

Conservation and Renewables Discount

Implementation Manual

**Energy Efficiency
Bonneville Power Administration**

October 1, 2004

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NOTE: This version of the Conservation and Renewables Discount Implementation Manual (Manual) has been updated from the October 1, 2003 edition. Clarifications or additions to the Manual are underlined, to help you identify what has been added or clarified.

1. Objectives and Key Features of the Conservation and Renewables Discount

The Conservation and Renewables Discount (C&RD) is a credit that is available to Bonneville Power Administration's (BPA) regional wholesale power customers that take action to further conservation and renewable resource development in the region. BPA believes that the region will realize substantial value through lower energy costs, fewer emissions, less investment in transmission and distribution infrastructure, better customer service, and higher system reliability by the development of more electric energy conservation, renewable resources, and new distributed energy technologies in the Pacific Northwest. BPA wants to be a regional catalyst for capturing this value primarily through market mechanisms. This becomes especially important when the demand for power is increasing and new generation resources are being developed. The C&RD program is one important means of accomplishing this goal.

1.1 Program Objectives

BPA's objectives for the C&RD program are to:

- Support the Comprehensive Review's recommendation of dedicating "3 percent of the revenues from the sale of electricity services" to cost-effective conservation, renewable resource development, and low-income weatherization in the Pacific Northwest;
- Continue BPA's role as a catalyst in furthering public purposes goals;
- Support the direction states and regional power planning organizations take for the development of conservation and renewable resources within the region;
- Produce real, measurable efficiency gains, and renewable energy supplies; and
- Support and maintain BPA's competitive rate position in the power market.

1.2 Key Features

Key features of the C&RD program include:

- Voluntary choice by power customers of whether and to what extent they participate;
- Local control of funds spent;
- Support for power customers is proportional to the amount of power purchased from BPA;
- Does not increase BPA's fixed costs;
- Maximizes power customer participation in the C&RD program;
- Simple to administer (integrates easily with power customers' current financial reporting requirements and involves minimal administrative overhead/costs);
- Avoids having BPA or anyone else serve as the "conservation cop"; and
- Accountability for cost-effective energy savings and renewables investments is maintained at the regional level.

2. C&RD Decisions Addressed in the Rate Case

The C&RD is found in BPA's 2002 wholesale power rate General Rate Schedule Provisions (GRSPs), as finally approved by the Federal Energy Regulatory Commission. Application of the C&RD to power customers will be made as described in the GRSPs. This section summarizes the C&RD decisions BPA made in the Administrator's Final 2002 Power Rate Case Record of Decision (ROD) dated May 18, 2000. *See* Attachment A.

2.1 Level of the C&RD

The level of the C&RD was set at 0.5 mills per kilowatt-hour (kWh) and added to the basic rate for Subscription Power Purchases and settlement benefits. [GRSPs Section II. (A)(2)(b)].

2.2 Applicable Rate Schedules, Contracts, and Settlement Benefits

The C&RD applies to the following:

- Priority Firm Power (PF-02) rate schedule.
- New Resource Firm Power (NR-02) rate schedule.
- Residential Load (RL-02) rate schedule.
- Purchasers of the Slice product.
- Industrial Firm Power (IP-02) rate schedule will be eligible to the extent that the C&RD does not reduce the customer's effective rate below the Direct Service Industry (DSI) floor rate.
- Benefits provided, as a cash payment in settlement of the Residential Exchange Program, will also be eligible for the C&RD and subject to the terms of such settlement.
- Pre-Subscription contracts with collared pricing provisions may be eligible for the C&RD subject to contract provisions.

[GRSPs Section II. (A)(1)]

2.3 Forecasting

The annual amount of C&RD each customer is eligible to receive will be forecasted annually based on the net requirement purchases specified in the customer's BPA contract prior to the start of each fiscal year. BPA will use each customer's annual, contractual Net Requirements purchases, as outlined in the GRSPs, for C&RD forecasting and planning purposes. [GRSPs Section II. (A)(2)(d)]

An annual review of individual customer forecasts will be made to determine if the customer's BPA power purchases have increased or decreased. Year-to-year decreases or increases greater than 5 percent will be reflected in the monthly C&RD amount that the customer is eligible to receive. [GRSPs Section II(A)(2)(e)]

For the Purposes of the C&RD, utilities that agreed to load reductions resulting from BPA's Rate Mitigation Actions will not have that load reduction deducted from the customer's Net Requirements Forecast when determining a customer's C&RD eligibility.

Annual Process for Forecasting the amount of the C&RD

1. Customer Letter

The BPA Power Business Line Account Executive (AE) will send the participating customer a letter documenting the qualifying power purchases and monthly C&RD amounts for the upcoming fiscal year. If customers have questions about the amount, they should contact their AE immediately so that the matter can be resolved 30 days prior to the beginning of the fiscal year.

2. Block Customers

A block customer's contract explicitly identifies eligible Subscription Power Purchase amounts for the upcoming fiscal year. Those amounts will be used to calculate the C&RD.

3. Slice Customers

A Slice customer's Subscription Power Purchases will be based on the Slice Initial Critical Inventory Amount (7,070 a MW). The Slice Initial Critical Inventory Amount multiplied by the customer's Selected Slice Percentage will be used to calculate the C&RD. A Slice customer's participation in BPA's 2002 Rate Mitigation does not reduce the amount of the fiscal year 2003 C&RD.

4. Full and Partial Customers

If the customer's qualifying Subscription Power Purchases for the upcoming fiscal year are expected to increase or decrease by more than 5 percent from the previous year, the AE will use a revised load forecast. If the customer participated in BPA's 2002 Rate Mitigation the previous year, then the upcoming fiscal year load forecast will be no less than the previous year's load forecast. The default amount will be the same as last year's unless an explicit measurable load came on or off the customer's system. The customer will be informed of what the C&RD would have been without the above one-year transition. The C&RD amounts for years more than one year after the Rate Mitigation agreement terminates will not be adjusted for Rate Mitigation action.

2.4 How to Calculate the C&RD

BPA will determine the annual amount of the C&RD using the following formula:

$$\text{Annual C\&RD eligibility} = \text{Annual net requirements load in kWh} \times \$0.0005$$

$$\text{Monthly C\&RD} = \text{Annual C\&RD eligibility} / 12 \text{ months}$$

The customer's monthly bill will show the customer's monthly C&RD eligibility as a deduction from the total power bill. At the end of each program year, the customer will report the amount of C&RD eligibility used on qualifying activities and the cumulative figure will be adjusted to reflect the customer's remaining C&RD eligibility. [GRSPs Section II. (A)(2)]

2.5 Qualifying Activities

There are five areas of activities that customers can pursue to use their C&RD eligibility. They are:

1. Conservation (see Section 4.1)
 - Net Requirements Purchases of less than 7.5 average megawatts (aMWs)
 - * Small Customer Option
 - Net Requirements Purchase of more than 7.5 aMWs
 - * Option A – Dollar-for-Dollar Cost Reimbursement (w/ restrictions)
 - * Option B – Value of the Energy Savings
2. New Renewable Resources (see Section 5)
3. Low-Income Weatherization (see Section 6)
4. Donations to Qualified Organizations (see Sections 7 and 8)
5. Funding of Research, Development, and Demonstration for Energy Conservation and Renewable Energy Projects (Sections 8.1 and 8.3)

[GRSPs Section II. (A)(3)]

2.6 Incremental Investments

To encourage additional investments in conservation, customers must self-certify that their C&RD spending is incremental to the conservation investments they would have made absent the C&RD. For BPA's public agency customers, a certification by each utility's General Manager will be requested. Likewise, DSI customers must self certify their incremental spending. [GRSPs Section II.(A)(4)(c)]

2.7 Application of the C&RD to the Power Bill

BPA will include an item on each eligible customer's power bill showing the amount discounted (monthly and cumulatively) in expectation of full participation in the C&RD program. This amount will offset the customer's *pro rata* share of additional revenue collected for the C&RD activity. Load determinations used for planning and billing purposes will be updated annually.

The amount discounted, on a monthly basis, will change only when a new load determination is made. [GRSPs Section II.(A)(2)(f)]

2.8 Reporting

Participating customers will submit Interim Reports of C&RD expenditures, or credits, certified as incremental spending, by Qualifying Activity (*see* section 2.5) at fiscal year end. Final Reconciliation Reports will be submitted after the end of the C&RD Period. [GRSPs Section II (A) (4)(a)&(b)]

2.9 Reimbursement

A final reconciliation will occur at the end of the rate period or the contract period, whichever is shorter (i.e., C&RD expenditures or credits compared to amount of C&RD available. If less, the customer must reimburse BPA the difference; if expenditures or credits are equal to or greater,

then the customer's obligation is met). [GRSPs Section II.(A)(5)(a)&(b)]. BPA will not credit any expenditures or conservation achievements by customers that exceed their C&RD eligibility.

2.10 Exemptions

If states, municipalities, or other governmental entities require a customer to invest in new conservation and/or new renewable resource projects, then such actions will obviate the incremental certification requirement. Furthermore, for any public utility that spends 3 percent or more of its retail revenues on qualifying conservation and/or renewable investments during the year being reported, those expenditures will be deemed as incremental budget increases. [GRSPs Section II.(A)(4)(d)]

For the purposes of the 3 percent exemption, retail revenues will be based on what a customer's retail revenues would have been absent CRAC. Utility customers that intend to apply for the 3 percent exemption will need to determine what their retail revenues would have been, absent the increase due to CRAC.

2.11 Revenue Dividends

In the event that BPA determines that a revenue dividend exists, the funds will be distributed to customers as defined in the GRSPs, Section II.(A)(6). The Dividend Distribution Clause (DDC) is a rate mechanism that will redistribute excess BPA reserves back to customers. It is triggered by a specific reserve total as reported in the mid year-financials. It is described in the GRSPs and includes a public process where the administration of the distribution is to be developed.

2.12 Duration of the C&RD

The C&RD must be spent during the contract or rate period, whichever ends first.

The C&RD may be applied at any time during the fiscal year 2002 to 2006 rate period, but may not exceed the amount of the C&RD available to the customer during the contract or rate period, whichever is shorter. For example, the C&RD earned in fiscal years 2002 and 2003 could be carried over and applied to qualifying activities in fiscal years 2004 through 2006. Also, the C&RD the customer expects to earn in fiscal years 2004 through 2006 could be applied to qualifying activities in fiscal year 2002 or 2003.

3. Regional Technical Forum (RTF)

The Regional Technical Forum (RTF) submitted initial recommendations to BPA on September 1, 2000. The recommendations came in the form of a comprehensive list of energy efficiency measures, renewable energy resource activities, deemed savings estimates, deemed values for the energy savings, and engineering protocols for BPA approval for the C&RD.

In its submission, the RTF indicated that it viewed its recommendations as a “work-in-progress” subject to modifications resulting from public comments. Members of the RTF participated in all of the public comment workshops on the C& RD Implementation Manual and reviewed the comments that were submitted in its recommendations to BPA. Together with the Manual, these recommendations were also made available for public review and comment. BPA adopted the RTF’s recommendations as submitted (*see* Recommendations to the Bonneville Power Administration Regarding Conservation and Renewable Resources Eligible for the Conservation and Renewable Resources Rate Discount and Related Matters (September 1, 2000)) including the recommendations below which have been modified in response to public comments.

3.1 Conservation Measures and Activities Eligible for BPA's C&RD

The list of activities and measures recommended by the RTF are eligible for BPA's C&RD and appear in *Appendix E*¹ and Attachment B of this document. Measures are listed in a "Table of Contents" format by general category, and then, again, along with a more detailed description of the eligible measures.²

3.2 Categories of Measures and Activities

Measures and activities are separated into three categories:

1. **Deemed Measures:** Measures and activities for which it is possible to "deem" per unit energy savings and costs. Lists of deemed measures, by end-use sector can be found in the C&RD Program Tracking and Reporting Software (C&RD Software) at www.rtf.nwppc.org.
2. **Deemed Calculated Measures:** Measures and activities that are well understood. Specific conditions of the application are variable (e.g., hours of operation for efficient lighting or motors). For these measures and activities, the RTF has defined a set of calculations that provide a "deemable" energy savings estimate. In the download section

¹ The most recent versions of all of the Appendices to the RTF’s Recommendations to BPA on the C&RD referenced herein are available on the RTF’s website (http://www.nwppc.org/rtf_toc.htm).

² The RTF has not developed "deemed" savings estimates for all measures on this list. The RTF's recommendations regarding the protocols to use for estimating savings for non-deemed measures appear in Appendix P entitled "Protocols for Estimating Energy Savings for Non-Deemed Conservation Measures and Activities."

of the C&RD Software, numerous downloadable spreadsheets are available to assist in determining the appropriate C&RD credit for a given measure or project.

- 3. Measures requiring the use of the Eligibility Measure Criteria and Energy Savings Verification Protocols:** Measures and activities for which the RTF has insufficient information to "deem" savings or to specify a calculation method for "deemable" savings. For these measures and activities, the customer must determine if a measure is eligible using the "Measure Eligibility Criteria (See Attachment E) and provide documentation, outlined in Attachment E, to the RTF. The RTF will not review this material to determine customer compliance with the C&RD Program requirements, but rather will use the information to determine how well this process is working. Once the customer has determined if a measure is eligible, they need to develop a Monitoring and Verification Plan. The results of the Monitoring and Verification Plan will be the basis for the energy savings reported in the customers annual report.

Projects or programs with **100,000 kWh or greater energy savings annually** for which there is not a deemed credit value or a deemed calculation method available, are required to submit a verification plan to BPA as outlined in Appendix P, the Energy Savings Verification Protocols, which is available in the C&RD Software under downloads. When BPA and the customer agree on an acceptable methodology to verify the energy savings, BPA will notify the customer in writing of the approved methodology. The customer must have a BPA approved verification plan in place before the project is started or the equipment has been ordered. The customer is also required to use the agreed-upon verification methodology to verify the energy savings and to use the results of that verification when claiming the project or program on their annual C&RD Report.

Projects or programs with less than 100,000 kWh annual energy saving for which there is not a deemed credit value or a deemed calculation method available and which produce energy savings, are encouraged to follow the verification protocols as outlined in Basic Protocol No. 1 (Attachment F of this document), but are not required to submit a verification plan for BPA's approval. In these cases, the utility is allowed to decide what is an appropriate level of engineering analysis and verification, in order to document the annual energy savings. BPA is willing to review potential projects and help customers determine eligibility. If BPA receives such a request, the customer can ask for a written determination of eligibility.

The customer can determine the C&RD credit for these types of measures by using the spreadsheet called "All Sectors – Rate Credit Discount Calculator by End Use/Sectors for Measure," which is found in the C&RD Software under Downloads. This spreadsheet allows the customer to enter the annual energy saving, end-use sector, measure life, and load profile. The customer should retain the results of that spreadsheet for their files and will be required to enter the results of that spreadsheet into the C&RD Software as a Protocol-based measure. The "All Sectors – Rate Credit Discount Calculator by End Use/Sectors for Measure" is also referred to in Section 3.6 of this Manual.

3.3 Conservation Program Standards and Guidelines for Deemed Measures

The RTF developed "deemed savings" estimates using the results of prior program evaluations and metering research conducted throughout the Northwest over the past 20 years. The savings estimates derived from these program evaluations and research projects are directly related to the standards and quality assurance processes embodied in these prior programs. Therefore, the RTF recommended that BPA accept claims for C&RD credits from its customers who use the "deemed savings" values only if they are in *substantial compliance* with the applicable program standards and guidelines described below. Customers claiming C&RD credits based on the site-specific evaluation protocols (Appendix P) do not need to be in compliance with the program standards and guidelines listed below.

3.3.1 RESIDENTIAL

BPA encourages utilities to use certified auditors and inspectors whenever possible in implementing residential weatherization. BPA is committed to help rebuild the infrastructure for certifying auditors and inspectors. Until this infrastructure is in place, utilities may use the "dipstick" approach to auditing.

Weatherization - BPA will accept the "deemed" savings measures claims of customers for weatherization of existing single family, multifamily and manufactured homes only on the condition that these residences have been retrofitted in substantial compliance with the most recent Site-built Weatherization Specifications. The Site-built Weatherization Specifications are available in the C&RD Software, under Downloads.

Long-Term Super GOOD CENTS⁰ - BPA will accept the "deemed" savings measures claims of customers for energy efficiency upgrades to new single family and multifamily homes only on the condition that these residences have been designed and constructed in substantial compliance with the most recent Long-Term *Super GOOD CENTS* program specifications. The Long Term Super GOOD CENTS specifications are available in the C&RD Software, under Downloads.

Northwest Energy Efficient Manufactured Housing⁰ Program (Super GOOD CENTS for Manufactured Housing) - BPA will accept the "deemed" savings measures claims of customers for energy efficiency upgrades to new manufactured homes only on the condition that these residences have been designed, constructed, and certified in substantial compliance with the most recent Northwest Energy Efficient Manufactured Housing Program and Super GOOD CENTS[®] Manufactured Housing program specifications. BPA will post updated versions of these program specifications on its website, as they become available.

Performance Tested Comfort Systems⁰ (PTCS) - BPA will accept the "deemed" savings measures claims of customers for energy efficiency upgrades to the heating systems, including air distribution systems, heat pump installation, and servicing of new or existing single family and multifamily homes and manufactured homes on the condition that these residences have been certified under the PTCS specifications. These specifications are available from Climate Crafters.

BPA will also accept *lower* "deemed" savings measures claims of customers for heat pump installations or conversion in new or existing single family and multifamily homes and manufactured homes when these residences *have not* been certified under the PTCS specifications.³

In addition, home installation or replacement of air source and ground source heat pumps must be in substantial compliance with the requirements set forth below for these systems.

Heat Pump and Central Conditioning Specifications - Air Source - BPA will accept the "deemed" savings measures claims of customers for the installation of air source heat pumps in existing residences built prior to 1992 only on the condition that these residences have been fully retrofitted in substantial compliance with the Site-built Weatherization Specifications.⁴

In addition, BPA will accept the "deemed" savings measure claims of customers for the installation of air source heat pumps in residences regardless of date of construction on the condition that such residences have had their duct systems certified under the PTCS specifications and are installed in accordance with the specifications in Appendix H "Air Source Heat Pump Installation Specifications, which are available in the C&RD Software, under Downloads.

