

Bonneville Power Administration

Conservation

RESOURCE ENERGY DATA

The RED Book

Fiscal Year 2008

(Published 2009)

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INTRODUCTION

On December 5, 1980, the 96th Congress passed the Pacific Northwest Electric Power Planning and Conservation Act (Act), Public Law 96-501. The overall purpose of the Act is:

- To assist the electrical consumers of the Pacific Northwest through use of the Federal Columbia River Power System to achieve cost-effective energy conservation
- To encourage the development of renewable energy resources
- To establish a representative regional power planning process
- To assure the region of an efficient and adequate power supply
- For other purposes

The Bonneville Power Administration (BPA), in compliance with the Act, has sponsored and funded various energy conservation programs for the benefit of Pacific Northwest consumers for the past quarter of a century. These programs have been successful due to the cooperation and assistance of BPA's electric utility customers.

PURPOSE

The RED Book summarizes data on cost and savings pertaining to the BPA energy conservation acquisition programs and resources. The document provides information and references for general audiences and for use in preparing general publications.

ORIENTATION

The RED Book is organized as follows:

- Information on the total conservation savings from fiscal year (FY) 1982 through FY 2008*
- Information on current conservation programs from FY 2001 through FY 2008
- Information on the historical conservation achievements for the period FY 1982 through FY 2000
- Expended dollars in a table format
- Definitions of the terms used within the text and tables of the document

* BPA's fiscal year runs from October 1 through September 30

IMPORTANT NOTE FOR THE USER:

This information is sensitive to seemingly unimportant changes in the assumptions surrounding it. ***Use data with care*** to ensure that the correct characterizations of the monetary and energy figures are communicated.

The RED Book information is presented to the nearest tenth of an average megawatt (aMW) in most of the tables. Information in the charts and graphs *may be rounded to the nearest 5 aMW*. When presenting this information to the public, BPA recommends using “rounded” numbers because it recognizes that these data are not precise and are subject to adjustment over time.

Data in the RED Book are as reported by April 2009, for BPA’s FY 2008. These data should be used as “official data” until the FY 2009 RED Book is published. Adjustments to the data are captured annually in the RED Book if information from evaluations or other sources indicate savings estimates should be changed. Also, dollar amounts may change from one year to the next due to revised utility reports.

If you have any questions about how to represent or use this information, please contact:

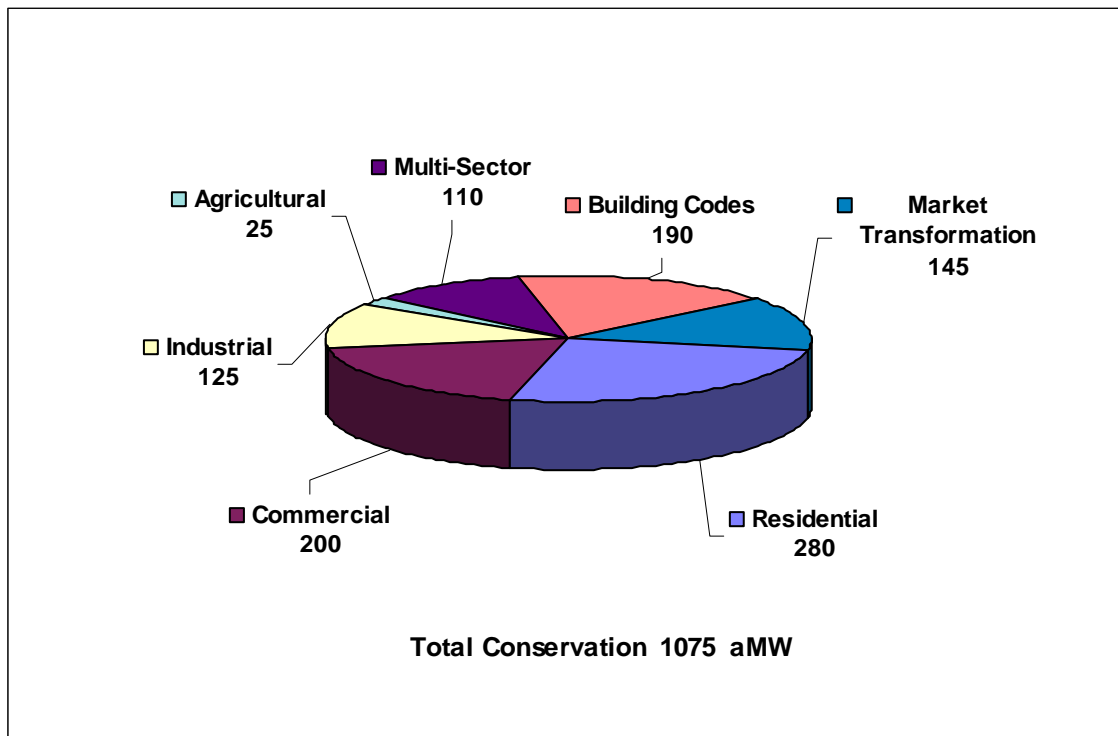
Kevin O’Sullivan (503) 230-3693

A QUICK OVERVIEW

BPA estimates a cumulative total of 1,000 aMW of energy savings are currently being delivered to the Pacific Northwest region from BPA conservation programs operated during the past 27 years (FY 1982 – 2008)¹. This cumulative total includes adjustments to some of the incremental energy savings reported in previous editions of the RED Book. These adjustments account for: changes in the reported number of installed conservation measures in previous fiscal years, changes in estimated energy savings for certain measures based on subsequent program evaluations, and installed measures that have “expired” or are no longer delivering energy savings. For example, energy savings from the Conservation Modernization (ConMod) legacy program (see glossary) are not included in the current total due to the economic downturn of the aluminum industry.

Figure 1 illustrates the relative contributions from various sector and program categories toward BPA’s cumulative total energy savings.

FIGURE 1: BPA’s Cumulative Total Conservation Savings (aMW) by Sector,² FY 1982 - 2008



¹ Beginning in FY 2007, utility-funded conservation savings, for which the utility is claiming credit towards the High Water Mark, will be included in the RED Book (in addition to BPA-funded conservation savings).

² All numbers are rounded to the nearest 5 aMW. Prior to the April 2004 edition of the RED Book, this graph also included savings from the ConMod program. ConMod savings are not included in the current total because the Region is no longer receiving conservation benefits from the aluminum industry.

The sector-specific contributions to BPA’s cumulative total adjusted conservation savings (rounded to the nearest 5 aMW) are:

- Residential Sector: 410 aMW
(includes 130 aMW from residential building codes)
- Commercial Sector: 260 aMW
(includes 60 aMW from commercial building codes)
- Industrial Sector: 125 aMW
- Agricultural Sector: 25 aMW
- Multisector: 110 aMW
(e.g., Billing Credits, Competitive Acquisitions, Flex Agreements, etc.)
- Market Transformation: 145 aMW

BPA’S TOTAL HISTORICAL CONSERVATION SAVINGS

Figure 2 illustrates the yearly contributions from each sector toward BPA’s cumulative total savings over the 27-year history of BPA’s conservation programs (FY 1982 – 2008).

