review the eligibility of new measures or measures previously deemed as not regionally cost-effective. If the RTF

recommends a proposed measure as cost-effective, BPA will review the RTF's recommendations to determine whether or not BPA will pay an incentive for the measure.

1.8.1 Process for Petitioning the RTF

Parties may initiate the process by contacting the Chair of the RTF via letter or e-mail. The party making the proposal should explain the change proposed. If a new measure is proposed, the proposal should cite the RTF criteria under which the measure qualifies for inclusion in the RTF's list. If a change in evaluation methodology is proposed, the proposal should include the rationale for the change. For example, in the case of a proposed change in protocol, the proposal should explain why the change would improve the analytical quality of the protocol. In the case of a proposed changed assumption, the proposal should present evidence that the changed assumption more closely reflects the real world. A standard form is available on the RTF Web site, which sets forth the minimum level of information needed to file the proposal.

If the proposal includes all necessary information, the staff will assess the validity of supporting arguments and evidence and make a recommendation to the RTF as to its acceptance or rejection. RTF members will receive copies of all information provided by the appealing party in support of their proposal.

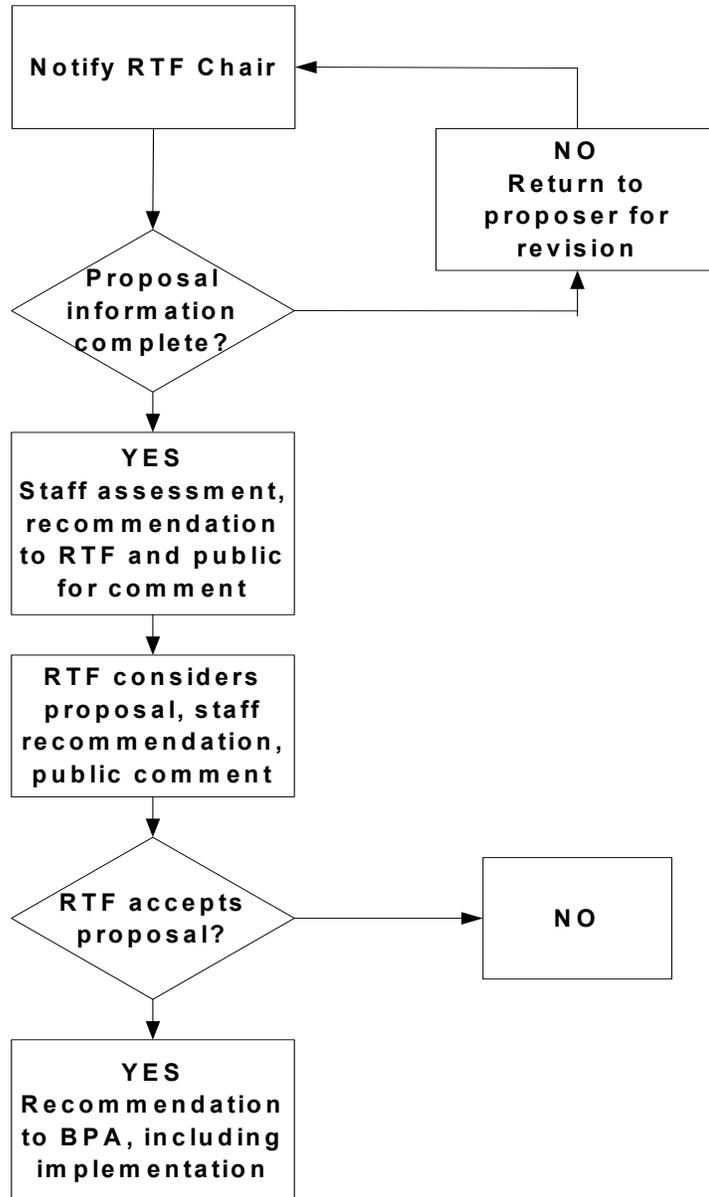
If the staff assessment is that the proposal should be accepted, or that the proposal is sufficient to merit more discussion by the RTF, the proposal will be put on the agenda for discussion at the next RTF meeting. If the staff assessment is that the proposal has no merit, staff will assign the proposal to a consent agenda for rejection. If any RTF member disagrees with the assignment, it will be moved from the consent agenda to the discussion agenda.

The RTF anticipates that it will normally make decisions on proposals within 90 days after receiving them, although complex issues could take longer and some circumstances (e.g., health and safety) could take less time. Notice of pending actions on matters under appeal will be provided in the RTF meeting announcements and agendas. Figure 1, below, depicts the flow of a proposal through the RTF's process.

The RTF will consider the proposal, staff's assessment and recommendation, and any public comment and accept or reject the proposal. Acceptance or rejection will require a 60 percent vote by the RTF. The party making the proposal may make a presentation directly to the RTF and may contact individual RTF members prior to the meeting. Members are obligated to disclose such contacts when the proposal is under consideration.

Accepted proposals will be submitted in writing to BPA as RTF recommendations with advice for implementing the changes. BPA will respond within 30 days of the RTF recommendation, either by approving the request, denying the request or by requesting more information. For more complex requests, BPA may need more time, but will respond with a proposed course of action and completion date within 30 days of the RTF recommendation.

Figure 1: RTF Process Flowchart



1.9. Direct Acquisition

The following provides (a) an overview of the Direct Acquisition mechanism, (b) a description of the implementation process and (c) a description of the CRC Repayment Option.

a. Overview

1. Direct Acquisition (DA) is an acquisition mechanism wherein BPA contracts directly with a third party to implement energy efficiency activities within a participating customer's service area.
2. DA may be used with a variety of initiatives (listed separately in their respective sectors). Under DA, incentive data will be collected and entered into the PTR system by the third party, and activity reporting will be provided to the customer pursuant to the specific initiative. Unless otherwise stated in the respective sector section, Customers do not have any oversight responsibility and are not eligible for a performance payment.
3. BPA will attribute energy savings (in kWh) to the participating customer and all energy savings will receive a 75 percent credit toward the conservation adjustment for the participating utility's High Water Mark (HWM).
4. BPA disclaims any and all warranties associated with the third party contractor's performance and does not in any way guarantee energy savings as a result of the completed conservation projects.

b. Implementation

1. If customers elect to participate in a BPA offered third party initiative for services in their service area, the customers shall send a written request to their COTR. If approved, the COTR shall confirm participation by written notice. Customers should indicate with their request if they wish to participate in the CRC Repayment Option and should provide contact information (name, address phone, email address) for the person responsible for CRC repayment.
2. Customers enrolled in DA under Consent or Consent Plus Agreements shall continue to operate under those agreements until they expire. Customers wishing to participate in additional DA initiatives, or add the CRC Repayment Option to an existing Consent agreement, may participate using the request and acknowledgment procedure outlined in this section.
3. The customer may rescind its consent by providing 30 days written notice to its COTR. If the customer rescinds consent after

BPA has hired a contractor, it must allow BPA up to one year from receipt of notice of rescission to complete any projects for which the contractor was hired.

c. CRC Repayment Option

General requirements for participation in the CRC Repayment Option are as follows.

- Participation in the CRC Repayment Option is initiative specific and voluntary.
- Repayment of BPA DA costs is at the customer's election (to allow customers flexibility to optimize use of available CRC).
- Customers may choose the repayment amount up to the total of the BPA DA costs.

The process steps below will be followed for customers who provide BPA with a request to participate in the CRC Repayment Option.

1. At least once per year, BPA will provide a notice summarizing the total DA costs and the total energy savings.
2. If a customer wishes to repay BPA costs, the customer must send a written confirmation to the BPA contact originating the notice, indicating the dollar amount it wishes to repay.
3. Upon BPA receipt of the confirmation, BPA shall send an invoice for the amount indicated by the customer and will also provide the amount of energy savings associated with the amount to be repaid.
4. The customer shall pay BPA upon receipt of the invoice.
5. Once BPA is paid, customers may claim the amount paid and the energy savings provided by BPA as a claim toward their CRC. CRC reference numbers are available by initiative.

1.9.1 Requirements for Self-Funding

1. Customers who elect to self-fund an initiative which is operated by BPA as an approved DA initiative are required to contract with the third party delivery organization directly. BPA shall not be a party to such agreements and shall have no liability to the delivery organization for costs incurred by self-funding customers.
2. Customers must meet the initiative specific requirements found in the Manual to receive credit for self-funded energy savings attributable to the HWM.

3. For self-funded programs, BPA will attribute energy savings (in kWh) to the participating customer and all energy savings will receive a 100 percent credit toward the conservation adjustment for the participating utility's HWM.

1.10. Third Party Contributions

Customers may make contributions to qualified third parties for the purpose of acquiring conservation. Qualified third parties currently are NEEA and ETO. The contribution requirements of each are discussed below.

1. NEEA

Contributions to NEEA will qualify for full CRC dollar-for-dollar credit, provided NEEA installs cost-effective conservation measures and meets all applicable requirements for measures claimed under the CRC. Contact NEEA for approval prior to making a contribution of \$200,000 or more and prior to reporting the contribution in the PTR system. Contributions do not qualify for a performance payment.

2. ETO

Contributions may be made to ETO for specific initiatives (listed below and described in their respective sectors) and may use any funding source available under this Manual. Reporting requirements will be determined on an initiative specific basis. Customers should contact ETO if interested in a specific initiative. Note that ETO may ascribe certain participation deadlines and criteria for its initiatives, and BPA may discontinue the eligibility of ETO to receive contributions upon 30 days notice.

The following describes the ETO criteria for accepting customer contributions, customer obligations, savings and available initiatives.

ETO criteria for accepting customer contributions:

- a. ETO will provide each interested customer with a budget estimate for any initiative the customer requests, and ETO must receive contributions sufficient to cover all costs associated with the ETO management, implementation and delivery of its initiative in a customer's service area.
- b. ETO may agree to accept and spend contributions from a customer only when a customer satisfies the ETO qualifying criteria and there is no conflict with the ETO mission and its agreements with the Oregon Public Utilities Commission and the gas utilities.
- c. Customer must sign an initiative specific service agreement with ETO.

Customer obligations:

- a. Comply with all oversight, evaluation and measurement and verification requirements of this Manual.
- b. Report payment made to ETO in the PTR system under an initiative specific reference number.

Savings

Unless otherwise provided in the specific initiative section, a savings estimate (kWh/dollar) will be provided in the specific initiative section and BPA will examine actual savings achieved at the close of each fiscal year and adjust the savings estimate for that fiscal year and for the upcoming year, as needed.

Available initiatives:

- a. Hospitality Initiative (Commercial Sector)
- b. *BPA may add initiatives through the changes process using the PTR system and BPA Web site.*

2. Conservation Rate Credit

This section provides an overview of elements specific to the CRC. Only conservation and renewables activities or spending that exceeds what the customer is required by law and regulatory requirements to accomplish qualify for CRC. In addition to specific qualifying measures, customers may be eligible for a CRC by contributing to a qualified third party.

A CRC early start option for FY 2010 - 2011 is available for customers who have fully claimed their FY 2007-2009 CRC.

- Customers who wish to early start their FY 2010 – 2011 CRC must send a written request to early start to their COTR. The BPA Account Executive will send notice showing the estimated FY 2010-2011 CRC that will be applied to the power bill.
- Customers initiating the early start option accept the risk that a CRC will not be available during the FY 2010 - 2011 rate period.
- All CRC requirements herein apply to early start activities.
- Early start claims will be reimbursed and receive savings levels in effect during the early start period.
- Customers who early start the FY 2010-2011 CRC will not have to close the FY 2007-2009 CRC prior to early starting the FY 2010-2011 CRC.
- All customers will be required to close out the FY2007-2009 CRC pursuant to section 2.4(b).

This section describes the following CRC elements: calculation of the rate credit, information on participating in and discontinuing the CRC and special rules for pooling organizations.

2.1. General Overview of the Conservation Rate Credit Program

- a. The CRC is available to BPA Priority Firm Power (PF), Industrial Power (IP), and New Resource Firm Power (NR) customers that take action to achieve cost-effective conservation and renewable resource development in the region.
- b. Each customer will be eligible for a CRC set at 0.5 mills per kWh applied to its PF, IP, and NR purchases. The rate credit is included in the posted rates for Subscription Power Purchases.
- c. Individual participants in the CRC are obligated to make investments in cost-effective conservation and renewable resource development in the region to earn reimbursements equal to their power purchases times 0.5 mills per kWh.

- d. BPA will determine and make available in the PTR system information about eligible measures and specific activities that can be implemented to satisfy customer credit obligations.
- e. The PTR system will provide the specific dollar amount of eligibility contributed by each measure or provide a means for calculating such amount.

2.2. Calculation of the Conservation Rate Credit

The CRC applies to the following rate schedules and contracts:

- a. Priority Firm Power (PF-07) rate schedule
- b. New Resource Firm Power (NR-07) rate schedule
- c. Industrial Power (IP-07) rate schedule
- d. Slice rate exhibit

BPA will determine the annual amount of the annual rate credit by multiplying the monthly rate credit by 12. The monthly rate credit will be reflected as a deduction on the customer's monthly total power bill.

The rate credit will be applied after BPA has determined all other charges and credits on the participating customer's power bill, and BPA will provide the rate credit even in those months when the rate credit amount is larger than the customer's total power bill amount.

2.3. Sources of CRC Qualifying Load Data

- a. For Block purchases and Full or Partial Requirements customers, BPA will use the monthly average, rounded to the nearest whole dollar, of the projected eligible purchases for October 1, 2006, through September 30, 2009, from the BPA fiscal year⁸ 2006 Wholesale Power Rate Case Sales Forecast.
- b. For Slice purchases, BPA will use the Slice Initial Critical Inventory Amount (7,070 average-megawatts) to determine the average monthly load, rounded to the nearest whole dollar.

2.4. Participation in the CRC

The following describes the process for participating in the CRC, including (a) reporting requirements and (b) the final true-up.

- a. Reporting Requirements
 - 1. Customers must report biannually to BPA via the PTR system.

⁸ The BPA fiscal year runs from October 1 through September 30.

2. If, at the end of the first full year of the program (October 1, 2007), the customer is not meeting its targets (i.e., the customer is claiming 50 percent or less of the rate credit received by the end of the first year of the rate period), the customer must prepare and have BPA approve an action plan by April 1, 2008, that provides sufficient proof of achievable intent by the end of the rate period.
 3. BPA staff will be available to assist customers in developing an action plan that will indicate how the customer will spend its CRC funds by the end of the rate period (September 30, 2009).
 4. The BPA goal is for every participating customer to spend the full amount of its CRC on qualified conservation and/or renewables activities by the end of the rate period. If at the end of the 18-month period (third progress report - April 1, 2008) participants still have not made sufficient progress on their CRC spending (i.e., the customer has spent 75 percent or less of the rate credit received by the end of the first 18 months of the rate period), BPA may send a notification letter that the CRC will be withdrawn for the third year of the program. Such customers will be required to pay the full PF or other appropriate power rate so the CRC funds can be reallocated.
- b. Final True-up (Reconciliation)
1. Within 30 calendar days of the end of the rate period (October 31, 2009), each customer shall submit a final annual report to BPA.
 2. If a participating customer's final annual report shows that the total CRC accumulated monthly rate credit received from BPA exceeds the customer's total CRC qualifying expenditures, the customer may take an additional month (for a total of two months after the end of the rate period) to make the necessary additional qualifying expenditures and prepare a final true-up report.
 3. The final true up report is due to BPA within two months of the end of the rate period (December 1, 2009). If the customer's total CRC qualifying expenditures still do not equal or exceed its total CRC accumulated monthly rate credit, the customer must reimburse the difference to BPA on or before January 31, 2010.

4. No reimbursements are required of any participating customer whose total CRC qualifying expenditures over the rate period are equal to or exceed the total CRC accumulated monthly rate credit received from BPA.
5. BPA will not assess interest on any reimbursement paid within the two month window after the close of the rate period. However, any payment received after the due date (December 1, 2009) shall be subject to a late payment charge as described in the customer's Subscription contract.
6. A customer's performance payment cannot exceed 20 percent of its qualifying claims (or 30 percent for customers with 7.5 or less aMW of net requirements load).
7. BPA will conduct oversight visits to determine if requirements have been met. The customer will be notified of any deficiencies in a findings report.
8. Once BPA is satisfied that the customer has met all of the CRC program requirements, BPA will notify the customer in writing.

2.5. Discontinuing Participation in the CRC

A customer may elect to discontinue CRC participation any time during the rate period. If a customer decides that it wants to discontinue receiving the CRC on its power bill, it must notify BPA in writing, and BPA will remove the CRC from the customer's future power bills. Unless otherwise specified by BPA, the customer will be required to submit a final report as would be required at the end of the rate period.

2.6. Rules for Pooling Organizations

Forming pooling organizations to implement cost-effective conservation is a contractual relationship among the pooling members. BPA will not monitor contractual relationships or activities of pooling organizations.

- a. Pooling Customers, regardless of the size of individual loads, can only claim a maximum of 20 percent of their qualifying budget as a performance payment.
- b. Pooling Customers are responsible for reporting their individual conservation costs and savings for determining their CRC. Customers in the pool can assign this responsibility to the pooling organization but are still responsible for what the pool reports on their behalf. In the case of renewables, the customer would report the CRC allocated by the pool based on the output of the qualified renewable resource.

- c. The pooling organization shall provide a summary report to BPA on a semi-annual basis documenting the conservation costs and savings reported by each participant. The savings and CRC for both conservation and renewables are allocated and determined by the pool. Double counting of credits is not permitted.
- d. A customer may put all or a portion of its CRC toward a pool and withdraw under the terms and conditions agreed to by the pool, not under terms specified by BPA. Pool membership can expand or contract as determined by the pool.
- e. Trading of the CRC is allowed within the pool. This allows a member to capture an amount above its CRC as determined by the 0.5 mill cap, by utilizing another pool member's unused CRC.

3. Conservation Acquisition Agreement

This section provides an overview of elements that are specific to the Conservation Acquisition Agreement (CAA). Customers should notify their Energy Efficiency Representative (EER) if they are interested in signing a CAA. The following discusses the procedure for establishing a CAA and the procedure for making changes to the implementation budget.

3.1. Establishing a Conservation Acquisition Agreement

The structure of the CAA contains terms and conditions applicable to the overall purchase of energy savings through the bilateral contract. The exhibit of the CAA provides terms and conditions specific to measures or outlines processes and conditions that must be met in order to receive reimbursement from BPA.

Customers may establish either (a) a Non-Standard CAA or (b) a Multisector Standard Offer.

a. Non-Standard CAA

To initiate a Non-Standard CAA, customers should submit a proposal to their EER that includes:

1. The measures
2. Metering and savings verification method to be used
3. Sector-specific reimbursement rate for those measures
4. Estimated installation cost
5. Total implementation budget amount
6. The proposed delivery approach

BPA will review the proposal submitted, ask any clarifying questions and, if acceptable for purchase, negotiate final terms for the agreement.

b. Multisector Standard Offer

The Multisector Standard Offer (MSO) takes effect when executed and runs through September 30, 2009. For the MSO, customers should request a CAA and an implementation budget amount. The implementation budget amount should match the expected expenditures for the service area for the term of the agreement. This request should be made to the EER directly.

BPA will review the request submitted and, if the request is accepted, develop a draft CAA. Generally, BPA will provide a draft CAA to the customer for review. Once the CAA is in final form, two originals will be sent to the customer with a request that both be signed and one original be returned to BPA.

3.2. Changes to Implementation Budget Amounts

Changes by BPA

BPA reserves the right to review actual budget expenditures relative to the initial implementation budget amount and the period of time remaining under the agreement. BPA, working with the customer, may review the actual expenditure rate and lower the implementation budget amount if the budget provided in the agreement cannot be fully utilized during the term of the agreement. BPA will take into account projects that are in progress and have a reasonable chance of being completed.

Changes by Customers

Customers may, at any time during the agreement, request additional budget for standardized offers and custom agreements. BPA will review such requests, taking into account actual expenditures, projects in progress, and potential new projects, and may add budget to projects in the CAA.

Requests for additional budget should be sent to the EER in writing, identify the additional amount requested and include information on actual or potential projects supporting the increase in funding. If the request is approved by BPA, BPA will send a notice increasing the budget amount.

3.3. Non-Standard Offers

Non-standard purchases are arrangements BPA negotiates with a customer which result in a variation from published WTP amounts or from the standardized processes established in the Manual. A non-standard agreement is not a "custom proposal" submitted to BPA through the PTR system.

BPA will enter into non-standard purchases of energy savings when there is a benefit to BPA. The benefits include, but are not limited to a reduction in the reimbursement amount paid or the staff time spent administering an agreement. BPA expects customers entering non-standard agreements will benefit from such agreements.

Non-standard purchases made by BPA are subject to the overarching principles written into the BPA Final Record of Decision (February 2005) on the short term Regional Dialogue, as well as the overarching requirements of the Manual in effect at the time of the negotiations. Agreements will address cost-effectiveness, measurement and verification, documentation, oversight, reporting and reimbursement and the programs/measures planned for installation by the customer. Customers may use their own avoided cost for custom projects, provided the methodology used is equivalent to that used by the Northwest Power and Conservation Council.

Through the negotiations, BPA will strive to:

- Develop agreements providing flexibility and ease of administration.
- Provide consistency among BPA and the customer self-funded projects to minimize complexity and ease PTR system reporting.
- Develop smooth transitions from existing activities to new activities, as well as plan for transitions to subsequent agreements.

4. General Requirements

The general requirements section discusses requirements applicable to both CRC and CAA that are consistent across all sectors. There are specific requirements for CRC and CAA activities and specific requirements by sector. For additional requirements, please see the appropriate sector section.

This section discusses reporting requirements, performance payment, and federal due diligence requirements.

4.1. Reporting Requirements

Table 2: Reporting Schedule

Due Date	Description of Activity
4/30/09	Biannual CRC report for FY 2009 for October 1 to March 31
9/30/09	Year three of the CRC/Rate Period ends (October 1, 2006, to September 30, 2009)
10/31/09	Annual CRC report for FY 2009 for April 1 to September 30
12/1/09	Final true-up report and agreed upon procedures reports on balances for FY 2009 from participating customers
1/31/10	Reimbursement from customers whose qualifying activities/expenditures do not equal or exceed their cumulative CRC amount

4.1.1 Reporting Requirements

- a. Types of Reports Required
 - A CRC biannual report is required, and customers may submit CAA invoices as often as monthly.
- b. Customers are required to report their CRC activity as follows:
 - CRC participants shall submit a report by April 30 for the period October 1 to March 31 for each year during the rate period.
 - CRC participants shall submit a report by October 31 for the period April 1 to September 30 for each year during the rate period.

Each customer shall establish files and maintain supporting documents and records for each submitted report. The files for all reports shall be clearly designated as BPA reimbursement files. The records shall be sufficient to document that the item reported is accurate and can be substantiated to meet the BPA due diligence in the spending or crediting of federal funds.

4.1.2 PTR System

When submitting a report for reimbursement, the customer must use the PTR system at ptr.nwcouncil.org. The system will accommodate other funding sources, and customers are encouraged to report all conservation activity funded using the PTR system.

In submitting reports for reimbursement, the PTR system will guide the customer through the submittal requirements, which include:

- a. Confirmation that the customer implemented the items for which it is claiming CRC credit or CAA reimbursement in compliance with the Manual and applicable contracts
- b. Identification of the percentage of performance payment the customer claims for the reported items (CRC claims are limited by the customer's total CRC eligibility. CAA claims are limited by the CAA invoice amount.)

Unless excepted by BPA, measures should be reported in the period in which they become a completed measure. All reports must include only measures with completion dates within the performance period specified. Completion dates are for completed units/measures (i.e., a unit that is properly installed, operating, commissioned in accordance with the manufacturer's requirements and specifications for normal operations and satisfied the measure requirements), or approved completion reports. Documentation retained by customers for each

submitted report should clearly indicate the reporting period and the report with which they are associated.

Unless otherwise approved by BPA, BPA will not reimburse for measures not reported in the PTR system.

4.1.3 Documentation Requirements

Documentation is required for all claims made to BPA. All customers must follow the general requirements (listed below), while some measures have additional specific requirements. Where additional measure specific requirements exist, they are included under "Additional Documentation Requirements" in the section for that measure. Measures may be claimed in the first reporting period following the end of the eligibility period, provided the documentation illustrates the measures were purchased and were in service (installed and operating) during the eligibility period.

The following are the general documentation requirements for all deemed measures and CPs:

- a. End-user address/facility name, address and telephone number
- b. Contact name and phone number for commercial, industrial and CPs
- c. Unique identification number (e.g., address, meter number, etc.) for end-users (for most measures)
- d. Unique identifying PTR system-generated number from the system report or invoice
- e. Supporting documentation for performance payments
- f. Invoice or other document showing purchase date (relevant for eligibility period) and validating that equipment is new (Note: Rebuilt nozzles are considered "new.")

Dates are required on all documentation, and vary by measure and program requirements (deemed or custom). Below are generalized requirements for dates:

- a. For CPs, the dates for equipment purchases must be after BPA approval of the M&V Plan.
- b. The pre-measurement date must occur before installation and the post-measurement date after installation.
- c. For deemed measures, the purchase date must be after the execution date of the Early Start Participation Agreement, Exhibit B to the Subscription Contract for the CRC, and/or the execution date of the

appropriate Standard Offer for the CAA); or October 1, 2006, for High Water Mark measures claimed.

- d. For ENERGY STAR® homes and manufactured homes, the certification date must be after the execution date of the Early Start Participation Agreement, Exhibit B to the Subscription Contract for the CRC, and/or the execution date of the Multisector Standard Offer for the CAA, October 1, 2006, for High Water Mark measures claimed.
- e. Inspection and verification dates must be after equipment installation and before the Report/Invoice date.

In some situations, one document is sufficient for a category of measures. Customers are encouraged to periodically review and update these types of documents. Examples include:

- a. High Performance Lighting Cut Sheet – if the same equipment is installed in several facilities, a single Cut Sheet may be retained as documentation for the measure.
- b. List of ENERGY STAR appliances – this list can be printed from the ENERGY STAR Web site and kept in the file.

Documentation must be retained by customers for claims made when requesting reimbursements and for claims for energy savings attributable to the HWM. Depending on the measure, all or some of the information about the measure installed must be entered into the PTR system.