BPA will also accept *lower* "deemed" savings measures claims of customers for air source heat pump installations or conversion in new or existing single family and multifamily homes and manufactured homes when these residences *have not* been certified under the PTCS specifications and are installed in accordance with the specifications in Appendix H "Air Source Heat Pump Installation Specifications."⁵

Heat Pump Specifications - Ground/Water Source - BPA will accept the "deemed" savings measures claims of customers for the installation of ground/water source heat pumps in existing residences built prior to 1992 only on the condition that these residences have been fully retrofitted in substantial compliance with Site-built Weatherization Specifications.⁶

In addition, BPA will accept the "deemed" savings measure claims of customers for the installation of ground/water source heat pumps in any residence, regardless of date of construction, on the condition that such residences have had their duct systems certified under the PTCS specifications and are installed in substantial compliance with the specifications in Appendix I "Ground/Water Source Heat Pump Installation Specifications, which are available in the C&RD Software, under Downloads.

³ See C&RD Software for "deemed savings" and the recommended amounts for installations that meet PTCS specification and those that do not.

⁴ "Fully retrofitted" means that the house has all feasible high priority thermal shell and air tightening measures installed.

⁵ See C&RD Software for "deemed savings" and the recommended amounts for those heat pump installations that meet PTCS specification and those that do not.

⁶ "Fully retrofitted" means that the house has all feasible high priority thermal shell and air tightening measures installed.

BPA will also accept *lower* "deemed" savings measures claims from customers for ground/water source heat pump installations or conversions in new or existing single family and multifamily homes and manufactured homes when those residences *have not* been certified under the PTCS specifications and are installed in substantial compliance with the specifications in Appendix I "Ground/Water Source Heat Pump Installation Specifications."⁷

Energy Star® Appliances & Lighting - BPA will accept the "deemed" savings measures claims of customers for energy efficiency upgrades to new clothes washers, room air conditioners, compact fluorescent lamps and fixtures only on the condition that these appliances, lamps and fixtures comply with the minimum specifications of the national Energy Star® program.

Energy Star Homes Northwest Builder Option Package - BPA will accept the "deemed" savings claims for new homes built to the **Energy Star Homes Northwest Builder Option Package** if the home has been certified to be in compliance with the latest in program specifications by the State Certifying Organization (SCO). The Energy Star Homes Northwest Builder Option Package and specifications will be posted on the C&RD Reporting Software site under "Downloads" once they become available. Additional information and contacts is available at www.NorthwestENERGYSTAR.com. You can also contact Tiffany Thompson, Energy Star Program Manager, at 503-595-4494 or tthompson@peci.org.

3.3.2 COMMERCIAL

Energy Smart Design - BPA will accept the "deemed" savings and evaluation protocol based estimates of savings claims of customers for energy efficiency upgrades to new or existing commercial buildings only on the condition that these building have been designed, constructed, and certified in substantial compliance with the most recent Energy Smart Design program specifications. BPA will post updated versions of these program specifications on its website, as they become available.

3.3.3 INDUSTRIAL

Energy Savings Plan - BPA will accept the "deemed" savings and evaluation protocol based estimates of savings claims of customers for energy efficiency upgrades to new or existing industrial facilities only on the condition that these facilities have been designed, constructed, and inspected in substantial compliance with the most recent Energy Savings Plan program specifications. BPA will post updated versions of these program specifications on its website, as they become available.

3.3.4 IRRIGATED AGRICULTURE

WaterWise - BPA will accept the "deemed" savings and evaluation protocol based estimates of savings claims of customers for energy efficiency upgrades to new or existing irrigation

⁷ See C&RD Software for "deemed savings" and recommended amounts for those heat pump installations that meet PTCS specification and those that do not.

systems and water management only on the condition that these facilities have been designed, constructed and inspected in substantial compliance with the most recent *WaterWise* program specifications. BPA will post updated versions of these program specifications on its website, as they become available.

3.4 Analytical Process and Assumptions for Estimating the Value of "Non-Deemed" Conservation Savings and Renewable Resource Net Energy Production to the Region's Bulk Power System and Resource Cost-Effectiveness

BPA customers who wish to claim discounts based on savings estimates derived from the protocols in Appendix P may use a modified version of the Northwest Power and Conservation Council's (Council) PROCOST model to establish the value of those energy conservation savings or net energy production of renewable resources to the region's bulk power system. The PROCOST model quantifies all costs to society including installed measure costs and operating costs, as well as replacement costs and maintenance costs to the transmission and local distribution systems. The model also incorporates all of the benefits to society that can be quantified including avoided energy and capacity resources, avoided transmission and distribution system losses, and non-energy benefits such as water savings, as well as environmental externalities and the regional conservation credit.

Discount and Finance Rates and Amortization Life - A real discount rate and real finance rate of 4.75 percent will be used. All capital costs should be amortized over 15 years. These assumptions are consistent with those used in the Council's Fourth Northwest Conservation and Electric Power Plan. The 15-year amortization life was selected to match the anticipated financing life of new "merchant plant" generating facilities.

Table 1 - Recommended Useful Lives for Conservation and Renewable Resource Measures

SECTOR/MEASURE	LIFE (YRS)	SOURCE
Residential		
New Construction Building Shell Measures - Site Built	70	Council Plan
New Construction Building Shell Measures – Manufactured Housing	45	Council Plan
Existing Construction, Site Built Building Shell Measures	45	Council Plan
Existing Construction, Manufactured Home Building Shell Measures	25	WeatherWise
Air Source Heat Pump	18	US DOE ⁸
Air Source Heat Pump Compressor	14	US DOE
Ground/Geothermal Source Heat Pump	30	GHPC ⁹
Ground/Geothermal Source Heat Pump Compressor	20	GHPC
Central Air Conditioner	18	US DOE
Central Air Conditioner Compressor	14	US DOE
Window Air Conditioner	9	US DOE
Domestic Hot Water Heater	12	US DOE
Heat Pump Hot Water Heater	15	US DOE
Clothes Washer	14	US DOE
Dishwasher	9	US DOE
Bi-Radiant Oven	20	US DOE
Refrigerator	19	US DOE
Freezer	22	US DOE
Compact Fluorescent Lamps - Interior	10,000 hrs	RTF
Compact Fluorescent Lamps - Exterior	8,000 hrs	RTF
Compact Fluorescent Fixtures	15	RTF
Commercial		
New Construction - Building Shell	30	Council Plan
New and Retrofit HVAC Systems & Controls	15	Council Plan
New Lighting Fixtures	20	Council Plan
Retrofit Lamps & Ballasts	12	Council Plan
Electronic Ballasts and Retrofit Fixtures	15	Council Plan
Industrial		
Motors	15	Council Plan
Irrigated Agriculture		
Irrigation Scheduling/Water Management	1	WaterWise
Low Pressure Nozzles	5	WaterWise
Pumps and Pump Repairs	10	WaterWise
Drop Tubes	10	WaterWise
Steel Pipe & Fittings	15	WaterWise
Mortar Lining (Installed to AWWA Specifications)	15	WaterWise
PVC Pipe (Installed to AWWA Specifications)	15	WaterWise
Renewable Resources		
Solar Photovoltaic Systems	20	RTF
Solar Domestic Hot Water Systems	20	RTF

⁸ All references to "USDOE" are to U.S. Department of Energy, Technical Support Documents for the applicable appliance or equipment developed for standards rulemaking.

⁹ Ground Source Heat Pump Consortium.

Measure Life - Useful lives for conservation measures and renewable resources are shown in Table 1, along with the sources for these assumptions. Measure life assumptions for those measures or resources not listed should be based on standard engineering practices and experience.

Avoided Cost of Future Electricity Supply - The Council's forecast of future wholesale prices for electricity developed in its "Northwest Power Supply Adequacy/Reliability Study - Phase 1 Report" will be used.¹⁰ If the volatility in wholesale electricity prices and increases in the cost of natural gas continues, BPA may request the RTF to revisit the avoided cost forecast for estimating the value to the bulk power system of conservation energy savings and the net energy production of customer-side renewable resources. BPA will consider such a request when the Council adopts a new forecast of future electricity prices.

Bulk Transmission System Capacity Benefits (Value) –The RTF did not have access to information that would enable it to establish a quantitative estimate of the bulk transmission system capacity benefits of conservation and distributed renewable resource generation that reflects potential transmission constraints in different locations across the region. However, the RTF believes that most conservation and distributed renewable generation resources have economic value due to their ability to defer transmission capacity upgrades and improve transmission system efficiency. Therefore, the RTF used a "placeholder" value of \$3.00 per kilowatt-year as the average regional bulk power transmission system benefit of conservation and distributed renewable resource generation. It was also assumed that this is proportional to the conservation measures savings or the renewable resource's net energy production during peak load hours in January. The RTF recommended that BPA's Transmission Business Line (TBL) develop information on what the appropriate values for bulk transmission system capacity benefits from conservation and distributed renewable resources are and make those available for use. The TBL is still considering this recommendation.

Shape of Savings/Net Energy Production - The shape of the conservation savings that were developed from sub-metering data collected during BPA's End Use Load and Consumer Assessment Project (ELCAP) will be used where project specific load shape information is not available. Each conservation measure's annual savings or the net energy production of customer-side renewable resources should be allocated to one of four time periods (or load segments) per day for each of the twelve months of the year. The PROCOST model uses this information to compute the present value regional benefit of energy savings or distributed electricity production during each of these load segments by comparing the avoided cost of electricity supply during these same times of the day and year.

Appendix K describes in more detail how the Council's PROCOST model uses the shape of conservation measure savings and net energy production from renewable resources to develop its estimates of regional bulk power system value.

¹⁰ Northwest Power Planning Council, Northwest Power Supply Adequacy/Reliability Study - Phase 1 Report. Document 2000-4. March 6, 2000.

3.5 Value of Conservation Savings and Renewable Resource Net Energy Production to the Region's Bulk Power System

The C&RD Program credits customers based on Total Present Value (Present Value) to the Bulk Power System based on the PROCOST model, the annual energy saving, and the expected life of a measure or project. For projects using the Site Specific Verification Protocols, a downloadable calculator called the “All Sectors – Rate Credit Discount Calculator by End Use/Sectors for Measure”. This spreadsheet is based on PROCOST and will determine the qualifying C&RD Credit for that project or measure based on the verified energy savings, the measure life, and the end-use sector load shape.

The C&RD Credit values generated by the “All Sectors – Rate Credit Discount Calculator...” are based on the estimated present value benefit to the region's bulk power system of conservation savings and the net energy production of customer-side renewable resources with varying load shapes and lifetimes. This value includes the Northwest Power Act's 10 percent conservation credit (except for customer-side renewable resources), the benefits of avoided future power supply purchases, and reflect the bulk transmission and sub-transmission savings of \$3.00 per kilowatt-year of capacity. The effect of environmental externalities is excluded from the values. All values are stated in terms of year 2000 present value dollars per kilowatt-hour of first year savings or net electricity production. No values are shown for lifetimes significantly beyond the expected life of the applicable measure (e.g., water heaters are only expected to last 10 to 12 years and, therefore, no values are given beyond 20 years for this measure).

The “All Sectors – Rate Credit Discount Calculator by End Use/Sectors for Measure” can be found in the C&RD Software, www.rtf.nwppc.org, in the Downloads section under downloadable calculators. This calculator will generate a bulk power system value of a particular conservation measure or renewable resource's net energy production that can be used to claim a C&RD Credit for a particular measure or project. The C&RD Credit can be derived by entering the first year savings and choosing the appropriate end use and measure life.

3.6 Quality Control Criteria for Customer-Side Photovoltaic and Direct Application Renewable Resources

Customer-side solar photovoltaic systems - Eligible photovoltaic 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 website.¹¹
2. The system must be installed by a licensed contractor, unless installed by the purchaser, and 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

¹¹ Certified modules are posted at http://www.consumerenergycenter.org/erprebate/eligible_pvmodules.html
Certified Inverters are posted at http://www.consumerenergycenter.org/erprebate/eligible_inverters.html

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 C&RD program must be warranted as follows:
 - (a) 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, and
 - (b) 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.

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 Water Heater Program - General and Technical Specifications.***" These program specifications are available by request from BPA. Certain terms and conditions may apply.

3.7 Utility Conservation and Renewable Resource Tracking and Reporting System

Because of the RTF's expertise in conservation and renewable resource technologies, BPA believes it is reasonable that the RTF act as the region's information clearinghouse to provide information about the regionwide C&RD program accomplishments. The RTF will track and report on the kilowatt-hours saved by all BPA customers on at least an annual basis. To facilitate the preparation and submittal of savings activity reports, the RTF, with BPA assistance, has developed a C&RD Program Tracking and Reporting Software. This is an interactive and user-friendly web-based "report generation" tool that allows utilities to:

- Report annual targets for each conservation measure under consideration.
- Prepare and submit periodic activity summary reports.
- Determine utility deemed savings or direct reimbursement credit entitlements.
- Examine program progress through measure and expenditure trending reports and graphical displays.

Customers will track their program activity on the C&RD Software, www.rtf.nwppc.org, and will annually submit reports to BPA. When a customer officially submits a report, a web link will be sent to BPA giving BPA only access to that customer's official report.

3.8 Process for Resolving Differences and Modifying the Qualifying Measures and Activities List

Due to a wide variety of factors (e.g., unique local climatic conditions, changes in technology or costs, local codes or standards), customers and interested persons may wish to propose modifications to approved recommendations and findings. Entities eligible for the C&RD, or an entity that is co-sponsored by an eligible entity, may submit a proposal. Such proposals for change might include a

desire to add new measures to the RTF's list, or a request for modification of an evaluation protocol or the assumptions used for calculating a measure's savings or regional value. The following describes the process adopted to bring proposals to the RTF for consideration prior to submission to BPA.

Initiation of Process - Parties may initiate the process by contacting the Chair of the RTF either in writing or via electronic mail. The party making the proposal should explain the change proposed. If a new measure is being 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 being 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 will be made available on the RTF's website, which will set forth the minimum level of information needed to file the proposal.

The RTF staff (Council staff assigned to support the RTF) will first assess the completeness of the proposal. If the proposal includes all the 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, the 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 a place on the discussion agenda.

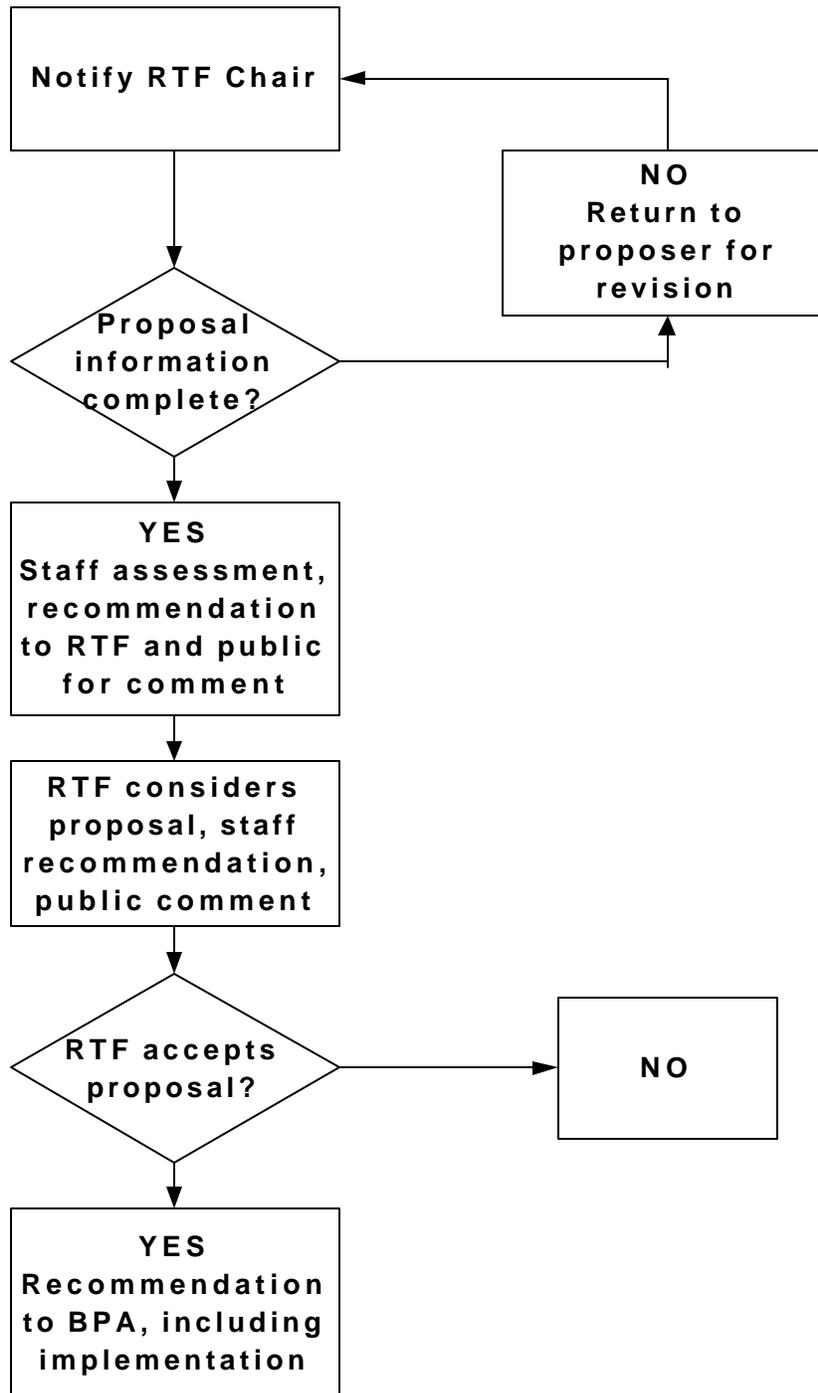
The RTF anticipates that it will normally be able to make decisions on most proposals within 90 days of receiving them, though complex issues could take longer and some circumstances (e.g., health and safety) could warrant more immediate action. Notice of pending actions on matters being appealed will be provided on the RTF's 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 being considered.

Transmittal of Recommendation to BPA - Accepted proposals will be submitted in writing to BPA as RTF recommendations, including recommendations as to how any changes should be implemented.

BPA Approval - BPA will respond within 30 days, either by approving the request, denying the request, or by requesting more information. For more complex requests, BPA may need to take longer, but will respond with a proposed course of action and completion date within 30 days of the utility request. See Section 11 for additional details.

Figure 1 - Process Flowchart



After BPA receives the RTF’s recommendation, BPA will respond within 30 days, either approving the request, denying the request, or by requesting more information.

4. C&RD Conservation Implementation Issues

The purpose of this section is to explain customers' options and responsibilities when implementing the conservation portion of the C&RD.