FIGURE 2:³ BPA's Cumulative Conservation Savings (aMW) by Sector, FY 1982 - 2008

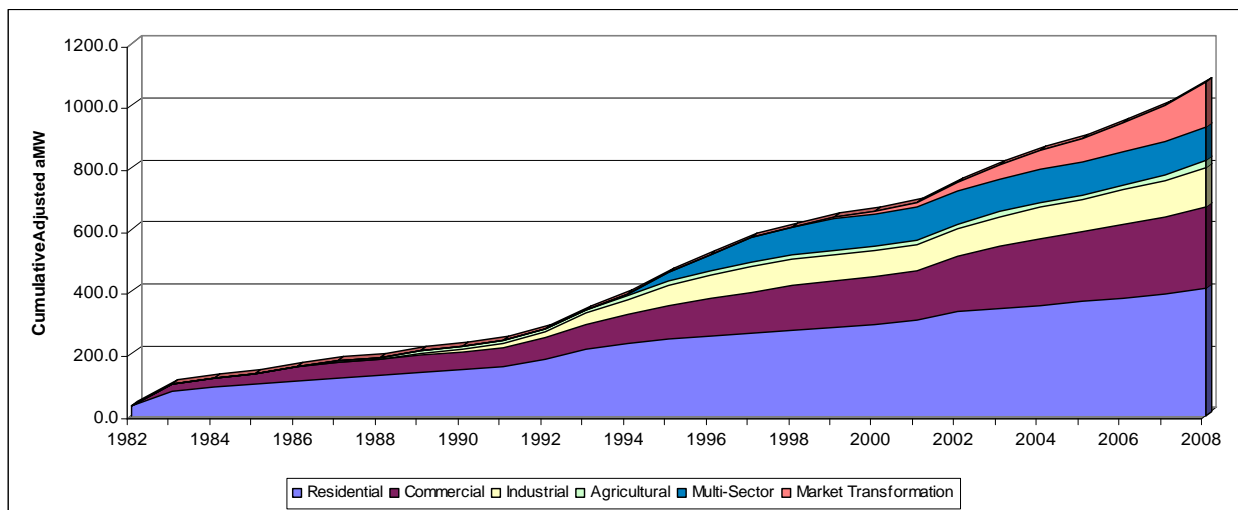


Table A summarizes the cumulative energy savings for FY 1982 - 2000 and the incremental energy savings for each fiscal year from FY 2001 through 2008.

³ ConMod savings have been removed from the graph. The region no longer receives conservation savings from the aluminum industry due to the economic downturn of the industry.

**TABLE A: BPA's Total Conservation Savings⁴⁻⁵⁻⁶ (FY 1982 – 2008)
Incremental aMW**

	FY 82-00	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	Total FY 82-08
Residential	179.6	6.0	19.0	11.9	11.0	10.5	10.7	12.4	22.6	283.9
Commercial	111.5	2.0	13.6	16.7	10.9	9.5	14.6	9.5	13.3	201.5
Industrial	84.9	0.5	4.0	6.7	3.8	3.4	8.2	6.8	6.4	124.7
Agricultural	14.8	0.3	0.4	0.4	0.2	0.1	0.5	3.0	3.1	22.6
Multi-Sector	104.2	0.0	0.4	0.4	0.2	1.9	0.2	0.1	0.4	107.9
Incremental Subtotal	495.0	8.8	37.5	36.0	26.1	25.3	34.2	31.8	45.8	740.7
Load Reductions from Improved Building Codes:										
Residential	111.6	8.3	8.7	0.0	0.0	0.0	0.0	0.0	0.0	128.6
Commercial	43.4	4.1	4.3	4.2	3.9	0.0	0.0	0.0	0.0	59.9
Incremental Subtotal	155.0	12.4	13.0	4.2	3.9	0.0	0.0	0.0	0.0	188.5
Market Transformation	9.0	7.5	12.9	17.2	15.1	13.6	15.2	26.2	30.0	146.8
Incremental Total with Load Reductions and Market Transformation										
	659.0	28.8	63.4	57.5	45.1	38.9	49.5	58.0	75.8	1075.9
Carbon Reduction (tonnes)	647,867	28,266	62,351	56,488	44,339	38,287	48,626	57,046	74,468	1,057,737

CARBON REDUCTION FROM CONSERVATION

For any given amount of conservation, there is a reduction in carbon emissions corresponding to the generation resource mix in the region. For FY 2008, the conservation savings of 75.8 aMW reduces annual carbon emissions by 273,000 tonnes (metric tons). This is equivalent to having approximately 53,000 fewer automobiles on the road. For the period FY 1982 – 2008, the cumulative conservation savings of 1,076 aMW reduces annual carbon emissions by 3.9 million tonnes. This is equivalent to having approximately 750,000 fewer automobiles on the road.

⁴ Includes transmission line loss credit savings.

⁵ The savings from expired measures are not included.

⁶ The Market Transformation savings contained in Table A reflects the approximately 50% level of funding that BPA provided to the Northwest Energy Efficiency Alliance (NEEA). A small amount of the Market Transformation savings funded by BPA (associated with building codes and other market transformation efforts) occurred outside of BPA's load service territory.

CURRENT CONSERVATION PROGRAMS

In FY 2001 BPA offered new conservation programs to utility customers under Conservation Augmentation (ConAug) and the Conservation & Renewables Discount (C&RD) Programs. Early acceptance by a few utilities provided energy savings for those programs in the summer of 2001 prior to the program official start in FY 2002. The State Low-Income Weatherization Program is funded by BPA for the states of Oregon, Washington, Idaho and Montana. Market Transformation continues to be a viable energy savings opportunity for the region. There are building code savings through FY 2004 which account for savings within the region. BPA only reports savings that are achieved within its service territory.

In FY 2006 BPA began the transition from ConAug and C&RD to new conservation opportunities under Conservation Acquisition Agreements (CAA) and Conservation Rate Credit (CRC) initiatives. Also included in the FY 2002 - 2008 data are the conservation savings results of the Irrigation Rate Mitigation Product (IRMP).

In FY 2007, Utility Self-Funding for High Water Mark credit began as a new funding category of savings. This is scheduled to end in FY 2010.

Figure 3 illustrates the cumulative effect of the current post-2000 conservation programs.

Cumulative savings are:

- ConAug: 95 aMW
- C&RD: 65 aMW
- State Low Income Weatherization Program: 2.7 aMW
- Market Transformation: 130 aMW
- Building Codes: 33.5 aMW
- CAA: 5.6 aMW
- CRC: 44 aMW
- Savings with a Twist (SWAT): 8 aMW
- IRMP: 3 aMW
- Federal: 7 aMW
- BPA Direct Acquisition: 0.5 aMW
- Utility Self-Funded for High Water Mark credit: 23 aMW

The total cumulative savings for the period, FY 2001 through 2008, are 417 aMW.