Customers shall keep all program report records for no less than three years after the term of the current rate period or through 2012, whichever is later, and these records must be organized and maintained in such a manner that pertinent records can be found when needed.

4.1.4 Review Process

As a part of the review process, BPA will (a) perform customer record review and (b) make program evaluations.

a. Record Review

BPA will, as part of its review process, ensure that the report is reasonable and corresponds with any and all attachments. Should there be a disagreement regarding a submitted report, BPA and the customer agree to work together to correct errors in the report and any revisions shall be included in the revised report. BPA and the customer shall make reasonable efforts to make adjustments as soon as possible after BPA receipt of the report.

The report submitted to BPA should include, through attachment or referenced e-mail, supporting documentation that may be required. Supporting documentation must include unique identification information. For CRC, this is the reporting period information. For CAA, this is the invoice number from the report. The unique identification information should be kept with the customer files for all supporting documentation which is not submitted with the report, but which is required to substantiate the reports.

The PTR system will track the CRC credit balance and the CAA contract balances as reports are filed. BPA will make this information available to the customer as part of the reporting process.

BPA or its agent will conduct oversight inspections of all report records and monitor or review the customer's procedures and records, and will conduct site visits and verify energy savings methods and results. The number, timing, and extent of such inspections shall be at the discretion of BPA and will be coordinated with the customer. BPA will provide written notice not less than 30 days prior to such an inspection. These inspections shall occur at BPA expense.

BPA may contact appropriate federal, state or local jurisdictions regarding environmental, health or safety matters related to any activity or measure/unit/project reimbursed under the CRC or CAA.

Financial audits shall be in compliance with the audit standards established by the Comptroller General of the United States.

b. Program Evaluation

1. BPA may conduct, and the customer shall cooperate with, evaluations of conservation impacts and project implementation processes to assess the amount, cost-effectiveness, and reliability of conservation in the customer's service area or region. After consultation with the customer, BPA shall determine the timing, frequency and type of such evaluations.
2. BPA anticipates that many of the evaluations will be done collaboratively with other organizations to share costs and to improve the usefulness of the evaluations. In some cases, the evaluation will be managed by another party on behalf of BPA.
3. BPA will determine the specific requirements for evaluations with consideration for the schedules and reasonable needs of the customer and the customer's end-use consumers.

4. Any evaluation of the project initiated by BPA shall be conducted at BPA expense or shared regional expense, and such costs shall be excluded from the implementation budget. Customers or other entities that cooperate with the evaluation are recognized as providing some resource/cost, but the cost will not be considered for direct reimbursement by BPA.

4.2. Performance Payment

The performance payment is intended to cover internal customer administrative costs incurred in support of energy conservation activities described in this Manual. The performance payment is above and beyond the BPA WTP parameters. Customers can decide with each CRC report or CAA invoice they submit, the performance payment amount (up to the limit) they wish to claim. A customer is allowed to have different percentages for the CRC and CAA. BPA is considering changing the Performance Payment to a payment made based on energy savings delivered. If made, such change would take effect October 1, 2009.

In general terms, allowable expenses include but are not limited to staff costs, marketing costs and other operating costs. Each of these categories is described below. If customers have questions, they may contact BPA for clarification.

Staff Costs (actual labor costs used to operate the customer's conservation program, including program planning, design, and implementation):

- a. Direct costs incurred for the implementation of CRC or CAA conservation activities, including customer program staff, and sub-contracts
- b. Contracted staff support that may be required for activities such as data entry for PTR system, administering credits and reimbursement or for field staff to verify installations or other end use activities
- c. Management personnel involved in the supervision of program staff and contractors
- d. Administrative support such as secretarial support, contractors and managers associated with the customer's program-related activities
- e. The customer's conservation-related share of indirect overhead, including the customer's cost related to preparing the Agreed Upon Procedures

Marketing Costs:

- a. Market research, development of advertisements and promotional materials

- b. Production of materials for mass distribution
- c. Marketing material distribution costs
- d. Airtime on radio or television in support of cost-effective conservation

Other Costs incurred in operating program:

- a. Computer hardware
- b. Technical equipment (metering equipment, software programs)
- c. Marketing training and technical training, including certain training for engineers for specific applications and other required technical training
- d. Transportation/travel costs capped at the level allowed under the Federal Travel Regulations (see www.gsa.gov)

4.3. CRC Performance Payment Guidelines

A qualifying claim is one that qualifies for the performance payment. It is defined as an installed, qualifying, cost-effective electric conservation measure. Claims that do not qualify for performance payments include, but are not limited to

- a. Renewables claims
- b. Third party contracts for cost-effective energy conservation, unless specifically approved by BPA as qualifying for administrative cost recovery
- c. Northwest Energy Efficiency Alliance (NEEA) contributions
- d. Energy Trust of Oregon contributions

Customers with more than 7.5 average megawatts (aMWs) of net requirements load may claim up to 20 percent of their qualifying claims as a performance payment. Customers with 7.5 or less aMW of net requirements load may claim up to 30 percent of their qualifying claims as a performance payment.

- a. Customers are allowed discretion on the amount and timing of performance payment claims during the rate period.

The following table represents examples of claims under the CRC.

Table 3: Examples of Performance Payment Claims

<p>Budget: \$300,000 - \$100,000 spent for renewables - <u>\$ 50,000</u> spent on contributions \$150,000 available for measures and eligible for a performance payment <u>\$30,000</u> allowed if full amount is spent on qualified measures \$120,000 additional is left to use for measures and in support of getting measures into place (WTP)</p>	<p>Budget: \$300,000 - \$ 0 spent for renewables - <u>\$ 0</u> spent on contributions \$300,000 available for measures and eligible for a performance payment <u>\$60,000</u> allowed if full amount is spent on qualified measures \$240,000 additional is left to use for measures and in support of getting measures into place (WTP)</p>
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4.4. CAA Performance Payment Guidelines

A customer’s performance payment is claimed as a percentage of its invoiced measures reported with each invoice.

BPA will pay a performance payment of up to 20 percent of the actual accepted invoiced amount (up to 30 percent for small customers). On each invoice submitted, the customer may elect the percentage for that invoice.

The following table represents examples of claims under the CAA.

Table 4: Example of Claims on the CAA (Bilateral) Side

<p>Budget (not WTP) for C/I Lighting: \$200,000 -\$100,000 spent on measures over three years and in support of getting measures into place <u>-\$ 30,000</u> performance payment \$ 70,000 unspent and subject to de-obligation</p>	<p>Budget for Custom Program: <i>(multifamily new construction, direct install, weatherization)</i> \$200,000 -\$170,000 spent on measures over three years and in support of getting measures into place <u>-\$ 30,000</u> admin allowance \$ 0 unspent</p>
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4.5. Fundamental Requirements Related to Federal Due Diligence

This section applies standard terms to the CRC and CAA.

4.5.1 Purchase of Energy Savings

The BPA purchase commitment applies to the customer and any applicable customer sub-contractors, customer contracted third parties and contract staff responsible for a portion, regardless of percentage, of time worked related to the implementation, management, record keeping, or any other related involvement of the customer activity funded through BPA reimbursement.

BPA shall not be obligated to pay for energy savings from measures/projects/completed units prior to the effective date of the CRC or a CAA or delivered after these initiatives end or after the implementation period unless otherwise specified herein.

4.5.2 Other Sources of Funding

- a. If requested in writing and approved by BPA, BPA and the customer may agree to the allocation of costs among various funding sources.
- b. BPA will not pay for any portion of the cost of a project where those costs have been or will be reimbursed by another BPA funding source.

4.5.3 Suspension and Withholding Payment

- a. BPA and the customer agree to an immediate suspension of any measure, which presents a significant environmental, health, or safety threat to end-users.
- b. BPA shall not accept a report for reimbursement for any suspended measure during the suspension period. The customer shall remedy or take actions agreed to by BPA to correct the environmental, health or safety threat to end-users. The customer shall have a number of days, as agreed to in writing by BPA, to remedy or complete the corrective actions. The customer shall notify BPA when the remedy or corrective actions are complete.
- c. If BPA determines the customer's implementation of the CRC or CAA is not in compliance with the environmental, technical, or record-keeping requirement, BPA shall provide a written notice to the customer suspending implementation of all or specific activities and identifying the specific nature of the noncompliance. The customer shall have a number of days as agreed to in writing by BPA, to correct the noncompliance identified and notify BPA when the corrective actions have been completed. BPA will provide comments on what activities are required to bring the activity into compliance. BPA shall not accept reports for any measure implemented under a suspended activity.

- d. BPA shall review the corrective actions and make a determination on lifting the suspension. BPA will notify the customer of its determination. If the suspension is lifted by BPA, the customer may begin implementation of the activity with the changes required by BPA under its determination.
- e. If the customer does not complete the remedy or corrective actions required, BPA may terminate funding.
- f. The customer shall bear the costs of compliance.

4.5.4 Termination

- a. The customer has the right to terminate funding upon no less than 60 days written notice or upon 30 days written notice for CAA. The customer shall have one year from the effective date of termination pursuant to this section to complete work in progress, unless otherwise negotiated in subsequent agreements.
- b. BPA may terminate funding when the customer
 - 1. Fails to comply with the environmental, technical, or record-keeping requirements
 - 2. Fails to comply with this Manual
 - 3. Gives notice to BPA that it will stop placing firm load on BPA pursuant to its existing firm power sales contract, or its successor, with BPA for the sale of power and energy to meet all or a portion of its firm electrical energy load or electric peaking requirements for a period of at least one year
 - 4. Gives notice to BPA of its intent to terminate, or terminates, such existing or successor firm power sales contract with BPA
 - 5. Becomes insolvent, files a petition for bankruptcy or reorganization, or assigns substantially all assets to creditors and consequently BPA no longer serves its loads

4.5.5 Environmental Provisions

The customer and BPA agree to

- a. Comply fully with all applicable environmental laws and regulations.
- b. Assist and cooperate with meeting all environmental obligations, to the fullest extent economically and technically practical and mutually agreeable.
- c. Provide, upon request of the other, a copy of the pollution abatement plans as required by the Clean Air Act, by the Clean Water Act, by other

federal statutes, or by an agency having jurisdiction, and, within a reasonable time, submit evidence such plans have been approved or not been objected to by agencies with jurisdiction.

4.5.6 Liability

- a. To the extent allowed by the Federal Tort Claims Act, BPA agrees to defend, indemnify, and hold harmless the customer, its affiliated companies, their respective boards of directors, officers, employees, agents and representatives, against and from any and all loss, claims, actions, or suits, for or on account of injury, bodily or otherwise to, or death of persons, or for damage to or destruction of property belonging to the customer or others, resulting from BPA's negligent acts or omissions or intentional misconduct in connection with the performance of the Manual, excepting that any liability attaching to BPA shall be reduced by any proportion that such injury or harm is caused by negligence or intentional misconduct of customer, its affiliated companies or its respective boards of directors, officers, employees, agents or representatives.
- b. Customer agrees to defend, indemnify, and hold harmless BPA, its employees, agents and representatives, against and from any and all loss, claims, actions, or suits, for or on account of injury, bodily or otherwise to, or death of persons, or for damage to, or destruction of property belonging to BPA, or others, resulting from the customer's negligent acts or omissions or intentional misconduct in connection with the performance under the Manual, excepting that any liability attaching to customer shall be reduced by any proportion that such injury or harm is caused by negligence or intentional misconduct of BPA, its employees, agents or representatives.
- c. BPA and the customer assert that neither is the agent or principal for the other, nor are they partners or joint venturers, and BPA and the customer agree that they shall not represent to any other party that they act in the capacity of agent or principal for the other.
- d. In no event shall either BPA or customer be liable to each other for any special, punitive, exemplary, consequential, incidental, or indirect losses or damages from any failure of performance howsoever caused, whether or not arising from a party's sole, joint, or concurrent negligence.
- e. Except for BPA offered Direct Acquisition initiatives, the customer agrees that BPA has no responsibility for production of energy savings under this agreement.

- f. BPA and the customer agree to require independent contractors of each to indemnify and hold harmless the other from all claims, damages, losses, liability, and expenses arising from breach of contract, statutory and regulatory claims, and the negligent or other tortuous acts or omissions of such independent contractors, their officers, employees, or agents. Nothing in this Manual shall establish, or be construed as establishing, a contractual relationship between BPA and any contractor or subcontractor hired by the customer.

4.5.7 Notices

Any notice required under this agreement shall be in writing and delivered in one of the following ways:

- a. In person
- b. By a nationally recognized delivery service
- c. By United States Certified Mail
- d. By electronic mail to e-mail addresses that are designated at the time agreements are signed

Notices are effective when received. Either BPA or the customer may change its address for the purposes noted above by giving notice of such change in the manner noted above.

4.5.8 Assignment

This Manual is binding on any successors and assigns of the parties. BPA may assign this Manual to another federal agency to which BPA statutory duties have been transferred. Neither party may otherwise transfer or assign this Agreement, in whole or in part, without the other party's written consent. Such consent shall not be unreasonably withheld. BPA shall consider any request for assignment, consistent with applicable BPA statutes.

4.5.9 Freedom of Information Act

BPA may release information provided by the customer to comply with FOIA or if required by any other federal law or court order. For information that a customer designates in writing as proprietary, BPA will limit the use and dissemination of that information within BPA to employees who need the information for purposes of this Agreement.

4.5.10 Uncontrollable Forces

The parties shall not be in breach of their respective obligations to the extent the failure to fulfill any obligation is due to an Uncontrollable Force. "Uncontrollable Force" means an event beyond the reasonable control of, and without the fault or negligence of, the party claiming the Uncontrollable

Force, that prevents that party from performing its contractual obligations under this Agreement and which, by exercise of that party's reasonable care, diligence and foresight, such party was unable to avoid. Uncontrollable Forces include, but are not limited to:

- a. Strikes or work stoppage
- b. Floods, earthquakes, or other natural disasters; terrorist acts
- c. Final orders or injunctions issued by a court or regulatory body having competent subject matter jurisdiction which the party claiming the Uncontrollable Force, after diligent efforts, was unable to have stayed, suspended, or set aside pending review by a court of competent subject matter jurisdiction.

Neither the unavailability of funds or financing, nor conditions of national or local economies or markets shall be considered an Uncontrollable Force. The economic hardship of either party shall not constitute an Uncontrollable Force. Nothing contained in this provision shall be construed to require either party to settle any strike or labor dispute in which it may be involved.

If an Uncontrollable Force prevents a party from performing any of its obligations under this Agreement, such party shall (1) immediately notify the other party of such Uncontrollable Force by any means practicable and confirm such notice in writing as soon as reasonably practicable; (2) use its best efforts to mitigate the effects of such Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligation hereunder as soon as reasonably practicable; (3) keep the other party apprised of such efforts on an ongoing basis; and (4) provide written notice of the resumption of performance.

4.5.11 Waiver

Unless otherwise provided, no waiver of any provision or breach of this Agreement shall be effective unless such waiver is in writing and signed by the waiving party, and any such waiver shall not be deemed a waiver of any other provision of this Agreement or any other breach of this Agreement.

5. Agricultural Sector

Please check the Key Changes Summary on page ii of this document to see if significant changes were made to any of the measures in this sector.

This section contains general information about Agriculture, including irrigation and measure-specific information, with a description of the measures and any related changes, technical specifications (some specifications may be located in the PTR system), reimbursement levels and associated tables and any documentation requirements.

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Agricultural Sector Definition

The Agricultural Sector includes electrical energy used by a farm business of which the primary purpose is land cultivated for food production or land used for breeding or raising of domestic live stock (including fish, oysters, etc.). There are many similarities between the agricultural and industrial sectors. The distinction between the agricultural and industrial sectors generally rests with the property line surrounding the farm. On-farm processes are agricultural (with the exception of major processing of farm products on-site); off-farm processes are industrial.

- Dairies and storage of milk while on farm are agricultural; pasteurizing, homogenizing, dehydrating, and bottling of milk, ice cream, cheese and butter are industrial.
- Fruit and vegetable storage (such as potatoes, onions, apples) on-farm is agricultural; storage at a co-op, middle-man, or at a processor is industrial.
- Pumping for fish farms and refrigeration of fish before shipping is agricultural; freezing, storing and canning fish is industrial.
- Wineries where grapes are grown, stored, pressed and wine is cooled and bottled on the farm are agricultural; wineries with storage and processing performed off-site are industrial.

Freeze Resistant Stock Water Tanks/Fountains

Requirements and Specifications

Installation of freeze resistant stock water tanks/fountains is available as a measure in heating zones 2 and 3.

Electric resistance stock tank heater(s) must be removed or permanently disabled and the new freeze resistant stock water tanks/fountains must meet the RTF specifications available in the PTR system.

Additional Documentation Requirements

No additional requirements.

Reimbursement Levels and Strategies

BPA will reimburse \$165 per freeze resistant stock tank/fountain in heating zone 2 and \$225 per freeze resistant stock tank/fountain in heating zone 3.

Green Motors Initiative

Requirements and Specifications

Agricultural motors qualify under the Green Motors Initiative. Please see the Industrial Sector section for information on Green Motors.

Additional Documentation Requirements

Please see the Industrial Sector section for information on Green Motors.

Reimbursement Levels and Strategies

Please see the Industrial Sector section for information on Green Motors.

Irrigation-Related Measures

Requirements and Specifications

Energy efficiency upgrades to new or existing irrigation systems and water management must be designed, constructed and verified in substantial compliance with the most recent irrigated agriculture specifications available in the PTR system, under "Downloads."

Additional Documentation Requirements

For nozzles and sprinklers, the customer must document equipment invoices and maintain a unique ID number or a field location identifying the site of installed measures.

Reimbursement Levels and Strategies

Table A-1: Reimbursements for Agricultural Measures

Sprinkler Equipment	Rebate	Est. Savings
1. New flow controlling type nozzle for impact sprinklers	\$3.00/nozzle ¹	20 kWh/yr
2. (a) Rebuilt or new impact sprinklers. (b) New nozzle for impact sprinkler replacing existing worn nozzle of same flow rate or less.	\$3.75/sprinkler ¹ \$0.25/nozzle ¹	25 kWh/yr 15 kWh/yr
3. New rotating type sprinklers that replace impact sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$4.00/sprinkler ¹	40 kWh/yr
4. New gasket for wheel lines, hand lines or portable main line	\$1.00/gasket	30 kWh/yr
5. (a) New low-pressure regulators. (Entire pivot ² must be upgraded.) (b) New rotating type sprinklers that replace low-pressure sprinklers. (Entire pivot ² must be upgraded. Flow may not be increased.)	\$4.00/regulator ¹ \$4.00/sprinkler ¹	20 kWh/yr 20 kWh/yr
6. New multiple configuration nozzles for low-pressure pivot ² sprinklers	\$2.00/sprinkler ¹	20 kWh/yr
7. New multi-trajectory sprays that replace impact sprinklers (Entire pivot ² must be upgraded. Flow may not be increased.)	\$3.00/sprinkler ¹	25 kWh/yr
8. New multi-trajectory sprays that replace low pressure sprinklers (Entire pivot ² must be upgraded. Flow may not be increased.)	\$1.00/sprinkler ¹	10 kWh/yr
9. New drains for wheel lines, hand lines, or pivots ² (Entire line must be upgraded.)	\$1.00/drain	30 kWh/yr
10. New hubs for wheel-lines (Entire wheel line must be upgraded.)	\$6.00/hub	40 kWh/yr
11. New "goose neck" elbow for new drop tubes	\$1.00/goose neck	20 kWh/yr
12. New drop tube for low-pressure pivot ² sprinklers (min. 3 feet length)	\$3.00/drop tube	20 kWh/yr
13. New center pivot base boot gasket	\$125.00/pivot	850 kWh/yr
14. Cut and pipe press repair of leaking hand lines, wheel lines, and portable mainline	\$8.00/pipe section	60 kWh/yr
15. Rebuilt or new wheel-line leveler	\$0.75/leveler	60 kWh/yr

Note: Number 2: has been broken into two parts, the sprinkler and the nozzle. This allows for the nozzle to be replaced separately from the sprinkler. Number 5: has been broken into two parts, 5(a) and 5(b) to allow upgrade of the regulators if new rotating sprinklers are already in place or the installation of new rotating sprinklers if low-flow regulators are already in place.

¹ Rebate limited to no more than two units per sprinkled acre.

² Lateral moves also included.

Motors

Requirements and Specifications

The motor must be open drip proof (ODP) or totally enclosed, fan cooled (TEFC), operate at 1,800 rpm, and have replaced an older rewind motor. Other types of motors qualify only as custom project proposals.

Motors must be new, three-phase AC induction, 5 to 500 horsepower (hp), NEMA design A, B, or C and must meet or exceed the NEMA Premium efficiency standard shown in table A-2 or table A-3 (below in Reimbursement Levels and Strategies).

Additional Documentation Requirements

Documentation must include equipment invoices, a specification sheet or model number of installed equipment and a unique ID number or other field location identifying the site of the installed motor.

Reimbursement Levels and Strategies

The incremental cost (and savings) is calculated based on NEMA standard efficiency motors of the same size and application. The reimbursements are found in table A-2.

Table A-2: Reimbursements for Irrigation System Motors

Measure Description Horsepower (hp)	Motor Efficiency	NEMA Premium Efficiency	Rebate Per Unit	Estimated Savings Per Unit (kWh/yr.)
5 hp	83.0%	89.5%	\$55	352
7.5 hp	84.0%	91.0%	\$85	569
10 hp	85.0%	91.7%	\$110	726
15 hp	87.3%	92.4%	\$125	829
20 hp	88.0%	93.0%	\$165	1,084
25 hp	88.0%	93.6%	\$300	1,518
30 hp	88.8%	93.6%	\$340	2,290
40 hp	89.3%	94.1%	\$450	3,053
50 hp	89.3%	94.5%	\$595	4,134
60 hp	89.5%	95.0%	\$700	5,247
75 hp	89.5%	95.0%	\$985	6,559
100 hp	90.0%	95.4%	\$1,290	8,586
125 hp	90.3%	95.4%	\$1,520	10,137
150 hp	90.8%	95.8%	\$1,790	11,926
200 hp	91.0%	95.8%	\$2,290	15,265
250 hp	91.0%	95.8%	\$2,860	19,081
300 hp	91.0%	95.8%	\$3,440	22,897
350 hp	91.0%	95.8%	\$4,010	26,713
400 hp	91.0%	95.8%	\$4,100	27,349
450 hp	91.0%	96.2%	\$5,050	33,630
500 hp	91.0%	96.2%	\$5,600	37,367

Table A-3: Reimbursements for Medium Voltage Irrigation System Motors (600v to 5,000v)

Measure Description Horsepower (hp)	NEMA Premium Efficiency	Rebate Per Unit	Estimated Savings Per Unit (kWh/yr.)
250 hp	95.0%	\$2,385	15,901
300 hp	95.0%	\$2,862	19,081
350 hp	95.0%	\$3,339	22,261
400 hp	95.0%	\$3,339	22,261
450 hp	95.0%	\$3,757	25,044
500 hp	95.0%	\$4,174	27,826

Scientific Irrigation Scheduling Light

Scientific Irrigation Scheduling Light (SISL) applies to agricultural systems with (1) a pumping capacity exceeding that needed to meet normal crop needs and (2) less than 1,000 qualifying acres. (Qualifying acres would benefit from SIS controls and are not currently under an SIS or irrigation management plan).

A deemed savings of 220 kWh/acre (75 kWh each years for three years) will be accepted for this measure, and reporting of acres under will be annual.

Customers must collect and use weekly hydro application data including all water applied, evapotranspiration needs and soil moisture tables.

Additional Documentation Requirements

The BPA-supplied SIS M&V calculator spreadsheet shall be submitted to BPA at the end of each reporting period.

Reimbursement Levels and Strategies

BPA will reimburse \$6.00 per acre for verified implementation of SISL.

Variable Frequency Drives on Small Milking Machines in Dairies and Other Approved Applications

Requirements and Specifications

Variable Frequency Drives (VFD) must be 10 hp or less to qualify as a deemed measure. VFDs larger than 10 hp may be submitted through the CP process with M&V.

Additional Documentation Requirements

For VFDs 10 hp and less (deemed), the customer must retain an invoice showing hp and an installation address. For VFDs greater than 10 hp (CPs), CP documentation requirements must be followed.

Reimbursement Levels and Strategies

VFDs 10 hp or less shall be reimbursed at a rate of \$2,200 for verified installations. VFDs of more than 10 hp that are submitted as CPs shall be reimbursed at the lesser of 20 cents per kWh or 70 percent of project cost.

Variable Frequency Drives in Spud and Onion Storage Facilities

Requirements and Specifications

Ventilation fan VFD installations in spud and onion storage facilities have a deemed energy savings of 1,000 kWh per hp. Except for deemed VFDs in dairies, agricultural VFD applications in facilities other than spud and onion sheds must be submitted through the CP process. If the fan VFD project is combined with other measures such as moisture management systems, louver replacements, refrigeration computer control upgrades, the entire project must be submitted as a CP.

Additional Documentation Requirements

The customer must retain an invoice showing individual fan hp, an installation address and installation date and a copy of the completed spud and onion storage shed energy savings calculation.

Reimbursement Strategies and Levels

For verified installations of fan VFDs in spud and onion storage facility applications, BPA will reimburse \$200 per hp per VFD.

Other Agricultural Measures

Requirements and Specifications

These measures must be submitted as CPs.

Additional Documentation Requirements

No additional requirements.

Reimbursement Levels and Strategies

For other agricultural measures, BPA will reimburse 20 cents per kWh or 70 percent, whichever is less, including, but not limited to, the following:

- Low pressure conversion with pump work
- Change to 40 foot spacing on hand lines and wheel lines to enable conversion

- Low energy precision application (LEPA) conversion for pivots and lateral moves
- Adjustable speed drives in certain applications (multiple-valve sprinkler systems and field elevation differences of 25 feet or greater)
- Winery efficiency improvements such as compressed air, refrigeration, fluid and air handling applications
- Turf irrigation applications in landscaping, golf courses, government and municipalities and other areas (including standard offer sprinkler measures, motor/pumping/VFD controls and weather station driven irrigation scheduling systems)
- Nursery and greenhouse improvements in lighting, irrigation, air handling, temperature and humidity controls
- Dairy and stockyard energy improvements not covered under the Deemed Measure applications

The cost of the technical studies needed to accomplish the project is covered in the BPA reimbursement amount to the customer and in the total project cost for purposes of cost-capping.