4.1 Customer Options for Conservation

The size of the customer's Net Requirements purchases will determine the customer's options for conservation implementation approaches. Customers whose Net Requirements purchases are 7.5 aMWs or less are eligible to use the Small Customer Option (section 4.1.1) or they can choose any of the other options available. Customers with Net Requirements purchases greater than 7.5 aMWs must choose between Option A (section 4.1.2) or Option B (section 4.1.3).

4.1.1 *Small Customer Option*

Those customers eligible for and participating in the Small Customer Option will receive their full BPA C&RD by certifying in an annual letter to BPA that they have provided their residential end users the Small Customer Option elements listed below. BPA customers without residential load will need to certify that they have met item 5 of the Small Customer Responsibilities, below.

The Small Customer Option is strictly voluntary. A small customer may choose to seek eligibility for the C&RD under Option A or Option B. The small customer may choose to do nothing, although in that case, the customer would not be eligible for the C&RD credit.

Small Customer Responsibilities

1. The small customer shall make available to all of its residential consumers:
 - a. Information on cost-effective energy conservation measures;
 - b. Information on energy conservation measure financing available to utility consumers, where it exists;
 - c. Information on energy conservation or renewable resource incentives such as state tax credits or low-interest loans; and
 - d. Information about net metering laws, where applicable.

This information (e.g., bill stuffers; city newsletters; promotion of the Energy Star[®] program; information on a utility website; public service announcements in local newspapers or public access channels; displays in lobbies; etc.) is to be made available to all residential consumers of a utility at a minimum of once a year. The C&RD Small Customer Options Handbook has examples of information and materials that can be used for this purpose.

2. Upon a retail consumer's request, a utility shall provide or arrange to provide for an energy assessment of a residential customer's dwelling. (Note: This responsibility does not require that the utility pay for the assessment; however, the utility is encouraged to

help offset part or all of the cost. The energy assessment could be on-site, web-based, etc.)

3. A small customer may satisfy the responsibilities above by: (a) providing the services itself; (b) joining an energy conservation organization (*see* Rules for Pooling Organizations); (c) contracting with an energy service provider; or (d) contracting with another utility.
4. Those small customers eligible for the Low Density Discount may alternatively provide appropriate energy efficiency information to their irrigation and agricultural customers.
5. Those small customers with little or no residential consumer load shall have information about cost-effective energy conservation measures available to share upon request with employees, visitors, and other interested parties. This can include information on non-residential conservation measures.
6. The small customer shall provide BPA an annual letter certifying the above requirements have been met by providing an overview of the services provided. Typically, the utility governing body or manager signs these letters. Small customers whose annual C&RD is less than \$5,000 do not need to send BPA a letter certifying their C&RD activity.

OR

The customer may simply participate in the C&RD program under Option A or Option B offered to BPA's power customers.

BPA Responsibilities

1. BPA shall make available to its small customers a sample customer information letter or bill stuffer to help meet the requirements of 1.a., above.
2. BPA shall be a conduit for providing information about energy conservation measure financing to help meet the requirements of 1.b. and 1.c., above.
3. BPA shall make available to its small customers its Northwest Energy Efficiency Business Listing, which provides information about energy service firms and organizations in the region.
4. BPA shall be a conduit for providing information about conservation and renewables through its Account Executives (i.e., NEEA programs and activities, Energy Star, DOE, etc.).

4.1.2 Option A – Dollar for Dollar Cost Reimbursement (w/restrictions)

Full cost reimbursement on a dollar-for-dollar basis without regard to energy efficiency cost-effectiveness, is conditioned upon the customer meeting the following criteria:

- A 20 percent cap on the amount of administrative and marketing costs that can be charged (see Attachment C for a list of allowable activities and costs). The 20 percent is of the remaining C&RD funds, after the following expenditures have been

deducted from the customer's total C&RD eligibility (see Cash Flow Diagram in Section 9.2):

- * Renewable energy purchases (Section 5);
 - * Donations to Qualifying Organizations on the "Un-Limited" List (Section 7);
 - * Donations to Qualifying Organizations on the "Limited" List (Section 8); or
 - * Spending on RD&D for Conservation and/or Renewables (Section 8).
- Low-income weatherization donations or costs qualify for full credit and are included in the conservation spending used to determine the allowable administrative costs;
 - Only measures from the reduced list of pre-approved measures listed below will be allowed (see Attachment D); and, if applicable;
 - For investments in utility system upgrades (i.e., "BPA customer's facility" investments), only the value of the energy savings to the bulk power system attributable to energy efficiency improvements (calculated from engineering estimates) would qualify for the C&RD, not the full cost of the system upgrade. Reducing line losses would be eligible, but capacitor replacements to improve power factor would not.

Reduced List of Pre-Approved Measures for Option A of the C&RD (see Attachment D)

Residential

- Energy Star Labeled Compact Fluorescent Light Fixtures and Bulbs (with limited exceptions).
- PTCS Duct Sealing Program.
- Efficient Electric Water Heater.
- Multi-Family Weatherization.
- Certified Super *Good Cents* (SGC) - Manufactured Homes.
- Energy Star Clothes Washers.
- Long term Super *Good Cents* (SGC).
- Single Family Weatherization.

Commercial

- Commercial Lighting: All retrofit applications based on T-8 and electronic ballast technologies that are described and assigned savings by the RTF and are calculated by the RTF to be cost-effective to the bulk power system and incandescent conversions recommended by the RTF to be cost-effective to the bulk power system.

4.1.3 Option B – Value of Energy Savings

- Customers can use one of three methods to determine the value of the energy savings to the bulk power system. They are: (1) deemed savings estimates; (2) deemed methods for calculating the value of the energy savings, as accepted by BPA, which require specific data inputs such as hours of operation; or (3) site specific approved engineering protocols for unique projects. Administrative and marketing costs are the responsibility of the customer.
- Customers using the Option B conservation approach have two choices for administrative costs. They may claim \$32,850 (not to exceed their C&RD eligibility) or they may claim up to 20 percent of the remaining C&RD credit, after the following expenditures have been deducted from the customer’s total C&RD eligibility (see Cash Flow Diagram in Section 9.2):
 - * Renewable energy purchases (Section 5),
 - * Donations to Qualifying Organizations on the “Un-Limited” List (Section 7),
 - * Donations to Qualifying Organizations on the “Limited” List (Section 8), or
 - * Spending on RD&D for Conservation and/or Renewables (Section 8).

It is BPA’s intent that administrative and marketing funds be spent on incremental conservation activities. In the customer’s annual letter certifying incremental increases in spending, the customer will describe how these funds were generally spent and how those expenditures relate to the C&RD program. Administrative costs above the \$32,850 or the 20 percent are considered part of the installed measure cost and would need to be covered by the C&RD credits received for installing qualified conservation measures.

Customers will be allowed to claim their allowable Administrative Allowance on an annual basis at the time they make their annual report. The Administrative allowance will only be available for each year of the Rate Period. The remaining funds, after the Administrative Allowance has been deducted can be carried forward into the next year, if they are not needed, but cannot be used to calculate the amount of the Administrative Allowance in subsequent years.

- Example 1: A utility has an annual C&RD eligibility of \$120,000. They claim \$20,000 as a limited donation. That leaves \$100,000 that can be spent on qualifying conservation measures and low-income weatherization. The allowable Administrative Allowance in this case is either \$32,850 or \$20,000 (20 percent). In this case it is expected that a utility will choose the \$32,850 amount for each year of the Rate Period.
- Example 2: A utility has an annual C&RD eligibility of \$320,000. They claim \$20,000 as a limited donation, buy \$50,000 worth of renewable power, and do a small RD&D project that costs \$10,000. That leaves \$240,000 that can be spent on qualifying conservation measures and low-income weatherization. The allowable Administrative Allowance in this case is either \$48,000 (20 percent) or \$32,850. The utility has \$192,000 to use toward qualifying conservation measures or projects, but only claims \$100,000 for the year. The remaining \$92,000 can be carried forward. However, when the

Administrative Allowance is claimed for the next year, the \$92,000 remaining from the previous year cannot be used to determine the current year's allowable Administrative Allowance.

- Low-income weatherization donations or costs qualify for full credit and are included in the remaining funds used to determine the amount allowed for administrative costs.

OR

Low-income weatherization may be claimed as a deemed measure from the Residential Deemed Measure List.

- Only conservation measures that meet the definition of “Conservation” as defined by the Pacific Northwest Electric Power Planning and Conservation Act (Act) qualify for a C&RD credit. For example, curtailment, fuel switching, or load building are some of the activities that do not qualify for a C&RD conservation credit. Section 3.3 of the Act is as follows:

“Conservation means any reduction in electric power consumption as a result in increases in efficiency of energy use, production, or distribution.”

- Commercial and industrial projects that have less than a one-year simple payback will not be eligible for the C&RD.
- A customer’s C&RD Credit for conservation projects with 100,000 kWh of annual energy savings will be capped at 100 percent of the incremental cost of the energy conservation related costs.

4.2 Selecting an Option

If a customer wants to change from one conservation option to the other (Option A to Option B or Option B to Option A), it will be allowed once with the following conditions:

- Changes will only be allowed at the end of the fiscal year (September 30). Customers are encouraged to notify BPA as soon as possible of the intended change, but must do so no later than 30 days before the end of the fiscal year (FY).
- Customers will have to close out their records for the period prior to the change in regard to administrative allowances and conservation achievements and/or costs.
- What the customer has spent prior to the change on administrative activities will be the basis used to determine, with minimal documentation, what they have left to spend on those activities for the remainder of the rate period.

If a customer wants to change conservation options more than once, during the rate period, and circumstances warrant such a change, BPA is willing to consider and may approve such changes on a case-by-case basis.

4.3 Mixing Customers in Pooling Organizations

If a pooling organization has a mix of customers using different conservation approaches (Option A or Option B), the pool must keep customers using the different conservation approaches in two separate subgroups for reporting purposes.

4.4 Ramp Up Costs

Customers will be given the option of claiming eligible activities prior to the beginning of the 2002-2006 Rate Period, but only for activities that occur after February 12, 2002. Actions taken before the beginning of the rate period will not increase a customer's C&RD eligibility, which is based on the customer's net requirements forecast during the rate period.

4.5 Ramp Out Costs

BPA does not have budget authority to fund C&RD energy conservation projects after the end of the 2002–2006 rate period. Since end users are allowed to approve and plan projects prior to the beginning of the rate period, projects that take longer than 6 years to plan and implement may not be appropriate for funding under the C&RD. However, all eligible costs incurred during the rate period can be credited under C&RD.

4.6 RD&D Activities for Conservation Resources

The following categories of activities potentially qualify for the C&RD as research, development, and demonstration activities. Qualification will be determined on a case-by-case basis using the criteria following this list of activities. The customer is required to submit a proposal to the RTF for review, so they can make a recommendation to BPA. The criteria that the RTF will use to evaluate renewable resource RD&D can be found in this Section and in Section 4.9.

1. Assessment of the supply or quality of qualifying measures.
2. General assessment (i.e., not in sole support of a specific project) of conservation potential.
3. Research and development regarding technology and environmental or other issues affecting the development and performance of conservation measures. These may be undertaken as a specific project, provided that the results will significantly benefit other projects and will be shared.
4. Development or demonstration of potentially significant new conservation measures.
5. Demonstration of novel applications of established conservation technologies.
6. Provision of information useful for the evaluation, design, or operation of facilities using qualifying conservation measures.

4.7 Criteria for the Evaluation of Proposed Conservation Resource RD&D Activities

The RTF will use the following criteria to evaluate proposed RD&D activities:

1. The research objectives, approach, tasks, timeline, budget and reporting of the proposed activity shall be clearly set forth in a written proposal. The proposal should also include a section addressing the criteria set forth here, as applicable.
2. The activity may be implemented by the BPA customer or by a separate organization funded in whole or in part by the customer.

3. The activity should have a high probability of expanding the use of conservation measures in the Northwest.
4. The activity should have a high probability of achieving one or more of the following objectives: reduced measure costs, improved technology performance (reliability, efficiency, etc.), reduced environmental impact, increased non-energy benefits, or improved forecasts of cost, performance, or environmental impact.
5. Preferably, activities should address conservation measures promising low or declining costs, abundant quantity, non-energy benefits and modest or beneficial environmental effects.
6. The activity should focus on resolution of problems specific to the Northwest. Emphasis should be given to addressing regional problems because it is less likely that national organizations or organizations operating outside the region will support work on these problems.
7. If feasible, the activity should be designed to achieve multiple objectives and widespread benefits.
8. 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 application. Commercial technologies may benefit from the C&RD on the basis of energy conservation benefits.
9. Efforts to lower costs through increased production or mass purchase of commercial technologies are not considered to be research, development or demonstration. Commercial technologies may benefit from the C&RD on the basis of energy conservation benefits.
10. The activity should foster the development of qualifying measures, in general, as distinguished from primarily supporting a specific project. The latter may benefit from the C&RD on the basis of its energy conservation benefits. For example, assessment of the energy efficiency improvement gained from testing a new or modified industrial process in a single production line could be considered a qualifying RD&D activity. However, retrofitting the remainder of production lines in the facility would be considered a commercial application eligible for C&RD based on energy savings.
11. Because of the cost and risk associated with large-scale installation of conservation measures, research objectives should be addressed, unless unfeasible, by means of smaller scale installations, or if there is conclusive evidence that a large scale installation will be economically viable.
12. Information resulting from the activity relating to the stated research objectives shall be made public within a reasonable period for data compilation, analysis and publication.
13. Credit is limited to RD&D costs incurred during the period of the C&RD.
14. Electricity conservation savings obtained as a result of a RD&D activity should not qualify for C&RD credits.
15. Projects that are co-funded by regional or national organizations responsible for promoting renewable resources, such as the U.S. Department of Energy, should be given preference, however, co-funding is not required. Co-funded amounts are excluded from the C&RD credit.

4.8 Loan Programs

BPA believes that loan programs are an effective way of developing sustainable energy efficiency programs. BPA does not believe, however, that it must do more to incentivize loan programs than is proposed in this Manual.

Under Option A, the customer's actual costs will be credited. Administrative and processing costs up to 20 percent of the customer's conservation expenditures can be claimed. Third-party closing costs, interest, escrow, and interest buy down costs will be fully reimbursable under Option A.

Under Option B, customers will be credited based on the value of the energy savings for the qualifying measures installed. With 20 percent allowed for administrative costs and 80 percent based on the value of the energy savings to the bulk power system, the customer has the ability to recoup more than the actual cost of implementing a loan program. The full value of the energy savings attributable to each measure installed under the loan program is potentially eligible for the C&RD.

5. Criteria for Renewable Energy Resources Eligible for the C&RD

5.1 Purpose and Scope

The purpose of this section is to explain the procedures for implementing the C&RD for renewable energy resources. Renewable energy resources 25 kW and larger are covered in this section. Renewable energy resources less than 25 kW are treated as conservation measures and will receive credit as an Option B conservation measure (see Section 4.1.3).

The C&RD is intended to encourage energy conservation and the development of new, incremental renewable energy resources in the Pacific Northwest. With the exceptions noted below, the amount of the C&RD that can be applied to eligible renewable energy generating resources would be based on the purchase share of the net electrical output of the resource.

5.2 Definitions

Deemed Output means the output from renewable energy resources that are too small to meter in a cost-effective way. In general, metering for renewable energy resources less than 25 kW is not required. Standards for Deemed Output will be developed in consultation with the RTF. A customer side of the meter solar photovoltaic system or a solar domestic hot water heating system might be examples of a resource for which the output would be deemed (see Appendix L).

Direct Application Renewable Resource means a resource which utilizes solar, wind, hydro, geothermal biomass, or similar sources of renewable energy which reduce the electric power requirements of consumers served by BPA's customers, thereby offsetting demand on the BPA system. Direct-Application Renewables will be treated like conservation, when it is possible to accurately estimate the future kWh output.

Expansion of an Existing Facility means an incremental expansion of generating capacity obtained by the installation of additional power-generating equipment at an existing power project site.

- 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.
- Replacement or modification of existing equipment that results in increased power generation will be considered generation.

Net Electric Energy means the metered kWh 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 Facility means a Renewable Energy Facility that is not an Expansion of an Existing Facility. A New Facility would generally be located at a site where there is not already an existing facility using the same resource (e.g., wind). A New Facility would likely require significant environmental review, permitting, and new infrastructure (such as transmission lines and access roads.) 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 Pacific Northwest Electric Power Planning and Conservation Act of 1980, Public Law 96-501, 16 U.S.C. 839.

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 Source.

Renewable Energy Source means:

- **Biomass** — generating electricity using heat derived from combustion of plant matter, or from combustion of gases or liquids derived from animal waste or sewage, or from combustion of gases (but not toxic liquids) derived from plant matter, or from combustion of gases derived from landfills, or which derive hydrogen from these same sources to generate electricity using fuel cells.
- **Geothermal** — generating electricity using naturally occurring underground heat.
- **Hybrid Facilities** — generating electricity in a fraction of a facility that uses a renewable energy resource.
- **Hydroelectric** — generating electricity using hydropower facilities outside of protected areas as defined by the NWPPC and other federal or state agencies and applicable statutes.
- **Solar** — generating electricity from solar heat and light, including solar photovoltaic systems and solar thermal systems.
- **Wind** — generating electricity by the capture of wind energy to drive an electric generator.

5.3 What is a Qualified Renewable Energy Facility

To be eligible for the C&RD, a Renewable Energy Facility must satisfy the following criteria:

- **Time of first use** — The facility must begin commercial operation no earlier than May 1, 1999, and no later than September 30, 2006.
- **Location** — Renewable Energy Facilities must be located in the Pacific Northwest as defined by the Northwest Power Act, with the following exceptions:
 - a. The currently permitted Wyoming Wind Project at Foote Creek Rim and Simpson Ridge in Carbon County, Wyoming, with the exception of the 41.4-MW Phase I development at Foote Creek Rim (in other words, the 41.4-MW Phase I project is not eligible for the C&RD, but subsequent facilities constructed at the site are eligible);
 - b. Projects shown by the applicant to effectively displace operation of regional nonrenewable generation resources (subject to BPA's approval).

5.4 Conversion of Non-Qualified Facilities

Existing Renewable Energy Facilities which were on-line prior to the date listed in section 5.3, but subsequently re-powered, are eligible for C&RD if the fair market value of the facility before the upgrades is not more than 20 percent of the new total fair market value.

5.5 Metering Requirements

Except for un-metered resources and RD&D (as shown in Table 2, Section 5.16), output of Renewable Energy Facilities must be metered in accordance with generally accepted utility standards, and output and meter calibration records must be available for inspection by BPA upon request.