FIGURE 3: Current Conservation Programs - Cumulative Savings (aMW), FY 2001 – 2008

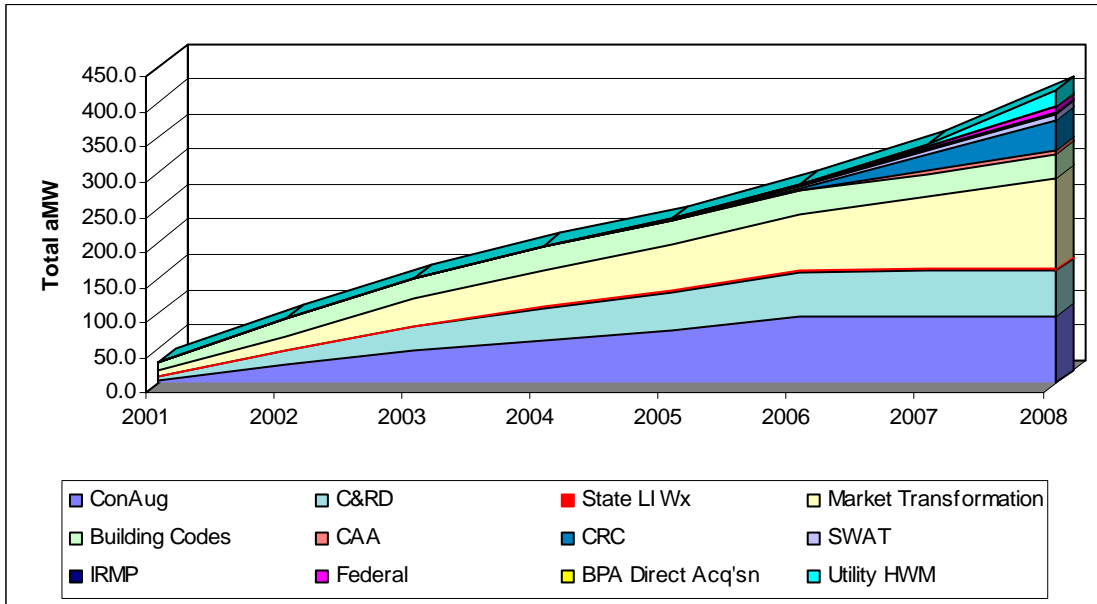


Figure 4 depicts annual energy savings attained by the current conservation programs for FY 2001 through 2008.

FIGURE 4: Current Conservation Programs – Annual Incremental Savings (aMW), FY 2001 - 2008

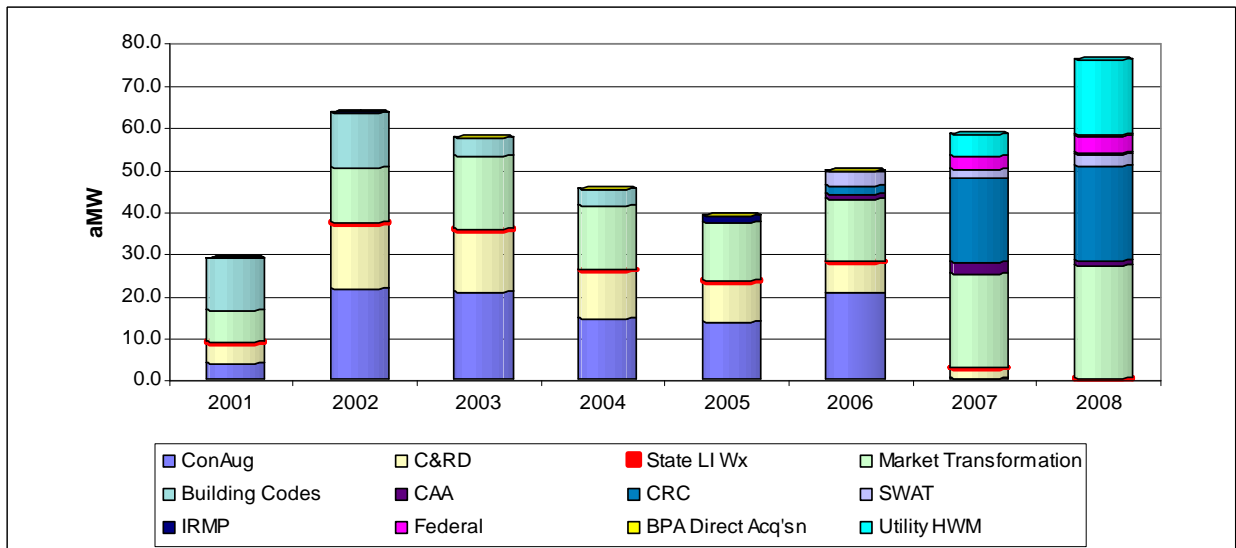


Figure 5 shows the annual acquisitions within each market sector for the current programs.

FIGURE 5: Current Conservation by Sector - Annual Incremental Savings (aMW), FY 2001 – 2008