Scientific Irrigation Scheduling

Requirements and Specifications

Scientific Irrigation Scheduling (SIS) applies to agricultural systems for which there is a pumping capacity beyond that needed to meet normal crop needs. SIS must be submitted as a CP; a standardized M&V Plan is available in the PTR system.

Customers must collect weekly hydro application data including all water applied, evapotranspiration needs and soil moisture tables.

Additional Documentation Requirements

A completion report, using the standard completion report tools, is required for the first year and is based on a field-by-field analysis using the standardized M&V algorithm. Subsequent yearly reporting must use a supplemental calculation template for measure claims to be based on the first year completion report. The BPA supplied SIS M&V calculator spreadsheet shall be submitted at the end of each reporting year.

Reimbursement Levels and Strategies

BPA will reimburse the lesser of 15 cents per kWh or 70 percent of the SIS project cost of \$25.50⁹ per acre, for a three-year measure life, on a field-by-field basis (based on the average annual energy savings over the three years of the contractual measure life, as opposed to a physical measure life).

SIS CPs can be reimbursed for one-third of the reimbursement total (the lesser of \$0.05/year/kWh or 70 percent of \$8.50/acre/year). First year savings will be based on actual savings. Subsequent reports calculate an adjustment to the first year figure using an average of the current and previous years.

True-up is required at the end of the third year.

- If BPA has under-paid reimbursements, the customer may claim a true-up adjustment at the end of the contract life and additional funds can be reimbursed.
- If BPA has over-paid reimbursements, the customer can implement SIS savings in a fourth year to increase the three year average of savings, submit a negative CRC report or repay CAA funds to BPA.

Transformer De-energization

Requirements and Specifications

Transformer De-energization (TRX) is defined as disconnecting a transformer from downstream load sources during extended periods of agricultural inactivity and reconnecting prior to the irrigation season startup. TRX applies to systems that serve only an agricultural load and do not currently incorporate this practice.

TRX projects must be submitted as CPs; a standardized M&V Plan is available in the PTR system.

Additional Documentation Requirements

The customer must maintain documentation showing the number of transformers de-energized, length of outage period and energy savings associated with each unit. A completion report, using standard completion report tools, is required for the first year. Subsequent yearly reporting will use a supplemental calculation template for measure claims to be based on the first year completion report.

⁹ The RTF determined that SIS is cost-effective with a TRC cost of \$13.50/acre first-year cost with a \$7.50/acre initial cost and \$6/acre service cost, and \$6.00 an acre for each of the next two years; and expected savings range from 80 kWh/acre - 125 kWh/acre, depending on the crop type, soil, climate and pumping lift. BPA has deemed the project costs at \$25.50 per acre.

Reimbursement Levels and Strategies

BPA will reimburse the lesser of 15 cents per kWh or 70 percent of the incremental cost of performing the project for a three-year measure life (based on the average annual energy savings over the three years of the contractual measure life, as opposed to a physical measure life).

In each year, TRX can be reimbursed for one-third of the total (calculated at the lesser of \$0.05/year per kWh or 70 percent of incremental cost of performing the project). First year reported savings will be based on actual savings. Subsequent reports calculate an adjustment to the first year figure using an average of the current and previous years or the lowest savings, if specified in an existing TRX contract.

New Agricultural Construction

Requirements and Specifications

New agricultural construction projects must be submitted as CPPs with an M&V plan according to the CP process outlined in the Manual. Standardized M&V protocols will be provided for certain measures prior to project implementation.

Additional Documentation Requirements

No additional requirements.

Reimbursement Levels and Strategies

BPA will reimburse the lesser of \$0.27 per kWh or 70 percent of incremental cost (which includes payments for design assistance/technical assistance) for improved efficiency above code.

Agricultural Lighting (Existing Buildings)

Requirements and Specifications

The Commercial and Industrial Lighting (C/IL) Program is applicable to both existing building (retrofit/upgrade) and new construction projects in the Commercial, Industrial, and Agricultural Sectors. Program savings, credits/reimbursement levels, and equipment specifications are embodied in Lighting Calculator Spreadsheets (one for existing buildings and another for new construction) available on the PTR system. Although the program requirements and process for claiming reimbursements are largely the same across sectors, users should verify that they are using the correct sector reference numbers in the PTR system for projects. Completed Lighting Calculator Spreadsheets are uploaded to the PTR system in the invoicing process. Lighting measures are considered deemed, except when they are part of a project that includes other measures that

have interactive effects on other measures, in which case they may be submitted as a CP under the multiple measures category. One exception is for industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings; in this case, the customer has an option of using the CP approach, recognizing that there is significantly more effort involved to make a CPP, complete with an M&V Plan and completion report.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

- Existing Buildings Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment. For projects claiming the increased incentive levels using version 1.7e of the Lighting Calculator Spreadsheet, cut sheets are only required for high performance lamps and ballasts not on the CEE equipment list. For high performance equipment on the CEE lists, the lamp and ballast model numbers and date of the CEE list referenced should be entered in the appropriate row of the notes column in the Lighting Calculator Spreadsheet.

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet
- Cut sheets for high performance equipment if necessary (see above)¹⁰
- Equipment purchase orders/invoices
- Contractor invoices
- Project estimates and/or other related project documents
- PCB ballast and lamp disposal (must meet environmental requirements)

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Corrected/completed Lighting Calculator Spreadsheet with date of completion
- Field notes from inspection (recommended)

¹⁰ Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

Reimbursement Strategies and Levels

In January, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later. These reimbursements are available through a new reference number on the PTR system and require that project information be input into a new version of the Lighting Calculator Spreadsheet (Version 1.7e). For projects with completion dates prior to January 1, 2009, the old version of the calculator (Version 1.6e) and the old reference numbers in the PTR system must be used. The old calculator and lower reimbursement option will no longer be available on the PTR system after September 30, 2009.

BPA is also exploring alternative program design options to acquire lighting savings in areas that historically have had no or few projects. While still in the development stage, this effort will likely use the Direct Acquisition contracting mechanism.

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the "Program Overview" section above. The list is available as part of the Existing Buildings Lighting Spreadsheet Calculator in the PTR system under Downloads - "Commercial/Industrial Lighting." C/IL reimbursements for existing buildings must use the Calculator Spreadsheet.
- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.
- If the measure does not qualify for a deemed reimbursement after a review, then the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions.

Agricultural Lighting (New Construction or Major Remodel¹¹)

Requirements and Specifications

Please see the General Lighting section above.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

¹¹ Major Remodel is defined as any project that requires code compliance and inspection.

- New Construction Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet
- Cut sheets for high performance equipment¹²
- Equipment purchase orders/invoices
- Contractor invoices
- Project estimates and/or other related project documents

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Field notes from inspection (recommended)

Reimbursement Strategies and Levels

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the "Program Overview" section above. The list is available as part of the New Construction Lighting Spreadsheet Calculator in the PTR system under Downloads - "Commercial/Industrial Lighting." C/IL reimbursements for new construction must use the Calculator Spreadsheet.
- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.
- If the measure does not qualify for a deemed reimbursement after a review, the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions.

¹² Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

6. Commercial Sector

Please check the Key Changes Summary on page ii of this document to see if significant changes were made to any of the measures in this sector.

This section contains general information about the Commercial Sector and measure-specific information, including a description of the measures and any related changes, technical specifications (some specifications may be located in the PTR system), reimbursement levels and associated tables and any additional documentation requirements.

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Commercial Sector Definition

The commercial sector is an energy-consuming sector that consists of service-providing facilities and equipment of businesses; federal, state, and local governments; and other private and public organizations.

The commercial sector is generally defined as non-manufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores and health, social and educational institutions.

General Commercial Sector Information

Lighting, HVAC and commercial refrigeration dominate the savings opportunities in commercial buildings. Efficient power supplies for computers and power controls for networked computers also represent savings opportunities.

Commercial projects with less than a six month simple payback, based on the estimated energy savings and the estimated project costs do not qualify for reimbursement.

All new construction/major renovation projects in the commercial sector (other than deemed lighting), as well as industrial motor and drive applications, must be submitted as CPs.

The overall structure for the commercial sector reimbursement is:

- BPA will pay specified reimbursements for selected measures (deemed measures) (e.g., Commercial/Industrial Lighting (C/IL) for stand-alone lighting, computer controls).
- BPA will pay a reimbursement of 20 cents per kWh up to 70 percent of the project incremental cost for HVAC, commercial refrigeration, and interacting lighting.
- BPA will pay a reimbursement of 27 cents per kWh up to 70 percent of the project incremental cost for new non-deemed commercial construction.

Specific measure requirements and reimbursement strategies are listed below.

Combined and Interactive Commercial Projects

Requirements and Specifications

These measures must be submitted as CPs and follow the CP process outlined in the Manual.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

Combined and/or interactive commercial projects that include lighting, commercial scale refrigeration, and HVAC measures, among other cost-effective measures that are calculated, will be reimbursed at \$0.20 per kWh, not to exceed 70 percent of the incremental installed measure cost. The incremental cost for retrofit of existing equipment is the fully installed measure cost. For replacement of burned out/failing/failed equipment, the incremental cost (and

savings) is the cost above code or its equivalent. For example, for HVAC replacement, the incremental cost is the cost of equipment above the federal or state applicable standard for new or replacement equipment.

Commercial Food Service Reach-in Refrigeration (solid and glass door)

Requirements and Specifications

Information on qualifying units is listed at the following link to the Consortium for Energy Efficiency (CEE): www.cee1.org/com/com-kit/com-kit-main.php3#qp.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

Deemed reimbursements are based on CEE, Tier 2 Commercial Food Service Refrigerators and Freezers as shown in table C-1 and table C-2.

Table C-1: Refrigerator Reimbursement

Size (cu. ft.)	# of Qualifying CEE Tier 2 Units	Credit/ Reimbursement
0-30	36	\$100
30-60	8	\$150
60-90	10	\$200

Table C-2: Freezer Reimbursement

<u>Size (cu. ft.)</u>	<u># of Qualifying CEE Tier 2 units</u>	Credit/ Reimbursement
0-30	12	\$200
30-60	19	\$400
60-90	16	\$700

Note: Size is interior volume of the new equipment as listed by CEE. No reimbursement for Tier 1, which is baseline practice.

Commercial New Construction

Energy Smart Design™ – Office

Requirements and Specifications

Eligible buildings are one of the following:

- A new office building
- An office addition to an existing building
- A major office renovation, requiring changes in multiple end-uses, or where a permit is required

The building must use one or more of the following HVAC system types for at least 70 percent of the conditioned space:

1. Roof-top variable-air-volume (VAV) with electric reheat
2. Roof-top VAV with a non-electric reheat
3. Packaged heat pump
4. Single zone equipment with gas furnace

The building must:

- Be three stories or less
- Be 100,000 square feet or less of conditioned area
- Have 30 percent or less window to wall area ratio
- Be built after October 1, 2007

The Energy Smart Design™ – Office Prescriptive Package is posted on the BPA Energy Efficiency Web site at: www.bpa.gov/Energy/N/projects/ESD-Utility. Technical specifications are available in the PTR system.

All of the items in table C-3 must be included in the new office building to qualify for an incentive. Code takes precedence if it exceeds any of these components.

Additional Documentation Requirements

Required documentation includes those items indicated in the technical specifications, submitted by a professional familiar with the project. Professionals can be a qualified customer representative, a registered architect, licensed engineer or commissioning agent. The customer's role is to verify that all required documentation has been submitted and to keep the documentation on file to support the claim.

Table C-3: Reimbursement for Energy Smart Design™ - Office

Description	Requirements	Package A	Package B	Package C
Incentives (\$ per sq. ft)		\$0.50	\$0.25	\$0.25
Cooling system minimum efficiency level	CEE Tier 2 Specifications can be found at www.cee1.org/com/hecac/hecac-main.php3	✓	✓	
Effective window U-value	Fixed 0.35 Maximum Curtain wall 0.40 Maximum	✓	✓	
Window solar heat gain coefficient	0.30 Maximum	✓	✓	
Enhanced economizer, including dedicated thermostat stage, differential changeover with dry-bulb sensors, and low ambient outside air compressor lock-out	Required	✓	✓	
Integrated Design of HVAC System, including fan power and plug load reduction	Required	✓	✓	
Lighting Budget (whole building)	0.75 Watts/SF Maximum, while providing illuminance levels as recommended by IESNA	✓		✓
Lighting Controls	Occupancy sensors-install where lighting loads are over 100 watts and sensors are not required by code; emergency fixtures are exempt	✓		✓

Reimbursement Strategies and Levels

BPA will reimburse the customer \$0.50 per square foot of conditioned area for Package A, \$0.25 per square foot of conditioned area for Package B and \$0.25 per square foot of conditioned area for Package C for eligible new, small office buildings that meet the requirements of the Energy Smart Design™ – Office Prescriptive Packages.

Energy Smart Design™ – Office Trade-Offs

Requirements and Specifications

Eligible buildings are one of the following:

- A new office building
- An office addition to an existing building
- A major office renovation, requiring a permit or changes in multiple end-uses

The building must use one or more of the following HVAC system types for at least 70 percent of the conditioned space:

1. Roof-top variable-air-volume (VAV) with electric reheat
2. Roof-top VAV with a non-electric reheat
3. Packaged heat pump
4. Single zone equipment with gas furnace

The building must

- Be three stories or less
- Be 100,000 square feet or less of conditioned area
- Have 30 percent or less window to wall area ratio
- Be built after October 1, 2007

The ESD™– Office Trade-Off form is posted on the BPA Energy Efficiency Web site at www.bpa.gov/ESD. Technical specifications are available in the PTR system.

All measures must be addressed, and energy savings must be greater than or equal to the ESD™– Office package to qualify for the package incentive in table C-3 above. Code takes precedence if it exceeds any of these components.

80 Plus Efficient Power Supplies

Requirements and Specifications

BPA will continue to fund the public utility share of the Northwest Energy Efficiency Alliance's 80 Plus Market Transformation. The initial subscription process has closed, and there will be no additional subscription offerings.

Additional Documentation Requirements

n/a

Reimbursement Strategies and Levels

n/a

EnergySmart (Grocer) Program

The EnergySmart (Grocer) Program (EnergySmart) is implemented by Portland Energy Conservation, Inc. (PECI) in collaboration with participating customers. All participating customers have individual Service Agreements with PECI.

Under the current funding approach (CRC, CAA or self-funding), customers have been responsible for cutting incentive checks to consumers, verifying accuracy of project data, accepting PTR carts and reporting to BPA. BPA seeks to streamline these steps and capture operational efficiencies by shifting to a Direct Acquisition (DA) delivery approach. Customers electing to shift to DA will benefit from centralized incentive payment and PTR system processing, without verification or oversight responsibility. The majority of participants are already in the process of shifting to DA, and BPA will continue to shift the remaining participants.

The current PECI Service Agreement expires on Sept 30, 2009. Customer participation in FY 2010-2011 will be available only through DA. In order to continue participation, customers are encouraged to switch from their current funding to DA funding by following the DA requirements of the Manual.

Because BPA now has two different funding mechanisms, the requirements of each will be discussed separately below: (1) DA and (2) Current funding mechanisms (CRC, CAA or self funding).

The current incentives for each measure may be found in the PTR system, under Commercial Third Party Programs. Note that some incentives have increased.

1. DA

Requirements and Specifications

Customers formally shifting to DA must follow the DA procedures outlined in the Manual. In addition, customers must sign a new or revised Service Agreement

with PECI, identifying DA as the funding source. Customers will receive monthly reports of program activity.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

Customers will receive 75 percent credit toward the conservation adjustment of their high water mark calculation.

Measures installed using DA funding do not qualify for a performance payment.

2. Current funding (CRC, CAA or self funding)

Requirements and Specifications

Customers must sign a Service Agreement with PECI in order to participate in EnergySmart.

Prior to submitting measures in reports or invoices for reimbursement, customers must review claims submitted to BPA to ensure they match documentation provided.

EnergySmart is not an implementing mechanism for custom projects. Customers are responsible for implementing custom projects per Section 1.7.

Lighting Projects

- PECI shall be responsible for coordination, installation and inspection of lighting measures.
- Customers must obtain and retain documentation of lighting measures for verification of measure installation.
- Customers must review claims submitted to ensure they match documentation provided for measures installed prior to submission in reports or invoices for reimbursement.

Additional Documentation Requirements

Customers must retain documents in their files for all claims submitted to BPA including the following:

- Copy of budget authorization(s) provided to PECI
- Copy of audit (if audited)
- Invoices for equipment installed in the facility specifying quantity and type of equipment installed
- Payment release form releasing the rebate from the customer to the installing contractor (optional)

- Vendor documentation, by facility, that installed measures meet specifications (e.g., model numbers, cut sheets, etc.)
- Copy of rebate application form

Reimbursement Strategies and Levels

Measures installed for credit under EnergySmart are qualifying measures and expenditures for purposes of a performance payment.

BPA will reimburse on a dollar-for-dollar basis for measures implemented and documented. The dollar-for-dollar reimbursement will be documented based on the rebate form provided by PECI. PECI will input the details of the accomplished measures into the PTR system for the customer or BPA.

Hospitality Initiative

Requirements and Specifications

BPA has coordinated with Energy Trust of Oregon (ETO) to extend the Hospitality Initiative (i.e., the current ETO lodging and foodservice program) to overlapping and neighboring Oregon public utility service areas. Under the Hospitality Initiative, ETO will provide all project processing, marketing and incentive check processing.

The Hospitality Initiative mirrors the existing ETO lodging and food service equipment package of measures including, but not limited to, the following: hot food holding cabinets, steamers, vent hoods, ice machines, refrigerators/freezers, laundry washers, dishwashers, packaged terminal heat pumps, HVAC in-room cooling sensors and LED motion-sensing bathroom nightlights. At this time, the initiative does not include lighting measures. Lighting opportunities should be referred to the Northwest Lighting Trade Ally Network.

More information on the Hospitality Initiative may be found at:

www.energytrust.org/existingbuildings/lodging.html

www.energytrust.org/existingbuildings/restaurant.html

The initial implementation period for the Hospitality Initiative is through September 30, 2009 (subject to extension).

Customers may participate in this program only by making a contribution to ETO under the established parameters of the ETO Contributions section and pursuant to a separate agreement with ETO. Participating customers will advance funding to Energy Trust based on an estimated level of program activity in customer's service area. **These funds will be held by ETO and used to pay incentives and program delivery and marketing costs. No funds will be expended unless there is project activity. Funds**

remaining at the end of the implementation period will be returned to the customer. Monthly status reports will be provided by ETO to all participating customers, detailing the measures installed, energy saved and incentives paid.

Additional Documentation Requirements

Customer shall retain the initiative specific agreement with ETO and ETO provided monthly status report. Customers are not responsible for verifying measures installed.

Reimbursement Strategies and Levels

Actual savings associated with each contribution will be determined in accordance with the actual measures installed by ETO and reflected in the ETO reports to the customer.

Customers may self-fund, and if BPA reimbursement is desired, **the preferred BPA funding source is bilateral funding through the CAA or its successor.** The CAA is preferred to CRC because of the end of rate period CRC true up.

Customers will receive 75 percent credit toward the conservation adjustment of their high water mark calculation, or 100 percent if self-funded. After the initial implementation period, customers will be advised by BPA on how to make the PTR system entry based upon the deemed savings reported by ETO and actual incentives paid.

2009 Rooftop Unit Service Pilot

Requirements and Specifications

The Rooftop Unit (RTU) Service Pilot Initiative is a Direct Acquisition (DA) initiative conducted with a limited number of utilities throughout the region. BPA will contract with a third party for services to verify energy efficiency improvements to RTUs. Qualified RTUs have over three tons of cooling capacity (ARI rating). Service on each RTU will only be provided once under this initiative.

Additional Documentation Requirements

Customer shall retain third party provided reports.

Reimbursement Strategies and Levels

Pre-approved incentive amounts will be paid to the third party contractor. The third party contractor will provide the end-use consumer with an invoice, indicating the "no-charge" services that were provided by its electric utility.

Slice/Block customers will not be subject to the Load Decrement requirement for the 2009 RTU Service Pilot.

ENERGY STAR Commercial Clothes Washers

Requirements and Specifications

If the clothes washer is on the ENERGY STAR commercial list, it can be claimed as a commercial measure, which includes commercial laundries and multifamily common area coin-operated machines.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA offers reimbursement for ENERGY STAR commercial clothes washers as shown in table C-4.

Table C-4: Reimbursement for ENERGY STAR Commercial Clothes Washers

ENERGY STAR	<ul style="list-style-type: none">▪ All electric (water heater and dryer)▪ All other combinations	<ul style="list-style-type: none">▪ \$180▪ \$ 75
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Existing Small Office or Retail (<5,000 square feet) Insulation

Requirements and Specifications

Deemed energy savings for attic, wall, and floor insulation measures are available for existing small buildings (less than 5,000 square feet) used for office or retail activities.

BPA will allow claims and provide reimbursement for insulation of whole buildings provided each individual office or retail space is less than 5,000 square feet and all of the individual spaces are under one roof. Customers may claim the individual spaces using the deemed savings and reimbursement reference numbers in the PTR system.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA will reimburse on a per square foot basis at \$0.13/deemed kWh energy savings.

Commercial Lighting (Existing Buildings)

Requirements and Specifications

The Commercial and Industrial Lighting (C/IL) Program is applicable to both existing buildings (retrofit/upgrade) and new construction projects in the Commercial, Industrial, and Agricultural Sectors. Program savings, reimbursement levels, and equipment specifications are embodied in Lighting Calculator Spreadsheets (one for existing buildings and another for new construction) available on the PTR system. Although the program requirements and process for claiming credits/reimbursements are largely the same across sectors, users should verify that they are using the correct sector reference numbers in the PTR system for projects. Completed Lighting Calculator Spreadsheets are uploaded to the PTR system in the invoicing process. Lighting measures are considered deemed, except when they are part of a project that includes other measures that have interactive effects on other measures, in which case they may be submitted as a CP under the multiple measures category. One exception is for industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings; in this case, the customer has an option of using the CP approach, recognizing that there is significantly more effort involved to make a CPP, complete with an M&V Plan and completion report.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

- Existing Buildings Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment. For projects claiming the increased incentive levels using version 1.7e of the Lighting Calculator Spreadsheet, cut sheets are only required for high performance lamps and ballasts not on the CEE equipment list. For high performance equipment on the CEE lists, the lamp and ballast model numbers and date of the CEE list referenced should be entered in the appropriate row of the notes column in the Lighting Calculator Spreadsheet.

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet
- Cut sheets for high performance equipment if necessary (see above)¹³
- Equipment purchase orders/invoices

¹³ Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

- Contractor invoices
- Project estimates and/or other related project documents
- PCB ballast and lamp disposal (must meet environmental requirements)

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Corrected/completed Lighting Calculator Spreadsheet with date of completion
- Field notes from inspection (recommended)

Reimbursement Strategies and Levels

In January, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later. These reimbursements are available through a new reference number on the PTR system and require that project information be input into a new version of the Lighting Calculator Spreadsheet (Version 1.7e). For projects with completion dates prior to January 1, 2009, the old version of the calculator (Version 1.6e) and the old reference numbers in the PTR system must be used. The old calculator and lower reimbursement option will no longer be available on the PTR system after September 30, 2009.

BPA is also exploring alternative program design options to acquire lighting savings in areas that historically have had no or few projects. While still in the development stage, this effort will likely use the Direct Acquisition contracting mechanism.

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the "Program Overview" section above. The list is available as part of the Existing Buildings Lighting Spreadsheet Calculator in the PTR system under Downloads - "Commercial/Industrial Lighting." C/IL reimbursements for existing buildings must use the Calculator Spreadsheet.
- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.
- If the measure does not qualify for a deemed reimbursement after a review, then the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions.

Commercial Lighting (New Construction or Major Remodel¹⁴)

Requirements and Specifications

Please see the Commercial Lighting section above.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

- New Construction Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet
- Cut sheets for high performance equipment¹⁵
- Equipment purchase orders/invoices
- Contractor invoices
- Project estimates and/or other related project documents

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Field notes from inspection (recommended)

Reimbursement Strategies and Levels

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the "Program Overview" section above. The list is available as part of the New Construction Lighting Spreadsheet Calculator in the PTR system under Downloads - "Commercial/Industrial Lighting." C/IL reimbursements for new construction must use the Calculator Spreadsheet.

¹⁴ Major Remodel is defined as any project that requires code compliance and inspection.

¹⁵ Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.
- If the measure does not qualify for a deemed reimbursement after a review, then the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions

Network Computer Power Management

Requirements and Specifications

Specifications for The Network Energy Management are as follows:

- a. Workstation is defined as the computer monitor and the PC box.
- b. The software shall give the IT administrator easily-accessible, central control over the power management settings of networked workstations, with the capability to override user settings.
- c. The software shall have the capability to cause a workstation's power-savings mode to be remotely enabled or disabled as necessary for centrally distributed software updates (for example: Wake on LAN capability).
- d. The software shall have the capability to monitor disk and CPU activity and delay setting the computer to a low-power mode until the activity has finished.
- e. The software shall provide reports on energy savings achieved through implementation of the software's features.

Cost and savings are per computer controlled.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA will reimburse \$10 per workstation.

New Commercial Construction, Major Renovation and Residential Multifamily Higher than Three Stories

Requirements and Specifications

These measures must be submitted as CPs.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

Major renovations (multiple end-uses changed with a construction or building permit required) are reimbursed on a performance-based approach that reimburses the lesser of \$0.27 per kWh or 70 percent of incremental cost (which includes payments for design assistance/technical assistance) for improved efficiency above code. New commercial construction will be reimbursed on a performance-based approach that reimburses the lesser of \$0.27 per kWh or 70 percent of incremental cost (which includes payments for design assistance/technical assistance) for improved efficiency above code. The key to project eligibility for the higher “new construction” reimbursement is the existence of an implementation design plan that usually involves modeling and a building construction permit.

Cost-effective geothermal heat pumps for all multifamily and commercial new construction applications (including residential MF less than three stories) will be reimbursed according to the commercial sector reimbursement schedule as a CP.