5.6 Power Purchases from Power Marketers

Purchases from power marketers and pooling organizations are eligible for the C&RD, provided the underlying resources meet the eligibility requirements for Renewable Energy Facilities and the customer can supply documentation upon BPA's request. The main purpose of the documentation would be to verify the renewable energy resource eligibility and the amount of the purchase share of the output for which the customer is claiming the C&RD. The amount of the C&RD available for each type of underlying renewable energy resource is specified in Table 2 in Section 5.16, below. Customers are required to retain and retire, within their service territory, the environmental attributes and/or Green Tags associated with power purchases from qualifying Renewable Energy Facilities when claiming such purchases on their annual C&RD Report.

5.7 Transfer of C&RD Claims for Renewable Energy Output

Customers may enter arrangements through which one customer would own or purchase the output from an eligible Renewable Energy Facility and other customers would apply their C&RD to the output.

For example, Customer A could sign a power purchase agreement with a developer for an eligible 15 megawatt (MW) wind project at a site qualified to be a New Renewable Energy Facility. Customers B and C could apply their C&RD to 5 MW each at the rate of 15 mills/kWh, under a payment arrangement with Customer A. All of the project's output would be delivered to, and used in, Customer A's system.

Customers may also transfer C&RD claims to other BPA customers by selling the attributes or Tags generated by eligible Renewable Energy Facilities to other BPA customers. See Section 5.8 for details.

5.8 Environmental Attributes from Renewable Energy Sources

Environmental attributes associated with energy generation from Renewable Energy Sources are the fuel, emissions, or other environmental characteristics of a renewable resource.

Environmental attributes do not include energy, capacity or reliability. Environmental attributes associated with energy generation from Renewable Energy Sources are also known as: "renewable energy attributes", "green tags", "renewable energy certificates", "tradable renewable certificates" and "renewable energy credits." Environmental attributes associated with energy generation from Renewable Energy Sources will henceforth be referred to as 'tags'.

This Section applies only to tags, not to Environmentally Preferred Power (EPP) or Alternative Renewable Energy (ARE); Section 5.9 addresses EPP and ARE.

Tags purchased from BPA, The Bonneville Environmental Foundation (BEF) or other parties are eligible for C&RD, provided the following conditions are met.

Conditions for tags to qualify for C&RD:

- a. The same megawatt-hours cannot be claimed twice under C&RD. Therefore, renewable energy claimed elsewhere under C&RD (e.g., under Sections 5.9, 5.10 or 5.16) is not eligible for additional C&RD benefits under this section.
- b. Only tags, which are retired within the purchasing utilities service area are eligible for the C&RD program. Tags resold in a premium green pricing program will be eligible for C&RD credit if the revenues from both the green pricing program and the C&RD credit are re-invested in the green pricing program.
- c. The facility generating the tags must be a Renewable Energy Source as defined in section 5.2.
- d. The facility generating the tags must meet the criteria provided in Section 5.3.
- e. The output of the generating resource from which the tags originated, is metered. See Section 5.5 for meter requirements.
- f. The C&RD claim is accompanied by: 1) a generator attestation verifying the monthly output of the generation facility, that the Tags have been sold only once, and that the Tags retain associated emission offsets; 2) Wholesaler attestation(s) verifying that the tags have been sold only once and retain associated emission offsets; and 3) a guarantee that an independent annual audit will be completed.
- g. Tags can only be claimed in the year in which they were generated.
- h. C&RD credit amount: Payment scale is the lesser of the amount listed in Table 2 (Section 5.16) or the purchase price of the tags. Proof of purchase price must be verified via audit under Section 5.8 (f)(3).

Reinvestment Requirement:

The reinvestment requirement for third party green tags purchase has been dropped due to the difficulty in defining and enforcing “reinvestment” and/or “profit” criteria. Retaining the current policy would require verification of “profit,” setting reinvestment percentages and verifying reinvestment, which is difficult to do.

Tags from direct application generation:

Tags generated by direct application renewable generation projects are not eligible for renewable C&RD Credit. Please see section 4.1.3 for information on conservation credit.

5.9 Renewable Purchases from BPA

Renewable products purchased from BPA are eligible for the C&RD. Customers are required to retain and retire within their service territory, the environmental attributes and/or Green Tag associated with power purchases from qualifying Renewable Energy Facilities when claiming such purchases on their annual C&RD Report.

BPA currently offers two types of renewable *energy* products and one tag product. The renewable energy products are Environmentally Preferred Products (EPP) and Alternative Renewable Energy (ARE):

- EPP Product: Green Energy Premiums associated with both the Blended and Pure Wind EPP are eligible for the C&RD. The payment paid by the customer to the Bonneville Environmental Foundation (BEF) for EPP, also qualifies for the C&RD (Section 5.11). The amount of the C&RD will be 100 percent of the Green Energy Premium and the BEF payments for EPP.
- ARE: Green Premiums associated with both the Blended and Pure Wind ARE is eligible for the C&RD. The amount of the C&RD will be 100 percent of the premium charged for this product.

Note: project-specific Green Energy Premium purchases from BPA, such as those made by EWEB and PGE, are also eligible. The entire amount of the premium for this product can be claimed against a customer's C&RD obligation.

BPA also offers a tag product. The amount of the C&RD will be 100 percent of the premium charged for this product.

BPA has agreed to ensure that at least \$6 million per year is spent on eligible new Renewable Energy Facilities as part of the C&RD. The mechanism for achieving this is described in Section 5.22 – “Minimum Spending Allocation For Renewables.”

5.10 Blended Renewable Resource Products

Blended Renewable Energy Resources can be purchased from BPA as described above. Also, a customer can receive the C&RD for the purchase of a third party, or their own, blended renewable resource product consisting of existing renewable resource facilities (See section 5.3 for the definition of ‘New.’ Any facility on line before this date is ‘existing’) combined with new Renewable Energy Facilities meeting the eligibility criteria of the C&RD. Customers are required to retain and retire within their service territory, the environmental attributes and/or Green Tags associated with such transactions when claiming such purchases on their annual C&RD Report. The amount of the C&RD that can be applied to the new renewable energy resources fraction of the product will be based on the content of each new Renewable Energy Facility in the product, as shown in Table 2. The existing renewable energy resource fraction of the product can receive the C&RD if all of the following conditions are met:

1. The difference between the cost of producing power from the existing Renewable Energy Facility and the cost of the blended renewable resource product can receive full credit, provided, however, that the entire amount of such difference is contributed to the BEF or to an approved RD&D activity, or invested in a new Renewable Resource Facility meeting the eligibility criteria of the C&RD.

2. The customer must provide documentation satisfactory to BPA regarding the cost of the existing Renewable Energy Facility, the cost of the blended renewable resource product, and the contribution to the BEF or approved RD&D activity, or investment in a new Renewable Energy Facility meeting the eligibility criteria of the C&RD.

5.11 Effects on Net Requirements Load

Net requirements calculations are part of the Subscription contract.

For purchases of BPA's EPP product, no adjustment of net requirements is required.

For purchases of renewable output from any third party or from BPA under the Firm Power Products and Services (FPS) rate schedule, the net requirements in the customer's subscription contract will be adjusted consistent with BPA's 5b/9c policy.

Pools created for the purpose of managing the C&RD are not required to adjust net requirements unless some or all of the members make a third party wholesale purchase of renewable energy. This policy applies to renewable and non-renewable power purchases.

5.12 Contributions to the Bonneville Environmental Foundation

The C&RD may be donated to the BEF, provided the BEF certifies that the donation will be used to purchase new renewable energy resources or fund RD&D activities meeting the other C&RD eligibility criteria. The purchase of Green Tags from the BEF also qualifies for full C&RD Credit.

The BEF has agreed that the portion of BPA's EPP product that goes to the BEF will be used for new resource development and, thus, will be eligible for full credit under the C&RD.

5.13 Contributions to Qualified RD&D Activities

Spending on qualified renewable energy resource RD&D is limited, see Section 9.2 for details.

The C&RD may be donated to pre-approved RD&D activities. Pre-approved RD&D activities include:

- The Wind Research Cooperative administered by Oregon State University;
- The regional wind data collection program administered by Oregon State University; or
- The Regional Solar Radiation Data Center administered by the University of Oregon.

Other RD&D activities may be approved by BPA on a case-by-case basis. The customer is required to submit a proposal to the RTF for them to review so they can make a recommendation to BPA. The criteria that the RTF will use to evaluate Renewable Resource RD&D can be found in Sections 5.13, 5.14 and 5.15.

5.14 Research, Development and Demonstration Activities for Renewable Resources

The following categories of activities potentially qualify for the C&RD as research, development, and demonstration activities. Qualification should be determined using the criteria following this list of activities.

- a. Assessment of the supply, location, or quality of qualifying renewable resources.
- b. General assessment (i.e., not in sole support of a specific project) of renewable resource development potential.
- c. 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.
- d. Research and development regarding technology, environmental or other issues affecting the development and operation of renewable resources. These may be undertaken at a specific project providing that the results will significantly benefit other projects.
- e. Development or demonstration of new technologies with potentially significant application to the use of qualifying renewable resources.
- f. Demonstration of novel applications of established technologies using qualifying renewable resources.
- g. Provision of information useful for the evaluation, siting, design or operation of facilities using qualifying renewable resources. An example might be a local demonstration of customer-side photovoltaic systems that includes measurement of the output and a public outreach program.

5.15 Criteria for the Evaluation of Proposed Renewable Resource Research, Development, and Demonstration Activities

Utilities may take the RD&D Dollar-for-Dollar credit, up to \$20,000 per utility for the rate period, for small-scale photovoltaic under 25 kW or other renewable energy demonstration systems without individual approval by the RTF provided that the projects meet the following criteria:

1. The performance of the project is measured on at least monthly intervals.
2. The system performance is reported to the public via the world-wide-web as well as local reporting mechanisms

For all other projects, BPA may ask the RTF to review the eligibility of the project using the following evaluation criteria:

- (a) The research objectives, approach, tasks, timeline, budget and reporting of the proposed activity shall be clearly set forth in a written proposal. The proposal should also include a section addressing the criteria set forth here, as applicable.
- (b) The activity may be implemented by the BPA customer or by a separate organization funded in whole or in part by the customer.
- (c) The activity should have a high probability of expanding the use of qualifying renewable resources in the Northwest.
- (d) 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.
- (e) 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.
- (f) The activity should focus on resolution of problems specific to the Northwest. Emphasis should be given to addressing regional problems because it is less likely that national organizations or organizations operating outside the region will support work on these problems.
- (g) If feasible, the activity should be designed to achieve multiple objectives and widespread benefits.
- (h) 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 application. Commercial technologies may benefit from the C&RD on the basis of energy production.
- (i) Efforts to lower costs through increased production or mass purchase of commercial technologies are not considered to be research, development or demonstration. Commercial technologies may benefit from the C&RD on the basis of commercial energy production.
- (j) The activity should foster the development of qualifying resources in general, as distinguished from primarily supporting the development of a specific commercial project. The latter may benefit from the C&RD on the basis of commercial energy production. 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.

- (k) Because of the cost and risk associated with large-scale generating projects, research objectives should be addressed, unless unfeasible, by means other than development of a commercial-scale project unless there is conclusive evidence that the project will be economically viable.
- (l) Information resulting from the activity relating to the stated research objectives shall be made public within a reasonable period for data compilation, analysis and publication.
- (m) Credit is limited to RD&D costs incurred during the period of the C&RD.
- (n) Electricity production obtained as a result of a RD&D activity will not qualify for C&RD credits.
- (o) Preferably, projects should be co-funded by regional or national organizations responsible for promoting renewable resources, such as the U.S. Department of Energy. Co-funded amounts are excluded from the C&RD credit.

5.16 Amount of the C&RD

The amount of the C&RD earned by eligible Renewable Energy Facilities or activities is shown in Table 2. The amount of the C&RD earned by eligible Renewable Energy Facilities in Categories 1, 2, and 3 will be based on the customer's purchase share of the actual net generation. The amount of the C&RD earned by un-metered renewable energy resources larger than 25 kW will be the C&RD shown for Category 1, 2, or 3 (whichever is applicable), applied against Deemed Output. For un-metered resources, appropriate levels of deemed net generation will be defined by BPA in cooperation with the RTF.

TABLE 2. AMOUNT OF THE C&RD

	Category 1	Category 2	Category 3	Un-metered Resources	Research, Development, & Demonstration
Resource Type	Solar facilities that are New Facilities	Geothermal or wind facilities that are New Facilities	Biomass or hydro facilities that are New Facilities Geothermal, solar, wind, biomass, or hydro facilities that are an Expansion of an Existing Facility	Un-metered Renewable Energy Facilities 25 kW and larger ⁺ Un-metered customer-side generating resources 25kW and larger ⁺	Wind or solar resource assessment* Other RD&D, as approved by the BPA New technologies**
Credit	20 mills/kWh	15 mills/kWh	10 mills/kWh	The C&RD in Category 1, 2, or 3 applied to “deemed” output	Full cost reimbursement up to 20% limit [#]

- ⁺ Renewable Energy Facilities smaller than 25 kW and Direct-Application Renewables will be treated like conservation measures claimed in Section 4.1.3.
- ^{*} Wind or solar resource assessment refers to the existing programs administered by Oregon State University and the University of Oregon, respectively.
- ^{**} BPA will determine what constitutes a “new technology” and the appropriate level of the C&RD on a case-by-case basis, with the RTF’s assistance.
- [#] Limited to 20 percent of customer’s total C&RD. See Section 8.3 for details.

Incentives or credits received by a customer from other sources (e.g., the Federal Renewable Energy Production Incentive) will not affect the amount of C&RD that may be applied to a qualifying renewable resource.

The cost of third party renewable purchases, as shown in Table 2, are eligible for a 20 percent Administrative Allowance.

5.17 Duration of the C&RD and Renewable Energy Purchases

The C&RD cannot be applied to output generated before or after the contract or rate period, and the C&RD cannot be carried over beyond the contract or rate period, whichever ends first. Similarly, the C&RD cannot be applied to expenditures that occur before or after the contract or rate period.

5.18 Administration

The C&RD for Renewable Energy Facilities 25 kW and larger is administered by Generation Supply, Contract Generating Resources. Applications, notifications, inquiries, and other matters related to the C&RD for renewable energy resources should be directed to the following address:

Bonneville Power Administration

Attn: Tom Osborn

Six West Rose; Suite 400

Walla Walla, WA 99362

Phone: 509-527-6211

Fax: 509-527-6311

5.19 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 eligibility for the C&RD:

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

1. Name of the facility or other official designation;
2. Location and address of the facility and type of renewable energy source;
3. Name, address, and telephone number of a point of contact to respond to questions or requests for additional information;
4. A clear statement of how the Renewable Energy Facility satisfies each and every part of the eligibility criteria; and
5. 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.

5.20 Application for Certification

BPA will certify eligibility for the C&RD renewable energy resources on an annual basis. An Application for Certification must be submitted to the address shown above during the first quarter of the next fiscal year after the output was generated. For instance, an Application for Certification for output generated from October 1, 2001, to September 31, 2002 (i.e., fiscal year 2002), would be submitted during the first quarter (October 1, 2002, to December 31, 2002) of the next fiscal year.

An Application for Certification related to a Renewable Energy Facility must contain the following:

1. All of the information required in the Pre-Application;
2. 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; and
3. A statement showing how the customer's C&RD was derived and computed.

An Application for Certification for a qualified RD&D activity or eligible donations must contain a description of the qualified activity and a copy of the invoices that are the basis for the customer's claim for credit. The customer does not need to include the cost of energy in the Application for Certification.

5.21 Procedures for Processing Applications

BPA will process Pre-Applications and Applications for Certification 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 C&RD for renewables, BPA will issue a written notice to the applicant.
2. Disqualification — If an application does not meet the requirements of the C&RD for renewables or 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 on a timely basis to BPA's Vice President, Energy Efficiency.

5.22 Minimum Spending Allocation For Renewables

At the end of the rate period, if there is a net under spending on renewables, BPA will make up the difference, up to a maximum of \$6 million per year. Depending on the level of under spending, BPA would implement measures that meet the renewable resource development goals and eligibility standards of the C&RD. The measure could be, for example, a prepayment for output (like Foote Creek II), or a short-term purchase from a power marketer, or a contribution to a pre-approved RD&D measure (like solar and wind data collection).

6. Low-Income Weatherization

BPA will directly fund low-income weatherization through the existing State/Community Action Partnership (CAP) agency infrastructure at a level of at least \$3 million per year for the 2002 to 2006 rate period, which begins October 1, 2001.

Low-income weatherization measures installed by power customers in their service area will be eligible for the C&RD, and will serve to supplement BPA's direct funding of the States' low-income weatherization efforts. Low-income weatherization expenditures will receive a dollar-for-dollar reimbursement under the C&RD or low-income weatherization may be claimed as a deemed measure from the Residential Deemed Measure List (Appendix L).

If a utility is currently operating its own low-income weatherization program, BPA will allow the utility to grandfather such a program into the C&RD without requiring the utility to use Community Action Agency (CAA) or BPA standards and guidelines. We applaud utilities that have been running low-income weatherization programs. However, if a utility wishes to start a new low-income weatherization program, BPA recommends that such programs be substantially in compliance with those programs currently funded by BPA grants for the USDOE Low-Income Weatherization Program.

The C&RD is to be used to weatherize electrically heated homes only.

No adjustment in the C&RD amount will be made to accommodate BPA's low-income weatherization direct funding.

7. Donations to Qualified Organizations on the "Un-Limited" List

Donations to qualified organizations will qualify for full C&RD dollar-for-dollar reimbursement. The organizations listed below were chosen because of their track record and because they offer the opportunity for others to propose conservation and renewable resource projects for funding. In general, these organizations are engaged in activities that would be eligible for the C&RD had an individual BPA customer carried them out. However, these organizations have the ability to better leverage their investments due to their regional scope and/or shared administrative systems.

1. Bonneville Environmental Foundation for renewable resources;
2. Northwest Energy Efficiency Alliance for market transformation; and
3. U.S. Department of Energy Low-Income Weatherization "sub-grantees" for low-income weatherization, including the Matchmaker Program.
4. Regional Technical Forum (RTF)

8. Limited Donations to Qualified Organizations and Funding of RD&D Projects

8.1 Donations to Qualified Organizations in the “Limited” category

Limited donations to organizations/agencies that meet the criteria below are permitted.