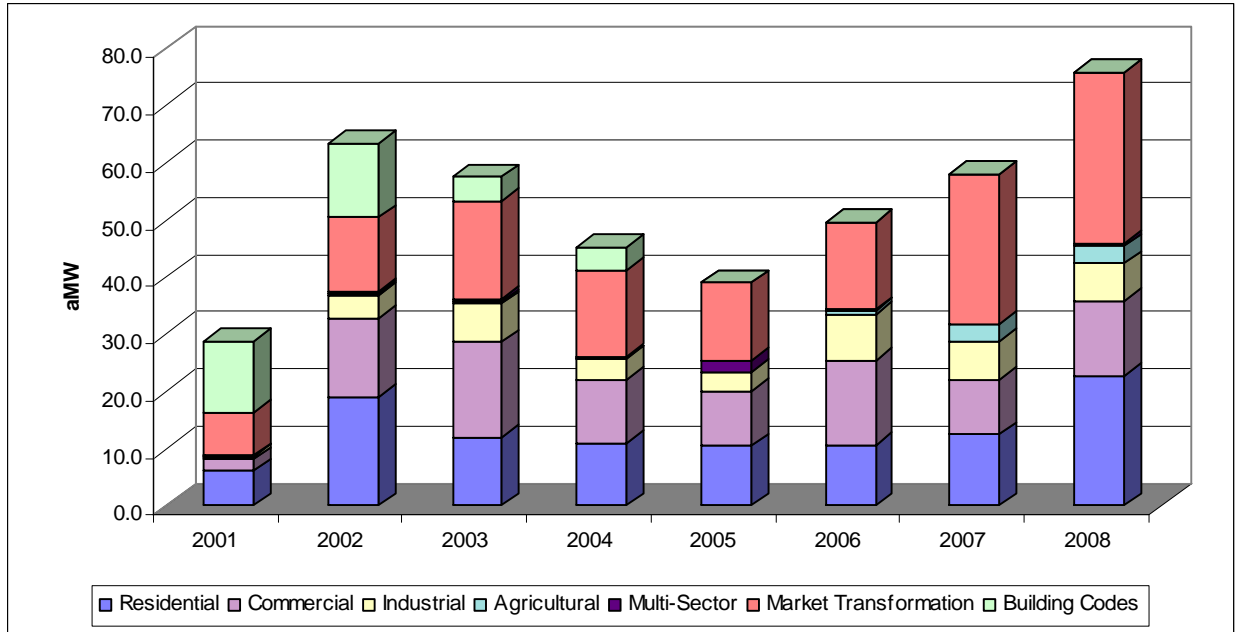


Table B provides information on total incremental energy savings for FY 2001 through 2008. Beginning with the 2007 edition of the RED book, Table B has a new format which no longer shows an adjustment column. All adjustments are now reflected in the data for the years to which they apply. Revisions to the savings occur on an annual basis, and are a result of evaluations performed, expired measures, or revised reports submitted by utilities for previous years.

TABLE B: BPA's Annual Conservation Savings (aMW) By Program, FY 2001-2008

aMW	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	TOTAL FY 01-08
RESIDENTIAL									
Low Income Residential Weatherization (States)	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	2.7
C&RD Low Income Weatherization	0.0	0.2	0.2	0.2	0.2	0.1	-		0.8
CRC Low Income Weatherization	-	-	-	-	-	0.3	0.0	0.4	0.6
<i>Conservation Augmentation (ConAug)</i>									
CFL Program	1.4	3.1	-	-	-	-	-		4.5
IRLC	0.6	2.7	2.4	1.8	1.7	1.9	0.0		11.1
SUBTOTAL RESIDENTIAL CONAUG	2.0	5.8	2.4	1.8	1.7	1.9	0.0	0.0	15.6
Conservation Renewable Discount (C&RD)	3.6	12.8	9.0	8.7	8.3	3.9	-		46.2
Conservation Acquisition (CAA)	-	-	-	-	-	0.2	0.3	0.2	0.7
Conservation Rate Credit (CRC)	-	-	-	-	-	0.7	7.0	10.4	18.1
Savings with a Twist (SWAT)	-	-	-	-	-	3.4	2.1	2.7	8.2
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	2.7	8.6	11.3
RESIDENTIAL TOTAL	6.0	19.0	11.9	11.0	10.5	10.7	12.4	22.6	104.3
COMMERCIAL									
<i>Conservation Augmentation</i>									
Federal	1.2	3.1	2.5	1.9	1.9	3.7	-		14.2
LSO & ESO	0.2	2.3	2.5	1.1	1.2	2.0	0.1		9.4
Vending Miser	0.2	1.0	0.3	-	-	-	-		1.5
C&I	0.0	0.1	0.6	0.2	0.7	1.0	0.1		2.7
IRLC	0.0	5.9	7.4	7.1	5.3	6.6	-		32.2
SUBTOTAL COMMERCIAL CONAUG	1.7	12.5	13.3	10.2	9.0	13.2	0.2	0.0	60.1
Conservation Renewable Discount (C&RD)	0.3	1.1	3.3	0.6	0.4	0.6	-		6.4
Conservation Acquisition (CAA)	-	-	-	-	-	0.6	1.8	0.6	3.0
<i>Conservation Rate Credit (CRC)</i>									
Energy Smart Grocer Program	-	-	-	-	-	-	0.2	0.6	0.8
All Other CRC (Non-Program Specific)	-	-	-	-	-	0.2	3.1	3.9	7.2
SUBTOTAL COMMERCIAL CRC	-	-	-	-	-	0.2	3.3	4.5	8.0
<i>BPA Direct Funded Initiatives</i>									
Energy Smart Grocer	-	-	-	-	-	-	0.0	0.3	0.3
Institutional Program	-	-	0.1	0.0	-	-	-		0.1
SUBTOTAL COMMERCIAL BPA DIRECT FUNDED	-	-	0.1	0.0	-	-	0.0	0.3	0.5
Federal	-	-	-	-	-	-	3.0	4.1	7.0
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	1.3	3.8	5.1
COMMERCIAL TOTAL	2.0	13.6	16.7	10.9	9.5	14.6	9.5	13.3	90.0
INDUSTRIAL									
<i>Conservation Augmentation</i>									
Water/Wastewater	-	0.3	0.2	0.2	-	-	-		0.7
C&I	-	-	0.5	0.1	0.8	1.3	0.0		2.7
ESO	-	-	-	-	0.0	0.2	-		0.2
IRLC	0.0	2.9	4.3	1.9	2.0	3.8	0.0		15.0
SUBTOTAL INDUSTRIAL CONAUG	0.0	3.2	5.0	2.2	2.8	5.3	0.0	0.0	18.6
Conservation Renewable Discount (C&RD)	0.4	0.8	1.7	1.6	0.6	2.6	2.2		9.9
Conservation Acquisition (CAA)	-	-	-	-	-	0.3	0.6	0.5	1.5
Conservation Rate Credit (CRC)	-	-	-	-	-	-	3.2	2.7	5.9
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	0.7	3.2	4.0
INDUSTRIAL TOTAL	0.5	4.0	6.7	3.8	3.4	8.2	6.8	6.4	39.8