Other

Requirements and Specifications

These measures must be submitted as CPs.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

LED traffic signals and other non-building energy efficiency improvements can be reimbursed at the rate of \$0.13 per kWh, up to 70 percent of the incremental project cost (see the “Other” measures category in the PTR system).

Pre-rinse Spray Wash Valves

Requirements and Specifications

Qualified installations require electrically heated dishwashing water in a facility that serves 10 or more meal shifts per week (for example, a facility that serves lunches and dinners, five days a week). If the facility does not meet the shift requirement, the customer may document the reason for an exception to the 10-meal shift rule. The documentation should indicate that the rinse system uses the equivalent amount of energy as 10 or more meal shifts. Exceptions may include commercial bakeries; central school district cafeterias that prepare thousands of hot meals; or catering facilities that may only be used for three parties a week but provide meals for hundreds of people at a time.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA will reimburse \$150 per qualified installation.

2009 Turnkey Lighting Pilot

Requirements and Specifications

The Turnkey Lighting Pilot Initiative is a Direct Acquisition (DA) initiative conducted with a limited number of utilities throughout the region. BPA will contract with a program partner for third party implementation of the Commercial and Industrial (C&I) Lighting Standard Offer. The pilot will test this implementation approach in the service territories of a very limited number of utilities that (a) have had little or no C&I lighting activity, (b) have little or no administrative program capacity, (c) have adequate opportunity, trade ally base, business association marketing partners and other enabling factors, (d) meet criteria for geographic diversity and certain learning objectives of the pilot, and (e) are willing to consent to third party activity.

Additional Documentation Requirements

None.

Reimbursement Strategies and Levels

Incentive amounts under this limited availability pilot effort will be identical to those available through the C&I Lighting Standard Offer. The pilot will use the current versions of the existing building and new construction lighting calculator spreadsheet. The program partner will pay all incentives directly.

Slice/Block customers will not be subject to the Load Decrement requirement for the 2009 Turnkey Lighting Pilot.

7. Industrial Sector

Please check the Key Changes Summary on page ii of this document to see if significant changes were made to any of the measures in this sector.

This section contains general information about the Industrial Sector and measure-specific information, including a description of the measures and any related changes, technical specifications (some specifications may be located in the PTR system), reimbursement levels and associated tables and any additional documentation requirements.

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Industrial Sector Definition

The industrial sector includes a fixed piece of equipment, building or complex used to produce goods in connection with, or as part of, any process or system. Also included are electric distribution systems, conservation voltage regulation and water/waste-water systems and any storage, processing (transportation), or other activities involving farm products off-farm.

In general, the majority of energy use is not devoted to HVAC or meeting the potable hot water energy load requirements of a facility.

Industrial Sector

Process Related Projects

Industrial process-related projects include production systems within a particular industry (e.g., pulping in wood products, food processing, plastic extrusion, compressed air, computer chip fabrication, drive systems, drying systems in lumber products, or water and waste water treatment). Process-related projects involve site-specific calculations (e.g., motors, variable speed drives, pumps, ammonia-based refrigeration) and will be eligible for reimbursement as part of an integrated approach.

Commercial/industrial projects with less than a six month simple payback, based on the estimated energy savings and the estimated project costs do not qualify for reimbursement.

In most cases, CRC and CAA projects have the same requirements within the Industrial Sector, however, stranded cost repayment provisions are required for CAA, but not for CRC. All new construction/major renovation projects in the Industrial Sector must be submitted as Custom Project Proposals (CPPs).

There are few specific measures in the Industrial Sector. Instead, most CRC and CAA projects follow the Industrial Reimbursement Strategies and Levels for either Option 1 or Option 2 described below.

Industrial Reimbursement Strategies and Levels

For CRC or CAA qualifying projects, the customer must choose between the two options noted below. These options are designed to allow a customer to seek BPA technical assistance or to use its own means to address technical needs.

Option 1 is designed to provide technical support for customers that need assistance and do not wish to bear the risk of projects that do not reach completion.

Option 2 is designed for customers providing technical assistance on their own that are comfortable bearing the risk of projects that do not reach completion. BPA does not provide these customers with any upstream technical project support.

The customer must make the decision of which option to use. The customer's option choice will apply to all industrial projects. However, customers participating in the CRC or CAA may switch the industrial reimbursement level selected, provided they have not

- Had any TSP audits paid for (\$0.12 group) by BPA or
- Been paid or had CRC claims accepted by BPA for a custom industrial project at the \$0.15 reimbursement level

Customers wishing to make this switch must send their request in writing to their EER.

Option Requirements

Option 1

- The reimbursement level for retrofit industrial projects is \$0.17 per kWh (up to 70 percent of the incremental project cost). The reimbursement for new industrial construction projects is \$0.27 per kWh (up to 70 percent of the incremental project cost).
- BPA will provide the customer with technical support services for which the customer is not required to reimburse BPA. BPA will provide the best technical staff to meet the customer's need.
- The current TSP process applies. BPA will cover TSP costs of most upstream support for project development, including audits, scoping, CPP development, and measurement and verification (M&V) plan development. BPA will not cover TSP costs of downstream support such as the implementation of M&V Plans or completion reports. At the discretion of BPA, however, limited assistance may be provided to complete the M&V Plan. Downstream technical support may be included as part of project costs.
- Customers may continue to call the BPA customer-dedicated engineer for assistance with their industrial customer loads.
- BPA strongly encourages that the full incentive be passed-through to the industrial end-user.

Option 2

- The reimbursement level for retrofit industrial projects is \$0.20 per kWh (up to 70 percent of the incremental project cost). The reimbursement for new industrial construction projects is \$0.27 per kWh (up to 70 percent of the incremental project cost).
- BPA does not provide technical support for customers under this option. The BPA customer-dedicated engineer or BPA provided contractors will not provide walk-through audits, scoping, proposal development or M&V Plan development, however, the TSP-qualified BPA contractor list is available for customer use.
- The cost of upstream technical project support, such as audits and technical studies can be included in the total project costs.

- BPA will review M&V Plans for CPPs and make comments and recommendations on submitted CPPs as provided under the CP section.

Regardless of the choice of Option 1 or Option 2

- The customer must pre-screen the projects for TRC cost-effectiveness by using the RTF protocol-based calculator, supplying the cost, savings and industry sector (to get the appropriate load shape) prior to submitting the M&V Plan to BPA for approval.
- For all CPs, customers must submit an M&V Plan for BPA approval prior to any project implementation activity such as equipment purchase. Project paperwork shall include the basis for the savings estimates.
- CPPs for which the expected first year energy savings are over 200,000 kWh require BPA review and comment in addition to BPA acceptance of the M&V Plan.
- The ultimate decision to proceed with the project, however, will be up to the customer and its end-users.
- BPA encourages all customers to use technical assistance from third party service providers and/or from the Industrial Sector Initiative of NEEA. Industrial savings can be hard to identify, and the industrial partners tend to trust trade allies with whom they traditionally work.

Conservation Voltage Regulation

Requirements and Specifications

Conservation Voltage Regulation (CVR) includes distribution level and customer level (e.g., house, business) voltage regulation.

CVR projects must be submitted as CPPs. All CPs for which reimbursement is based on verified savings require BPA approval of an M&V Plan. Standardized M&V protocols will be provided for some measures prior to project implementation. CVR projects must be submitted to BPA for approval prior to any project implementation activity such as equipment purchases.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

The reimbursement amounts are determined by the industrial program Option 1 or Option 2.

Distribution System Efficiency Improvements

Requirements and Specifications

Distribution System Efficiency Improvements (DSEI) may include the following measures when cost-effective and otherwise qualifying:

- Power transformer replacement
- Service conductor replacement
- Higher distribution primary voltage (including insulator additions and replacement)
- Transformer load management (replacement of improperly sized transformers for loss improvements)
- Balancing loads and phases
- Adding parallel feeders
- Operation improvement (recognition and phase balancing)
- De-energizing seasonally unloaded transformers
- Service distribution transformer
 - Replacing an existing or proposed transformer with a higher efficiency transformer
 - Multiple transformers vs. single transformer based on system analysis
- Power factor improvement (measure to improve power factor and reduce line losses)
 - VAR management
 - Voltage management
 - Fixed and switched capacitors

DSEI projects must be submitted as CPPs. All CPs for which reimbursement is based on verified savings require BPA approval of an M&V Plan. Standardized M&V protocols will be provided for some measures prior to any project implementation. DSEI projects must be submitted to BPA for approval prior to any project implementation activity such as equipment purchases.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

The reimbursement amounts are determined by the industrial program Option 1 or Option 2.

Industrial Lighting (Existing Buildings)

Requirements and Specifications

The Commercial and Industrial Lighting (C/IL) Program is applicable to existing buildings (retrofit/upgrade) and new construction projects in the Commercial, Industrial, and Agricultural Sectors. Program savings, reimbursement levels, and equipment specifications are embodied in Lighting Calculator Spreadsheets (one for existing buildings and another for new construction) available on the PTR system. Although the program requirements and process for claiming credits/reimbursements are largely the same across sectors, users should verify that they are using the correct sector reference numbers in the PTR system for projects. Completed Lighting Calculator Spreadsheets are uploaded to the PTR system in the invoicing process. Lighting measures are considered deemed, except when they are part of a project that includes other measures that have interactive effects on other measures, in which case they may be submitted as a CP under the multiple measures category. One exception is for industrial sector lighting projects estimated to provide more than 100,000 kWh in annual savings; in this case, the customer has an option of using the CP approach, recognizing that there is significantly more effort involved to make a CPP, complete with an M&V Plan and completion report.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

- Existing Buildings Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment. For projects claiming the increased incentive levels using version 1.7e of the Lighting Calculator Spreadsheet, cut sheets are only required for high performance lamps and ballasts not on the CEE equipment list. For high performance equipment on the CEE lists, the lamp and ballast model numbers and date of the CEE list referenced should be entered in the appropriate row of the notes column in the Lighting Calculator Spreadsheet.

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet

- Cut sheets for high performance equipment if necessary (see above)¹⁶
- Equipment purchase orders/invoices
- Contractor invoices
- Project estimates and/or other related project documents
- PCB ballast and lamp disposal (must meet environmental requirements)

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Corrected/completed Lighting Calculator Spreadsheet with date of completion
- Field notes from inspection (recommended)

Reimbursement Strategies and Levels

In January, BPA increased its reimbursement levels for existing building lighting projects with completion dates January 1, 2009 or later. These reimbursements are available through a new reference number on the PTR system and require that project information be input into a new version of the Lighting Calculator Spreadsheet (Version 1.7e). For projects with completion dates prior to January 1, 2009, the old version of the calculator (Version 1.6e) and the old reference numbers in the PTR system must be used. The old calculator and lower reimbursement option will no longer be available on the PTR system after September 30, 2009.

BPA is also exploring alternative program design options to acquire lighting savings in areas that historically have had no or few projects. While still in the development stage, this effort will likely use the Direct Acquisition contracting mechanism.

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the "Program Overview" section above. The list is available as part of the Existing Buildings Lighting Spreadsheet Calculator in the PTR system under Downloads - "Commercial/Industrial Lighting." C/IL reimbursements for existing buildings must use the Calculator Spreadsheet.
- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.

¹⁶ Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

- If the measure does not qualify for a deemed reimbursement after a review, then the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions.

Industrial Lighting (New Construction or Major Remodel¹⁷)

Requirements and Specifications

Please see the General Lighting section above.

Additional Documentation Requirements

The following must be submitted to BPA no more than three days after submission of each invoice or report:

- New Construction Lighting Calculator Spreadsheet showing actual equipment installed (the electronic version should be submitted via email)
- Cut sheets for high performance equipment

The following must be retained in the files for each sub-project:

- Lighting Calculator Spreadsheet
- Cut sheets for high performance equipment¹⁸
- Equipment purchase orders/invoices
- Contractor invoices
- Project estimates and/or other related project documents

The following must be in the files after completing the inspection:

- Lighting Calculator Spreadsheet showing validated counts and proper listing and labeling of equipment installed
- Field notes from inspection (recommended)

Reimbursement Strategies and Levels

- The C/IL measure list reimbursement schedule and requirements must be used for lighting-only projects in any size commercial, industrial, agricultural, or institutional facility other than the exceptions noted in the

¹⁷ Major Remodel is defined as any project that requires code compliance and inspection.

¹⁸ Failure to submit cut sheets for high performance equipment within three days of submission of the report or invoice may result in reimbursements at standard equipment rates.

“Program Overview” section above. The list is available as part of the New Construction Lighting Spreadsheet Calculator in the PTR system under Downloads - “Commercial/Industrial Lighting.” C/IL reimbursements for new construction must use the Calculator Spreadsheet.

- If a measure is not listed on the list of C/IL measures, the customer may request a one-time approval prior to installation from BPA to use a deemed measure and credit.
- If the measure does not qualify for a deemed reimbursement after a review, then the customer can submit a custom proposal, or seek to have a deemed value established through the RTF. If submitted as a CP, all CP requirements apply.

Reimbursements for some measures in the C/IL list may change over time to reflect market conditions.

Motors

Motor and Drive Applications

Requirements and Specifications

Industrial motor and drive applications must be submitted as CPs.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

Motors and drives are eligible for calculated savings based on site-specific CP analyses.

Green Motors Initiative

Requirements and Specifications

The Green Motors Initiative is a Direct Acquisition (DA). Qualified motors include NEMA Standard Horsepower rated motors between 15 and 5,000 horsepower (hp) (either NEMA Premium or other) that are rewound via certified Green Motor Practices Group™ member service centers.

Participating customers are eligible for the various participation options as listed in the DA section.

The savings acquired under the Green Motors Initiative are not subject to decrement.

Additional Documentation Requirements

Customer shall retain third party provided reports.

Reimbursement Levels and Strategies

An incentive of \$2 per hp will be paid to the participating service center that rewind the motor. The service center will acknowledge the incentive is provided by the end user's serving utility and will pass through \$1 per hp to the end user as a credit on the end user's invoice.

New Industrial Construction

Requirements and Specifications

New industrial construction projects must be submitted as CPPs with an M&V Plan. Standardized M&V protocols will be provided for some measures prior to project implementation. New industrial construction projects must be submitted to BPA for approval prior to any project implementation activity such as equipment purchases, etc.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA will reimburse \$0.27 per kWh (up to 70 percent of the incremental project cost), regardless of which Option is chosen.

Small Compressed Air System

Requirements and Specifications

Variable Frequency Drives (VFD) applied to a single air compressor of less than 75 hp may use the RTF approved small compressed air calculator spreadsheet for M&V for this CP. This measure is primarily Industrial, but it may be used across all sectors.

Additional Documentation Requirements

A copy of the completed RTF-approved Small Compressed Air Calculator spreadsheet is required as part of the CP documentation.

- Dated invoice showing the horse power and installation address

Reimbursement Strategies and Levels

The reimbursement amounts are determined by the industrial program Option 1 or Option 2.

8. Residential Sector

Please check the Key Changes Summary on page ii of this document to see if significant changes were made to any of the measures in this sector.

This section contains general information about the Residential Sector and measure-specific information, including a description of the measures and any related changes, technical specifications (some specifications may be located in the PTR system), reimbursement levels, and any documentation requirements.

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Residential Sector Definition

Applicable measures are defined as any electric energy conservation measure that is used in a residential setting. This includes single family residences, multifamily residential (structures with more than four units up to three stories high), and manufactured homes. Excluded are temporary residences such as hotels, motels, nursing homes, dorms, or any other generally temporary quarters. *(Multifamily housing above three stories is considered commercial.*

Appliances (new)

Requirements and Specifications

BPA will provide reimbursements for the purchase of ENERGY STAR® qualified appliances with deemed savings. The customer may elect to check the ENERGY STAR Web site at www.ENERGYSTAR.gov to confirm the appliance meets ENERGY STAR requirements.

Additional Documentation Requirements

The following must be maintained as part of the documentation for these measures:

- Copy of purchase receipt/invoice
- Manufacturer name
- Model number
- Documentation detailing the specifications (e.g., energy factor) for the appliance claimed. A copy of the page from the ENERGY STAR Web site listing the appliance model is sufficient for documentation, provided it details the specifications for the model claimed.
- In the event that ENERGY STAR specifications change, BPA will continue to support the pre-existing models as ENERGY STAR qualified.
- To reduce the need to look up every appliance on the ENERGY STAR Web site, customers may also meet this requirement by having consumers submit the ENERGY STAR logo from the appliance box or product information insert that includes the ENERGY STAR logo. Submissions without this documentation will still need to be confirmed using the ENERGY STAR product list available at www.ENERGYSTAR.gov.

Reimbursement Strategies and Levels

The reimbursement differs for each type of appliance, listed below.

ENERGY STAR Clothes Washers: BPA will reimburse two amounts for ENERGY STAR qualified residential clothes washers, depending on the water heater fuel type.

- \$70 per ENERGY STAR clothes washer (with electric water heater)
- \$25 per ENERGY STAR clothes washer (with gas water heater)

ENERGY STAR Dishwashers: \$25 per ENERGY STAR qualified dishwasher

ENERGY STAR Freezers: \$25 per ENERGY STAR qualified full size freezer (7.75 cu. ft. or greater)

ENERGY STAR Refrigerators: \$25 per ENERGY STAR qualified full size refrigerator (7.75 cu. ft. or greater)

Appliance Decommissioning

Refrigerator and Freezer Early Retirement and Recycling

Requirements and Specifications

The existing appliance for recycling must be verified as functional, serving a home within the participating customer service territory and must be a minimum of 10 cu. ft. capacity. The unit must be decommissioned and its components recycled.

Additional Documentation Requirements

The following must be maintained as part of the documentation for these measures:

- Address from where the refrigerator/freezer was picked up
- Disposal/recycling documents
- Cubic size of refrigerator or freezer

Reimbursement Strategies and Levels

BPA will reimburse \$125 per decommissioned residential refrigerator or freezer unit.

Electric Water heating

Requirements and Specifications

BPA will provide reimbursements for cost-effective, energy-efficient electric storage water heaters meeting the minimum energy factor (EF) provided in the PTR system and summarized in Table R-1 below. BPA will also provide reimbursements for cost-effective installations of gravity film heat exchangers (GFX) in electric water heater applications.

Reimbursements for GFX can be found in the PTR system and are summarized below in Table R-2.

Additional Documentation Requirements

The following must be maintained as part of the documentation for these measures:

- Copy of purchase receipt/invoice
 - Manufacturer or brand name
 - Model number
 - Rated storage volume, in gallons (for storage water heaters)
- Warranty period, if claiming higher 20 year warranty

Reimbursement Strategies and Levels

Electric Storage Water Heaters:

- \$0.25 per kWh for cost-effective, energy-efficient electric water heater measures.
- \$0.35 per kWh for cost-effective water heater measures with a 20-year or longer warranty (currently only Marathon offers a 20 year warranty).

Table R-1: Summary of Reimbursements for electric storage water heaters

Tank Size	Min. Energy Factor	Minimum Warranty	Energy Savings (kWh/yr)	BPA Credit
50 gallon	EF- 0.93 or higher	Any	101	\$25.24
50 gallon	EF- 0.94 or higher	20 yr*	133	\$46.62
65 gallon	EF- 0.91 or higher	Any	106	\$26.48
65 gallon	EF- 0.94 or higher	20 yr*	205	\$71.77
75 gallon	EF- 0.92 or higher	20 yr*	177	\$61.93
80 gallon	EF- 0.91 or higher	Any	181	\$45.32
80 gallon	EF- 0.92 or higher	20 yr*	215	\$75.32
85 gallon	EF- 0.92 or higher	20 yr*	217	\$76.11
105 gallon	EF- 0.91 or higher	20 yr*	302	\$105.77
119 gallon	EF- 0.85 or higher	Any	166	\$41.59

* Currently only the Marathon Water Heaters meet the 20 year minimum warranty requirement.

Reimbursements and busbar savings can also be found in the PTR system.

Gravity film (GFX) Heat Exchangers: \$0.35 per kWh (according to the busbar savings in the PTR system). Reimbursements and busbar savings are listed in the PTR system and summarized in Table R-2 below.

Table R-2: Summary of Reimbursements for GFX

Residence Type	Retrofit or New Construction	Application	Water Heater Type	Energy Saving (kWh/yr)	BPA Credit
Single Family & Multifamily	Retrofit	DHW & Shower Preheat	Electric	652	\$228.24
Single Family & Multifamily	Retrofit	DHW Preheat	Electric	522	\$182.60
Single Family	New Construction	DHW & Shower Preheat	Electric	652	\$228.24
Single Family	New Construction	DHW Preheat	Electric	522	\$182.60
Multifamily	New Construction	DHW & Shower Preheat	Electric	652	\$228.24
Multifamily	New Construction	DHW Preheat	Electric	522	\$182.60
Multifamily	New Construction	Shower Preheat	Electric	456	\$159.77

HVAC Measures

BPA will provide reimbursements for HVAC measures in electrically-heated homes including ductless heat pumps, high efficiency heat pump upgrades, heat pump conversions, geothermal heat pump system upgrades and proper installation, sizing, refrigerant charging and duct sealing protocols as specified by Performance Tested Comfort Systems™ (PTCS). PTCS measures must be certified as PTCS, and work must be performed by a PTCS certified technician. Either electric or non-electric auxiliary heat systems may be installed with a heat pump; however, an electric heat pump must be the primary system used to meet the heating needs of the house.

The PTCS specifications are available in the PTR system, under Downloads.

PTCS forms are available at www.ptcsnw.com.

This section covers the following:

- Ductless Heat Pump (DHP) Pilot
- PTCS Air Source Heat Pump Upgrade, with minimum HSPF 8.5/SEER 14 ratings (bundled measure)
- PTCS Heat Pump conversions (BPA Qualified)
- PTCS Heat Pump Commissioning & Controls as a stand alone (unbundled) measure
- PTCS Geothermal (Ground Source) Heat Pump Systems
- PTCS Duct Sealing as a stand alone (unbundled) measure

Ductless Heat Pump Pilot

BPA is participating in a Northwest Energy Efficiency Alliance (NEEA) led pilot to measure and validate energy savings of Ductless Heat Pumps (DHP) in various existing residential applications, with permanently installed electric resistance heat. The initial period for the pilot is October 1, 2008 to September 30, 2009 for BPA customers. All eligible DHPs must be installed by September 30, 2009. BPA funding is available for this pilot through our existing CRC and CAA structure. This pilot will test DHP installations in a variety of applications. BPA, recognizing the saving values are provisionally deemed, also wishes to ensure the pilot cost and savings risks are managed appropriately. NEEA will keep customers and vendors informed as the pilot progresses. All pilot program materials and updates can be found at www.nwductless.com.

Requirements and Specifications

- BPA customers desiring to participate in the pilot should give notice to NEEA's contractor, Fluid Market Strategies (Fluid) of their intent and should identify an approximate number of units they anticipate will be installed during the pilot period. Contact Erica Thompson, 503-808-9003 ext. 107,

ethompson@fluidms.com. Pilot requirements may be found at www.nwductless.com.

- All claims made to BPA for DHPs installed must be recorded in the PTR system.
- Cost-effective DHPs in the PTR system, with BPA dollar reimbursement values, may be claimed as deemed measures. (See Table R-3). All measures shown in Table R-3 apply to existing residences.
- Cost-effective DHPs without BPA dollar reimbursement values may be utility self funded as a deemed measure or submitted for BPA reimbursement using the Custom Project Proposal (CPP) process. (See Table R-3).
- Utilities choosing to submit CPPs for DHPs should refer to the CPP Process Guidelines and Requirements for information specific to the custom project process. Additionally, the following CPP requirements apply to this pilot:
 - Customers may submit CPPs using the RTF provisionally deemed estimate of site kWh energy savings (3950 kWh) and estimate of incremental cost (\$3409), found in the PTR system, to determine Total Resource Cost Benefit Cost Ratio (TRC B/C) cost-effectiveness.
 - A CPP must be submitted and approved by BPA before the DHP is purchased or installed.
 - Customers may submit a CPP for individual units or multiple units as a batch. If submitted as a batch, all units need to be at one general location, such as several individual units in a single multifamily complex or several units in a single manufactured home park. BPA will make only one payment for all units submitted in an accepted completion report, and payment for batched units will be based on the sum of the energy savings or the sum of the total incremental cost, whichever is lower.
 - Completion reports must include information for the individual units that matches the total claimed in the completion report.
 - The responsible BPA engineer will determine the appropriate Measurement and Verification (M&V) required for each CPP.
 - The M&V of energy savings will be accomplished by comparing billing histories, pre and post, collected via the customer's existing meters. At least two months of winter usage (one month minimum between November 1 and March 31) after installation of the DHP at each residence will be compared to the two years' winter heating billing histories prior to its installation. The data shall be normalized for pertinent weather variances when comparing the measured electric energy use to the baseline average weather use. The savings will be the average baseline usage minus the post installation usage after it has been normalized for weather and pro-rated to reflect the post measurement period. A commercially available weather adjusting software (e.g. PRISM) shall be used to determine the actual electric energy savings.

Additional Documentation Requirements

- The data collection and documentation requirements are the same for all DHPs in this pilot.
- Fluid will collect all required documentation. Erica Thompson, 503-808-9003 ext. 107, ethompson@fluidms.com.
- Qualified contractors are required to send Fluid all required documentation. Fluid will qualify all eligible installations and perform quality control checks on all submitted forms. The Quality Control work performed when the documentation is collected will satisfy BPA’s documentation requirements. If a unit is on Fluid’s list of qualified units, BPA will accept that as proof that the unit meets the pilot’s requirements.
- Fluid will determine that forms are complete and the install meets all of pilot requirements. The customer will be sent an e-mail, with PDFs of all the program documentation, verifying that the unit can be claimed in the PTR system. In the case of a CP, this notification and documentation should be referenced in the completion report.

Reimbursement Strategies and Levels

A customer may fund its participation in this pilot with a CAA, CRC, self funding or Irrigation Rate Management Program (IRMP) credits.

Table R-3 - Eligible Ductless Heat Pump Measures

Measure Description	BPA Dollar Credit shown in PTR (Y/N)	Funding Source Allowed	Savings Determination	BPA Credit
Existing Single Family w/ Zonal Electric Heat	Yes	All	Deemed	\$1,500
Existing Single Family w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	Yes	All	Deemed	\$1,500
Existing Multifamily w/ Zonal Electric Heat	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Multifamily w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Manufactured Homes w/ Zonal Electric Heat	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Manufactured Homes w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **

Notes: *This refers to the method of claiming kWh saving. If the unit is being claimed as self funded, the customer can claim the RTF provisionally deemed kWh energy savings estimate. If the customer is claiming the unit via the CPP Process, the kWh energy savings will be determined by a Measurement and Verification (M&V) plan approved by a BPA engineer.