1. Non-profit organizations that are engaged in activities (e.g., consumer education) that are not designed to directly result in energy efficiency improvements or the installation of renewable resources.
2. Public agencies that are primarily engaged in activities to promote the use of measures, technologies and/or the adoption of practices on the RTF's list of qualifying measures and activities, as approved by BPA.

Customers will be required to self-certify that organizations and agencies meeting the following criteria are eligible to receive such donations. In addition, the customer will be required to maintain documentation that indicates that the organizations and/or agencies to which they have contributed meet these criteria.

These organizations must have an explicit objective to increase the use of energy efficiency technologies or practices and/or qualifying renewable resources in the Pacific Northwest. They must also demonstrate that they are actively engaged in programs or activities that have or are designed to result in improvements in the energy efficiency of electricity generation, distribution or use, or the actual installation and use of qualifying renewable resources.

8.2 Funding of Energy Conservation or Renewable Energy Resource RD&D Projects

Energy Conservation or Renewable Energy Resource RD&D Projects need to satisfy the RTF requirements for such projects. See Sections 4.8 and 4.9 for Conservation RD&D. See Sections 5.13 and 5.14 for Renewables RD&D.

8.3 Spending Cap on Limited Donations and RD&D

Contributions to nonprofit organizations, meeting the criteria in Section 8.1, and funding of electric energy conservation or renewable energy RD&D projects, meeting the criteria in Section 8.2, are eligible for C&RD credit. Spending for both categories, combined, cannot exceed 20 percent of a customer's total C&RD eligibility.

9. Reporting Requirements

The purpose of these sections is to explain the reporting requirements for the C&RD.

9.1 Annual Reporting and Reporting Software

By November 1, 30 days after the end of the fiscal year, customers will be required to submit an annual report to BPA.

Tracking and reporting of C&RD expenditures or conservation achievements is required of customers participating in the C&RD. Customers are encouraged, but not required, to use the C&RD Reporting Software at www.rtf.nwppc.org. If a customer chooses not to use the C&RD Reporting Software, the customer's report will contain all of the elements contained in this section. Small customers whose annual C&RD is less than \$5,000 do not need to send BPA a letter certifying their C&RD activity.

9.2 Cash Flow Diagram

All C&RD spending is limited by the customer's total C&RD eligibility, which is based on the customer's Net Requirements Forecast.

Spending Categories Not Included in Administrative Cost Calculations

- Renewable energy purchases, per Section 5, will receive 100 percent of premium for Blended EPP.
- Donations to Qualifying Organizations in the Limited Category and RD&D, for conservation and renewables, are capped at 20 percent of a customer's total C&RD eligibility.
- Donations to Qualifying Organizations on the Unlimited List will receive 100 percent credit under the C&RD.

Remaining Funds are defined as the customer's C&RD balance after renewable purchases, RD&D, and donations are deducted. Remaining Funds may be spent on the following:

Option A - \$ for \$ Cost Reimbursement Approach w/ Restrictions

- **Administrative Costs** - Up to 20 percent of **Remaining Funds**.

Balance of Funds May Be Spent on the Following:

- Installed Conservation Costs - 100 percent of the capital and installation costs can be claimed for measures or activities on the Option A Limited List of Qualifying Measures and Activities.
- Utility System Upgrades - Only the value of the energy savings to the bulk power system attributable to energy efficiency improvements.
- Low-income weatherization donations or costs, 100 percent credit.
- Third Party renewable energy purchases based on Section 5.15, Table 2.

Option B – Value of the Energy Savings Approach

- **Administrative Costs** – The customer has two choices, either
 - * \$32,850 or
 - * 20 percent of **Remaining Funds**.

Balance of Funds May Be Spent on the Following:

- Conservation Measures and Direct Application Renewables (DAR) – 80 percent of the deemed value of the energy savings or a “fixed price,” for some high value, low-cost measures.
- Low-income weatherization donations or costs, 100 percent credit.
- Third Party renewable energy purchases based on Section 5.15, Table 2.

9.3 Reporting Schedule and Other Important Dates

<u>Date</u>	<u>Description of Activity</u>
2/15/01	BPA Approves Implementation Manual, List of Qualifying Measures, deemed kWh savings values and the value of the energy savings. Customers may start C&RD activity, as described in Section 4.6 under Ramp Up Costs.
8/1/01	Last Day for Customers to Submit Adjustments to their BPA Loads (w/AE Approval)* or submit a letter stating that the customer is declining to participate in the C&RD.
10/1/01	C&RD Begins
8/1/02	Last Day for Customers to Submit Adjustments to their BPA Load (w/AE Approval)*
9/30/02	Year 1 of C&RD/Rate Period Ends (10/1/01 to 9/30/02)
10/30/02	1st Annual Interim C&RD Report** and Incremental Certification is due from participating customers.
8/1/03	Last Day for Customers to Submit Adjustments to their BPA Load (w/AE Approval)*
9/30/03	Year 2 of the C&RD/Rate Period Ends (10/1/02 to 9/30/03)
10/30/03	2nd Annual Interim C&RD Report** and Incremental Certification is due from participating customers. The program participant's agreed upon procedures report, on the certification and balances for FY01 and FY02 are due.
8/1/04	Last Day for Customers to Submit Adjustments to their BPA Load (w/AE Approval)*
9/30/04	Year 3 of the C&RD/Rate Period Ends (10/1/03 to 9/30/04)
10/30/04	3rd Annual Interim C&RD Report** and Incremental Certification is due from participating customers. The program participant's agreed upon procedures report, on the certification and balances for FY03 is due.
8/1/05	Last Day for Customers to Submit Adjustments to their BPA Load (w/AE Approval)*
9/30/05	Year 4 of the C&RD/Rate Period Ends (10/1/04 to 9/30/05)
10/30/05	4th Annual Interim C&RD Report** and Incremental Certification is due from participating customers. The program participant's agreed upon procedures report, on the certification and balances for FY04 is due.
9/30/06	Year 5 of the C&RD/Rate Period Ends (10/1/05 to 9/30/06)
11/1/06	Final Reconciliation Report*** and Incremental Certification Due from Participating Customers. The program participant's agreed upon procedures report, on the certification and balances for FY05 is due.
12/1/06	Revised Final Reconciliation Report and Reimbursement from Customers whose Qualifying Activities/Expenditures DO NOT Equal or Exceed their Cumulative C&RD Amount. The program participant's agreed upon procedures report, on the certification and balances for FY06 is due.

* Net Requirements forecasted loads to be served by BPA times the unit C&RD (0.5 mills per kWh) determines the C&RD amount for each customer.

** Each customer participating in the C&RD program must submit an annual report that shows their cumulative C&RD received to date and their cumulative qualifying expenditures for Option A or earned values for Option B (organized into conservation, renewables, low-income weatherization and other qualifying activities) and an incremental certification statement. If the report shows that the customer's qualifying activities/expenditures are less than or equal to it discount receipts by 5 percent or more, the customer must indicate in its report how it plans to adjust its activities/expenditures to ensure that it will retain the full discount after the Discount Period.

*** The Final Reconciliation Report shall identify: (i) the cumulative C&RD that the customer has received from BPA during the C&RD Period; and (ii) the total qualifying expenditures, for Option A, or earned values, for Option B, that the customer has made during the C&RD Period segregated into the following four categories: incremental conservation, renewable resources, low-income weatherization, and other qualifying activities (i.e., administrative, advertising, RD&D, evaluation, donations to qualified organizations).

9.4 Audits and Agreed Upon Procedures

BPA will rely on work performed by the C&RD program participant that is verified by a certified public accounting (CPA) firm or state auditors. This is to assure that the information submitted to BPA in applications and reports is supported by adequate documentation and accounting records. Such documentation and records are to be maintained in accordance with the participant's policies and procedures. Audit costs are allowable for recovery as qualifying administrative costs under the program.

It is BPA's objective to keep the cost of performing the work outlined below to the minimum possible. To keep these costs low, BPA expects program participants to negotiate relatively low cost "agreed-upon procedures" work with their CPA firms/auditors whenever possible. If a CPA firm/auditor concludes that an audit in accordance with the Single Audit Act is required, BPA authorizes the CPA firm/auditor to use the verification of the reported information as the audit guide for a "program-specific" audit. When determining the need for a "Single Audit," Option B (Value of Savings) contracts should be considered as purchase contracts not subject to the Single Audit Act.

"Agreed-Upon Procedures" is a specific technical term that has specific meaning to auditors and accountants. This section of the C&RD Implementation Manual does not suggest that an agreement be made between BPA and program participant on the nature of the agreed-upon procedures. It is BPA's intent that the C&RD participant should agree upon the procedures with their CPA firm/auditor since (i) there are many types of conservation measures available for the C&RD credit, (ii) each participant may have a different method to incur, record, and accumulate C&RD measures; and (iii) the participants' CPAs are more familiar with their clients' record keeping system.

At the initiation of the C&RD program, October 1, 2001, the participant will provide CPA/auditor verified documentation to BPA that:

1. defines what basis and related documentation will be used to support the reporting elements for either Option A or Option B for Conservation and both the Pre-application and the Annual Application for Certification for Renewables; and
2. the participant has policies and procedures and an accounting system capable of tracking the elements in 1, above.

Each C&RD renewables application and annual certification report submitted will include a confirmation by the participant's CPA firm/auditor that the certifications and balances are supported by the documentation, policies, procedures and accounting system described above in the Program Initiation section. The program participant's agreed-upon procedures report, on the certification and balances for the C&RD year, should be provided to BPA no later than the next C&RD year end (September 30).

Customers using the Small Customer Option do not need to satisfy the requirements in this section.

9.5 Incremental Certification or Exemption Statement

Annually, customers will be required to include with their annual report:

1. A statement, self-certifying that their C&RD spending is incremental to the conservation investments they would have made absent the C&RD. For BPA's public agency customers, a certification by the utility's governing body, using the language in the GRSPs, will be requested. Likewise, DSI customers will self-certify their incremental spending. [GRSPs Section II.(A)(4)(c)] A sentence such as the following, submitted along with the annual C&RD Report will suffice.

“[Customer] certifies that the expenditures documented in this report are incremental increases in this organization's budget for the current operating year beyond what we planned to spend absent the C&RD.”

OR

2. A statement of exemption. If states, municipalities, or other governmental entities require a customer to invest in new conservation and/or new renewable resource projects, then such actions will obviate the incremental certification requirement. The statements should reference the legislation. [GRSPs Section II.(A)(4)(d)]

OR

3. Documentation that the customer spends 3 percent or more of its retail revenues on qualifying conservation and/or renewable investments, during the year being reported. Such expenditures will be deemed as incremental budget increases. [GRSPs Section II.(A)(4)(d)]

Customers using the Small Customer Option do not need to satisfy the requirements in this section.

9.6 Renewable Energy Purchases

9.6.1 *Renewable Purchases from BPA (Section 5.9)*

The customer will be requested to reference the contract, the BPA product, the amount of the purchase (kWhs), and how much of the C&RD is being applied, in their annual C&RD report.

9.6.2 *Power Purchases from Power Marketers (Section 5.6)*

1. The Pre-Certification Application is optional, but strongly encouraged. For each project, customers may submit a pre-certification application before a resource purchase or renewable resource project investment to ensure that it will qualify for the C&RD.
2. Annual Certification. Annually for each purchase or project, customers will need to send in information on the amount of energy generated by or purchased from the resource and claimed for C&RD credit. Information listed under pre-certification will also need to be submitted with the annual certification.

9.7 Donations to Organizations on the “Un-Limited” List (Section 7)

Report to whom the donation was made, when it was made and how much was donated.

9.8 Limited Donations to Qualifying Organizations (Section 8)

Donations to Organizations who meet the criteria for “Limited” donations are to be reported separately from those that qualify for unlimited donations. Report to whom the donation was made, when it was made and how much was donated. The customer is reminded to keep on file documentation on how the organizations receiving the funds meet the RTF’s criteria, as approved by BPA, for such donations.

9.9 Funding of RD&D Projects (Section 8)

Reports should include all pertinent information, such as a project description, location, cost, and goals.

9.10 Conservation Reporting

Listed in this section are the elements required in the conservation portion of a customer's annual and final true-up report.

9.10.1 Small Customer Option

Letter stating that the customer has met the requirements of the Small Customer Option. This can be a letter from the customer’s governing body or manager.

9.10.2 Option A, Dollar for Dollar Cost Reimbursement Approach

1. Administrative Costs. List amount spent, up to 20 percent of annual C&RD conservation spending (see Section 9.2 - Cash Flow Diagram), and a statement that it was spent on qualifying administrative activities as listed in Attachment C.
2. Conservation Costs and number of units by Reduced List of Qualifying Measures as listed below **OR** use RTF Reporting Software to report units and costs.

Residential Sector

- Energy-Star-Labeled Compact Fluorescent Lights, Fixtures, and Bulbs
- PTCS Ducts (duct sealing programs)
- Efficient Electric Water Heaters
- Multi-Family Weatherization
- Certified SGC - Manufactured Homes
- Energy-Star Clothes Washers
- Long term SGC
- Single Family Weatherization

Commercial Lighting.

- Optional: Conservation Achievements by Reduced List of Qualifying Measures (i.e., deemed kWh savings per unit).

9.10.3 Option B – Value of Energy Saving Approach

1. Conservation Achievements by Qualifying Measure (list qualifying measure, number of units, and deemed kWh savings per unit **OR** use RTF reporting software and indicate the number of each measure installed).
2. Optional: Conservation Costs by Qualifying Measure.

9.11 Annual Variations

If the report shows that the customer's qualifying expenditures and/or conservation achievements are less than or equal to its discount receipts by 5 percent or more, the customer must indicate in its report how it plans to adjust its expenditures/activities to ensure that it will retain the full discount after the Discount Period.

9.12 Low-Income Weatherization Reporting

1. Donations. List to whom the donation was made, when was it made, and how much was donated.
2. Low-Income Weatherization Efforts by Customer in Customer Service Territory. List the number of units weatherized and how much was spent during the reporting period.

9.13 Final Reconciliation Report

Thirty (30) days after the end of the Rate Period (October 30, 2006) the customer will be required to submit a Final Reconciliation Report.

Customers whose qualifying expenditures and/or conservation credits **DO NOT** equal or exceed their cumulative C&RD eligibility will be required to submit a Revised Final Reconciliation Report no later than 60 days after the end of the Rate Period (November 30, 2006). The Revised Final Reconciliation Report should include a check reimbursing BPA for the difference between the customer's cumulative C&RD eligibility and the actual qualifying expenditures and/or credits.

9.14 Financial Records

C&RD program records on expenditures and documentation on measure installations will need to be maintained for potential audit purposes for at least three years after the end of the C&RD Program.

10. Rules for Pooling Organizations

For both for conservation and renewables, pooling is a contractual relationship among the pooling members. BPA needs very little involvement with the pooling organization. BPA will not monitor contractual relationships or activities of poolers other than to assure easy tracking of results, associated costs, and the C&RD, and that the process involves no double counting and has an audit trail.

10.1 General Requirements

1. Pooling utilities or DSI customers are responsible for reporting their individual conservation costs and savings for determining their C&RD. In the case of renewables, the utility would report the C&RD allocated by the pool based on the output of the qualified renewable resource.
2. The pooling organization shall provide a summary report to BPA on an annual basis documenting the conservation costs and savings reported by each participant. The savings and C&RD for both conservation and renewables would be allocated and determined by the pool. Double counting of credits is not permitted.
3. A customer could put all or a portion of its C&RD toward a pool and withdraw under the terms and conditions agreed to by the pool and not under terms specified by BPA. Pool membership can expand or contract as determined by the pool.
4. Trading of the C&RD would be allowed within the pool. This would allow a member to capture an amount above their C&RD, as determined by the 0.5 mill cap, by utilizing a pool member's unused C&RD.
5. If a pooling organization has a mix of customers using different conservation approaches (Option A or Option B), the pool must keep customers using the different conservation approaches in two separate subgroups for reporting purposes.

10.2 Additional Renewable Requirements

1. In order to qualify for the C&RD, the energy either integrated or purchased must be generated by a qualified renewable resource, as defined by BPA's policy.
2. Purchases of Environmentally Preferred Power (EPP) from BPA do not require an adjustment of a customer's Net Requirements.
3. For purchases of renewable energy output from BPA or any third party, a member or members of the pooling organization must show a reduction in net requirements equal to the quantity of energy claimed for C&RD. At the end of a renewable energy purchase term the load may return to BPA, without having to pay a Targeted Adjustment Charge (TAC). The pooling member(s) showing a reduction in net requirements will in turn allocate their total C&RD to the pooling organization for subsequent distribution to the pool members. The pool members will indicate their respective share of the total C&RD in their annual C&RD reports to BPA.

11. Annual Review and Updating of C&RD Program

BPA will periodically review the Implementation Manual, the List of Qualifying Measures, the deemed kWh savings values, the value of those savings to the bulk power system, and other related material to assure that the C&RD continues to function as originally envisioned. If changes are needed, the modifications will occur annually, before the beginning of a new fiscal year. Customers can petition BPA or the RTF to make changes, additions, or deletions at any time (See Section 3.11). BPA will incorporate and adopt approved changes to the List of Qualifying Measures, the deemed kWh savings values, and the value of those savings to the bulk power system on an annual basis, before the beginning of the new fiscal year.

Annual Review Schedule

February 1	Request to utilities and other interested parties to submit proposed changes to C&RD.
March 30	Last day to propose C&RD Program changes.
May 1	Beginning of 30 day Comment Period for Proposed Changes.
June 1	End of 30 day Comment Period.
July 1	New C&RD Implementation Manual will be distributed.

12. Process For Approving RTF Recommendations

The C&RD allows BPA to make periodic policy or technical changes to the Program. Policy changes or technical changes with an effect that is more restrictive than the prior version may occur annually (see Section 11). Technical changes that have a positive effect can occur on a quarterly basis.

Technical Changes: BPA, participating customers and interested parties can petition the RTF to review and, if appropriate, make recommendations on technical issues to BPA as described in Section 3.8, “Process for Resolving Differences and Modifying the Qualifying Measures and Activities List.” This section describes the process that BPA will follow when implementing changes to the C&RD Program resulting from recommendations from the RTF. In general, the intent is to allow changes with a more restrictive impact only at the beginning of a Fiscal Year (FY). Such changes would include removing a measure from the program, lowering the C&RD Deemed Credit, or imposing a higher installation specifications. Changes that have a positive impact can occur at the beginning of a quarter (Oct., Jan., April, or July). Positive changes would include adding a measure to the list of qualifying technologies, adding a new deemed C&RD Credit, raising an existing C&RD Credit, or relaxing an installation requirement (i.e. specification).