TABLE B, continued

aMW	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	TOTAL FY 01-08
Agricultural									
Conservation Augmentation	-	0.0	0.0	-	-	0.1	0.1		0.2
Conservation Renewable Discount (C&RD)	0.3	0.4	0.3	0.2	0.1	0.0	-		1.3
Conservation Acquisition Agreements (CAA)	-	-	-	-	-	0.2	0.1	0.1	0.4
Conservation Rate Credit (CRC)	-	-	-	-	-	0.1	2.9	2.7	5.8
BPA Direct Funded Initiatives	-	-	-	-	-	-			0.0
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	0.0	0.2	0.2
AGRICULTURAL TOTAL	0.3	0.4	0.4	0.2	0.1	0.5	3.0	3.1	7.8
Multi-Sector									
Conservation Augmentation	-	-	-	-	-	-	-		0.0
Conservation Renewable Discount (C&RD)	0.0	0.2	0.2	0.1	0.0	0.0	-		0.5
Conservation Rate Credit (CRC)	-	-	-	-	-		0.0	0.1	0.1
Irrigation Rate Mitigation Product (IRMP)	-	0.3	0.2	0.2	1.9	0.2	0.1	0.4	3.2
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	-	-	0.0
MULTI-SECTOR SUBTOTAL	0.0	0.4	0.4	0.2	1.9	0.2	0.1	0.4	3.7
Market Transformation									
BPA Direct-Funded	7.5	12.9	17.2	15.1	13.6	14.6	22.2	26.6	129.8
Conservation Rate Credit (CRC)	-	-	-	-	-	0.6	3.6	1.5	5.7
Utility Self-Funded (High Water Mark)	-	-	-	-	-	-	0.4	1.8	2.3
MARKET TRANSFORMATION SUBTOTAL	7.5	12.9	17.2	15.1	13.6	15.2	26.2	30.0	137.8
TOTAL CONAUG	3.7	21.5	20.7	14.2	13.5	20.5	0.3	0.0	94.5
TOTAL C&RD	4.7	15.4	14.6	11.4	9.5	7.2	2.2	0.0	65.0
TOTAL CAA	0.0	0.0	0.0	0.0	0.0	1.3	2.8	1.4	5.6
TOTAL CRC	0.0	0.0	0.0	0.0	0.0	1.9	19.9	22.3	44.2
TOTAL UTILITY SELF-FUNDED (HIGH WATER MARK)	-	-	-	-	-	-	5.1	17.7	22.8
BUILDING CODES									
Residential	8.3	8.7	0.0	0.0	0.0	0.0	0.0	0.0	17.0
Commercial	4.1	4.3	4.2	3.9	0.0	0.0	0.0	0.0	16.5
BUILDING CODES TOTAL	12.4	13.0	4.2	3.9	0.0	0.0	0.0	0.0	33.5
TOTAL POST LEGACY CONSERVATION	28.8	63.4	57.5	45.1	38.9	49.5	58.0	75.8	416.9

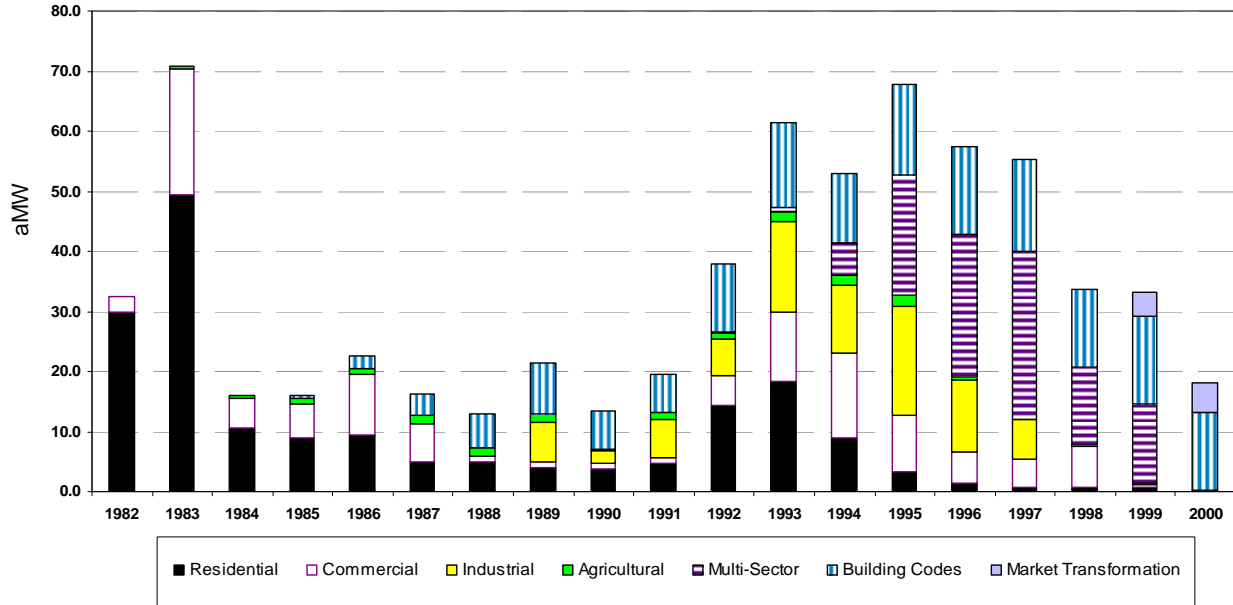
NOTES FOR TABLE B

- In FY 2007, a new funding category began – Utility Self-Funded (for High Water Mark credit).
- Beginning with FY 2007, Federal is a separate program with a separate line within the Commercial sector.
- The Energy Smart Grocer initiative can be funded through CRC, CAA, BPA Direct-Funded, or Utility Self-Funded (High Water Mark).
- Beginning with the 2007 RED Book, IRMP is located under Multisector, whereas the prior editions of the RED book placed it under Agricultural. The relocation recognizes that many of the measures are not irrigation.
- The C&RD savings shown in FY 2007 for the Industrial sector were for the completion of a single, large industrial project funded in FY 2006, the final year of the C&RD program.

BPA'S HISTORICAL CONSERVATION SAVINGS FY 1982 - FY 2000

Figure 6 shows the annual acquisitions within each market sector for the historical period of FY 1982 - 2000.

FIGURE 6: Historical Conservation Savings (aMW), FY 1982 – 2000



NOTES FOR FIGURE 6

- Beginning with the 2007 edition of the RED Book, the savings from expired measures are excluded from Figure 6, whereas they were included in previous RED Books.
- Multisector is a “pseudo sector” that makes no sector distinction for the savings achieved.

Figure 7 shows those measures which have expired and which are not included in the preceding figures and tables.

FIGURE 7: Expired Historical Conservation Savings, Shown by Year of Installation
Cumulative Total Expired Savings = 120.6 aMW