**BPA’s reimbursement for custom projects will be \$0.30/measured first year kWh *or* 70 percent of the actual incremental cost, whichever is lower.

PTCS Air Source Heat Pump Upgrade with Minimum HSPF 8.5/SEER 14 Ratings (bundled)

Requirements and Specifications

- a. Heat pump must be installed by a PTCS certified contractor.

- b. Heat pump must be installed according to the version current at the time of heat pump purchase of the “PTCS Air Source Heat Pump Installation Standards,” which is available in the PTR system.

Reminder: As a part of the PTCS installation standards, PTCS Commissioned Heat Pump certification is required on all Air Source Heat Pump Upgrades, and PTCS Duct System certification may be required, depending on the location of the ductwork.

- c. Allowable tradeoffs of the HSPF and SEER ratings are as follows:
- A minimum SEER rating of 13.5 shall be acceptable when HSPF is at least 8.6
 - A minimum SEER rating of 13.0 shall be acceptable when HSPF is at least 8.7
- d. Homes with heated floor area greater than 4,500 square feet, which is twice the size of the prototypes used by the RTF to estimate savings, are allowed to claim up to two heat pump measures when two heat pumps are installed.
- e. BPA requires the newly installed heat pump(s) to be the primary heating source for the entire house.
- f. Where a house has a substantial¹⁹ amount of ductwork in unconditioned space, the heat pump with ducts outside²⁰ measure must be claimed. Where a house does not have a substantial amount of ductwork in unconditioned space, the heat pump with ducts inside measure must be claimed. PTCS Duct System certification is required when the heat pump with ducts outside measure is claimed.

Additional Documentation Requirements

- PTCS form - the certificate
- List from Ecos Consulting of PTCS certified units as found at www.ptcsnw.com
- ARI certificate
- Copy of the whole house heating and cooling calculation (Manual J or Easy J) and balance point worksheet OR PTCS Heat Pump and Central Air Conditioner Sizing Calculator
- Vendor invoices
- Duct sealing documentation (if duct sealing is required)

Reimbursement Strategies and Levels

The PTCS air source heat pumps upgrade measure is intended to provide an incentive to homeowners to install a high efficiency heat pump, when replacing an existing heat pump or adding a heat pump to a system with gas backup. Reimbursement is based on the energy savings and incremental cost of installing

¹⁹ BPA interprets “substantial” to mean ~ 75 percent or more of the ducts are outside the conditioned space.

²⁰ “Ducts Outside” and “Ducts Inside” are shorthand for homes with ducts outside the conditioned space where duct testing and sealing can result in higher savings gains, and homes without substantial ducting outside the conditioned space, respectively.

a heat pump with a minimum HSPF 8.5/SEER 14 rating, installed to PTCS specifications.

Customers converting an electric forced air furnace to air source heat pumps should claim the PTCS Heat Pump Conversion measure.

Customers wishing to convert a single family home, with a zonal electric heating system, should use the Ductless Heat Pump measure.

The reimbursement level for the PTCS air source heat pump upgrade measure varies depending on the heating and cooling zone and whether the ducts are outside the conditioned space or not. See Table R-4 for the reimbursement schedule.

Table R-4: Reimbursements for Air Source Heat Pump Upgrade (bundled)

Heating/ Cooling Zone	Ducts Outside where Duct Sealing is required (i.e., outside the heated envelope, such as an unheated crawlspace or attic)	Ducts Inside where Duct Sealing is not required (i.e., home with a basement)
HZ1 CZ1	\$915	\$470
HZ1 CZ2	\$935	\$480
HZ1 CZ3	\$975	\$500
HZ2 CZ1	\$1,380	\$650
HZ2 CZ2	\$1,390	\$665
HZ2 CZ3	\$1,425f	\$685
HZ3 CZ1	\$1,730	\$780
HZ3 CZ2	\$1,750	\$790
HZ3 CZ3	\$1,790	\$815

Note: Manufactured homes are almost always built on vented crawlspaces, rather than sealed basements, which means the duct sealing (ducts outside) measure should apply.

PTCS Air Source Heat Pump conversions (BPA Qualified)

Requirements and Specifications

- Heat pump must be installed by a PTCS certified contractor.
- Heat pump must be installed according to the version current at the time of heat pump purchase of the "PTCS Air Source Heat Pump Installation Standards," which is available in the PTR system.
- Reminder: As a part of the PTCS installation standards, PTCS Commissioned Heat Pump certification is required on all Air Source Heat Pump Conversions, and PTCS Duct System certification may be required, depending on the location of the ductwork.
- Allowable tradeoffs of the HSPF and SEER ratings are as follows:

- A minimum SEER rating of 13.5 shall be acceptable when HSPF is at least 8.6
- A minimum SEER rating of 13.0 shall be acceptable when HSPF is at least 8.7
- Homes with heated floor area greater than 4,500 square feet, which is twice the size of the prototypes used by the RTF to estimate savings, are allowed to claim up to two heat pump measures when two heat pumps are installed.
- BPA requires the newly installed heat pump(s) to be the primary heating source for the entire house.
- Where a house has a substantial²¹ amount of ductwork in unconditioned space, a PTCS Duct Sealing certification will be required and the PTCS Duct Sealing reimbursement can be claimed. Where a house does not have a substantial amount of ductwork in unconditioned space, the PTCS Duct Sealing reimbursement cannot be claimed. PTCS Duct System certification is required when the heat pump with ducts outside measure is claimed.

Additional Documentation Requirements

- PTCS form - the certificate
- List from Ecos Consulting of PTCS certified units as found at www.ptcsnw.com
- ARI certificate
- Copy of the whole house heating and cooling calculation (Manual J or Easy J) and balance point worksheet OR PTCS Heat Pump and Central Air Conditioner Sizing Calculator
- Vendor invoices
- Duct sealing documentation (if duct sealing is required)

Reimbursement Strategies and Levels

The PTCS air source heat pumps conversion measure is intended to provide an incentive to homeowners replacing an electric forced air furnace with a heat pump.

The reimbursement level varies depending on the efficiency of the heat pump installed and whether the ducts are outside the conditioned space or not. See Table R-5 for the reimbursement schedule.

²¹ BPA interprets "substantial" to mean ~ 75 percent or more of the ducts are outside the conditioned space.

**Table R-5: Reimbursements for Air Source Heat Pump Conversions
(bundled)**

Heating/ Cooling Zone	Ducts Outside where Duct Sealing is required (i.e., outside the heated envelope, such as an unheated crawlspace or attic)	Ducts Inside where Duct Sealing is not required (i.e., home with a basement)
SF HZ1	\$1,900	\$1,400
SF HZ2	\$1,900	\$1,400
SF HZ3	\$1,900	\$1,400
MH HZ1	\$1,900	Not applicable
MH HZ2	\$1,900	Not applicable
MH HZ3	\$1,900	Not applicable

PTCS Heat Pump Commissioning & Controls (unbundled)

Requirements and Specifications

- a. This stand alone (unbundled) measure requires that the heat pump be installed and/or serviced according to the current version of the "PTCS Air Source Heat Pump Installation Standards," which is available in the PTR system. Two exceptions to the BPA requirements/PTCS Standards are allowed:
 - This measure can be applied to any new heat pump.
 - This measure does not require a minimum HSPF or SEER rating.
- b. This measure is available for all existing or new construction housing types (single family and manufactured homes).
- c. Work must be completed by a PTCS certified contractor.
- d. This reimbursement is available per each heat pump system that is installed or serviced regardless of the size of the home and the number of new heat pumps installed.

Additional Documentation Requirements

- PTCS form - the certificate
- List from Ecos Consulting of PTCS certified units as found at www.ptcsnw.com
- ARI certificate
- Copy of the whole house heating and cooling calculation (Manual J or Easy J) and balance point worksheet OR PTCS Heat Pump and Central Air Conditioner Sizing Calculator
- Vendor invoices
- Duct sealing documentation (if duct sealing is required)

Reimbursement Strategies and Levels

- BPA will reimburse \$300 per documentation of PTCS Commissioning and Controls on a newly installed heat pump.
- PTCS Duct Sealing, where a substantial percentage of the duct system is outside the heated envelope, is not required but highly recommended.

Note: when PTCS Commissioning and Controls is performed in combination with PTCS Duct Sealing, an additional \$50 reimbursement will be allowed to encourage contractors and home owners to do PTCS Duct Sealing when duct sealing is desirable. See table R-6 below. (See duct sealing measures below for requirements and specifications.)

Table R-6: Reimbursements for PTCS unbundled measures

Measure	Manufactured Homes	Single Family Existing Homes	Single Family New Construction
PTCS System Commissioning & Controls	\$300	\$300	\$300
PTCS Duct Sealing	\$400	\$500	\$400
PTCS Commissioning & Controls with Duct Sealing	\$750	\$850	\$750

PTCS Geothermal (Ground Source) Heat Pump Systems (new)

Requirements and Specifications

- a. All geothermal heat pump system components must be newly installed. The replacement of an existing geothermal heat pump unit does not qualify for BPA reimbursement.
- b. Geothermal heat pump must be installed by a PTCS certified contractor.
- c. Geothermal heat pump installations must adhere to the latest version of the "PTCS Ground Source Heat Pump Specifications," which are available in the PTR system.
- d. BPA will only provide one reimbursement per home for geothermal heat pumps.
- e. BPA will allow claims for geothermal heat pumps connected to hydronic heating systems in residential end-use applications provided all applicable specifications are met.

Additional Documentation Requirements

- PTCS form - the certificate
- List from Ecos Consulting of PTCS certified units as found at www.ptcsnw.com
- Documentation showing the efficiency ratings (HSPF and SEER for air-source heat pumps, or COP for geothermal heat pumps)

- Copy of the whole house heating and cooling calculation (Manual J or Easy J) and balance point worksheet OR PTCS Heat Pump and Central Air Conditioner Sizing Calculator
- Vendor invoices
- Duct sealing documentation (if duct sealing is required)

Reimbursement Strategies and Levels

BPA set reimbursements based on the incremental savings from a standard air-source heat pump (upgrade to a geothermal system), regardless of the end-user's reasons for the installation of the geothermal heat pump system and regardless of the fuel used in the pre-existing heating system, if any.

Single Family installations in HZ 1: BPA will reimburse \$2,400 per unit

Single Family installations in HZ 2 and 3: BPA will reimburse \$3,000 per unit.

Manufactured Homes: There are no deemed cost-effective geothermal heat pump measures in manufactured homes. BPA will provide no deemed reimbursement.

Multifamily: Cost-effective geothermal heat pumps for all MF applications, including residential and commercial MF (greater than three stories) will be reimbursed according to the commercial sector reimbursement schedule as a Custom Project (CP).

PTCS Duct Sealing (unbundled)

Customers may claim credit for PTCS Duct Sealing on any new or existing heat pump in single family new construction, in an existing single family home, or in any new or existing manufactured home. Customers may also claim credit for PTCS Duct Sealing for forced-air electric furnaces.

To qualify, the pretest must show that duct sealing is required and ducts must be outside the heated envelope (i.e., in an un-insulated crawlspace).

PTCS Duct Sealing in Manufactured Homes

Requirements and Specifications

- Duct system must be tested and certified as a PTCS Duct System, by a PTCS certified technician.
- All electrically-heated manufactured homes qualify for this measure if PTCS duct testing indicates that duct sealing is required to meet the PTCS specifications. The pre-test must show an existing, tested leakage rate of 100 CFM50 for single-wide homes or 150 CFM50 leakage for two- or more-section homes.
- This measure applies to existing and new manufactured homes with electric forced air furnaces, as long as the home meets the requirement stated above.

In the PTR system, this measure is identified as “Existing Manufactured Homes.”

Additional Documentation Requirements

- Copy of the signed PTCS Duct Sealing certificate or a list of completions meeting program specifications from a BPA approved PTCS Service Provider, currently Ecos Consulting
- Vendor invoice

Reimbursement Strategies and Levels

BPA will reimburse \$400 for PTCS Duct Sealing in electrically-heated manufactured homes for all climate zones.

An additional \$50 reimbursement is available if this measure is claimed in combination with PTCS Commissioning and Controls (within same reporting period).

PTCS Duct Sealing in Existing Single family Homes

Requirements and Specifications

- Duct system must be tested and certified as a PTCS Duct System, by a PTCS certified technician.
- All electrically-heated existing single family homes qualify for this measure if PTCS duct testing indicates that duct sealing is required to meet the PTCS specifications. Pre-existing duct leakage to the outside must be greater than 250 CFM50 or 15 percent of the floor area, whichever is less.

Additional Documentation Requirements

- Copy of the signed PTCS Duct Sealing certificate or a list of completions meeting program specifications from a BPA approved PTCS Service Provider, currently Ecos Consulting
- Vendor invoice

Reimbursement Strategies and Levels

BPA will reimburse \$500 for PTCS Duct Sealing in electrically-heated existing single family homes for all climate zones.

An additional \$50 reimbursement is available if this measure is claimed in combination with PTCS Commissioning and Controls (within same reporting period).

PTCS Duct Sealing Single family New Construction

Requirements and Specifications

Duct system must be tested and certified as a PTCS Duct System by a PTCS certified technician.

Additional Documentation Requirements

- Copy of the signed PTCS Duct Sealing certificate or a list of completions meeting program specifications from a BPA approved PTCS service provider, currently Ecos Consulting
- Vendor invoice

Reimbursement Strategies and Levels

BPA will reimburse \$400 for PTCS Duct Sealing in electrically-heated single family new construction for all climate zones.

An additional \$50 reimbursement is available if this measure is claimed in combination with PTCS Commissioning and Controls (within same reporting period).

Lighting

ENERGY STAR compact fluorescent lamps/light bulbs (CFLs) and ENERGY STAR lighting fixtures provide cost-effective energy efficiency opportunities for BPA utilities.

CFL measures included in this section should be installed in a residential setting. CFLs shall be claimed under one measure only (e.g. CFLs in ENERGY STAR fixtures cannot be claimed as Documented Direct-installed CFLs if the ENERGY STAR fixture was already claimed under that measure.)

Specialty CFLs represent a significant savings opportunity and consumers are showing an increased demand to purchase them. In response, BPA has added measures with a higher reimbursement to support specialty CFLs.

Specialty CFLs are defined as screw-in CFLs including: A-lamps, candelabras, G-lamps (globe), reflectors, torpedoes, dimmables, 3-way bulbs and twisters greater than 25 Watt.

Note: Change-a-light (CAL) bulbs are not eligible for the higher specialty CFL reimbursement, because they are marked down at retail. CAL bulbs should be recorded in the PTR under reference number RLI00112-Energy Star CFL: Any Interior or Exterior Application (\$2.50 reimbursement).

For hard-to-reach or special opportunity segments, utilities must submit a written request to BPA and have that request approved prior to the start of the activity in order to receive the higher reimbursement rate. Once approved, the hard-to-reach or special opportunity activity needs no further approval by BPA, provided there is no change in the methodology deployed. Changes to the hard-to-reach or special opportunity segments must be approved by BPA prior to the start date of that activity.

This section covers the following:

- ENERGY STAR CFLs - Standard Twister
- ENERGY STAR CFLs - Specialty bulbs
- ENERGY STAR CFLs – Documented Direct-installed CFLs-Twister

- ENERGY STAR CFLs – Documented Direct-installed CFLs-Specialty
- ENERGY STAR Light fixtures

A summary of CFL measures, reimbursement and corresponding PTR reference numbers is included in Table R-7 below.

Table R-7: Summary of CFL measures

CFL measure	Application	Details	Credit/	PTR Ref. No.
CFL– Twister/Spiral	<ul style="list-style-type: none"> • Retail store purchase • Bulk purchase • Direct mail purchase <p><i>Note:</i> all CAL bulbs should be recorded here</p>	Interior/exterior, any application. Must be EnergyStar rated and wattage must be more than 5 watts.	\$2.50	RLI00112
CFL Specialty**	Any specialty bulbs through bulk purchase, direct mail, etc. (EXCEPT retail CAL*bulbs)	Must meet specialty bulb definition	\$4.00	RLI00125
Documented Direct Installed CFL – Twister	Any CFL - twister/spiral with documented installation	Installation witnessed by utility or agent. Documentation requirements in Implementation Manual.	\$4.00	RLI00124
Documented Direct Installed CFL – Specialty	Any CFL-specialty bulb with documented installation	Installation witnessed by utility or agent. Documentation requirements in Implementation Manual.	\$5.50	RLI00123
Special or Hard-to-reach Opportunities – Twister/spiral	Twister CFL distributed by utility via special events/activities	Requires advance approval by BPA	\$4.00	RLI00120
Special or Hard-to-reach opportunities – Specialty	Specialty CFL distributed by utility via special events/activities.	Requires advance approval by BPA	\$5.50	RLI00126

*CAL refers to bulbs acquired through the BPA Change-A-Light Specialty CFL promotion.

**Specialty CFLs, as defined in the BPA Implementation Manual.

ENERGY STAR CFLs – Standard Twister

Requirements and Specifications

Each installed CFL must be ENERGY STAR-rated and wattage must be more than five watts.

Additional Documentation Requirements

The following must be maintained as documentation for these measures:

- Vendor invoice with the number, type and wattage of bulbs purchased
- The number of bulbs distributed (e.g., given out at an event, coupon program, retail markdown program, direct mail etc.)
- Alternate method of distribution (e.g., high bill complaints, over-the-counter, etc.)

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$2.50 per CFL.

ENERGY STAR CFLs – Specialty bulbs

Requirements and Specifications

Each installed CFL must be ENERGY STAR-rated. Specialty CFLs are defined as screw-in CFLs including: A-lamps, candelabras, G-lamps (globe), reflectors, torpedoes, dimmables, three-way bulbs and twistlers greater than 25 watt.

Additional Documentation Requirements

The following must be maintained as documentation for these measures:

- Vendor invoice with the number, type and wattage of bulbs purchased
- The number of bulbs distributed (e.g., given out at an event, direct mail, etc.)
- Alternate method of distribution (e.g., high bill complaints, over-the-counter, etc.)

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$4.00 per CFL.

ENERGY STAR CFLs – Documented Direct-installed CFLs - Twistlers

Requirements and Specifications

Each installed CFL must be ENERGY STAR-rated and wattage must be more than five watts.

Direct-installed is defined as bulbs that are visually confirmed as installed in sockets in residences within the customer's service territory. This requires that bulbs are either physically installed, or witnessed at the time of installation by a customer program employee or an agent/contractor acting under a signed agreement for the customer, or documented with a visual inspection after installation.

Note: ENERGY STAR New Homes (electric) may qualify for this measure for lighting measures installed above the ENERGY STAR Homes requirement. ENERGY STAR New Homes (gas) may utilize this measure if they meet the documentation requirements included below.

Additional Documentation Requirements

The following must be maintained as documentation for these measures:

- Vendor invoice with the number, type and wattage of bulbs purchased
- Manufacturer and documentation that CFL is ENERGY STAR qualified
- Documentation of direct-installation including: residential address, type, wattage, and number of bulbs installed, name/agent responsible for installing bulbs or inspection.

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$4.00 per CFL for qualified ENERGY STAR Direct-Installed CFLs-Twister.

ENERGY STAR CFLs – Documented Direct-Installed CFLs - Specialty

Requirements and Specifications

Each installed CFL must be ENERGY STAR-rated and meet the definition of Specialty CFL.

Specialty CFLs are defined as screw-in CFLs including: A-lamps, candelabras, G-lamps (globe), reflectors, torpedoes, dimmables, three-way bulbs and twisters greater than 25 watt.

Direct-installed is defined as bulbs that are visually confirmed as installed in sockets in residences within the customer's service territory. This requires that bulbs are either physically installed, or witnessed at the time of installation by a customer program employee or an agent/contractor acting under a signed agreement for the customer, or documented with a visual inspection after installation.

Note: ENERGY STAR New Homes (electric) may qualify for this measure for lighting measures installed above the ENERGY STAR Homes requirement. ENERGY STAR New Homes (gas) may utilize this measure if they meet the documentation requirements included below.

Additional Documentation Requirements

The following must be maintained as documentation for these measures:

- Vendor invoice with the number, type and wattage of bulbs purchased
- Manufacturer and documentation that CFL is ENERGY STAR qualified
- Documentation of direct-installation including: residential address, type, wattage, and number of bulbs installed, name/agent responsible for installing bulbs or inspection.

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$5.50 per CFL for qualified ENERGY STAR Direct-Installed CFLs-Specialty.

ENERGY STAR Lighting Fixtures

Requirements and Specifications

Lighting fixture must be ENERGY STAR qualified.

Additional Documentation Requirements

- Copy of purchase receipt/invoice
- Manufacturer
- Model number or other documentation that the fixture is an ENERGY STAR qualified lighting fixture.

Individual lighting fixture incentive applications (end-user with incentive form or coupon): To reduce the need to look up every fixture on the ENERGY STAR Web site, a customer may also meet this requirement by having consumers submit the ENERGY STAR logo from the lighting fixture box, or product information insert that includes the ENERGY STAR logo. Submissions without this documentation will still need to be confirmed using the ENERGY STAR product list available at www.ENERGYSTAR.gov.

Customers may elect to provide a coupon to their end-users to assist in the documentation process. Sales of qualified fixtures using the customer-supplied coupon may be documented by having the participating store provide a store sales report detailing the manufacturer, model number and date of each sale generated by the coupon. These reports will be considered the purchase receipt/invoice and should be maintained on file at the customer's place of business.

In-store markdown of qualified ENERGY STAR lighting fixtures: Fixtures to be included in an in-store markdown or promotion should be confirmed, in advance, as ENERGY STAR qualified. Sales of qualified fixtures via a markdown promotion should be documented by having the participating store(s) provide a store sales report detailing the manufacturer, model number and date of each sale generated by the promotion. These store sales reports will be considered the purchase receipt/invoice and should be maintained on file at the customer's place of business.

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$10 per fixture for ENERGY STAR qualified lighting fixtures.

Line-Voltage Thermostats

Requirements and Specifications

This measure applies to replacement of bi-metal line voltage thermostats in existing single family homes with line-voltage electronic thermostats. All existing thermostats, except those in bathrooms, must be replaced with

thermostats in accordance with the most recent version of the “Electronic Thermostat Specifications,” which are available in the PTR system.

Additional Documentation Requirements

- Statement noting that all thermostats (except those located in bathrooms) have been replaced
- Invoice for thermostats
- Model number(s) of thermostat(s)

Reimbursement Strategies and Levels

BPA will provide reimbursements per home as listed in Table R-8 below.

Table R-8: Reimbursements for Line Voltage Electronic Thermostats per Home

HZ 1	\$115
HZ 2	\$160
HZ 3	\$160

New Construction

New ENERGY STAR Manufactured Homes

Requirements and Specifications

BPA will reimburse customers for energy-efficient upgrades to new electrically-heated manufactured homes on the condition that residences have been designed, constructed and certified by the Northwest Energy Efficient Manufactured (NEEM) Homes program as ENERGY STAR.

NEEM has an online tracking and certification system. Contact the NEEM Regional Program Lead at (503) 373-7875 for access to this online tracking system.

For questions about your state’s NEEM program contact NEEM program staff:

Washington: Andy Gordon (360) 956-2046

Idaho: Tim O’Leary (208) 287-4902

Montana: Paul Tschida (406) 841-5232

Oregon: Tom Hewes (503) 373-7875 or 800-221-8035 (toll-free within Oregon)

Other deemed measures eligible to be added to ENERGY STAR Manufactured Homes include the following:

- PTCS Air-Source Heat Pumps Conversion measure (bundled)
- PTCS Air-Source Heat Pump Upgrade measure (bundled)
- PTCS Commissioning and Controls on a code minimum air source heat pump
- PTCS Duct Sealing, if pretest demonstrates ducts need sealing

- ENERGY STAR lighting fixtures or CFLs
- ENERGY STAR clothes washers, ENERGY STAR freezers and ENERGY STAR refrigerators

Additional Documentation Requirements

- Installation address
- Copy of Certificate of Compliance

Reimbursement Strategies and Levels

BPA will provide a reimbursement as shown in Table R-9 below.

Table R-9: Reimbursements for ENERGY STAR Manufactured Homes

Heating Zone 1	\$ 850
Heating Zone 2	\$1,150
Heating Zone 3	\$1,450

New ENERGY STAR Site-Built Homes

Requirements and Specifications

BPA will accept claims for CRC credit or CAA invoices for new electrically-heated homes certified to be in compliance with the ENERGY STAR Homes Northwest standards by the state certifying organization. Information regarding the ENERGY STAR Homes Northwest Program is available at www.northwestenergystar.com.

Gas-heated ENERGY STAR homes do not qualify for BPA reimbursements under New Construction, however, reimbursements for electric appliances and lighting may be claimed in gas heated homes.

Notes:

- BPA will accept claims for homes built to ENERGY STAR Homes Northwest standards:
 - Builder Option Package (BOP) #1 if a heat pump is installed or for
 - Builder Option Package (BOP) #2 (zonal electric heat)
- BPA will accept claims for homes built to ENERGY STAR Homes Northwest standards using one of several approved technical compliance options. The qualifying and non-qualifying Technical Compliance Options (TCOs) are listed in Table R-10 below. More information is available at the Energy Star Homes Northwest website, listed below.