Process: BPA and participating customers can petition the RTF to consider a technical issue. If the RTF accepts the petition and makes a recommendation to BPA, customers will be given an opportunity to comment on the RTF’s recommendation before the proposed changes are reviewed and approved by BPA. When the approved recommendations are distributed, the

effective date will be clearly noted. Technical recommendations from the RTF will be reviewed and approved by BPA quarterly.

Technical Review Schedule

RTF Meeting	Review Period
September, October, November	December
December, January, February	March
March, April, May	June
June, July, August	September

For example, recommendations resulting from RTF Meetings that occur during September, October, or November will be distributed for review in December.

BPA Process for Approving Regional Technical Forum Recommendations

	Time Required (Running Count)	Process
1	1 Week (7 days)	The RTF Chair has agreed to send formal RTF Meeting Recommendations within one week of the meeting.
2	3 Days (10 days)	Upon receiving Recommendations from the RTF, they will be discussed among BPA staff who was involved in the RTF discussions. Typically this includes the C&RD Program Manager, the Evaluation Lead, and pertinent engineering staff. Any pertinent BPA staff comments will be included with the summary of RTF Recommendations.
3	1 Day (11 days)	The RTF Recommendation will then be distributed to the Energy Efficiency Representatives (EER) and other interested Energy Efficiency (EE) Staff.
4	10 Day Comment Period (21 days)	EERs will forward those recommendations to any other party who they feel might desire to comment on the RTF Recommendations (i.e. participating customers and Account Executives). A 10 day comment period will be allowed, unless otherwise stated. Participating customers, who choose to be on a Technical Review Team, will be sent the RTF Recommendations directly.
5	1 Week (28 days)	Comments received from the field and internal EE will be noted and a final recommendation will be forwarded to the EE Implementation Manager for approval.
6	2 Days (30 days)	Upon Approval by the EE Implementation Manager, the RTF Recommendations that are approved will become official. EERs will be provided a C&RD Program Up Date, at the beginning of each Quarter, that explains the Approved Changes that can be distributed to C&RD Program participants.

Attachment A

General Rate Schedule Provisions

A. General Rate Schedule Provisions, 2002 Final Power Rate Proposal, Appendix 1, Section II (A).

1. Description of the Discount

To encourage and support the development of conservation projects and renewable resources in the PNW, BPA is offering a C&RD to customers purchasing under the Priority Firm Power (PF-02), New Resource Firm Power (NR-02), and Residential Load (RL-02) rate schedules. Purchasers of the Slice product and benefits provided as a cash payment in settlement of the Residential Exchange Program will also be eligible for the C&RD.

Customers purchasing under the Industrial Firm Power rate (IP-02) will be eligible to the extent that the C&RD does not reduce their effective rate below the DSI floor rate. Regional public agency customers with Pre-Subscription contracts with collared pricing provisions may be eligible for the C&RD subject to contract provisions.

The amount of the C&RD will be a fixed monthly amount based on the customer's forecasted purchases and Residential Exchange Program settlement benefits from BPA under its Subscription contract. Following the end of the Discount Period (which is the end of the rate period or the customer's contract term, whichever comes first), BPA will evaluate the customer's investments in qualifying conservation and renewable resource projects during the Discount Period. Any customer that has not spent at least as much money on Qualifying Expenditures as the cumulative C&RD received from BPA must reimburse the difference to BPA. Purchasers accepting the monthly C&RD agree to abide by the implementation provisions specified in the C&RD Implementation Manual.

2. Calculation and Application of the Discount

a) Overview of the Discount

The C&RD will be included as a fixed dollar credit in the monthly power bill of each participating customer. The C&RD will equal the customer's forecasted average monthly Subscription Power Purchases and settlement benefits (in kWh) multiplied by the Unit Discount. (Because the average contract is used, the Unit Discount does not vary by month).

b) Determination of the “Unit Discount”

The Unit Discount will equal 0.50 mills/kWh for Subscription Power Purchases and settlement benefits. The Unit Discount for eligible Pre-Subscription contracts will be determined based on individual contract provisions.

c) Determination of Individual Customer Discounts

For a participating customer buying power from BPA, the monthly dollar discount will be determined by multiplying the customer’s forecasted average monthly Subscription Power Purchases and settlement benefits for each contract year by the Unit Discount.

d) Determination of Subscription Power Purchases

1. To determine each customer’s average monthly Subscription Power Purchase, BPA will use the customer’s Net Requirements purchase, as established in the customer’s Subscription contract to calculate the following:
 - i. When a customer’s contract explicitly calculates Net Requirements purchases for a contract year, the customer’s monthly average Subscription Power Purchases are equal to the total annual Net Requirements purchases divided by 12.
 - ii. When a customer’s contract specifies only the monthly kWh output of the customer’s resources, the customer must provide its Account Executive with a monthly load forecast of its Net Requirements purchases. The customer’s total annual Net Requirements purchases will then be estimated, for purposes of applying the C&R Discount, by subtracting the customer’s forecasted total annual resource output from its forecasted annual Requirements purchases and dividing the result by 12.
2. BPA shall treat benefit amounts provided as cash in settlement of Residential Exchange Program as described in their Subscription settlement contract as Subscription Power Purchases for purposes of this calculation.

e) Annual Review of Individual Customer Discounts

At least 30 days prior to the start of each contract year, customers will submit, to their Account Executive, adjustments to the monthly Subscription Power Purchase amounts, referred to in section 2 d. above, as specified in their BPA contract. Subscription Power Purchase increases or decreases of greater than 5 percent, year-to-year, will be reflected in the monthly C&RD amounts consistent with section 2 c., above.

f) Application of the Discount

1. The C&RD will be applied after BPA has determined all other charges and credits on the participating customer’s power bill.

2. BPA will provide the C&RD even in those months when the C&RD amount is larger than the customer's total power bill amount.

3. Qualifying Expenditures

- a) Participating customers shall record all individual Qualifying expenditures by the categories required for the Final Reconciliation Report to ensure full credit for their conservation and renewable resource activities. Qualifying Expenditures are those that meet technical standards developed by the Regional Technical Forum, as approved by BPA.
- b) Although BPA will provide the C&RD on a monthly basis, the customer has no obligation to adhere to any particular expenditure pattern. To retain the full C&RD provided by BPA, the participating customer must make Qualifying Expenditures during the Discount Period in an amount equal to, or exceeding, the cumulative C&RD received from BPA during the Discount Period.

4. Reporting

a) Interim Conservation and Renewable Reports

Participating customers shall submit to BPA annual Interim Conservation and Renewable Reports at the end of each fiscal year of the rate period (i.e., 10/01/01 to 9/30/02, 10/01/02 to 9/30/03, etc.). The Interim Report shall show the customer's cumulative C&RD received to date and their annual and cumulative Qualifying Expenditures by category. If the report shows that the customer's Qualifying Expenditures are less than or equal to its cumulative C&RD receipts by 5 percent or more, the customer must indicate in its report how it plans to adjust its expenditures to ensure that it will retain the full C&RD after the Discount Period.

b) Final Reconciliation Reports

At the end of the Discount Period the participating customer shall prepare a Final Reconciliation Report. This report shall be submitted and received by BPA one month after the end of the Discount Period (November 1, 2006, for participating customers' purchasing power from BPA for the full five-year rate period).

This report shall identify:

- i. The cumulative C&RD that the customer has received from BPA during the Discount Period;
- ii. The cumulative Dividend Distribution Clause (DDC) amount dedicated to Qualifying Expenditures that the customer has received from BPA during the Discount Period; and
- iii. The total Qualifying Expenditures that the customer has made during the Discount Period segregated into the following four categories.
 - I. Incremental Conservation

- II. Renewable Resources
- III. Low Income Weatherization
- IV. Support Activities (i.e., administrative, advertising, RD&D.)

c) Certification of Incremental Spending

Each Interim Report and the Final Reconciliation Report shall include language certifying the participating customer's actual incremental spending, such as:

“[Customer] certifies that the expenditures documented in this report are incremental increases in this organization's budget for the current operating year beyond what we planned to spend absent the C&RD.”

d) Exemption Language

If states, municipalities, or other governmental bodies in the BPA service territory require, by law or regulation, that a customer, participating in the C&RD, acquire or invest in new conservation and/or a new renewable resource project, then such acquisitions and investments will be deemed as incremental budget increases for the purposes of section 4(c) above.

If any utility, participating in the C&RD, reports Qualifying Expenditures amounting to 3 percent or more of its retail revenues, then such expenditures will be deemed as incremental budget increases for the purposes of section 4(c), above.

5. Reimbursement

a) Customers Whose Expenditures Exceed the Threshold

No reimbursements are required of any participating customer whose total Qualifying Expenditures over the Discount Period equal or exceed the total cumulative C&RD received from BPA.

b) Customers Whose Expenditures Fall Below the Threshold

If a participating customer's Final Reconciliation Report shows that the cumulative C&RD received from BPA exceed the customer's total Qualifying Expenditures, the customer may take an additional month (for a total of two months after the end of the Discount Period) to make the necessary Qualifying Expenditures and prepare a Revised Final Reconciliation Report. The final report is due to BPA within two months of the end of the Discount Period (which is December 1, 2006, for the five-year customers). If the customer's Qualifying Expenditures still do not equal or exceed its cumulative C&RD receipts, the customer must reimburse the difference to BPA. Such reimbursement shall be made within the same two-month grace period and shall be made using the same payment method as the customer uses for paying its wholesale bill. BPA will not assess interest on any reimbursement paid within the two-month window. However, any payment received after the due date (December 1, 2006, for the five-year customers) shall be subject to a late payment charge as described in their Subscription contract.

6. Revenue Dividends

If BPA declares a Dividend Distribution during this rate period, the first \$15 million will be allocated to conservation and renewable resource development. BPA will distribute the C&R portion of any declared dividend in the same manner outlined in this section with the following modifications:

- a)** In order to receive their portion of the C&R dividend, customers must be actively participating in the basic C&RD effort; and
- b)** Participating customers must spend and report two dollars of additional investment in eligible activities to receive credit toward one dollar of their Dividend Distribution share (i.e., any C&R dividend will be leveraged on a two for one basis).
- c)** The Unit Discount for participating customers receiving the Dividend Distribution will be reset to reflect the actual amount of the DDC and their Subscription Power Purchases during the months the Dividend Distribution is in effect.

Attachment B

Conservation Measures and Activities Eligible for BPA's Conservation and Renewables Discount

(Note: This appendix is the same as Appendix E of the RTF Recommendations)

Introduction: Any energy conservation measure or activity for which the energy savings can be verified or reliably estimated can qualify for a C&RD Credit (see Attachment E for more detail). There are also many measures or activities that assist in identifying potential energy conservation opportunities or educate the public about the value of energy conservation activities that do not directly conserve energy. These types of measures or activities do not directly qualify for a C&RD Credit, but can be paid for out of a utility's allowable Administrative Allowance.

An asterisk (*) indicates that the measure has "deemed" savings assigned.

A double asterisk () indicates that a measure does not qualify for a C&RD Credit, but is an allowable activity under a utility's Administrative Allowance.**

1. Residential Sector Measures and Activities

The following Measures and Activities may be installed or provided for in new or existing site-built or manufactured/mobile homes, including both single and multifamily dwellings as well as low-rise and high-rise residential structures. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

RESIDENTIAL -- DEFINED PROGRAMS

There are a number of defined programs in the region that include measures and activities that have been scrutinized and approved as cost-effective. The individual measures and activities that make up the programs are included in the RTF's list of eligible measures and activities, even if they are not listed explicitly below.

- a) ***WeatherWise****
the most recent program specifications
- b) ***Long Term Super Good Cents****
the most recent program specifications
- c) ***Northwest Energy Efficient Manufactured Housing Program (Super Good Cents for Manufactured Housing)****
the most recent program specifications

- d) ***Performance Tested Comfort Systems*** \hat{O} *
the most recent certification specifications
- e) ***Energy Star*** \hat{O} ***Appliances & Lighting****
- f) ***Earth Advantage*** \hat{O} ***New Homes***
the most recent program certification specification
- g) ***Built Smart*** \hat{O} ***New Low-Rise Multifamily Homes***
the most recent program certification specification

RESIDENTIAL -- TECHNICAL ASSISTANCE

- h) **Audits/Energy Reviews** **
including visual inspection, infrared camera building shell analysis and the use of other testing and measurement tools to assess the potential for improvements to:
 1. building thermal shells,
 2. space conditioning systems (furnaces, heat pumps, central air conditioners)
 3. domestic water heating and pumping systems,
 4. appliances,
 5. lighting,
 6. air tightening
 7. indoor air quality
- i) **Passive Solar Design**
 1. window orientation
 2. thermal storage
- j) **Technical and Design Assistance** **
Includes any activities necessary to recommend cost-effective measures and to determine their potential for energy savings. Technical and design assistance activities encompass a variety of analytical methods, including:
 1. general assistance and consultations
 2. prescriptive paths
 3. simple hand or computer calculations
 4. computer simulation models
 5. rebate lists
 6. scale modeling
 7. other types of analyses

RESIDENTIAL -- LIGHTING

k) Lighting Equipment and Controls

1. fluorescent, compact fluorescent*, light emitting diode (LED), high- and low-pressure sodium, and metal halide lamps and fixtures
2. low voltage incandescents
3. replacement of quartz halogen torchiere with compact fluorescents
4. lighting controls

RESIDENTIAL -- PLUG LOADS

l) Appliances

1. Energy Star or better refrigerators*
2. Energy Star or better freezers
3. Energy Star or better dishwashers*
4. Energy Star or better clothes washers*
5. Energy Star or better room air conditioners*
6. microwave ovens
7. garbage disposals

m) Home Electronics and Office Equipment

1. Energy Star or better computers
2. Energy Star or better monitors
3. Energy Star or better printers
4. Energy Star or better scanners
5. Energy Star or better copiers
6. Energy Star or better fax machines
7. Energy Star or better TVs
8. Energy Star or better VCRs

RESIDENTIAL -- WATER

n) Domestic Water Systems

1. pumps
2. low flow showerheads
3. kitchen and bathroom faucet aerators
4. hot tub and swimming pool covers
5. gravity film heat exchangers*

o) Water Heaters

1. energy efficient electric*, solar, and heat pump water heaters*
2. water heater tank wraps and bottom boards
3. pipe insulation
4. tank temperature setback

RESIDENTIAL -- BUILDING ENVELOPE

p) Insulation

1. attic, interior/exterior roof, wall (above and below grade), perimeter, knee wall, under floor insulation
2. hydronic pipe, and heat duct insulation
3. insulated exterior water heater closet doors

(Excludes insulation products made from asbestos or urea formaldehyde and insulated vinyl siding.)

q) Windows, Skylights and Glass Doors and Insulated Doors

1. Energy Star or better windows*
2. multiple glazed, low-E glass, low conductivity gas filled, and jalousie window replacements
3. storm windows
4. double or triple pane sliding or French doors, and multiglazed insert doors
5. insulated metal or fiberglass doors
6. solar control glazing
7. air tight installation

r) House Tightening Measures

1. using blower doors, digital manometers, etc. to diagnose the pressure differentials between different rooms and from inside to attic and crawl space
2. correcting air balance problems
3. air sealing (including caulking and weatherstripping exterior doors and windows, sealing electrical/plumbing penetrations in flooring and holes under plumbing traps and tubs and installing removable “fireplace plugs”)
4. indoor air quality monitoring and mitigation

s) Structural Repairs Required Prior To Installation of Insulation, Windows, Skylights, Glass and/ or Insulated Doors **

1. roof repair
2. addition of attic and crawlspace ventilation
3. door and window jamb repair or replacement

RESIDENTIAL -- HVAC EQUIPMENT

t) Furnace or Heat Pump Efficiency Improvements

1. Performance Tested Comfort System™ certified heating systems*
2. higher efficiency system replacements or upgrades with properly sized equipment
3. control testing and repair
4. refrigerant charge testing and recharging
5. higher efficiency compressor replacements
6. gas furnace efficiency upgrades to reduce electric fan blower use

u) Central and Window Air Conditioning Efficiency Improvements

1. Energy Star or better system replacement or upgrades*
2. control testing and repair
3. refrigerant charge testing and recharging
4. higher efficiency compressor replacements
5. filter cleaning and/or replacement
6. installation of whole house fans
7. solar gain controls such as exterior shades

v) Heat Pumps

1. Energy Star or better air-source*
2. Energy Star or better ground-source (geothermal)*
3. Energy Star or better water-source
4. Energy Star or better exhaust-air heat pumps
5. solar-assisted heat pumps

w) Thermostats and Controls

1. clock thermostats
2. electronic and vapor diaphragm thermostats
3. low-voltage micro-processor controlled thermostats for central heating, ventilation and air conditioning systems
4. heat pump thermostats with heating/cooling lockout features that prevent cross-cycling between heating and cooling
5. heat pump programmable electronic setback thermostats with ramped/intelligent recovery to limit supplemental heat during recovery periods

x) Dehumidifiers

1. central
2. portable systems

y) Whole House Ventilation Systems

1. air-to-air heat exchangers
2. other forms of heat-recovery ventilation
3. high efficiency fans and controls

z) Air Distribution System (duct) Sealing and Insulation

1. Performance Tested Comfort System™ certified duct systems*
2. system diagnostics
3. tightening
4. insulation
5. air flow balancing
6. addition of supplies and return ducts

2. Commercial Sector Measures and Activities

The following Measures and Activities may be provided or installed in new or existing, or remodeled, commercial, institutional, or public buildings and facilities. Where applicable, all Measures must be Underwriter's Laboratory (UL) listed or classified. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

COMMERCIAL -- DEFINED PROGRAMS

a) *Energy Smart Design*

The individual measures and activities included in the most recent program specifications are included in the RTF's list of eligible measures, even if they are not listed explicitly below.

COMMERCIAL -- TECHNICAL ASSISTANCE

b) **Audits/Energy Reviews ****

including inspection and analysis of potential improvements to:

1. building thermal shells
2. space conditioning systems and controls (furnaces, heat pumps, chillers, economizers, central air conditioners, time clocks, energy management systems)
3. domestic water heating and pumping systems
4. refrigeration
5. lighting
6. air tightening
7. indoor air quality

c) **Startup and Aftercare ****

including activities that ensure the proper installation and/or operation of measures or other items that affect energy consumption in a commercial building by achieving conservation, or by ensuring the persistence of energy savings. The startup and aftercare activities can include:

1. repairs, operations and maintenance actions
2. building operator training and certification
3. building commissioning and retro-commissioning services (Building Commissioning includes activity to involve building owners and managers in the operation of their facilities. Standard commissioning procedures for HVAC, lighting, motors, and refrigeration are established for each facility.)

d) **Resource Efficiency Management Services ****

1. comprehensive, on-going, utility cost tracking
2. resource accounting
3. other services such as training, efficiency opportunity identification, operation and maintenance planning,

e) Technical and Design Assistance **

including activities necessary to recommend cost-effective measures and to determine their potential for energy savings. Technical and design assistance activities encompass a variety of analytical methods, including:

1. general assistance and consultations
2. prescriptive paths
3. simple hand or computer calculations
4. computer simulation models
5. rebate lists
6. scale modeling
7. utility cost analysis
8. contractor referral
9. other types of analyses and assistance.