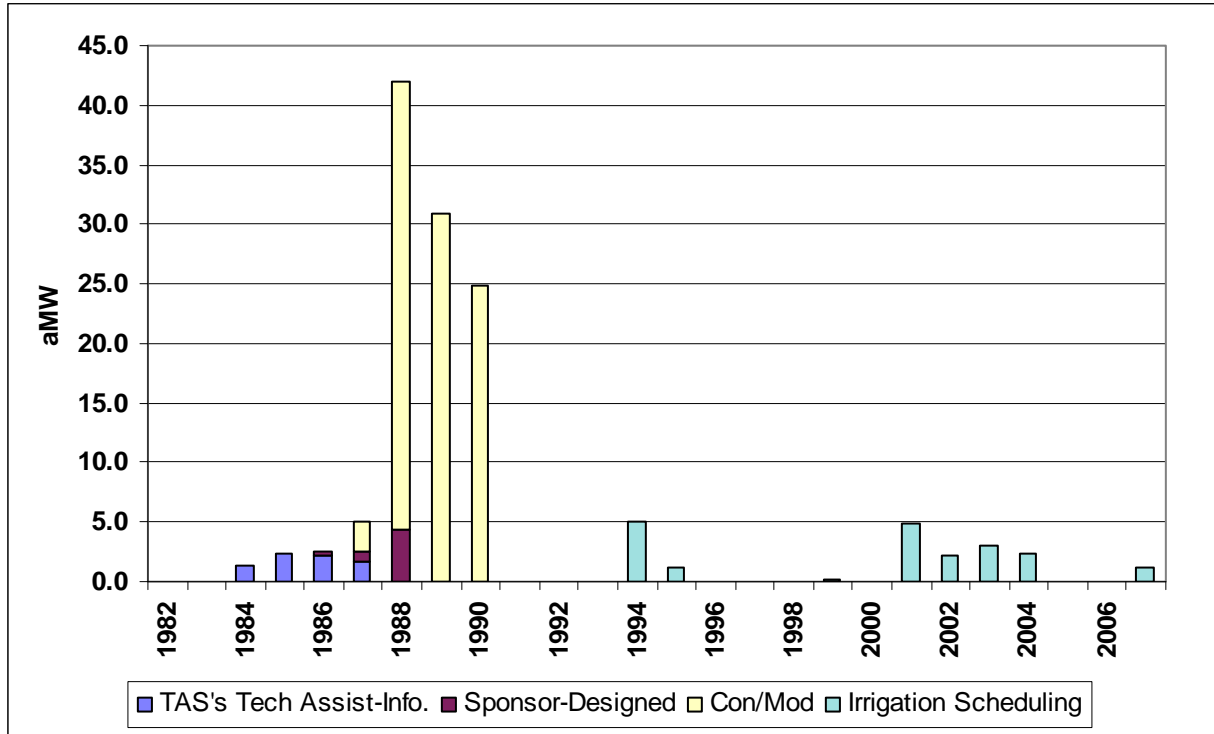


Table C provides information on historical programs for the period FY 1982 through 2000. Total cumulative energy savings achieved during this time period are 660 aMW.

TABLE C: BPA's Historical Conservation Savings (aMW), FY 1982–2000

	Total FY 82-94	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	SubTotal FY 82-00	Adjustment FY 82-00	Total FY 82-00
RESIDENTIAL										
EXISTING:										
Weatherization-SF&MF	99.4	1.4	0.0	0.0	0.0	0.0	0.0	100.8	0.0	100.8
Weatherization-MH	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Low-Income Wx	0.0	0.0	0.5	0.3	0.4	0.6	0.3	2.1	0.0	2.1
NEW										
Super Good Cents	4.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8
New Manuf. Homes	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.9
L/T Super Good Cents	1.9	0.5	0.4	0.2	0.2	0.0	0.0	3.2	0.0	3.2
Manuf. Hsg. Acq.(MAP)	6.3	1.1	0.4	0.0	0.0	0.0	0.0	7.8	0.0	7.8
Water Heater Wraps	30.4	0.0	0.0	0.0	0.0	0.0	0.0	30.4	0.0	30.4
Shower Flow Restrictors	9.1	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	9.1
Waterheat/sh-hds/aerators	18.7	0.4	0.1	0.1	0.1	0.0	0.0	19.4	0.0	19.4
RES. SUBTOTAL	172.6	3.4	1.4	0.6	0.7	0.6	0.3	179.7	0.0	179.7
COMMERCIAL										
LTNG. & WTR. HTNG.:										
Water Heater Wraps	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0
Shower Flow Restrictors	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Lamps	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7
Street & Area Lighting	16.9	0.0	0.0	0.0	0.0	0.0	0.0	16.9	0.0	16.9
INSTITUTIONAL BLDG.										
TAS's Tech Assist-Info.	7.6	0.0	0.0	0.0	0.0	0.0	0.0	7.6	(7.6)	0.0
ECM's	26.7	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	26.7
ACQUISITION SUPPORT										
Purch. of Energy Svngs.	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
Finance (CIPP)	3.2	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	3.2
PSP&L	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
PECI - Comm/Ind Ltng.	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
CREUS End-use Study	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Energy Smart Design	28.5	8.0	4.6	2.1	2.2	0.1	0	45.5	0.0	45.5
Targeted Acq. (TAP)	3.0	0.5	0.5	2.7	4.6	0.4	0	11.7	0.0	11.7
ODOE - Schools	0.1	0.8	0.2	0.0	0.0	0.0	0.0	1.1	0.0	1.1
COM. SUBTOTAL	92.5	9.3	5.3	4.8	6.8	0.5	0.0	119.2	(7.6)	111.6
INDUSTRIAL										
Sponsor-Designed	9.7	0.0	0.0	0.0	0.0	0.0	0.0	9.7	(5.6)	4.1
Energy Savings Plan	31.3	16.9	9.8	3.6	0.2	0.0	0.0	61.8	0.0	61.8
Major Plants	12.4	1.3	2.0	3.1	0.0	0.2	0.0	19.0	0.0	19.0
IND. SUBTOTAL	53.4	18.2	11.8	6.7	0.2	0.2	0.0	90.5	(5.6)	84.9
AGRICULTURAL										
Irrigation Hardware	12.4	1.8	0.6	0.0	0.0	0.0	0.0	14.8	0.0	14.8
Irrigation Scheduling	5.2	1.2	0.0	0.0	0.0	0.2	0.0	6.6	(6.6)	0.0
AG. SUBTOTAL	17.6	3.0	0.6	0.0	0.0	0.2	0.0	21.4	(6.6)	14.8

(Table C continued on next page)

TABLE C, continued

	Total FY 82-94	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	TOTAL FY 82-00	Adjustment FY 82-00	Total FY 82-00
MULTI-SECTOR										
Billing Credits	1.0	0.5	0.6	0.3	0.0	0.0	0.0	2.4	0.0	2.4
Competitive Acquisition	0.1	0.6	0.0	0.1	0.1	1.1	0.0	2.0	0.0	2.0
BPA Sys Efficiencies	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7
Third-Party Financing	4.9	10.3	12.4	18.1	6.8	4.8	0.0	57.3	0.0	57.3
Flex Agreements	0.0	8.3	10.6	9.4	6.0	7.5	0.0	41.8	0.0	41.8
MULTI-S. SUBTOTAL	6.3	20.1	23.6	27.9	12.9	13.4	0.0	104.2	0.0	104.2
SECTOR										
SUBTOTALS	342.4	54.0	42.7	40.0	20.6	14.9	0.3	515.0	(19.8)	495.2
Con/Mod	95.9	-	-	-	-	-	-	95.9	(95.9)	0.0
SUBTOTAL W/ CON/MOD	438.3	54.0	42.7	40.0	20.6	14.9	0.3	610.9	(115.7)	495.2
LOAD REDUCTION FROM BLDG. CODES										
Residential	59.0	10.3	8.7	8.8	8.2	8.2	8.4	111.6	0.0	111.6
Commercial	10.8	4.6	5.9	6.5	4.9	6.2	4.5	43.4	0.0	43.4
Improved Bld Codes	69.8	14.9	14.6	15.3	13.1	14.4	12.9	155.0	0.0	155.0
Market Transformation	0.0	0.0	0.0	0.0	0.0	4.0	5.0	9.0	0.0	9.0
TOTAL HISTORICAL CONSERVATION										
	508.1	68.9	57.3	55.3	33.7	33.3	18.2	774.9	(115.7)	659.2