<http://www.northwestenergystar.com/partner-resources/index.html>

Table R-10: ENERGY STAR Homes Northwest – Approved Technical Compliance Options Register

Technical Compliance Option	Option Type & BPA Credit Qualification	Does Not Qualify for BPA Credit	General Description
TCO #1: Perimeter Insulated Crawlspace	Component Trade-Off Qualifies for BPA credit if heat pump is installed in home east of the Cascades		Perimeter insulated crawlspaces are specified with a package of measures as an option (in selected climate zones) to the BOP insulated floor.
TCO #2	No longer available	No longer available	
TCO #3: Advanced Lighting Package	Component Trade-Off Qualifies for BPA credit in home with heat pump or zonal electric heat		EPA's Advanced Lighting Package using efficient fixtures in targeted locations is an option to the BOP requirement (50 percent of sockets).
TCO #4: Natural Gas Fired Hydronic Heating		Component Trade-Off does not qualify for BPA credit.	Alternative heating system source and distribution measures using natural gas fired boilers or integrated water heating systems
TCO #5: Electric Fired Hydronic Heating	Component Trade-Off Qualifies for BPA credit as zonal electric heat		Alternative heating system source and distribution measures using electric fired boilers or integrated water heating systems
TCO #6: U-Value Equivalency NWBOP 1	Component Trade-Off Qualifies for BPA credit if electric energy savings are maintained or improved via component substitutions		Spreadsheet driven Ua/Uo calculator with component library and prototype weightings - allows SCOs (only) to review proposed measure trade-offs and approve "equivalent" component substitutions within BOP 1
TCO #7: U-Value Equivalency NWBOP 2	Component Trade-Off Qualifies for BPA credit if electric energy savings are maintained or improved via component substitutions		Spreadsheet driven Ua/Uo calculator with component library and prototype weightings -allows SCOs (only) to review proposed measure trade-offs and approve "equivalent" component substitutions within BOP 2
TCO #8: Improved Ua for DHW EF		Component Trade-Off Does not qualify for BPA credit	Substitutes improved Ua features (R-49 adv. attics and R-21 adv. wall) for reduced gas water heater efficiency
TCO #9: 0.74 AFUE gas fireplace with electric zonal back up		Component Trade-Off Does not qualify for BPA credit	Allows a gas unit heater (ductless) such as a fireplace in combination with electric resistance zonal (ductless) as the heating source within a BOP 1 home

Technical Compliance Option	Option Type & BPA Credit Qualification	Does Not Qualify for BPA Credit	General Description
TCO #10: mini split heat pump with electric zonal back up	Component Trade-Off Qualifies for BPA credit as heat pump with ducts inside		Allows a ductless-split heat pump in combination with electric resistance zonal (ductless) as the heating source within a BOP 1 home
TCO #11: 90 AFUE propane furnace substitute for 80 AFUE		Component Trade-Off Does not qualify for BPA credit	Substitute a 90 AFUE propane furnace for a 90 AFUE gas furnace. This substitution will allow the home to qualify if all other components of the home meet the BOP 1 requirements. Propane water heater may also be substituted for gas at the required efficiency levels.
TCO #12: HSPF 8.3 heat pump coupled to a 90 AFUE gas furnace		Component Trade-Off Does not qualify for BPA credit, electric energy savings not maintained	Allow a HSPF 8.3 heat pump when coupled to a 90 AFUE gas furnace backup that provides all heating at temperatures below 40 degrees F as a trade-off option in BOP 1.
TCO #13: Cathedral Attic	Additional BOP Qualifies for BPA credit if heat pump is installed		This TCO only applies to ENERGY STAR homes in Montana or Idaho. Attic ceiling shall be insulated with R-33 foam applied in place. All other BOP 1 requirements still apply.
TCO # 14: Lighting Power Density/Watts per square feet	Additional BOP Qualifies for BPA credit a heat pump or zonal electric heat		Fifty percent CFL sockets are not required to qualify lighting if homes lighting requirements are met w/ 1.1 watts per square feet or less. Lighting spreadsheet required.
TCO # 15: Conditioned Crawlspace	Additional BOP Qualifies for BPA credit if heat pump is installed		This TCO only applies to ENERGY STAR homes built east of the Cascades. Crawlspace is sealed and insulated using perimeter insulation in place of floor insulation. Wall and ceiling insulation improvements are required.

Deemed measures eligible to be added to an ENERGY STAR site-built home include the following:

- ENERGY STAR lighting measures above what the ENERGY STAR homes measure requires
- ENERGY STAR clothes washers, ENERGY STAR refrigerators, ENERGY STAR freezers
- Gravity film heat exchangers (GFX)

Additional Documentation Requirements

- Installation address
- Copy of the certification label provided by the state certifying organization (SCO) which includes the name of the certifier for each ENERGY STAR home

Reimbursement Strategies and Levels

New electrically-heated ENERGY STAR site-built homes are cost-effective in all climate zones with air source heat pumps or zonal electric systems. BPA will provide reimbursements as shown in Table R-11.

Table R-11a: ENERGY STAR Site-Built Homes Reimbursements for Homes built to BOP #1, with a Heat Pump or an Approved TCO

Heating/ Cooling Zone	Ducts Outside where Duct Sealing is required (i.e., outside the heat envelope, such as an unheated crawlspace or attic)	Ducts Inside where Duct Sealing is not required (i.e., homes with a basement)
HZ1/CZ1	\$1,140	\$ 600
HZ1/CZ2	\$1,180	\$ 600
HZ1/CZ3	\$1,250	\$ 600
HZ2/CZ1	\$1,800	\$ 850
HZ2/CZ2	\$2,000	\$ 850
HZ2/CZ3	\$2,100	\$ 850
HZ3/CZ1	\$2,600	\$1,020
HZ3/CZ2	\$2,700	\$1,020
HZ3/CZ3	\$2,800	\$1,020

Table R-11b: ENERGY STAR Site-Built Homes Reimbursements for Homes built to BOP #2, with Zonal Electric Heat

Heating Zone 1	\$1,170
Heating Zone 2	\$1,400
Heating Zone 3	\$1,400

New Homes Built to the Montana House Specifications

Requirements and Specifications

BPA will accept claims for CRC credit or CAA invoices for new electrically-heated homes certified to be in compliance with the Montana House Specifications by

the local electric utility. The Montana House Specifications can be found in the PTR system. Currently this measure is eligible only for homes built in Montana.

Deemed measures eligible to be added to a Montana House site-built home include the following:

- ENERGY STAR lighting measures above what the Montana House specifications requires
- ENERGY STAR clothes washers, ENERGY STAR refrigerators, ENERGY STAR freezers
- Gravity film heat exchangers (GFX)

Additional Documentation Requirements

- Builder information (name and contact information).
- House information (including):
 - Installation address
 - Foundation type
 - Square footage of home
 - Heating system equipment type (zonal, FAF, HP)
 - Type of ventilation system installed including rated CFM, etc.
 - Reports of inspections performed by the customer, including any substantial findings and documentation of any corrective actions taken

Air Source Heat Pumps shall meet all PTCS documentation requirements.

Reimbursement Strategies and Levels

BPA will provide reimbursement for the Montana House as indicated below. Heat Pump, Duct Sealing and Commissioning & Control reimbursements can be combined with the Shell Upgrade reimbursement.

Measure	Proposed Credit
Shell Upgrades Only	\$1,500
Air Source Heat Pump	\$300
Duct Sealing (prescriptive)	\$300
Commissioning & Controls (utility verified)	\$200

Summary of Montana House New Construction - Prescriptive Component Requirements

Insulation			
Ceiling		R-49 Adv.	Flat or vaulted.
Wall (above grade)		R-21 Int. + R-5 foam	
Floors over Unconditioned Space		R-38	Insulation in floor joist cavity.
Slab Floors	Unheated	R-10 Full Slab + R-5 Thermal Break	Applies to all concrete slab floors above or below grade. Minimum R-5 thermal break required between slab edge and all walls and footings.
	Heated Radiant	R-15 Perimeter, R-10 Remaining Slab + R-5 Thermal Break	Applies to all concrete slab floors above or below grade. Perimeter insulation shall be installed for a distance of 4 feet vertical, horizontal, or combined distance. Minimum R-5 thermal break required between slab edge and all walls and footings.
Basement Wall		R-21	Below grade walls can extend up to 24 inches above grade.
Sealed Crawlspace Wall		R-21	The crawlspace wall shall be sealed and mechanical ventilation shall be provided. Sealed crawlspaces shall be considered conditioned space.
Windows & Doors			
Glazing	Windows	≤ U-0.32	NFRC rated: Up to 1% of heated floor area exempt.
	Skylights	≤ U-0.50	Skylight area shall not exceed 5% of heated floor area.
	Max. Glazing Area	21% of Heated Floor Area	Combined window and skylight area.
Exterior Doors		≤ U-0.16	One door up to 28 ft ² exempt.
Ducts in Unconditioned Space			
Insulation	Rigid	R-11	
	Flexible	R-8	
Sealing		Mastic	Cloth duct tapes not allowed.
Max. Leakage		Not tested	
Ventilation & Air Sealing			
Ventilation System		Whole-House	Mechanical ventilation system required.
Envelope Tightness		6.0 ACH @ 50Pa	Utility to test 10% of homes
Heating & Cooling Equipment			
Heat Pump		8.5 HSPF/SEER 13	Installed according to Montana House New Construction specifications for sizing and controls.
Air Conditioner		SEER 13	
Zonal Electric			Electronic thermostat required.
Forced Air Electric			Energy Star programmable thermostat required.
Water Heating			
Electric Water Heaters	≤ 39 gallons		Energy Factor ≥ 0.96
	40 to 49 gallons		Energy Factor ≥ 0.94
	50 to 64 gallons		Energy Factor ≥ 0.93
	≥ 65 gallons		Energy Factor ≥ 0.91
Appliances & Lighting			
Appliances		ENERGY STAR qualified	Applies to built-in appliances only.
Lighting		ENERGY STAR qualified	A minimum of 50% of sockets to be either ENERGY STAR bulbs, fixtures, or both.

New Multifamily Construction

Requirements and Specifications

New multifamily construction of five or more units and three stories or less can be made more efficient than code or standard practice. Projects meeting the latest version of the RTF "Multifamily New Construction Low Rise Technical Specifications" (available in the PTR system) will be reimbursed on a per unit basis as outlined in table R-5.

Deemed measures eligible to be added to MF homes include: ENERGY STAR lighting measures, ENERGY STAR clothes washers, ENERGY STAR refrigerators, ENERGY STAR freezers, ENERGY STAR dishwashers and cost-effective gravity film heat exchangers (GFX).

Projects not meeting the prescriptive specifications that qualify as being above code or standard practice efficiency must be reviewed and approved by BPA as Custom Projects. The amount and type of measurement and verification (M&V) required will be determined by the BPA reviewing engineer but is not expected to be complex.

MF housing above three stories is considered commercial construction and submitted for new construction incentives and BPA pre-approval under the commercial sector. Table R-12 summarizes the required prescriptive path for compliance with the MF New Construction Low Rise Specifications.

Table R-12: MF New Construction Specifications – Summary 1

Component		Zone 1 (<6,000 HDD)	Zone 2 (6,000-7,500 HDD)	Zone 3 (>7,500 HDD)
Ceilings ²	Attic	R-38 Std.	R-38 Std.	R-38 Std.
	Vaults	R-30	R-30	R-30
Walls ²	Above Grade	R-21, Inter.	R-21, Inter.	R-21, Inter.
	Below Grade Inter. w/R-5 thermal break ⁴	R-21	R-21	R-21
Floors	Over Crawlspace and Unheated Basements	R-30	R-30	R-30
	Slab-on-Grade Perimeter	R-15	R-15	R-15
Glazing ³	Maximum NFRC rated U-value	U-0.30	U-0.30	U-0.30
Exterior Doors		U-0.19	U-0.19	U-0.19
Duct Insulation	Rigid	R-11	R-11	R-11
	Flexible	R-8	R-8	R-8
Water Heaters		See Specification		
Mechanical ventilation and pollutant source control in all climate zones.				

¹ This table presents a summary of the requirements - the RTF's Multifamily New Construction Specifications shall be followed.

² Inter. indicates intermediate framing techniques

³ An area weighted U-factor for windows which meets the component requirement of this table is acceptable.

⁴ A thermal break having a minimum value of R-5 is required between slab floors and all walls and footings.

Additional Documentation Requirements

- Installation address
- Copy of the certification label provided by the state certifying organization which includes the name of the certifier

Reimbursement Strategies and Levels

Consistent with MH and single family (SF) homes, \$0.30 per kWh will be the applicable reimbursement level (with a cap of 70 percent of the incremental energy related measure costs). A summary of reimbursements for MF New Construction is included in Table R-13 below.

Table R-13: Reimbursements for MF New Construction

Heating Zone 1	\$80 per unit
Heating Zone 2	\$115 per unit
Heating Zone 3	\$140 per unit

Showerheads (2.0 GPM)

Requirements and Specifications

This measure is available for all types of residential buildings (multifamily, single family and manufactured homes). The hot water in the house must be heated by an electric water heater. Showerheads must adhere to the requirements stated in the PTR system.

Additional Documentation Requirements

The customer must provide proof of end-user request for the showerhead, or documentation of directly-installed showerhead.

Reimbursement Strategies and Levels

BPA will provide reimbursements of \$12 per showerhead, with a limit of two showerheads per residence.

Showerheads (2.5 GPM) and Aerators for Multifamily

Requirements and Specifications

This measure is only available for multifamily residential buildings. The hot water in the house must be heated by an electric water heater. The pre-existing showerhead(s) must have a tested flow rate of at least 3.0 gallons per minute (gpm). The replacement showerhead(s) must have a tested flow rate of 2.5 gpm or less. Showerheads must be installed by customer staff or a customer contractor.

Additional Documentation Requirements

No additional requirements.

Reimbursement Strategies and Levels

BPA will provide reimbursements of \$12 per MF living unit with electrically-heated water if all showerheads and at least the kitchen faucet have low-flow showerheads and aerators installed.

Weatherization (standard income)

Weatherization measures include insulation, windows and air sealing.

BPA will accept claims for CRC credit or CAA invoices for weatherization of existing single family, multifamily and manufactured homes only on the condition that these residences have been retrofitted in compliance with the most recent site-built weatherization specifications or mobile home weatherization specifications, which are available in the PTR system, under Downloads.

Insulation

Requirements and Specifications

Insulation measures must follow the latest version of the "Weatherization Specifications" found in the PTR system. Insulation for specific types of residences is discussed below.

Additional Documentation Requirements

- Installation address
- Audit or field notes detailing pre- and post conditions
- Invoices for measures installed
- Documentation of square feet of insulation and R-value of insulation

Reimbursement Strategies and Levels

BPA will provide reimbursements based on \$0.30 per kWh X the estimated savings at the busbar (as found in the PTR system).

Reimbursements and busbar savings for specific measures can be found in the PTR system.

Reimbursement is based on square footage of insulation installed.

Insulation – Single Family (SF)

Most insulation measures are cost-effective in all heating and cooling zone combinations. Effective April 1, 2009, R-49 attic insulation was deemed cost effective in Heating Zone 3. Single family measures and pre-condition requirements are listed below. Single family is defined as four units or less.

Attic Insulation (SF):

- R-0 to R-19: Existing attic insulation must be less than R-11.

- R-0 to R-38: Existing attic insulation must be less than R-11.
- R-0 to R-49: Existing attic insulation must be less than R-11.
- R-19 to R-38: Existing attic insulation must be greater than R-11 and less than or equal to R-19.
- R-19 to R-49: Existing attic insulation must be greater than R-11 and less than or equal to R-19.
- R-38 to R-49: Existing attic insulation must be greater than R-19 and less than or equal to R-38 (applies to HZ3 only).

Wall Insulation (SF):

- No existing wall insulation may be present.

Floor Insulation (SF):

- R-0 to R-19: Existing floor insulation must be less than R-11.
- R-0 to R-38: Existing floor insulation must be less than R-11
- R-19 to R-38: Existing floor insulation must be greater than R-11 and less than or equal to R-19.

Insulation – Multifamily (MF)

Multifamily (low rise) is defined as more than four units, less than four stories. Multifamily buildings more than three stories high are considered commercial construction.

Attic Insulation (MF):

- R-0 to R-19: Existing attic insulation must be less than R-11
- R-0 to R-38: Existing attic insulation must be less than R-11.
- R-19 to R-38: Existing attic insulation must be greater than R-11 and less than or equal to R-19.

Wall Insulation (MF):

- No existing wall insulation may be present.

Floor Insulation (MF):

- R-0 to R-19: Existing floor insulation must be less than R-11
- R-0 to R-30: Existing floor insulation must be less than R-11.
- R-19 to R-30: Existing floor insulation must be greater than R-11 and less than or equal to R-19.

Insulation – Manufactured Homes (MH)

Attic Insulation (MH):

- R-0 to R-19: Existing attic insulation must be less than R-11.

- R-0 to R-30: Existing attic insulation must be less than R-11. (This measure is not cost-effective in Heating Zone 1; no credit is provided in this situation.)
- R-19 to R-30: Existing attic insulation must be greater than R-11 and less than or equal to R-19. (This measure is not cost-effective in Heating Zone 1 or 2; no credit is provided in these situations.)

Floor Insulation (MH):

- R-0 to R-11: Existing floor insulation must be less than R-11.

Prime Window Replacement

Requirements and Specifications

Window measures must follow the latest version of the "Prime Window Replacement" specifications found in the PTR system.

Existing windows must be single pane, single pane with storms, or dual pane with metal frames. Prime windows must meet ENERGY STAR specifications and have a U-factor of 0.30 or lower.

Additional Documentation Requirements

- Installation address
- Audit or field notes detailing pre- and post conditions
- Invoices for windows installed
- Documentation of total square footage of windows replaced, documentation of U-factor (NFRC stickers or other verification of U-factor)

Reimbursement Strategies and Levels

BPA will provide a reimbursement of \$6 per square foot of glazing area of qualified windows replaced.

The BPA credit for this measure is based on the incremental improvement in performance from the pre-existing window to an ENERGY STAR window with a U-factor of 0.30 or less.

Air Sealing

Requirements and Specifications

- Air-sealing measures must follow the latest version of the "Air Sealing" specifications found in the PTR system.
- If combustion appliances are present (fireplace, wood or gas stove, gas range, gas water heater, etc.) a UL or CUL approved carbon monoxide detector shall be installed.

- Mechanical Ventilation may be required, see section two of the Air Sealing specifications found in the PTR system.
- If PTCS Duct Sealing is performed at the same time as the air sealing measure, the PTCS Total Leakage to Outside Post test will be the baseline for the air sealing measure.

Additional Documentation Requirements

- Invoice for measures installed, with installation address
- Audit or field notes detailing
 - Pre- and post-conditions (ACH @ 50 and ACH @ natural)
 - Total square footage of the pressure zone being tested and sealed (typically this is the interior floor area of the home)
 - Building Volume
 - Final ACH natural and notes on mechanical ventilation requirement

Reimbursement Strategies and Levels

BPA will provide reimbursements based on the total square floor area of the pressure zone being tested and sealed times the reduction in air infiltration per 0.1 ACH natural. Reimbursements and busbar savings can be found in the PTR system. The calculation of reimbursement is

Square feet x (ACH natural / .1) x credit.

This calculation is performed in the “add to cart” page in the PTR system.

Note: Converting CFM50 to ACH natural.

Building Volume (BV) = Area treated in square feet X Ceiling height

ACH50 = (CFM50 X 60)/BV

ACH natural = ACH50/20

Total Credit = ((Pre ACH natural minus Post ACH natural) divided by 0.1) times credit in PTR system.

Low Income Weatherization

Low-income weatherization measures include air sealing, insulation, PTCS Duct Sealing and windows.

Because customers that provide funding for low-income programs to Low-Income Weatherization Service Providers (LIWSP) must ensure that the measures are cost-effective and qualifying, BPA has attached a simple list of the measures that are qualifying.

Customers can provide funds to state/LIWSP/tribal organizations and receive credit on a dollar-for-dollar basis, with the exception of low-income prime window replacements in which the reimbursement is up to \$20 per square foot not to exceed 100 percent of the actual cost.

Under a separate BPA program, BPA will directly fund low-income weatherization through the existing state/LIWSP/tribal infrastructure at a level of up to \$5 million per year for the FY 2007 to 2009 Rate Period.

Requirements and Specifications

CRC funds can only be used to install eligible measures, in electrically-heated homes in the customer's service territory. Eligible measures are those that the RTF has defined as Total Resource Cost (TRC) cost-effective that are also approved by BPA. The CRC has a defined list of eligible measures that might be different than the list of eligible measures defined by the Department of Energy's Savings to Investment Ratio (SIR) method.

Alternatively, customers can run their own low-income weatherization program and will be credited on the same dollar-for-dollar basis as funding provided to LIWSPs. Customers choosing to run their own low-income weatherization program should be in substantial compliance with programs currently funded by BPA grants for the U.S. Department of Energy Low-Income Weatherization Program.

The following conditions apply to all low-income weatherization programs:

- Customers should have a written agreement with the LIWSP outlining terms and conditions and reporting requirements.
- CRC funds may be used to do repair work directly associated with installation of cost-effective weatherization measures.
- CRC funds and BPA funds provided to state/LIWSP/tribal organizations cannot be co-mingled for the same measure.
- Low-income activity qualifies for the performance payment, regardless of whether a customer provides funds to a LIWSP or runs its own program.
- Eligible measures will be reported in the PTR system. The customer will be required to enter the square footage data on a measure basis. Data on a house-by-house basis is not required in the PTR system; however, house-by-house data must be maintained in customer records.
- Oversight:
 - Customers need to provide an appropriate level of oversight to ensure that CRC funds provided to LIWSPs are used only to install eligible measures.
 - Customers and LIWSPs should expect the same level of oversight and diligence from BPA on low-income weatherization claims as they would expect for other reported activity in the CRC.

Additional Documentation Requirements

- Documentation detailing cost of installed measures
- Documentation of the weatherization measures installed (e.g., square feet of insulation, r-value, U-value, NRFC stickers)

Reimbursement Strategies and Levels

BPA offers a dollar-per-dollar reimbursement for cost-effective retrofit air sealing, insulation and duct sealing measures that are on the RTF list. Deemed savings and reimbursement levels for the measures listed in table R-14 are provided in the PTR system.

BPA also offers a dollar-per-dollar reimbursement for qualifying cost-effective low-income prime window replacement not to exceed 100 percent of actual cost or \$20 per square foot of glazing replaced, whichever is less. Eligible window conditions are outlined in table R-15. Deemed savings and reimbursement levels for qualifying windows is included in table R-16 and provided in the PTR system.

All costs directly attributable to the installation of the conservation measure are eligible for dollar-for-dollar reimbursement. This includes costs associated with low-income weatherization projects necessary to protect the integrity of the conservation measure including, but not limited to, the following:

- Manufactured Home EPDM roofing membrane over rigid insulation
- Attic and crawl space ventilation
- Under-floor moisture barrier
- Insulation of exposed water lines

Table R-14: Low Income Weatherization List

BPA designates measures eligible under the Low Income Weatherization provisions of the Conservation Rate Credit \$ for \$ credit. Customers are also directed to inform the state/CAP agencies/tribal organizations that receive CRC funds, that CRC funds can only be spent on measures that are listed as qualifying measures.	
Shaded Measures Do Not Qualify for Low Income Weatherization Measure credit.	
Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Single Family Wx (All Heating Zones)	
Single Family Weatherization - Infiltration Control (Cost and Savings per square feet of floor area for each 0.1 ach reduction)	Qualifies
Single Family Weatherization - R0 to R19 Attic Insulation (Cost and Savings are per square feet of attic area insulated)	Qualifies
Single Family Weatherization - R19 to R38 Attic Insulation (Cost and Savings are per square feet of attic area insulated)	Qualifies
Single Family Weatherization - R0 to R19 Attic Insulation (HZ3 only)	Qualifies
Single Family Weatherization - R19 to R38 Attic Insulation ((HZ3 only)	Qualifies
Single Family Weatherization – R38to R49Attic Insulation ((HZ3 only)	Qualifies
Single Family Weatherization - R0 to R19 Floor Insulation (Cost and Savings are per square feet of floor area insulated)	Qualifies
Single Family Weatherization - R19 to R30 Floor Insulation (Cost and Savings are per square feet of floor area insulated)	Qualifies
Single Family Weatherization - R0 to R11 Wall Insulation (Cost and Savings are per square feet of wall area insulated)	Qualifies
Multifamily Wx (All Heating Zones)	Qualifies
Multifamily Weatherization - R0 - R19 Attic insulation (Cost & Savings are per square foot of attic area insulated)	Qualifies
Multifamily Weatherization - R19 - R38 Attic insulation (Cost & Savings are per square foot of attic area insulated)	Qualifies
Multifamily Weatherization - R0 - R19 Floor insulation (Cost & Savings are per square foot of floor area insulated)	Qualifies
Multifamily Weatherization - R19 - R30 Floor insulation (Cost & Savings are per square foot of floor area insulated)	Qualifies
Multifamily Weatherization - R0 - R11 Wall Insulation (Cost & Savings are per square foot of area insulated)	Qualifies
Multifamily Weatherization - Infiltration Control	Does Not Qualify

Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Manufactured Home Wx	
HZ1	
Manufactured Home Weatherization - Infiltration Control (Cost and savings are per square foot of floor area per 0.1 air change per hour infiltration rate reduction) - Heating Zone 1	Qualifies
Manufactured Home Weatherization - Attic Insulation R0 to R19 (Cost and savings are per square foot of attic insulated) - Heating Zone 1	Qualifies
Manufactured Home Weatherization - Attic Insulation R19 to R30 (Cost and savings are per square foot of attic insulated) - Heating Zone 1	Does Not Qualify
Manufactured Home Weatherization - Floor Insulation R0 to R11 (Cost and savings are per square foot of floor insulated) - Heating Zone 1	Qualifies
Manufactured Home Weatherization - Floor Insulation R11 to R22 (Cost and savings are per square foot of floor insulated) - Heating Zone 1	Does Not Qualify
HZ2	
Manufactured Home Weatherization - Infiltration Control (Cost and savings are per square foot of floor area per 0.1 air change per hour infiltration rate reduction) - Heating Zone 2	Qualifies
Manufactured Home Weatherization - Attic Insulation R0 to R19 (Cost and savings are per square foot of attic insulated) - Heating Zone 2	Qualifies
Manufactured Home Weatherization - Attic Insulation R19 to R30 (Cost and savings are per square foot of attic insulated) - Heating Zone 2	Does Not Qualify
Manufactured Home Weatherization - Floor Insulation R0 to R11 (Cost and savings are per square foot of floor insulated) - Heating Zone 2	Qualifies
Manufactured Home Weatherization - Floor Insulation R11 to R22 (Cost and savings are per square foot of floor insulated) - Heating Zone 2	Does Not Qualify
HZ3	
Manufactured Home Weatherization - Infiltration Control (Cost and savings are per square foot of floor area per 0.1 air change per hour infiltration rate reduction) - Heating Zone 3	Qualifies
Manufactured Home Weatherization - Attic Insulation R0 to R19 (Cost and savings are per square foot of attic insulated) - Heating Zone 3	Qualifies
Manufactured Home Weatherization - Attic Insulation R19 to R30 (Cost and savings are per square foot of attic insulated) - Heating Zone 3	Qualifies

Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Manufactured Home Weatherization - Floor Insulation R0 to R11 (Cost and savings are per square foot of floor insulated) - Heating Zone 3	Qualifies
Manufactured Home Weatherization - Floor Insulation R11 to R22 (Cost and savings are per square foot of floor insulated) - Heating Zone 3	Qualifies
PTCS Duct Sealing	
Gas Heated Homes - Cooling Only (All Cooling Zones)	
Manufactured Home w/o Electric Heat, w/ CAC - PTCS Duct Sealing	Does Not Qualify
Manufactured Home Natural Choice, w/ CAC - PTCS Duct Sealing	Does Not Qualify
Single Family w/o Electric Heat w/ CAC - PTCS Duct Sealing	Does Not Qualify
Electrically Heated Homes (Single Family and Manufactured Homes)	
H1	
Manufactured Home Non-SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 1	Qualifies
Manufactured Home SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 1	Qualifies
Single Family Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 1	Qualifies
H1C1	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 1	Qualifies
H1C2	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies

Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 2	Qualifies
H1C3	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 1 - Cool Zone 3	Qualifies
H2	
Manufactured Home Non-SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 2	Qualifies
Manufactured Home SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 2	Qualifies
Single Family Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 2	Qualifies
H2C1	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 1	Qualifies
H2C2	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies

Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 2	Qualifies
H2C3	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 2 - Cool Zone 3	Qualifies
H3	
Manufactured Home Non-SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 3	Qualifies
Manufactured Home SGC Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 3	Qualifies
Single Family Forced Air Furnace w/o CAC - PTCS Duct Sealing Heat Zone 3	Qualifies
H3C1	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 1	Qualifies
H3C2	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies

Technology, Measure or Practice	"Qualifies" or "Does Not Qualify"
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 2	Qualifies
H3C3	
Manufactured Home Non-SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies
Manufactured Home Non-SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies
Manufactured Home SGC Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies
Manufactured Home SGC Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies
Single Family Forced Air Furnace w/ CAC - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies
Single Family Heat Pump - PTCS Duct Sealing Heat Zone 3 - Cool Zone 3	Qualifies

Low-Income Window Replacement

Requirements and Specifications

Existing single pane windows with storm windows may be considered single pane windows for the purpose of determining eligibility. Overall, the replacement windows must have a weighted average value of $U=0.30$ or less.