COMMERCIAL -- LIGHTING

f) Interior and Exterior Lighting Systems

1. removal of inefficient lamps and fixtures*
2. installation of efficient fixtures, including heat recovery fixtures, T8 , T5, T3 and parabolic reflectors (if old fixtures are removed)*
3. installation of efficient ballasts, including electromagnetic ballasts, and high frequency electronic ballasts, if listed on the Lighting Design Lab's approved ballast list*
4. microwave sulfur lamps (with light guides)
5. installation of efficient lamps (e.g., initial installation or replacement of incandescent or low efficiency mercury vapor lamps with high pressure sodium, low pressure sodium, metal halide, T8, T5 or T3 fluorescent or low-watt fluorescent lamps), and low voltage (tungsten) lighting*
6. installation of microprocessors to control illumination levels
7. use of natural light and daylighting, including perimeter dimming systems, and installation of automatic dimming control systems
8. installation of corridor light timers, switching for selective control illumination, occupancy sensors
9. Energy Star exit signs lights

COMMERCIAL -- PLUG LOADS

g) Appliances

including energy efficient:

1. Energy Star or better refrigerators
2. Energy Star or better freezers
3. Energy Star or better dishwashers*
4. Energy Star or better clothes washers*
5. clothes dryers
6. microwave ovens
7. garbage disposals
8. ice-making equipment

h) Office Equipment and Plug Loads

1. replacement of monitors, computers, copiers, scanners and printers with models that are more efficient or have advanced power management features
2. plug load control devices
3. software systems that permit control of networked computers and/or monitors to activate their advanced power management features

COMMERCIAL -- WATER

i) Domestic Hot Water Systems

1. insulation of hot water piping or hot water storage tanks with wraps, bottom boards, or convection loops
2. installation of flow restrictors, faucet aerators, and low flow showerheads to limit water use
3. installation of chemical dishwashing system
4. use of heat recovery systems, including gravity film heat exchangers and packaged systems, to heat water
5. replacement of central systems with local, tankless, point-of-use heating units
6. use of heat pump or solar water heating systems
7. installation of timers, circulating pump controls, or turning off hot water pumps during off hours
8. installation of time clocks to turn off water heaters during unoccupied periods
9. installation of efficient electric water heaters

COMMERCIAL -- BUILDING ENVELOPE

j) Building Envelope Measures

1. installation of wall, roof, or ceiling insulation
2. installation of floor, foundation (crawl space), or slab perimeter insulation
3. reduction of space heating loads by reducing outside air infiltration (e.g., caulking, weather stripping)
4. installation of window and skylight insulation (curtains)
5. installation of storm windows or sash-mounted storm windows

6. installation of low-E glass or multiple glazed windows
7. reduction of solar heat gain with solar film, window tints, overhangs, awnings, louvers, screens, or other shading devices
8. installation of storm doors or double pane sliding doors, or screen doors
9. replacement of existing doors with insulated doors
10. enclosure of loading docks with shelters and seals
11. installation of vestibules to reduce infiltration and exfiltration
12. sealing vertical shafts (e.g., elevators, stairwells) to reduce infiltration and exfiltration, and installation of air curtains

COMMERCIAL -- HVAC EQUIPMENT

k) Heating and Air Conditioning Measures, including Energy Management Systems

1. installation of advanced HVAC systems/strategies including terminally regulated air volume (TRAV) systems, occupancy-based ventilation strategies, underfloor HVAC, low-temperature systems, etc.
2. installation of oversized condenser water cooling towers to decrease approach temperature
3. installation of primary/secondary de-coupled chilled water systems
4. optimize chilled water and condenser water setting
5. installation of automatic condenser cleaning
6. replacement of air-cooled condensers with cooling towers
7. installation of spot cooling or earth cooling tubes, or roof spray systems
8. installation of high efficiency air-conditioning units*
9. installation of chiller economizers (water side), or air side economizers
10. installation of air side heat recovery systems (ventilation air tempering, packaged systems, etc.)
11. isolation of off-line chillers and cooling towers
12. prevention of simultaneous heating/cooling through use of automatic controls
13. reset of hot deck or cold deck temperatures using automatic controls
14. zone optimization of reheat systems
15. use of duty cycling for fan control, or installation of high efficiency air handlers
16. installation of warm-up cycle controls, optimum start controls, automatic night setback/set up devices, or dead band thermostats
17. reduction of pump energy requirements by reducing resistance or flow rates
18. insulation of ducts or piping
19. replacement of forced air heating system with spot radiant heaters, or resistance heating with heat pumps, or installation of air, ground, or water source heat pumps

20. installation of solar pool/spa heating systems, swimming pool/spa covers and heat recovery
21. conversion of existing constant volume air distribution systems to variable air volume systems
22. installation of energy management systems
23. test and balancing of air distribution systems
24. cleaning isolated circulation systems in cooling or heating loops
25. installation of reflective roof treatments or surfaces
26. installation of direct or indirect evaporative cooling, evaporative pre-cooling, and absorption cooling

l) Ventilation Measures

1. installation of CO₂-controlled building ventilation or CO₂-controlled covered parking ventilation
2. automatically reducing ventilation during unoccupied periods
3. reducing minimum outside air requirements
4. recirculating exhaust air using activated carbon filters
5. installation of vortex hoods in restaurants or separate make-up air for exhaust hoods
6. use of evaporative cooling of outdoor air or desiccant dehumidification
7. reducing fan energy consumption by reducing air flow rates and the resistance to air flow, or use of dual speed fans
8. installation of high efficiency fans with larger ductwork
9. installation of attic ventilation or low leakage dampers
10. installation of air destratification systems (e.g., ceiling fans)
11. installation of outside air reset controls
12. automatically reducing or minimizing outside air intake by control modifications
13. installation of nighttime pre-cooling controls and systems

m) Heat Recovery Equipment

1. installation of equipment to transfer heat to or from a liquid or gas and to or from an existing or proposed process which will offset electric or other fuel use

n) Thermal Storage

1. installation of equipment to store energy in the form of hot or cold fluids or mass to provide heating or cooling capacity for later use

o) Cooling Tower Efficiency Improvements

including installation of modifications to cooling towers to improve their efficiency, such as:

1. conversion from counterflow to crossflow cooling
2. installation of "Strainer Cycle" operations to provide direct cooling
3. installation of high efficiency motors, adjustable speed drives, or other fan or pump control systems

COMMERCIAL -- PROCESS ENERGY

p) Refrigeration

1. fixing refrigerant leaks **
2. optimize defrosting controls or capacity controls through new controls
3. increasing condensing unit efficiencies
4. optimize cooling tower controls (i.e., coolant or air flow modulation) using new controls
5. installation of variable speed chiller motors or high efficiency chillers
6. installation of time clocks on circulating pumps, or installation of efficient compressors
7. more efficient compressor systems
8. motors
9. reduced speed or cycling of evaporator fans
10. suction pressure re-set
11. heat exchangers
12. oil cooling
13. auto purgers
14. refrigerant upgrades
15. use of heat recovery from exhaust air, or use of thermal storage (ice, chilled water, hot water)
16. installation of variable speed drives on pumps
17. installation of floating condenser head pressure controls
18. reduction of heat gains to refrigerated spaces (anti-sweat controls, demand defrost, efficient case lighting, case doors)

q) Efficient Motors

1. installation or replacement of existing motors with ones that meet NEMA “Premium” standards, including comprehensive motor management services*
2. comprehensive motor management services

r) Adjustable/Variable Speed Drives or “ASD/VSD”

1. installation of drives to control motor and driven equipment speed to meet variations in process requirement

s) Pumps and Fans

1. replacement
2. trimming pump impellers
3. rebuilding, or modifying fans, compressors, blowers, pumps, impellers or fluid conveyance systems with energy saving units

t) Transformers

1. replacement of existing or proposed transformers with transformers meeting the NEMA TP-1 efficiency standards

3. Industrial Sector Measures and Activities

The following Measures and Activities may be provided or installed in industrial or industrial-type facilities (e.g., sewage treatment plants), or the facility's electric distribution system. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

INDUSTRIAL -- DEFINED PROGRAMS

a) *Energy Savings Plan*

The individual measures and activities included in the most recent program specifications are included in the RTF's list of eligible measures, even if they are not listed explicitly below.

INDUSTRIAL -- TECHNICAL ASSISTANCE

b) **Audits/Energy Reviews ****

including analyses of industrial sector conservation opportunities by qualified individuals or firms to identify conservation implementation options, their estimated costs, and their estimated savings

c) **Technical and Design Assistance ****

including activities necessary to recommend cost-effective measures and to determine their potential for energy savings. Technical and design assistance activities encompass a variety of analytical methods, including:

1. general assistance and consultations
2. prescriptive paths
3. simple hand or computer calculations
4. computer simulation models
5. rebate lists
6. scale modeling
7. other types of analyses

INDUSTRIAL -- LIGHTING

d) **Interior and Exterior Lighting Systems**

1. removal of inefficient lamps and fixtures*
2. installation of efficient fixtures, including heat recovery fixtures, T8 , T5, T3 and parabolic reflectors (if old fixtures are removed)*
3. installation of efficient ballasts, including electromagnetic ballasts, and high frequency electronic ballasts, if listed on the Lighting Design Lab's approved ballast list*
4. microwave sulfur lamps (with light guides)
5. installation of efficient lamps (e.g., initial installation or replacement of incandescent or low efficiency mercury vapor lamps with high pressure sodium, low pressure sodium, metal halide, T8, T5 or T3 fluorescent or low-watt fluorescent lamps), and low voltage (tungsten) lighting*
6. installation of microprocessors to control illumination levels

7. use of natural light and daylighting, including perimeter dimming systems, and installation of automatic dimming control systems
8. installation of corridor light timers, switching for selective control illumination, occupancy sensors
9. Energy Star exit signs lights

INDUSTRIAL -- WATER

e) **Water Recycle Processes**

1. upgrading existing water recycle or reclaim processes to conserve electrical energy

INDUSTRIAL -- BUILDING ENVELOPE

f) **Building Envelope Measures**

1. installation of wall, roof, or ceiling insulation
2. installation of floor, foundation (crawl space), or slab perimeter insulation
3. reduction of space heating loads by reducing outside air infiltration (e.g., caulking, weather stripping)
4. installation of window and skylight insulation (curtains)
5. installation of storm windows or sash-mounted storm windows
6. installation of low-E glass or multiple glazed windows
7. reduction of solar heat gain with solar film, window tints, overhangs, awnings, louvers, screens, or other shading devices
8. installation of storm doors or double pane sliding doors, or screen doors
9. replacement of existing doors with insulated doors
10. enclosure of loading docks with shelters and seals
11. installation of vestibules to reduce infiltration and exfiltration
12. sealing vertical shafts (e.g., elevators, stairwells) to reduce infiltration and exfiltration, and installation of air curtains

g) **Insulation**

1. installation of insulation to reduce heat transfer losses in a process

INDUSTRIAL -- HVAC

h) **Energy Management Systems**

1. reducing the electrical energy consumption of systems by optimizing the control of fluid flows, material handling, and controlled variables such as temperatures, pressures, scheduling, and sequencing

i) **Heating and Air Conditioning Measures, including Energy Management Systems**

1. installation of advanced HVAC systems/strategies including terminally regulated air volume (TRAV) systems, occupancy-based ventilation strategies, underfloor HVAC, low-temperature systems, etc.
2. installation of oversized condenser water cooling towers to decrease approach temperature

3. installation of primary/secondary de-coupled chilled water systems
4. optimize chilled water and condenser water setting
5. installation of automatic condenser cleaning
6. increasing evaporator and/or decreasing condenser water temperatures and modifying controls
7. replacement of air-cooled condensers with cooling towers
8. installation of spot cooling or earth cooling tubes, or roof spray systems
9. installation of high efficiency air-conditioning units*
10. installation of chiller economizers (water side), or air side economizers
11. installation of air side heat recovery systems (ventilation air tempering, packaged systems, etc.)
12. isolation of off-line chillers and cooling towers
13. prevention of simultaneous heating/cooling through use of automatic controls
14. reset of hot deck or cold deck temperatures using automatic controls
15. zone optimization of reheat systems
16. use of duty cycling for fan control, or installation of high efficiency air handlers
17. installation of warm-up cycle controls, optimum start controls, automatic night setback/set up devices, or dead band thermostats
18. reduction of pump energy requirements by reducing resistance or flow rates
19. insulation of ducts or piping
20. replacement of forced air heating system with spot radiant heaters, or resistance heating with heat pumps, or installation of air, ground, or water source heat pumps
21. installation of solar pool/spa heating systems, swimming pool/spa covers and heat recovery
22. conversion of existing constant volume air distribution systems to variable air volume systems
23. installation of energy management systems
24. test and balancing of air distribution systems
25. cleaning isolated circulation systems in cooling or heating loops
26. installation of reflective roof treatments or surfaces
27. installation of direct or indirect evaporative cooling, evaporative pre-cooling, and absorption cooling

j) Ventilation Measures

1. installation of CO₂-controlled building ventilation or CO₂-controlled covered parking ventilation
2. automatically reducing ventilation during unoccupied periods
3. reducing minimum outside air requirements
4. recirculating exhaust air using activated carbon filters
5. installation of vortex hoods in restaurants or separate make-up air for exhaust hoods
6. use of evaporative cooling of outdoor air or desiccant dehumidification
7. reducing fan energy consumption by reducing air flow rates and the resistance to air flow, or use of dual speed fans
8. installation of high efficiency fans with larger ductwork
9. installation of attic ventilation or low leakage dampers
10. installation of air destratification systems (e.g., ceiling fans)

11. installation of outside air reset controls
12. automatically reducing or minimizing outside air intake by control modifications

k) Dehumidifiers

1. replacement of an existing or proposed electric dehumidification system with a more energy efficient system

l) Heat Recovery Equipment

1. installation of equipment to transfer heat to or from a liquid or gas and to or from an existing or proposed process which will offset electric or other fuel use

m) Thermal Storage

1. installation of equipment to store energy in the form of hot or cold fluids or mass to provide heating or cooling capacity for later use in a process

n) Cooling Tower Efficiency Improvements

1. installation of modifications to cooling towers to improve their efficiency, such as conversion from counterflow to crossflow cooling
2. installation of “Strainer Cycle” operations to provide direct cooling
3. installation of high efficiency motors, adjustable speed drives, or other fan or pump control systems

INDUSTRIAL -- PROCESS ENERGY

o) Refrigeration Systems

including replacement of existing or proposed mechanical refrigeration processes or their components with systems or components of higher efficiency. This may include:

1. fixing refrigerant leaks **
2. optimize defrosting controls or capacity controls through new controls
3. increasing condensing unit efficiencies
4. optimize cooling tower controls (i.e., coolant or air flow modulation) using new controls
5. installation of variable speed chiller motors or high efficiency chillers
6. installation of time clocks on circulating pumps, or installation of efficient compressors
7. more efficient compressor systems
8. motors
9. reduced speed or cycling of evaporator fans
10. suction pressure re-set
11. heat exchangers
12. oil cooling
13. auto purgers
14. refrigerant upgrades
15. use of heat recovery from exhaust air, or use of thermal storage (ice, chilled water, hot water)
16. installation of variable speed drives on pumps
17. installation of floating condenser head pressure controls

- p) Premium Efficiency Motors**
 1. installation or replacement of existing motors with ones that meet NEMA “Premium” standards*
 2. comprehensive motor management services

- q) Adjustable/Variable Speed Drives or ASD/VSD**
 1. installation of drives to control motor and driven equipment speed to meet variations in process requirements

- r) Energy Efficient Drive Power**
 1. installation of energy efficient drive devices in place of lower efficiency equipment such as change out of flat or V-belts with synchronous belts and pulleys or with cogged belts

- s) Pumps and Fans**
 1. replacement
 2. trimming pump impellers
 3. rebuilding
 4. modifying fans, compressors, blowers, pumps, impellers or fluid conveyance systems with energy saving units

- t) Process Heating and Cooling Equipment**
 1. installation of equipment or implementation of efficiency improvements to process heating, process cooling or distribution systems

- u) Compressed Air Systems**
 1. installation of efficiency improvements such as humidity controls for purge controls on twin tower dryers
 2. automatic shutdown timers
 3. compressor change outs
 4. improved sequencing controls
 5. adding receiver capacity to systems with load/unload controls
 6. piping upgrades
 7. reduction of air leaks when accompanied by an ongoing monitoring and maintenance program
 8. unloaders to existing or proposed compressed air systems

- v) Material Handling**
 1. upgrading material handling systems by replacing pneumatic conveyors with mechanical systems, optimizing product flows, or other measures

- w) Power Factor Improvement**
 1. installation of capacitors to improve power factor and reduce on-site line losses

- x) Transformers**
 1. replacement of existing or proposed transformers with transformers meeting the NEMA TP-1 efficiency standards

y) Furnace Upgrades

1. replacement of existing electric furnaces with more efficient electric furnaces

z) Upgrade of Electrolyzer Cathode and Anode Tubes

1. reconditioning and redesigning electrolyzer cathode and anode tubes in an electrochemical chlorine production facility to improve their conductivity and increase the efficiency of the process

aa) Plant Process System Efficiency Improvements

including changes to system configuration, controls, operation and industrial process such as:

1. conversion from mechanical aeration to biological digestion in waste water treatment
2. rectifier conversion efficiency improvements
3. inter cell bus bar connection improvements
4. cell cathode and anode coatings
5. high performance membranes used in chlorine cell production to improve energy efficiency
6. chlorine cell diaphragm modifications to improve energy efficiency
7. heat recovery for wastewater
8. bus bar improvements to increase efficiency
9. increasing and/or reconfiguring anode and cathode surface areas for energy improvement
10. improvements in electrical distribution
11. wiring for voltage line loss reduction
12. raw material processing improvements
13. cleaning of anode and cathode surfaces to improve efficiency
14. other industry specific process , including energy use monitoring and data collection that reduces the electric energy required to produce a unit of plant output

4. Agricultural Sector Measures and Activities

The following measures and activities may be provided or installed in agricultural sector facilities. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

AGRICULTURAL -- DEFINED PROGRAMS

a) *WaterWise*

The individual measures and activities included in the most recent program specifications are included in the RTF's list of eligible measures, even if they are not listed explicitly below.