NOTES ON TABLE C

- **ACHIEVED SAVINGS:** Reported average megawatt (aMW) savings *are first year savings only* and not the true measure life or program life savings. Measure life is the estimated median time a measure will remain in place, or whenever the structure in which a measure is installed ceases to exist.
- **ADJUSTED SAVINGS:** The adjusted savings reflect, in some cases, the end of a measure life when BPA assumes the measures are no longer producing savings. In addition, the adjusted savings may reflect findings from evaluations that show savings are more or less than expected when the program was initiated, or reflect revised reports submitted by utilities.
- **LINE LOSS:** Reported savings include transmission and distribution line-loss credit savings of 7.5 percent for direct acquisition programs and 2.5 percent for ConMod. This adjustment is made to account for transmission and distribution line losses avoided through the acquisition of conservation. The line loss credit has been adjusted to 7.625 percent for FY 2006 and beyond. During the transmission and distribution of electricity, a certain amount of electricity is lost due to electrical resistance inherent in conductors. Since conservation causes less electricity to be consumed by the end-uses, less electricity is generated and transmitted and, therefore, less electricity is lost. BPA credits its conservation with the line-loss savings. This adjustment allows conservation and generation savings to be compared from the same point in the electrical system often referred to as the “busbar.”

- **FUEL CHOICE:**⁷ In 1993, BPA analyzed the following programs for possible fuel switching effects: Residential Weatherization, Manufactured Housing Acquisition Program (MAP), New Residential, Energy Smart Design (ESD), and Water Heating. These analyses concluded that the Residential Weatherization program had no fuel choice effect and only a modest effect on the Water Heating program.

However, a fuel choice effect was found in the New Residential sector and MAP. This analysis concluded that the 1993 new residential program incentives from Long-Term Super Good Cents (LTSGC), Super Good Cents (SGC), Washington State Energy Code and/or Northwest Energy Code, and the MAP program do affect fuel choice. The report states that the incentives paid to build energy efficient electrically-heated homes throughout the region appear to be causing approximately 8 percent of the certified LTSGC homes and 6 percent of the new manufactured homes to be built using electricity when, absent the incentives, natural gas would have been the preferred fuel. The fuel choice impacts noted in the report are the result of builders responding to the available incentives from all the programs in their area.

In the Commercial Sector, a similar fuel choice impact was found in the ESD program where analysis concluded that incentives did effect fuel choice decisions for HVAC equipment and water heating units. The incentives resulted in unintended fuel choice effects that accounted for 3 percent of the program savings occurring because the participants selected electricity instead of natural gas. The above fuel choice effects are incorporated into the program savings for LTSGC, MAP, and ESD.

- **BUILDING CODES:** Building Code savings are a result of new building codes that were passed in 1985 and MCS (or codes close to MCS) that were implemented in Washington in 1991 and in Oregon, Idaho and Montana in 1992. Commercial MCS were implemented in Washington in 1994 and in Oregon in 1996. Savings from building codes and MCS are estimated through a backward-looking methodology in the load forecast and, therefore, are only approximate.

Residential Code savings from 2003 forward are no longer counted. Commercial Code savings are not counted as of 2005, since it is likely that codes would have reached current standards by now. In 2003, Idaho adopted a code equivalent to the 1988 MCS. Oregon and Washington codes have gone beyond MCS at this point, and current practice in Montana appears to be equivalent to the MCS. Although the national energy codes and international energy codes upon which Idaho codes were finally based may have been influenced by MCS efforts in the Pacific Northwest, it is appropriate to stop counting additional new benefits due to BPA's efforts in the 1980s and 1990s.

TOTAL BPA CONSERVATION COSTS

TABLES D & E – Conservation Costs

From FY 1982 – 2008, BPA spent approximately \$2.3 billion on conservation measures that are still producing savings. Acquisition expenditures were:

- Residential: \$1.174 billion
- Commercial: \$433 million
- Industrial: \$147 million (excludes \$48 million for ConMod measures now expired).
- Agricultural: \$37 million
- Multisector acquisitions: \$159 million
- Market Transformation, conservation support and other costs: \$430 million

⁷ Fuel choice effects occur when a consumer decides to change fuel sources from what would have been done absent the program. Of concern here is a decision to stay with electricity due to the increased efficiency when the consumer may have decided to use natural gas or another fuel instead.

TABLE D: BPA's Total Conservation Costs (\$ 000)