Additional Documentation Requirements

- Invoice, including installation address number of windows and total square footage replaced
- National Fenestration Rating Council (NFRC) sticker or equivalent
- Description of home (stick built or manufactured)
- Description of original window and frame type

Reimbursement Strategies and Levels

BPA offers a dollar-per-dollar reimbursement not to exceed \$20 per square foot of glazing area of qualified windows replaced.

Table R-16: Low-Income Prime Window Replacement List

Measure	Building Type	Delivery Mechanism or Program	Annual Savings @ Busbar (kWh/yr)	Reimbursement
Heating Zone 1				
Single Family Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	27	Up to \$20
Single Family Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	19	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	15	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	11	Up to \$20
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	24	Up to \$20
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	17	Up to \$20
Heating Zone 2				
Single Family Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	35	Up to \$20
Single Family Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	25	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	25	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	18	Up to \$20

Measure	Building Type	Delivery Mechanism or Program	Annual Savings @ Busbar (kWh/yr)	Reimbursement
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	33	Up to \$20
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	23	Up to \$20
Heating Zone 3				
Single Family Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	42	Up to \$20
Single Family Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Single Family	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	29	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	29	Up to \$20
Multifamily Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Multifamily	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	21	Up to \$20
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Single Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single pane with wood or metal frame.	39	Up to \$20
Manufactured Home Low-Income Class 30 Prime Replacement Windows - Double Pane Base	Manufactured Home	Prime windows must have an NFRC rated U-factor of 0.30 or lower. Patio doors must have an NFRC rated U-factor of 0.35 or lower. Existing window must be single or double pane with wood or metal frame.	28	Up to \$20

9. Renewables Option

This section contains information about the Renewables Option (RO) of the Conservation Rate Credit.

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Renewables Definition

Energy produced from a resource that is renewable, such as:

- Biogas
- Biomass
- Geothermal
- Hydroelectric
- Landfill Gas
- Ocean
- Solar
- Wind

Renewables Option

Criteria for Renewable Energy Resources Eligible for the Renewables Option (RO) of the Conservation Rate Credit

9.1 Purpose and Scope

The purpose of this section is to explain the procedures for implementing the RO.

Many of the new requirements included in this section exist because of the \$6 million dollar/year cap on claims against the RO. To ensure this \$6 million spending cap is not exceeded, claims against the RO will be pro rata reduced if they total more than \$6 million in any single year. Several new reporting restrictions have been put into place to help ensure the \$6 million is distributed fairly, that the objectives of the program are met (section 9.2), and that funds are channeled towards Customers with valid project/program needs.

9.2 Objectives of the Renewables Option

- To encourage the development of new incremental renewable energy facilities and activities in the Pacific Northwest
- To maximize the development of incremental renewable generation

9.3 Definitions

- **Community Owned Renewable Projects:** Community owned means that more than one member of the local community (private citizens or other non-municipal or customer entities) has a greater than 50 percent direct financial stake in a small commercial-scale project (meeting the New Renewable Energy Facility definition) other than through land lease payments, tax revenues, or other payments in lieu of taxes. Customers participating in such projects are eligible for an annual dollar-for-dollar rate credit for expenses associated with the project(s). As with other aspects of the RO, administrative costs are not eligible expenses. BPA will approve applications for a rate credit amount after the customer demonstrates to the satisfaction of BPA that the proposed project meets this definition of a Community Owned Renewable Project.
- **Energy Costs** means the cost of project energy delivered to the point of interconnection expressed on a dollar/megawatt-hour basis. Administrative & General costs are not allowed.
 - For Power Purchase Agreements or Output Contracts this would be the contract price for the reporting year. If multiple prices are paid during the reporting year, an Energy Cost based on a weighted price for the reporting year should be utilized. The weighting should be based on the price paid for actual generation received.

- For Renewable Projects that are owned by the utility, these costs would include capital costs, financing costs, operating and maintenance costs and land purchases or leases. These costs would be net of the Production Tax Credit or the Renewable Energy Production Incentive, whichever is applicable.
- **Environmental Attributes** means the non-power attributes associated with the energy generated from a renewable energy facility. Environmental attributes are the fuel type, emissions, or other environmental characteristic of a renewable resource. Non-power attributes or environmental attributes do not include any energy, capacity, reliability, or other power attributes used to provide electricity services. Environmental or non-power attributes are expressed in megawatt-hours (MWh); one Environmental Attribute represents the non-power attributes made available by the generation of 1 MWh of energy from a Renewable Energy Facility. Environmental Attributes are commonly referred to as "Renewable Energy Certificates" (RECs), "Green Tags," or "Tradable Renewable Certificates" (TRCs).
- **Environmentally Preferred Power (EPP):** One of the BPA renewable energy products for which BPA charges a Green Energy Premium. (WP-07-E-BPA-25)
- **Existing Renewable Energy Facility (Existing Facility)** is a Renewable Energy Facility that was energized prior to January 1, 2006, but after May 1, 1999.
- **Hybrid Facilities:** Generation facilities which use both conventional and renewable fuels. Only that fraction of generation created by use of a Renewable Energy Fuel Source shall be considered renewable.
- **Incremental Renewable Energy Facilities and Activities:** Those activities and resources beyond that required by law. For example, in Oregon, the Investor-Owned Customers System Benefit Charge is required by law; therefore, it is not incremental and is not eligible for the RO.
- **Integration Costs:** Costs of hour-to-hour storage and/or shaping of generation from non-dispatchable Renewable Energy Facilities. Integration costs do not include within hour ancillary services (imbalance and regulation costs) or transmission costs. Self-supplied storage and shaping is eligible, if costs are approved by BPA. BPA suggests self-supplied integration cost claims should be based on near-term opportunity costs. Certification by an independent CPA is required for approval.
- **Net Electric Energy** means the metered MWh generated and sold, and excludes electric energy used within the renewable energy facility to power equipment

such as pumps, motors, controls, lighting, heating, cooling, and other systems needed to operate the facility.

- **New Renewable Energy Facility (New Facility)** is a Renewable Energy Facility that was energized after January 1, 2006. BPA will distinguish between new facilities and expansions of an existing facility on a case-by-case basis.
- **Pacific Northwest** has the meaning defined in section 3(14) of the Act, Public Law 96-501, 16 USC 839.
- **Project Costs:** Project Costs will be limited to independently CPA-certified contracted energy charges at the busbar for the year in which the claim is being made and independently CPA-certified Integration Costs for the year in which the project's generation being claimed.

Project Costs = [Energy Costs at the busbar for the year in which the claim is being made + Integration Costs for the year in which the claim is being made]

- **Proxy for Avoided Cost:** The simple average of the BPA FY 2007 flat Priority Firm (PF) preference rate and the 2007 forward flat-block Mid-C market price used in the investor-owned customer residential exchange settlement. The 2007 forward flat block Mid-C market price used in the residential exchange settlement is equal to \$58.46/MWh and the FY 2007-2009 flat PF preference rate is equal to \$25.87/MWh, resulting in a Proxy for Avoided cost of \$42.17/MWh. This amount is fixed for the entire FY 2007 – 2009 rate period.
- **PTR** means the Regional Technical Forum's Planning, Tracking and Reporting system (<http://ptr.nwcouncil.org/>)
- **Renewable Energy Certificates (RECs):** See Environmental Attributes.
- **Renewable Energy Facility** means a single module or unit, or an aggregation of such units, which generates electric energy that is independently metered and that results from the utilization of a Renewable Energy Fuel Source.
- **Renewable Energy Fuel Source** means:
 - **Biogas:** Electricity generated from the combustion of gases derived from animal manure, sewage digesters, or from decaying plant matter. Includes sewage treatment plant digesters, dairy-based anaerobic digesters, and biomass gasification.
 - **Biomass** is electricity generated from combustion of:
 - The organic, non-fossil-based portion of municipal solid waste
 - Energy crops
 - Agricultural residues

- Untreated mill or forest residues
- Biomass-derived energy from hybrid facilities, not including energy derived from fossil fuels

Biomass does not include the combustion of black liqueur or preservative-treated wood waste.

- o **Geothermal:** Electricity generated from naturally occurring underground heat
- o **Hydroelectric:** Electricity generated by the flow of water at facilities located outside of protected areas as defined by the Council
- o **Landfill Gas:** Combustion of gases derived from landfills
- o **Ocean:** Generation of electricity from wave, thermal gradient or tidal forces. Ocean energy is not likely to achieve commercial status during this rate period, and it is eligible as Research Development & Demonstration (RD&D) during the FY 2007-2009 rate period.
- o **Solar:** Electricity generated from solar heat and light. Includes solar photovoltaic systems (PV) and solar water heaters.
- o **Wind:** Electricity generated from wind. Because project size affects costs, wind projects are broken out into three categories:
 - Utility-scale wind projects with a total installed capacity greater than or equal to 10 MW
 - Wind projects with a total installed capacity of less than 10 MW but greater than 25 kW
 - Wind projects with a total installed capacity of less than or equal to 25 kW
- **Small commercial-scale:** All projects that are too large to qualify for net metering but less and 3-megawatt capacity (e.g., onsite home-sized projects are excluded and projects must be connected to the grid).

9.4 General RO Requirements

- a. Only Incremental Renewable Energy Facilities and activities are eligible for the RO.
- b. The RO is only available during FY 2007 through FY 2009. There was no early start for the RO claims portion of the CRC.
- c. Renewable claims under the RO must be spent on qualifying renewable activities and or projects prior to the end of the rate period (e.g., money claimed against the renewable program under CRC shall not be

used for conservation measures). If all of the money claimed on renewables is not directed towards qualifying renewable projects or activities and reported to BPA by October 31, 2009, the customer will be billed for that portion of their renewable claim which remains unreported, plus interest. Interest will accrue on the unreported amount from the date of the customer's first renewable claim against the CRC program for the FY 2007-2009 rate period. Interest will be calculated by dividing the Prime Rate for Large Banks as reported in the Wall Street Journal, plus 4 percent; by 365. The applicable rate for Large Banks shall be the rate reported on October 31, 2009. Customers will be billed on the November 2009 bill, issued in December 2009.

- d. Claims made under the RO need to be substantiated using the PTR system (see section 4.1 and 9.22 for reporting requirements).
- e. Administrative activities do not qualify for the RO unless otherwise exempted.
- f. Individual customer RO claims are limited to the customer's total CRC eligibility for the fiscal year in which the claim is being made. Note that customer RO claims may be further limited by the prorated reductions made pursuant to Section 9.22 of this Manual.
- g. Energy generation and project cost claims must be verified via an independent annual audit which must be submitted with the utility's annual written report.
- h. It is not a requirement that the timeframes for receiving the CRC and investing in a renewable facility match. For example, it is acceptable for a customer to justify their FY 2007 credit with a renewable facility that comes on line in FY 2008 or FY 2009.

9.5 What is a Qualified Renewable Energy Facility?

To be eligible for the RO, a renewable energy facility must satisfy the following criteria:

- a. The energy must be generated using a Renewable Energy Fuel Source and meet one of the following criteria:
 - 1. **Time of first use** — The facility must begin commercial operation no earlier than May 1, 1999, and no later than December 31, 2009.
 - 2. New Facilities energized after September 30, 2009, but prior to December 31, 2009, may qualify for the RO on a case by case basis, subject to BPA approval. To qualify, the customer must

provide BPA with the verification information listed below. If any one of these conditions is not met, the customer must repay BPA for claims based on the facility, plus interest (see section 9.4(c), except that the billing schedule will begin January 2010 for customers with facilities falling under this category).

- i. Verification that the customer has entered into a power purchase agreement during FY 2007 – 2009 for the output of the facility.
 - ii. Evidence supporting the claim that the facility will be energized by December 31, 2009. Examples: Contractual incentives for commercial operation by December 31, 2009, or penalties for late performance.
 - iii. Verification by no later than January 15, 2010, that the New Facility achieved commercial operation by December 31, 2009.
3. Renewable Energy Facilities on-line prior to May 1, 1999, are eligible for RO if they have been rebuilt or expanded. The following criteria apply:
- i. Rebuilt facilities qualify if the fair market value of the facility before the upgrades is less than 20 percent of the new total fair market value. In other words, capital investments in the new facility must total at least 80 percent of the value of the assessed value of the repowered facility. Tax records should be provided to validate this claim.
 - ii. Incremental expansions to Renewable Energy Facilities qualify if the additional equipment generates incremental energy which is metered independently from the original facility. Replacement or modification of existing equipment that does not change gross power production, but results in a reduction of electric power consumption, will be considered conservation.
- b. **Location** — renewable energy facilities must be located in the Pacific Northwest, with the following three exceptions:
1. The currently permitted Wyoming Wind Project at Foote Creek Rim and Simpson Ridge in Carbon County, Wyoming
 2. Projects shown by the applicant to effectively displace operation of regional nonrenewable generation resources (subject to BPA approval)

3. The project or a portion of the project serves load within the Pacific Northwest (subject to BPA approval)

9.6 Metering Requirements

Except for PV, solar water heaters and RD&D projects, the output of renewable energy facilities must be metered by a revenue-quality meter at the point of delivery in accordance with generally accepted customer standards, and output and meter calibration records must be available for inspection by BPA upon request.

9.7 Power Purchases from Power Marketers

Purchases from power marketers and pooling organizations are eligible for the RO provided:

- a. The underlying resources meet the eligibility requirements for renewable energy facilities.
- b. The customer can supply documentation verifying the renewable energy resource eligibility; the amount and term of the purchase, the Project Costs, and attestation that the environmental attributes have not been sold or claimed elsewhere. The amount of the RO available for each type of underlying renewable energy facility is specified in tables 1 and 2 in section 9.17.
- c. Customers are required to retain and retire within their service territory the environmental attributes associated with power purchases from qualifying renewable energy facilities when claiming such purchases on their annual CRC report. If the environmental attributes are sold into the customer's green pricing program, costs of administrating the green pricing program may qualify as eligible expenses. Revenues from the attribute sales and the pricing program must be reinvested in the green pricing program to qualify for the RO.

9.8 Transfer of RO Claims for Renewable Energy Output

Customers may enter contractual arrangements through which one customer would own or purchase the output from an eligible renewable energy facility and other customers would apply their RO to the output.

For example, Customer A could sign a power purchase agreement with a developer for 15 MW of wind power from a qualifying new renewable energy facility. Customer A could assign the right to claim the project as a new renewable energy facility to Customer B under a separate payment arrangement with Customer A. All of the project's output would be delivered to, and used in, Customer A's system, but Customer B would own and could claim the resource under the RO. The RECs from this project must be retired within one of the participating parties' service area(s) for the entire rate period and should not be subject of a second claim.

Customers may also transfer RO claims to other BPA customers by selling the attributes or RECs generated by eligible renewable energy facilities to other BPA customers.

9.9 Environmental Attributes from Renewable Energy Sources

This section applies only to Renewable Energy Certificates (Green Tags, RECs, or environmental attributes), not to Environmentally Preferred Power (EPP); section 9.10 addresses EPP.

RECs are eligible for RO, provided the following conditions are met:

- a. Megawatt-hours cannot be claimed twice under the RO. RECs associated with renewable energy claimed elsewhere under the RO are not eligible for additional RO benefits under this section. RECs from new facilities cannot be claimed under this program during this rate period if the energy from the project is the subject of a RO claim anytime during the rate period.
- b. Claims based on RECs from a single New Facility cannot total more during the 3-year rate period (for all customers) than could be derived from a claim based on one year of generation times the appropriate \$/MWh credit cap (table RO-1, section 9.16).

For example, IOU #1 builds a 100 MW wind facility. In its first year of production, the project produces 220,000 MWh of generation at a total cost (Energy + Integration Costs) of \$55.87. Using all of the production of the facility, IOU#1 could justify a CRC credit of \$3,014,000 $((\$55.87 - \$42.17) * 220,000)$. If IOU #1 chose to instead sell the RECs to various PUD's then the total amount of CRC claims via RECs from this wind facility could not exceed \$3,014,000 over the 3-year rate period.

Further, if IOU #1 had a CRC credit of \$2,000,000, it could use this wind facility to a) meet that credit requirement and; b) sell the RECs associated with the facility that were not allocated to the CRC to other Customers to meet their CRC obligation.

Without this restriction, REC claims for a specific New Facility could be claimed for all three years of the rate period at a purchase price equal to the credit cap. Under this scenario, REC claims would total three times that of a straight facility claim. (The amount of credit associated with REC claims is equal to the purchase price of the REC, not to exceed the caps posted in tables RO-1 and RO-2; RECs can be claimed all three years of the rate period.)

- c. Only RECs which are retired within the purchasing utility' service area are eligible for the RO program. RECs sold outside of the utility's service area cannot be claimed by the seller but may be claimed by the purchaser. RECs resold in a premium green pricing program will be eligible for RO credit in an amount equal to the REC purchase price if the revenues from the green pricing program, net of REC purchase price, are reinvested in qualifying New Renewable Energy Facilities, other qualifying Renewable Education program(s), qualifying RD&D project(s) or the green pricing program. Costs of administrating the green pricing program may qualify as eligible expenses. Demonstration of reinvestment will be required in the October 31 annual report to BPA as required in section 9.22.
1. The facility generating the RECs must be a qualifying Renewable Energy Facility as defined in section 9.5.
 2. The output of the generating resource from which the RECs originated is metered (section 9.6).
 3. The REC claim is accompanied by: (1) a generator attestation verifying the monthly output of the generation facility, that the RECs have been sold only once, and that the RECs retain associated emission offsets; (2) Wholesaler attestation(s) verifying that the RECs have been sold only once and retain associated emission offsets; and (3) an independent annual audit verifying purchase price. Verification of REC ownership from the Western Renewable Energy Generation Information System can be used in lieu of (1) and (2) above.
 4. RECs can only be claimed in the year in which they are generated.
 5. RO credit amount: Payment scale is equal to the purchase price of the RECs, not to exceed the resource specific credit caps listed in table RO-1 or table RO-2 (section 9.16). Proof of purchase price must be verified via independent audit and provided to BPA by October 31 for the proceeding fiscal year.
- d. Solar exception: RECs from PV units claimed under the RO can be sold outside of the customer's service area because the credit for solar units has been reduced to \$500/kW.

9.10 Renewables Purchases from BPA

BPA currently offers three types of renewable products: (a) Environmentally Preferred Power (EPP), (b) Alternative Renewable Energy (ARE) and (c) RECs.

- a. **EPP and ARE:** BPA will reinvest the Green Energy Premiums (as defined in WP-07-FS-BP-05) associated with EPP and ARE sales in the Pacific Northwest Renewable RD&D projects. Therefore, 100 percent of the Green Energy Premium associated with EPP and ARE (\$10.50/MWh) is eligible for the rate credit under the RO.

ARE and EPP remarketed into green pricing programs is eligible for the RO if proceeds, net of the EPP/ARE purchase price, are reinvested in New Renewable Energy Facilities, Renewable Education program(s), qualifying RD&D project(s), or the green pricing program itself. Costs of administrating the green pricing program may qualify as eligible expenses. Demonstration of reinvestment will be required in the October 31 annual report to BPA required in section 9.22.

- b. **RECs:** BPA will reinvest the green energy premiums associated with EPP in Pacific Northwest renewable RD&D projects. Therefore, the amount of the RO for BPA RECs will be 100 percent of the premium paid for this product.

RECs remarketed into green pricing programs are eligible for the CRC if proceeds, net of the REC purchase price, are reinvested in New Renewable Energy Facilities, Renewable Education program(s), qualifying RD&D project(s), or the green pricing program. Costs of administrating the green pricing program may qualify as eligible expenses. Demonstration of reinvestment will be required in the October 31 annual report to BPA required under section 9.22.

- c. Customers are required to retain and retire within their service territory the environmental attributes associated with EPP or RECs purchased from BPA when claiming such purchases under the RO.

9.11 Third Party Blended Renewable Resource Products

A customer can receive credit under the RO for the purchase of a third party, or their own, blended renewable resource product consisting of Existing or New Renewable Energy Facilities meeting the eligibility criteria of the RO. The appropriate "new" credit will be given to the new portion of the product for one year of estimated generation. The "existing" portion of the blended product will be given the appropriate credit for Existing Renewable Energy Facilities. Renewable energy claimed elsewhere under the RO is not eligible for additional RO benefits under this section.

Customers are required to retain and retire within their service territory the RECs associated with such transactions when claiming such purchases under the RO.

9.12 Community Owned Renewable Projects

Expenses associated with Community Owned Renewable Projects, incurred by the customer, which include but are not limited to interconnection, integration, and energy costs above the Proxy for Avoided Cost, which are not passed through to the Customers or to the Community-owned project, are eligible for a dollar-for-dollar credit. Community Owned Renewable Projects are New Renewable Energy Facilities; therefore, claims based on energy production are limited to one year of actual generation. Consistent with other eligible activities and programs under this chapter, Administrative costs are not eligible.

9.13 Technical Specifications for PV systems and Solar Water Heaters

- a. **Customer-side solar photovoltaic systems** — Eligible PV systems must meet the following requirements:
 1. Photovoltaic modules and inverters must be certified by the California Energy Commission (CEC). The lists of CEC-certified modules and inverters are posted on the California Energy Commission Web site (<http://www.consumerenergycenter.org/erprebate/equipment.html>).
 2. The system must be installed by a licensed contractor, unless installed by the purchaser, and must be installed in conformance with the system manufacturer's specifications and with applicable electrical codes and standards.
 3. Photovoltaic modules must be listed by a nationally recognized testing laboratory as meeting the requirements of the Underwriters Laboratory Standard 1703. Inverters must be listed by a nationally recognized testing laboratory for safe operation. Further, all grid-connected, inverter-based systems must meet the Institute of Electrical and Electronic Engineers Standard 929-2000. In the absence of a recognized testing standard, manufacturers of concentrator photovoltaic systems must provide acceptable evidence of one year of reliable operation of that model of equipment.
 4. Photovoltaic systems credited under the RO must be warranted as follows:
 - i. The warranty must cover the photovoltaic panel components of the generating system against breakdown or degradation in

electrical output of more than 20 percent from their originally rated electrical output in the first 20 years.

- ii. Other components of the generating systems against breakdown or degradation for five years, including the full cost of repair or replacement of defective components or systems.

- b. **Solar Domestic Water Heaters** — Eligible solar domestic water heating systems must be designed, installed, inspected, and found to be in substantial compliance with the most recent version of the Bright Way to Heat Water Program - General and Technical Specifications. These program specifications are available in the PTR system, under Downloads. Customers claiming renewables credit for solar water heating systems under the RO are required to sign a Bright Way to Heat Water licensing agreement, available from BPA.

9.14 Renewable Education Programs

Renewable Education Programs are customer-funded curriculum and demonstration projects. Education programs are eligible for a dollar-for-dollar rate credit, capped at the greater of 20 percent of a customer's total CRC over the rate period or \$25,000/year. In no year shall a customer's Renewable Education Program claim exceed that customer's pro rata reduced Renewable rate credit for the applicable year.

9.15 Donations

Donations to 501c (3) non-profit organizations promoting renewable resource development in the Pacific Northwest are eligible for the RO upon BPA approval. Examples of organizations that may qualify: Bonneville Environmental Foundation, Energy Trust of Oregon, Climate Trust, Last Mile Electric Coop, and Northwest Seed. Donations are limited to 20 percent of the customer's total CRC over the rate period. One hundred percent of the donated amount is eligible for the RO. BPA may waive the 20 percent cap on a case-by-case basis if there are compelling reasons to do so.

To qualify for credit, the following conditions must be met:

- a. The 501c (3) recipient will be asked to self-certify that at least 80 percent of the donation will be used to support renewable resource activities as contemplated elsewhere in this Manual and must demonstrate that the donation was not used to support lobbying activities.
- b. The receiving organization will provide BPA and the donating customer a report documenting use of the donated funds by no later than

October 31 of each year, for the preceding year. BPA reserves the right to audit the receiving organization.