AGRICULTURAL -- TECHNICAL ASSISTANCE

b) *Audits/Energy Reviews* **

1. analyses of agricultural sector conservation opportunities by qualified individuals or firms to identify conservation implementation options, their estimated costs, and their estimated savings;

c) Technical and Design Assistance **

includes any activities necessary to recommend cost-effective measures and to determine their potential for energy savings. Technical and design assistance activities encompass a variety of analytical methods including:

1. general assistance and consultations
2. prescriptive paths
3. simple hand or computer calculations
4. computer simulation models
5. rebate lists
6. scale modeling
7. other types of analyses

d) Soil Moisture Monitoring Equipment and Services

1. moisture probes and meters, infra-red remote scanning services, field soil type mapping, weather data monitoring equipment and station maintenance

e) Water Management Software and Services

1. programs or services that recommend irrigation water application rates based on soil type and moisture conditions, crop type and age and evaporation/transpiration data

AGRICULTURAL -- IRRIGATION

f) Conversion of Water Transport Canals to Pipes

g) Sprinklers and Nozzles

1. low pressure spray heads, low pressure impact sprinkler heads, low angle heads and nozzles
2. flow control nozzles and flow control diffusers
3. low pressure stainless steel, brass, or plastic nozzles
4. low pressure end guns and low pressure big guns
5. drops for spray heads and pressure regulators
6. drip and underground irrigation systems

h) Center Pivot Sprinkler Equipment

1. pressure regulators, drop tubes, goosenecks, elbows, nipples, bushings and booms
2. tubing braces and harnesses
3. swivel fittings, hoses and hose clamps
4. computer assistance for the sizing of nozzles
5. low pressure end gun booster pumps and accessories
6. electric valves essential to control operation of new low pressure equipment on corner catchers
7. Individual nozzle control for precision applications

i) Handmove and Sideroll Sprinkler Equipment

1. swing pipes, flex pipes, elbows, and sprinkler levelers necessary for offsetting

j) Mainline Equipment

1. thrust blocks, saddles, cones, tapers, couplers, flanges, bolts, seals, and gaskets
2. vacuum, pressure relief, check, drain, gate, and butterfly valves
3. PVC pipe, reducers, expanders, sleeves, elbows, tees, transition connectors, and risers
4. steel pipe (coated and uncoated), reducers, expanders, sleeves, elbows, tees, electrolytic corrosion protection, and risers
5. trench digging
6. fill material

k) Turbine Pumps

1. refurbishment of bowl assemblies
2. new bowls, columns, and accessories
3. impellers
4. camera inspection work
5. removal and re-setting pumps
6. precipitate removal
7. high pressure well flushing
8. shaft repair
9. impeller trim and balancing
10. pump and lineshaft bearings
11. parts to adapt new or modified pump to motors
12. screens and strainers, and rust treatment of screens and strainers
13. headshafts, seals, new coatings, oil tubes and shot peen
14. airline or well access ports
15. water level gauges

l) Centrifugal Pumps

1. pump replacements, impellers, impeller trim and balancing
2. seals and packing
3. bearings
4. screens/strainer assemblies

m) Motors

1. installation or replacement of existing motors with ones that meet the NEMA “Premium” efficiency standards
2. motor bases
3. brushes and bearings

n) Adjustable Speed Drives and Associated Controls for Electric Motors

o) Electrical Equipment

1. panel improvements, time clocks or twist timers, and power factor correction capacitors.

p) Suction Fittings Equipment

1. screen or strainer assemblies
2. piping, foot valves, flow straightener vanes and intake bells

3. gaskets or sealers
4. smooth elbows, eccentric tapers, flanges, and couplers

q) Discharge Fittings Equipment

1. steel piping
2. nuts and bolts
3. gaskets and sealers
4. glycerin-filled pressure gauges
5. tapered fittings and cones
6. check valves, smooth elbows, and tees
7. flanges and couplers
8. discharge control valves

AGRICULTURAL -- CHANGES IN CROP MIX OR LOCATION

r) Changes In Crop Mix or Location

1. moving crops that have high moisture demands to locations where pumping lifts are lower and/or soil conditions permit less irrigation
2. changing to crops with lower moisture demands

s) Acquisition of Consumptive Water Rights **

includes actions that results in reduced pumping loads and /or increased hydro generation.

AGRICULTURAL -- DAIRY EQUIPMENT

t) Flat-plate heat-exchangers for milk cooling

u) Variable Speed Drives (e.g., ASD, VFD, etc.) for milking machine vacuum pumps

5. Utility System Measures and Activities

The following conservation activities, technologies or practices may be provided or installed in utility facilities. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

a) Distribution System Efficiency Improvements

1. power transformer replacements
2. service conductor replacement
3. insulator additions and replacement
4. higher distribution primary voltage
5. transformer load management (replacement of improperly sized transformers for loss improvement)
6. operation improvements (reconfiguration and phase load balancing)

7. conservation voltage reduction (CVR), including both distribution level and customer level (e.g. house, business) voltage regulation
8. de-energize seasonally unloaded transformers

b) Power Factor Improvement

1. measures to improve power factor and reduce line losses
2. VAR management
3. voltage management
4. fixed and switched shunt capacitors

c) Service Distribution Transformers

1. replacement of existing or proposed transformers with higher efficiency transformers
2. multiple-transformer vs. single transformer, based on system analysis

d) Service Connection Standards

1. minimum efficiency standards that must be met prior to connection to or change in service connection load rating to the utility distribution system
2. service wire, transformer sizing

e) Remote Feedback or Load Control Equipment

1. equipment that provides consumers with real time consumption information
2. load management controls (i.e. water heaters, time of use, etc.)
3. other devices that permit the utility or consumers to monitor and manage electricity consumption.

f) Station Service Loads

such as lighting, motors, etc. that are replaced, or upgraded with more efficient components (in the same criteria as if it were an industrial facility).

6. Other Conservation Measures and Activities

The following conservation activities, technologies or practices may be provided or installed in facilities not covered in other sectors. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

a) Traffic Lights

1. new or conversion of existing incandescent traffic signals to more efficient light sources

b) Street & Area Lighting

1. replacement or upgrading of existing or proposed street and/or area lighting systems that are not metered as a commercial or industrial account to reduce electrical energy use and maintain or improve light levels and quality

c) Vending Machines

1. installation of more efficient lighting, timers and other measures that reduce the electrical consumption of refrigerated vending machines

d) Energy Code Enforcement Support

1. provision of support for code training, design assistance, plan review and field inspection services

e) Contractor Training and Support **

1. educational seminars and classes
2. equipment purchases (testing and measurement equipment, blower doors, etc.)
3. referral services purchases
4. referral services
5. co-marketing

Attachment C:

Option A

Allowable Administrative and Marketing Costs

Customers using Option A (Dollar for Dollar, w/ restrictions) are allowed to spend up to 20% of their total C&RD budget on Administrative and/or Marketing activities. The purpose of this section is to identify what activities will be allowable under the cap. In general terms, this includes staff-related costs, marketing costs, training costs, technical assistance costs, and evaluation costs.

Staff Costs: Staff costs are the actual staff time needed to operate the program as designed. This includes:

- Staff to operate the program.
- Contract support needs, such as data entry for computerized tracking systems, administering incentive payments, or field staff for verifying installations;
- Management supervision to provide program staff and contractors with appropriate direction; and
- Secretarial staff-to-support staff, contractors, and managers associated with program activities.

Staff expense, based on compensation levels including vacation and other benefits, can be estimated on an annual basis, once the above levels are determined.

Training, Equipment, and Supplies: The tools and other resources that staff will need to operate the program. For example:

- Computer hardware.
- Technical equipment (metering equipment, software programs).
- Sales training.
- Technical Training.
- Transportation.

Marketing Costs: The following costs will to be considered as appropriate:

- Market research development of advertisement and promotional materials.
- Production of materials for mass distribution.
- Distribution costs.
- Air time on radio or television.

Technical Assistance Costs: Technical assistance costs include costs associated with:

- Energy audits, design studies.
- Implementation assistance.
- Quality/cost control.
- Contract expertise.

Verification Costs: These will vary, depending on the type of program and the kind of verification needed.

Attachment D

Option A **Limited List of Qualifying Measures and Activities**

Customers who choose to use the Option A – Dollar-for-Dollar Cost Reimbursement (with restrictions) approach to conservation and want to receive full cost reimbursement are limited to the following conservation measures or activities.

1. Residential Sector Measures and Activities

RESIDENTIAL -- DEFINED PROGRAMS

There are a number of defined programs in the region that include measures and activities that have been scrutinized and approved as cost-effective. The individual measures and activities that make up the programs are included in the RTF's list of eligible measures and activities, even if they are not listed explicitly below. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

- a) **WeatherWise***.....**OPTION A ELIGIBLE**
the most recent program specifications
- b) **Long Term Super Good Cents***.....**OPTION A ELIGIBLE**
the most recent program specifications
- c) **Northwest Energy Efficient Manufactured Housing Program (Super Good Cents for Manufactured Housing)*****OPTION A ELIGIBLE**
the most recent program specifications
- d) **Performance Tested Comfort Systems*****OPTION A ELIGIBLE**
the most recent certification specifications

RESIDENTIAL -- LIGHTING

- e) **Lighting Equipment and Controls**
 - 1. compact fluorescent.....**OPTION A ELIGIBLE**

RESIDENTIAL -- PLUG LOADS

- f) **Appliances**
 - 1. Energy Star or better clothes washers*.....**OPTION A ELIGIBLE**

RESIDENTIAL -- WATER

g) Water Heaters

- 1. energy efficient electric***OPTION A ELIGIBLE**

2. Commercial Sector Measures and Activities

The following Measures and Activities may be installed in new or existing, or remodeled, commercial, institutional, or public buildings and facilities. Where applicable, all Measures must be Underwriter's Laboratory (UL) listed or classified. **An asterisk (*) indicates that the measure has "deemed" savings assigned:**

COMMERCIAL -- LIGHTING

Interior and Exterior Lighting Systems

Installation of efficient fixtures, including heat recovery fixtures; T8, T5, T3 with electronic ballast; and parabolic reflectors (if old fixtures are removed), as listed in Lighting Design Lab.....**OPTION A ELIGIBLE**

Attachment E

Conservation Measures Eligible for BPA's Conservation and Renewables Discount

Introduction: Any energy conservation measure or activity for which the energy savings can be verified or reliably estimated can qualify for a C&RD Credit. There are also many measures or activities that assist in identifying potential energy conservation opportunities or educate the public about the value of energy conservation activities that do not directly conserve energy. These types of measures or activities do not directly qualify for a C&RD Credit, but can be paid for out of a utility's allowable Administrative Allowance.

Measure Eligibility Criteria

If a measure is deemed or deem-calculated, it is eligible for the C&RD program by default. For a list of deemed and deem-calculated measures, see the section titled "Deemed and Deem-Calculated Measures List" on page 3 of this document.

For measures that are not deemed or deem-calculated to be eligible under the Program, the following eligibility criteria must be met and the measure cannot be on the "List of Ineligible Measures". The criteria for eligibility are guidelines for determining a measure's eligibility rather than strict rules. If the measure in question cannot reasonably fit under the criteria below, it is not eligible for C&RD credit under the Program. Each utility is responsible for determining measure eligibility. Questionable measures can be brought to the RTF for recommendation on eligibility.

Eligibility Criteria

- 1) Documented evidence must exist that the technology or practice improves energy efficiency or produces energy from renewable resources. Such evidence must include at least one of the following developed by an independent third party organization:
 - a) Evaluation reports
 - b) Case studies
 - c) Metering results
 - d) Prototype testing results
 - e) Scientific research
- 2) The proposed measure demonstrates energy efficiency.
- 3) The energy savings have a high probability of persisting over the life of the measure.
- 4) The energy savings can be accurately and reliably determined as follows:
 - a) For projects with savings over 100,000 kWh, a Measurement & Verification (M&V) Plan must be developed and used to determine energy savings.
 - b) For projects with savings less than 100,000 kWh, energy savings can be estimated using widely accepted methods described in the Basic Protocol #1.

List of Ineligible Measures

The following measures are not eligible under the C&RD Program:

- 1) Programmable Thermostats where energy savings are intended to result from a scheduled temperature setback (temperature increase in winter). Insufficient third party evidence supports energy savings claims from this measure. Some studies have shown energy savings were near zero. For the RTF meeting notes, see:
http://www.nwcouncil.org/energy/rtf/meetings/2003_0122/minutes.htm
- 2) Residential Hot Water Circulation Systems (except the “on demand” type) where energy savings are intended to result from reduced hot water use due to immediately adequate temperature at fixture. Due to the energy use of the circulating pumps and the potential increase in heat loss of water in the pipes, energy savings are not expected from this measure. For the RTF meeting notes, see:
http://www.nwcouncil.org/energy/rtf/meetings/2003_0122/minutes.htm

Deemed and Deem-Calculated Measures List

For additional specifications and/or requirements for the following measures, please see the C&RD reporting software at <https://www.rtf.nwppc.org/>.

Residential Sector Measures

(The following Measures and Activities have deemed or deem-calculated energy savings and credits when installed or provided for in new or existing site-built or manufactured/mobile homes, including both single and multifamily dwellings as well as low-rise and high-rise residential structures.)

- aa) Retrofit insulation (ceiling, wall, floor, duct)
- bb) Long Term Super Good Cents® homes
- cc) Northwest Energy Efficient Manufactured Housing Program (Super Good Cents for Manufactured Housing) homes
- dd) Performance Tested Comfort Systems or RTF-approved equivalent duct sealing and heat pump/AC commissioning.
- ee) Energy Star Appliances & Lighting
- ff) Built Smart™ New Low-Rise Multifamily Homes
- gg) Low flow showerheads
- hh) Kitchen and bathroom faucet aerators
- ii) Gravity film heat exchangers
- jj) Energy efficient electric, solar, and heat pump water heaters
- kk) DHW pipe insulation
- ll) Energy Star prime window replacements

Commercial Sector Measures

(The following Measures and Activities have deemed or deemed calculated energy savings and credits when installed in new or existing, or remodeled, commercial, institutional, or

public buildings and facilities. Where applicable, all Measures must be Underwriter's Laboratory (UL) listed or classified.)

1. Linear fluorescent lamp and ballast retrofits with or without delamping
2. New construction lighting power reduction
3. Heat pump efficiency upgrades
4. Retrofit insulation (ceiling, wall, floor)
5. Energy Star prime window replacements
6. Energy Star clothes washers
7. Energy Star exit signs
8. High efficiency commercial refrigerators
9. High efficiency icemakers
10. Control of networked computer's advanced energy management system with software

Industrial Sector Measures

(The following Measures and Activities have deemed or deemed calculated savings and credits associated with them when installed in industrial or industrial-type facilities (e.g., sewage treatment plants), or the facility's electric distribution system.)

1. NEMA "Premium" efficiency new motors

Agricultural Sector Measures

(The following measures and activities have deemed or deemed calculated energy savings and credits when installed in agricultural sector facilities.)

1. Irrigation water management
2. Variable speed drive on dairy vacuum pumps
3. Flat plate heat exchanger for milk cooling
4. Freeze resistant stock watering tanks/fountains

Utility System Measures and Activities

(The following conservation activities, technologies or practices have deemed or deemed calculated energy savings and credits when installed in utility facilities.)

1. Transformer de-energizing
2. Energy Star transformers

Other Conservation Measures and Activities

(The following conservation activities, technologies or practices have deemed or deemed calculated energy savings and credits when installed in facilities not covered in other sectors.)

1. Vending machine controls
2. Street lighting
3. LED traffic signals

Attachment F

Basic Protocol No. 1

Primary Sector and End-Use:

Any sector where energy savings from the measure(s) are expected to be less than 100,000 kWh/year.

Protocol Review by BPA

Protocols for measures submitted under the Basic Protocol will not be reviewed by BPA.

Utilities should keep the following information in their records for each protocol:

1. Explanation of the measure including baseline and retrofit descriptions
2. Calculation methodology
3. Sources and explanation of assumptions
4. Energy savings
5. Best and worst-case energy savings
6. Planned number of units to be installed
7. Measure life.

Application Specifications:

This protocol is intended for small-scale programs or unique projects with overall annual energy savings less than 100,000 kWh. The conservation measures discussed in this protocol are generally not deemed measures or deemed calculated measures. However, this protocol may be used if energy savings are expected to vary significantly from the available deemed or deemed calculated estimates because conditions for this specific measure are significantly different than those assumed by the deemed or deemed calculated calculations.

The measures installed under this protocol should have defensible energy savings values that are based on engineering estimates using widely accepted assumptions. The engineering estimates should use assumptions from independent third party information such as evaluation reports, case studies, metering results, prototype testing, and/or scientific research.

Method Description:

Primary Method

The primary method to determine savings is simple engineering calculations that use known variables specific to the project combined with assumed variables. Assumptions can come from applicable third party evaluation reports, cases studies, metering results, prototype testing, and/or scientific research. The combined possible error in the engineering estimate should not be more than 25 percent of the total energy savings estimate. Conservative estimates should be used whenever possible to account for the multitude of things that can be expected to go wrong with the measure and negate the savings.

Program Savings

The program savings are simply taken as the sum of all of the measure savings.

Special Considerations

- **Energy Savings Limits**

Since many of the inputs to the engineering calculation are assumed, a best case and worst-case calculation should be made. For each 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 assumed variables should be those that are realistic and, when occurring together, provide the highest savings. In the worst-case calculation, the variables should provide the least amount of savings, assuming the measure hasn't completely failed, unless the potential for a failure in any individual case is probable. In the worst-case calculation, it is not uncommon to have no savings, or even negative savings.

- **Documentation**

A paper trail should be made detailing original third party sources of information used to determine key assumptions in the energy savings calculations. A method of the calculation should also be documented.

Control Group:

No control group is required for this protocol.

Recommended Tool(s):

Since the engineering calculations and site verification process will vary with the measure application, there is not one specific tool to recommend. It is recommended to use an Excel spreadsheet for engineering calculations as an easy way to document the calculation.

Additionally, cells that contain assumptions pulled from third party data should have comments stating the source of the assumption.