9.16 Contributions to Qualified Research Development & Demonstration Activities

One hundred percent of the amount spent on qualified RD&D activities is eligible for the RO; however, renewable RD&D claims cannot comprise more than 40 percent of the participating utility's total CRC over the rate period. Costs are limited to those incurred from October 1, 2006, to September 30, 2009. Electricity production obtained as a result of a RD&D activity will not qualify for RO credits. BPA may waive the 40 percent cap on a case-by-case basis if there are compelling reasons to do so.

BPA pre-approved RD&D activities include:

- a. The regional wind data collection program administered by Oregon State University.
- b. The Regional Solar Radiation Data Center administered by the University of Oregon, and the Wave Energy Technology Center.
- c. New ocean-powered renewable energy facilities.
- d. BPA will approve small-scale (less than \$20,000 per installation) renewable energy demonstration systems on a case-by-case basis without consultation with the RTF, provided the project meets all of the following criteria:
 1. The performance of the project is measured on at least monthly intervals. Projects using revenue-quality meters are preferred but not required.
 2. The system performance and description of the project must be reported to the public via the Intranet, as well as local reporting mechanisms, before September 30, 2009.
 3. The project falls under at least one of the Eligible Activities listed below, in section 9.16.1 and not specifically excluded in section 9.16.1(e).

9.16.1 Eligible RD&D Activities

The following categories of activities potentially qualify for the RO as RD&D activities. Qualification will be determined using the criteria listed in section 9.16.2.

- a. Assessment of the supply, location, development potential, or quality of renewable energy sources.
- b. General preparations (i.e., not in sole support of a specific project) for the development of renewable resource areas. These efforts may include identification and resolution of technical, environmental, and institutional issues potentially affecting resource development.
- c. Research regarding environmental or other issues affecting the development and operation of renewable energy facilities. These may be undertaken at a specific project, providing the results will significantly benefit other projects.
- d. Development or demonstration of new technologies with potentially significant application to the use of renewable energy sources.
- e. Demonstration of novel applications of established technologies using renewable energy sources (e.g., new applications of commercially available technologies). Conventional applications of commercially available technologies are not considered RD&D. For example: PV installations using conventional approaches/designs are no longer considered to be in the developmental phase and will not be considered RD&D. PV installations using new designs or novel applications may be considered developmental.

While a RD&D activity may be undertaken in conjunction with the development of a specific commercial project, the cost of the activity should not include the costs of developing or operating a proven commercial application. Efforts to lower costs through increased production or mass purchase of commercial technologies are not considered to be RD&D.

- f. Provision of information useful for the evaluation, citing, design, or operation of facilities using renewable energy sources.

9.16.2 Criteria used to Evaluate Proposed Renewable Resource Research, Development, and Demonstration Activities

Other RD&D activities may be proposed and approved by BPA on a case-by-case basis or, at the sole discretion of BPA, submitted to the RTF for review. The proposal must include research technology, renewable fuel source, location, objectives, approach/methodology, tasks, timeline, budget, and milestone

reporting schedule. The proposal should clearly state the project's specific stage in the technology continuum (hypothesis, research, development, or demonstration). The proposal should also include a section addressing the criteria set forth here, as applicable:

- a. The activity should have a high probability of expanding the use of qualifying renewable resources in the Northwest.
- b. The activity should have a high probability of achieving one or more of the following objectives: reduced resource development or operating costs; improved technology performance (reliability, conversion efficiency, etc.); reduced environmental impact; improved project development characteristics (e.g., lead time); and improved forecasts of cost, performance, development timeline, or environmental impact.
- c. Preferably, activities should address resources promising low or declining costs, abundant quantity, modest or beneficial environmental effects, and favorable development characteristics, including short lead-time and modularity.
- d. Preference for activities designed to achieve multiple objectives and widespread benefits (e.g., the activity should foster the development of qualifying resources in general, as distinguished from primarily supporting the development of a specific commercial project). For example, assessment of the spatial extent, and general turbulence and wind shear characteristics of a wind resource area could be considered a qualifying RD&D activity, whereas studies leading to the placement of individual wind turbines are a responsibility of the commercial developer.
- e. Projects that are co-funded/co-sponsored are preferred. Co-funded amounts are excluded from the RO credit.

9.17 Renewable Energy Purchased from qualifying Renewable Energy Facilities

Methods to calculate the RO credit earned by energy purchases from eligible Renewable Energy Facilities are described below. The \$/MWh cap for each resource type is shown in table RO-1 (New Facilities) and table RO-2 (Existing Facilities).

- a. **New Renewable Energy Facilities:** To be eligible for credit, the New Facility must qualify under sections 9.4, 9.5, and 9.6. The amount of the credit earned by New Facilities is based on the difference between Project Costs and the Proxy for Avoided Costs (\$42.17/MWh) and capped at \$27/MWh. Credit can be earned for up to one year (any consecutive 12 month period during the program) of

generation regardless of whether the facility is energized in the beginning or at the end of the rate period.

Calculating the credit:

1. New Utility-scale wind (> 10 MW): The amount of the RO is equal to the customer's share of the output from a New Customer Scale Wind project over any single fiscal year during the rate period, multiplied by the difference between actual Project Costs and the Proxy for Avoided Costs, with that difference not to exceed \$27/MWh (see NOTE below).

Claims submitted as part of the October 31 report to BPA (section 9.22 b) should be based on actual generation and should use metered data. Claims based on forecasted generation should use capacity factors provided in table RO-1 and the nameplate rating of the facility. Forecasted claims apply to projects not on line by the end of the rate period, but scheduled to be in commercial operation prior to December 31, 2009.

Third party verification (CPA audit) of Project Costs and actual generation should be included in the October 31 annual report to BPA (BPA may grant case-by-case extensions for audit reports).

New Utility-Scale wind Credit = [(Energy Costs at the busbar for the year in which the claim is being made + Integration Costs for the year in which the claim is being made) - (Proxy for Avoided Cost)] x MWh generated over one year; This amount is not to exceed the cap posted in table RO-1.

2. All other New Renewable Facilities: The amount of the credit is equal to the customer's share of the output over any single fiscal year during the rate period, multiplied by \$/MWh credit provided in table RO-1.

New Renewable Facility Credit (other than Customer Scale Wind) = Customer share of generation in fiscal year x \$/MWh credit from table RO-1.

NOTE: Credit for New Utility-scale wind projects will be calculated differently than other New Facilities because the Council updated project cost estimates for New Utility-scale wind projects. The revised cost estimate for Utility-scale wind increased by nearly 100 percent resulting in a more than 7-fold increase in the \$/MWh credit.

If the Council's new cost estimates were used as the sole basis for the rate credit for Utility-scale wind projects (as occurs with other New

Facilities), BPA would create a windfall for purchasers of less expensive projects. (The difference between the actual costs and the Council's cost estimates can be significant.) Because of the \$6 million dollar cap on total renewable claims and because of the large amount of wind being developed in the Region, BPA decided to change the way utility-scale wind credit is calculated.

The credit for New and Existing Utility-scale wind projects will be based on actual Project Costs, not the Council's cost estimate. The Council's cost estimate for New Utility-scale wind will be used to create the cap. Both the cap and the Council's estimate are posted in table RO-1.

- b. **Existing Renewable Energy Facilities:** It is the objective of BPA to encourage the development of new incremental renewable energy facilities and activities. Therefore, the credit for existing facilities cannot exceed that of new facilities.

Existing facilities will be eligible for credit on energy generated during the entire rate period. Because of the 3-year rate period, the credit for Existing Facilities is capped at 33 percent of the credit given to New Facilities using the same renewable energy source. The amount of the \$/MWh credit for generation from Existing Facilities will be based on the customer's share of actual generation during the rate period, the type of facility, and the difference between the Project Costs during the year the claim is being made and the Proxy for Avoided Cost, not to exceed the \$/MWh caps posted in table RO-2 (capped at 33 percent of the cap for New Facilities). Credit will only be given for metered generation during the rate period.

Credit = [Energy Costs at the busbar for the year in which the claim is being made + Integration Costs for the year in which the claim is being made] - [Proxy for Avoided Cost] x MWh. This amount is not to exceed the cap posted in table RO-2.

1. Third party verification (audit) of Project Costs for the year the claim is being made and third party verification of actual generation should be included in the October 31 annual report to BPA. BPA may grant case-by-case extensions for audit reports.
2. The existing facility must qualify under sections 9.5 and 9.6.
3. No credit will be given to existing solar energy facilities.

Table RO-1: New Renewable Facility Credit

New Facilities			
Total Credit for each Facility = (Capacity) x (Capacity Factor) x (New Facility Credit). If claiming actual generation, disregard capacity factor and use metered data. If claiming forecasted generation use the nameplate rating to determine capacity and Capacity Factors posted below.			
Credit should not exceed the resource-specific caps listed below. <i>Credit for 1 year of Generation.</i>			
Resource type (project size)	Project Cost (Proxy) (\$/MWh)	Credit (\$/MWh)¹	Capacity Factor²
Biogas ³	51.00	8.50	90%
Geothermal ⁴	67.84	25.34	92%
Hydro ⁵	48.46	5.96	80%
Micro hydro (<1 MW) ⁴	79.00	27.00	58%
Landfill gas (> 2 MW) ³	42.00	0.00	80%
Landfill gas (less than or equal to 2 MW) ⁶	50.00	7.50	90%
Wind (less than or equal to 25 kW (no Tx)) ³	270.00	27.00	14%
Wind (less than or equal to 10 MW but > 25 kW) ⁷	73.00	27.00	30%
Wood/Forest residue (wood only, not cogen) ³	68.00	25.50	90%
Wood/Forest residue (cogen) ³	51.00	8.50	90%
New Utility-Scale Wind			
Credit = (Project Cost – Proxy for Avoided Cost) x (Capacity) x (Capacity Factor). If claiming actual generation, disregard capacity factor and use metered data. If claiming forecasted generation, use the nameplate rating to determine capacity and the Capacity Factor posted below.			
Wind - customer scale (+1 0 MW) ⁸	80.00	27.00	30%
Solar			
	Project Cost (Proxy) (\$/MWh)	Credit (\$/unit)	Capacity Factor
Solar water heaters, collectors > 31 sq ft of evacuated tubes with equivalent output ⁴ (\$ credit per installation, based on capacity)	117.00	500.00	NA
Photovoltaic (PV) Credit in \$/kW ⁴ (\$ credit per kW)	290.00	500.00	NA

- ¹ New Resource Credit (\$/MWh) = (Project cost as posted in table 1) - (Proxy for Avoided Cost). NTE \$27/MWh. \$27/MWh Cap reflects the FY07 value of 20 years of CO² offsets. (Northwest Power and Conservation Council).
- ² Capacity Factors taken from the same sources as the cost estimates. Actual metered generation should be used if the project is in commercial operation.
- ³ Project Cost is the FY07, 20-year levelized cost of shaped and delivered energy (see Council Memo dated August 10, 2005). Note because project costs for this resource is less than market, it is not eligible for the CRC.
- ⁴ Cost data derived from unsolicited proposals submitted to BPA and BPA project files.
- ⁵ Estimate based on one project.
- ⁶ Costs derived from Energy Trust of Oregon "Sizing and Characterizing the Market for Oregon Biopower Projects" April 2005.
- ⁷ Costs derived from an Energy Trust of Oregon report and from Northwest Power Planning and Conservation Council staff analysis. ETO report: "A Comparative Analysis of Community Wind Power Development Options in Oregon" July 2004.
- ⁸ Project Cost is the FY07, 20-year levelized cost of shaped and delivered energy (see Council Memo dated July 13, 2006).

Table RO-2: Caps on Credit for Existing Renewable

Resource type	Cap (\$/MWh)
Biogas	2.83
Geothermal	8.45
Hydro	1.99
Micro hydro (< 1 MW)	9.00
Landfill gas > 2 MW	0.00
Landfill gas less than or equal to 2 MW	2.50
Wind less than or equal to 25 kW	9.00
Wind less than or equal to 10 MW	9.00
Wind - customer scale (+10 MW)	9.00
Wood/Forest residue (wood only, no Cogen)	8.50
Wood/Forest residue (Cogen)	2.83
Solar water heaters, collectors>31 sq ft	no credit available
Photovoltaic (PV) Credit in \$/kW	no credit available

Table RO-3: Renewable Credit Proxy Values

	(\$/MWh)
Proxy for Avoided Costs =	
Avg of FY07 Flat PF & FY07 IOU Settlement Flat-Block Mid C mkt price ¹	42.17
Cap =	
Proxy for present year value of a 20-year CO ² offset ²	27.00
¹ The 2007 forward flat block Mid-C market price used in the residential exchange settlement is equal to \$58.46/MWh and the FY 2007-2009 flat PF preference rate is equal to \$25.87/MWh, giving a Proxy for Avoided cost of \$42.17/MWh Value will be fixed at FY07 levels not adjusted for inflation or variations in market prices.	
² Cap based on NW Power and Conservation Council estimates of the average 2007 current year dollar value of a CO ² offset. Any credit below \$27/MWh could be considered cost-effective if the CO ² credits are not sold. CO ² value will be fixed at FY07 levels not adjusted for inflation.	

9.18 Effects on Net Requirements Load

Adjustments to the customer's Subscription contract and Net Requirements Load will be independent of credit given under the RO. No adjustment to net requirements load is necessary for REC and EPP purchases.

9.19 Duration of the RO and Renewable Energy Purchases

The RO can only be applied to activities undertaken during the rate period and energy generated during the rate period, except for special considerations given to new facilities energized between January 1, 2006, and December 31, 2009 (see section 9.5).

9.20 Administration

Applications, notifications, inquiries, and other matters related to the RO for renewable energy resources should be directed to the following address:

Bonneville Power Administration
Attn: Debra Malin, MS PTL-5
P.O. Box 3621
Portland, Oregon 97208
Phone: (503) 230-5701
E-mail: djmalin@bpa.gov

9.21 Optional Pre-Application

At any time, a customer may submit a Pre-Application containing the information described below to obtain a preliminary and conditional determination of a renewable energy facility's or activity's eligibility for the RO:

(Note: Pre-Application is optional, but the October 31 report will need to include this information regardless of whether a Pre-Application is submitted.)

- a. Name and type of facility or activity or other official designation
- b. Location and address of the facility and type of renewable energy source
- c. Name, address, and telephone number of a point of contact to respond to questions or requests for additional information
- d. A clear statement of how the renewable energy facility or activity satisfies the eligibility criteria
- e. If the customer intends to purchase power from a power marketer or enter into an arrangement with another customer, a description of the purchase or arrangement
- f. Other applicable information as required elsewhere in this chapter

9.22 Reporting requirements

- a. **Customer request for Renewable funds and the pro rata reduction:** Due to the \$6 million dollar annual cap on total annual renewable rate credit, BPA requires customers to request total annual renewable credit claims by July 15 of each year for the following fiscal

year. If total customer requests exceed \$6 million dollars in any year, all requests will be pro rata reduced for that year so that the \$6 million dollar cap is not exceeded. Note: Small (<7.5 aMW load) customers and federal customers will not be pro rata reduced but their requests will count against the \$6 million dollar cap. In the event of a pro rata reduction, BPA will notify customers of the amount their request was pro rata reduced by no later than August 15 of each year.

Due to the increased volume of renewable claims against the RO, BPA will no longer allow adjustments to renewable requests (claims) after the pro rata reduction. The dollar amount remaining after the pro rata reduction will be considered a final number and the requesting customer has an obligation to spend this amount of money on renewables before the end of the rate period. Customers have the option of rolling forward that portion of their July 15 request which was pro rata reduced (e.g., Customers may request it again in the following fiscal year).

The amount reduced via the pro rata reduction should be spent on conservation, rolled forward as a renewable request in the next year, or the customer can opt out of the program.

Renewable requests made under this section should be sent to the address shown in section 9.20 by July 15 of each year of the rate period.

- b. Annual Reports to BPA:** Customers must submit annual reports to BPA validating renewable claims made under the RO. Annual reports should use the PTR system and should be submitted by no later than October 31 of each year for the proceeding fiscal year's renewable claim. Annual reports should be sent to the address shown in section 9.20

Due to increasing pressure on the \$6 million cap, BPA will no longer accept or approve additional requests for renewable credit for FY 2009 if renewable claims from FY 2007 and FY 2008 have not been substantiated via the annual October 31 reports. This is consistent with reporting required for conservation under section 4. Because the RO option amounts for FY 2009 will be published in August 2008, which is prior to the FY 2008 reports being filed, it may be necessary for BPA to invoice customers who are not allowed a FY 2009 RO allotment because they did not fully substantiate their FY 2007 and FY 2008 RO funds.

October 31 reports to BPA validating pro rata reduced July 15 renewable rate credit requests (claims) should contain the following information to be approved:

1. A statement of the annual and monthly metered Net Electric Energy generated by the renewable energy facility during the previous fiscal year and claimed for credit by the customer.

2. A statement showing how the customer's renewable rate credit claim was derived and computed.
3. Applicable information required elsewhere in section 9, including third party verification (written verification from an independent auditor or state audit agency): BPA recognizes it may be difficult to obtain third party verification by October 31 for the previous fiscal year and may grant extensions for third party verification on a case-by-case basis.
4. RD&D and Donations: An Application for Certification for a qualified RD&D activity or eligible donations must contain a description of the qualified facility or activity, verification that applicable criteria have been met, and a copy of the invoices that are the basis for the customer's claim for credit (if applicable).
5. Purchases from BPA: The customer will reference the contract, the BPA product, the amount of the purchase (kWhs), and how much of the rate credit is being applied to this purchase in the annual October 31 report.

If a customer has yet not yet completed the spending for its RO allocation prior to the end of a fiscal year, the customer must submit its annual report with an explanation as to why the spending has not yet been completed and share the customer's plans to use the RO funds.

9.23 True-up for Generation-Based Claims

Due to the \$6 million dollar cap on renewable claims, customers making RO claims on new and existing facilities will be required to make claims based on actual generation. True-ups will only be accepted for New Facilities that cannot complete 12 consecutive months of actual generation prior to the end of the rate period, but are energized prior to December 31, 2009. (These facilities use forecasted generation rather than actual generation.)

Customers that need to use forecasted generation for all or part of a reporting year will need to file a true-up report with BPA. After a facility completes 12 consecutive months of generation, the customer will need to file a true-up comparing previously reported forecast generation with actual generation for that forecasted period. This true-up will be used to determine if the full credit has been earned or if a refund is due BPA. The true-up report will be due 30 days after the completion of the first 12 months of generation, but in no event should it be received after January 31, 2011.

For example, if a project starts generating on July 1, 2009, in its annual report the customer will report actual generation from July 1, 2009, through September 30, 2009, and forecasted generation from October 1, 2009, through June 30, 2010. The true-up report, comparing forecasted vs. actual generation for October 2009 – June 2010, will be due on July 31, 2010.

9.24 Procedures for Processing Reports and Applications

BPA will process Pre-Applications and Annual Reports and notify the customer of its determination within 60 days of receipt of the Pre-Application and 30 days of receipt of the Application for Certification.

1. Notice to applicant — If an application meets the requirements of the RO, BPA will issue a written notice to the applicant.
2. Disqualification — If an application does not meet the requirements of the RO for renewables or if some of the kWh claimed in the application are disallowed as unqualified, BPA will issue a written notice denying the application in whole or in part, with an explanation of the basis for denial.
3. Appeal of determination — A customer may appeal a decision within 60 days. Appeals should be sent to the address shown in section 9.20.

9.25 Rules for Pooling Renewables

A project or proposal from a pooling entity is subject to the same criteria, standards, and procedures as any other entity. The pool must comply both on an individual and aggregate basis.

Renewable Pooling Requirements

- a. Pooling Customers are responsible for reporting their own individual claims and semi-annual reports. Claims are subject to applicable reporting requirements outlined in section 9.22 of this document.
- b. The pooling organization will provide an annual summary report to BPA. The report shall document the claims of all pooling participants.
- c. If the pooling entity has a mix of customers using different conservation or renewable approaches, the pool must keep customers using different approaches separate for reporting purposes.

Examples

Existing Customer Scale Wind

Big City Energy wants to use its rate credit to offset the cost of purchasing 20 MW of energy from the Big Wind Project (energized in 2001). The busbar CY 2007 power purchase price is \$44/MWh, their contracted integration charges are \$9/MWh. The project generated (and Big City Energy purchased) 40,000 MWh in FY 2007, 60,000 MWh in 2008 and 50,000 MWh in 2009. This project would be classified as an Existing Facility and as a utility-scale wind project.

$\$/\text{MWh Credit} = [(\text{Contracted Power Cost}) + (\text{Contracted Integration Charges})] - (\text{Proxy for avoided cost})$.

NTE 33 percent of the applicable New Facility credit.

$\$/\text{MWh Credit} = [(\$44/\text{MWh}) + (\$9/\text{MWh}) - (\$42.17/\text{MWh}) = \$10.83/\text{MWh}$.

However, $\$11.83/\text{MWh} > 33$ percent of the credit given to New Customer Scale Wind facilities (e.g. Existing Utility-scale wind projects are capped at $\$9.00/\text{MWh}$). Therefore, the $\$/\text{MWh Credit}$ for the purchase of energy from the Big Wind Project is capped at $\$9.00/\text{MWh}$.

$\text{Total Credit} = (\text{Energy Generated}) \times (\$/\text{MWh Credit})$

$\text{Total Credit} = (150,000 \text{ MWh}) \times (\$9.00/\text{MWh}) = \$1,350,000$

Big City Energy can submit a request for a claim for $\$1,350,000$ anytime during the rate period, but the amount claimed in one year cannot exceed their annual CRC credit, and the claim will need to be substantiated in the next October 31 report.

Big City Energy must have the output and costs independently certified by a CPA and include these verification reports in their October 31 annual report to BPA for the year in which they make the claim.

New small wind project

During the FY 2007-2009 rate period PUD #1 signs an agreement to purchase a wind project within their service area. The Project is contracted to be energized by December 31, 2009. Project consists of two 1.5-MW turbines. This is a New Wind project with a capacity less than or equal to 10 MW but greater than 25 kW.

$\text{Credit} = (\text{Capacity}) \times (\text{Capacity Factor}) \times (\$/\text{MWh Credit}) \times (\text{hours/year})$

$\text{Credit} = (3 \text{ MW}) \times (0.30) \times (\$27/\text{MWh}) \times (8,760) = \$212,868$. ($\$27/\text{MWh} = \text{Cap}$)

PUD #1 can submit a claim for this project anytime during the rate period, but must include in their October 31 annual report verification that they have executed

a power purchase agreement during the rate period and that contractual incentives are in-place to ensure the project is energized by December 31, 2009. By no later than January 15, 2010 PUD #1 must also demonstrate that the project was energized by December 31, 2009. If the project fails to come on-line by December 31, 2009, the PUD must repay BPA for the credit claimed for this project plus interest. If the project was energized after October 1, 2009, PUD#1 will need to include forecasted energy in their annual report and a true-up report will need to be provided after the first 12 months of consecutive operation.

If PUD #1's request is reduced due to a pro rata reduction in 2007 or 2008, the PUD can roll the portion of their project credit forward into the next FY. There will be no ability to roll forward in 2009.

Although the PUD can claim the renewable project during any year, they must substantiate the claim in the next October 31 annual report. PUD #1 must retire the RECs generated by this project during the 2007-2009 rate period within their service area. PUD #1 cannot simultaneously claim energy generated by their wind project under the rate credit program and sell the attributes or Renewable Energy Certificates (RECs) separately.

See table RO-1, section 9.16.

New utility-scale wind project with self-supplied integration services:

East Side Electric signs a contract to purchase 60 percent of the output of the 50 MW White Eagle wind project. The busbar cost of the energy is \$48/MWh and integration costs are \$20/MWh.

The project is scheduled to be energized in September 2007. The White Eagle project would be classified as a New customer scale wind project.

Credit = ((Project Costs) - (Proxy for Avoided Cost)) x (Capacity) x (Capacity Factor) x (hours/year)

Credit = [(\$48/MWh + \$20/MWh) - (\$42.17)] x (50 MW x 0.60) x (0.30) x (8760)
= \$2,036,437.

Credit = \$25.83/MWh

East Side can submit a request for a claim for this project anytime during the rate period, but the amount claimed in any one year cannot be greater than the customer's total CRC for that year. If East Side's total eligibility is only \$1,000,000/year, then this customer must submit their request for a claim for this project over several years rather than in a single year.

For example, it would be permissible for East Side to report only a portion of one year's worth of output received to satisfy the CRC requirements for FY 2007. East Side could then apply the remaining portion of that year's production from White

Eagle to satisfy all or a portion of the CRC requirements for FY 2008. If there was any remaining production, it could be applied to CRC requirements for FY 2009.

East Side must verify, via a third party audit, generation amounts, purchase price, and justification for their near-term opportunity costs associated with self-supplied integration. The audit report and the justification for integration costs should be supplied to BPA in their October 31 annual report for the year in which they made the claim (e.g., report due by October 31, 2007, for FY 2007). This customer may want to keep the busbar energy and integration costs confidential, in such case they should arrange for a confidentiality agreement with BPA.

Generation exceeding the requested claim can be rolled forward and claimed in the following year. (FY 2009 generation cannot be rolled forward to FY 2010.)

East Side must retire the RECs generated by their portion of the White Eagle wind project during the FY 2007 – 2009 rate period within their service area. East Side cannot simultaneously claim energy under the rate credit program and resell the associated RECs to another customer or marketer.

See section 9.16(a).

RECs

Jones County PUD purchases 50,000 MWh of Calendar Year 2009 RECs from East Side's portion of the wind Project. Jones paid East Side \$5/MWh for the RECs and submits a claim to BPA for \$250,000. The calculations are correct but BPA denies Jones' claim because:

- a) BPA determined that East Side also submitted a claim on the same portion of project.
- b) Some of the RECs will be generated after the end of the rate period. Only RECs generated during the rate period are eligible. Jones will have to use the amount of rate credit they claimed for these RECs on another eligible Renewable activity before the end of the rate period. The other customer making a claim on this project may be required to repay BPA for their claims made on this project.

See section 9.9.

Figure RO-4: Renewable Reporting Timeline

Renewable Reporting Timeline