	1982-2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals
RESIDENTIAL:										
State Low Income Weatherization	\$	3,103	\$ 2,429	\$ 3,745	\$ 2,474	\$ 3,817	\$ 4,030	\$ 3,576	\$ 4,135	\$ 27,310
C&RD Low Income Weatherization	\$	70	\$ 1,379	\$ 1,321	\$ 1,197	\$ 990	\$ 254		\$	5,211
CRC Low Income Weatherization							\$ 465	\$ 1,226	\$ 2,138	\$ 3,829
Conservation Augmentation	\$	42	\$ 8,693	\$ 3,046	\$ 2,876	\$ 2,422	\$ 2,067	\$ 43	\$	19,188
Conservation & Renewables Discount	\$	6,237	\$ 24,062	\$ 18,989	\$ 16,577	\$ 14,903	\$ 5,966	\$ -	\$ -	86,734
Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 242	\$ 855	\$ 248	\$ 1,346
Conservation Rate Credit	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 1,408	\$ 8,308	\$ 10,954	\$ 20,669
Savings with a Twist	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 906	\$ 1,456	\$ 1,201	\$ 3,563
Residential Total	\$ 1,006,407	\$ 9,452	\$ 36,563	\$ 27,101	\$ 23,125	\$ 22,131	\$ 15,338	\$ 15,463	\$ 18,677	\$ 1,174,257
COMMERCIAL:										
Conservation Augmentation	\$	12	\$ 14,652	\$ 14,248	\$ 13,596	\$ 9,259	\$ 7,253	\$ 425	\$	59,444
Conservation & Renewables Discount	\$	695	\$ 2,534	\$ 5,850	\$ 1,565	\$ 920	\$ 1,435	\$ -	\$	12,998
Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 702	\$ 3,101	\$ 468	\$ 4,271
Conservation Rate Credit	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 261	\$ 3,284	\$ 4,138	\$ 7,683
New Initiatives	\$	-	\$ -	\$ 92	\$ 6	\$ -	\$ -	\$ 63	\$ 425	\$ 585
Federal Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,371	\$ 6,354	\$ 9,725
Commercial Total	\$ 338,550	\$ 707	\$ 17,185	\$ 20,189	\$ 15,167	\$ 10,179	\$ 9,652	\$ 10,244	\$ 11,385	\$ 433,256
INDUSTRIAL:										
Conservation Augmentation	\$	4	\$ 4,864	\$ 5,571	\$ 2,904	\$ 2,974	\$ 3,196	\$ 19	\$	19,531
Conservation & Renewables Discount	\$	106	\$ 1,676	\$ 3,014	\$ 1,822	\$ 941	\$ 4,053	\$ -	\$	11,612
Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 289	\$ 1,176	\$ 376	\$ 1,841
Conservation Rate Credit	\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,786	\$ 2,396	\$ 5,182
Industrial Total	\$ 108,691	\$ 110	\$ 6,540	\$ 8,585	\$ 4,725	\$ 3,915	\$ 7,539	\$ 3,981	\$ 2,771	\$ 146,857
AGRICULTURAL:										
Conservation Augmentation	\$	-	\$ 16	\$ 36	\$ -	\$ -	\$ 100	\$ 115	\$	267
Conservation & Renewables Discount	\$	1,452	\$ 953	\$ 697	\$ 518	\$ 119	\$ 85	\$ -	\$	3,824
Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 213	\$ 164	\$ 116	\$ 493
Conservation Rate Credit	\$	-	\$ -	\$ -	\$ -	\$ -	\$ 156	\$ 1,087	\$ 1,719	\$ 2,962
Agricultural Total	\$ 28,946	\$ 1,452	\$ 969	\$ 733	\$ 518	\$ 119	\$ 554	\$ 1,366	\$ 1,835	\$ 36,491
MULTI-SECTOR:										
Conservation Augmentation	\$	-	\$ 3	\$ -	\$ 56	\$ 96	\$ -	\$ -	\$	155
Conservation & Renewables Discount	\$	0	\$ 290	\$ 511	\$ 175	\$ 140	\$ 0	\$ -	\$	1,118
Conservation Acquisition	\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$	-
Conservation Rate Credit	\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4	\$ 45	\$ 48
Irrigation Rate Mitigation Product			\$ 121	\$ 166	\$ 92	\$ 547	\$ 267	\$ 116	\$ 391	\$ 1,700
Multi-Sector Total	\$ 155,565	\$ 0	\$ 414	\$ 678	\$ 323	\$ 783	\$ 267	\$ 119	\$ 436	\$ 158,587
SUBTOTAL	\$ 1,638,159	\$ 11,721	\$ 61,672	\$ 57,285	\$ 43,858	\$ 37,126	\$ 33,349	\$ 31,174	\$ 35,105	\$ 1,949,448

TABLE D, continued

	1982-2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals										
Market Transformation	\$	9,603	\$	7,798	\$	9,321	\$	9,709	\$	7,956	\$	10,140	\$	9,925	\$	9,353	\$	73,805		
C&RD Expense Development)	\$	1,040	\$	7,969	\$	9,109	\$	7,988	\$	6,597	\$	4,433	\$	-	\$		\$	37,136		
CRC Expense (Includes Donations/Admin)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	1,205	\$	4,443	\$	4,936	\$	10,584		
Energy Web	\$	1,229	\$	1,445	\$	4,287	\$	831	\$	602	\$	969	\$	1,817	\$	3,749	\$	14,930		
SUBTOTAL	\$	-	\$	11,872	\$	17,212	\$	22,717	\$	18,529	\$	15,155	\$	16,747	\$	16,185	\$	18,038	\$	136,455
CONSERVATION SUPPORT COSTS:																				
PBL Conservation Sales/Support	\$	-	\$	4,517	\$	787	\$	360	\$	794	\$	831	\$	669	\$	243	\$	34	\$	8,235
Conservation Staff expense	\$		\$	4,873	\$	5,570	\$	5,742	\$	5,921	\$	6,456	\$	6,841	\$	6,380	\$	6,814	\$	48,597
Conservation Support Expense	\$	178,113	\$	753	\$	3,778	\$	1,808	\$	1,756	\$	902	\$	68	\$	398	\$	1,067	\$	188,642
\$		-																		
SUBTOTAL	\$	178,113	\$	10,142	\$	10,135	\$	7,910	\$	8,471	\$	8,189	\$	7,577	\$	7,020	\$	7,916	\$	245,474
OTHER COSTS:																				
Third Party Financing Costs	\$	79,519	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	79,519
Debt Service Payment Adjustments	\$	(71,508)	\$	(5,574)	\$	(4,081)	\$	(4,236)	\$	(5,275)	\$	-	\$	-	\$	-	\$	-	\$	(90,674)
Various Costs Adjustments	\$	(31,748)	\$	-	\$	-	\$	(3,371)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	(35,119)
Federal Reimbursable Program Costs ¹	\$	-	\$	6,979	\$	10,053	\$	9,074	\$	8,266	\$	14,093	\$	17,233	\$	17,172	\$	11,205	\$	94,075
SUBTOTAL	\$	(23,737)	\$	1,405	\$	5,972	\$	1,467	\$	2,991	\$	14,093	\$	17,233	\$	17,172	\$	11,205	\$	47,801
Total Incremental Costs²	\$	35,141	\$	94,991	\$	89,380	\$	73,849	\$	74,563	\$	74,906	\$	71,551	\$	72,263				
Federal Reimbursable (Revenues)¹	\$	(7,034)	\$	(12,278)	\$	(7,728)	\$	(8,131)	\$	(15,355)	\$	(17,709)	\$	(16,293)	\$	(11,326)				
Net Incremental Costs	\$	28,107	\$	82,713	\$	81,652	\$	65,718	\$	59,208	\$	57,197	\$	55,258	\$	60,937				
With Carryover from Table E	\$	1,792,535	\$	1,820,642	\$	1,903,355	\$	1,985,007	\$	2,050,724	\$	2,109,932	\$	2,167,129	\$	2,222,387				
Total Cumulative Net Costs	\$	1,792,535	\$	1,820,642	\$	1,903,355	\$	1,985,007	\$	2,050,724	\$	2,109,932	\$	2,167,129	\$	2,222,387	\$	2,283,324		

¹ Federal reimbursable costs and reimbursements for these costs are excluded from the costs for FY 1982-2000. These costs and reimbursements netted out close to zero.

² Incremental costs exclude the cost of financing the current year's conservation efforts or the interest expense associated with prior year expenditures that were capitalized and debt financed.

Additional footnotes for Table D

- In FY 2007, a new funding category began – Utility Self-Funded (for High Water Mark credit).
- Beginning with FY 2007, Federal is a separate program with a separate line within the Commercial sector.
- Conservation costs do not include an allocation of general and administrative overhead costs.
- Conservation Modernization (ConMod) expenditures totaling \$48,140,000 incurred during FY 1988-1999 are omitted from this table, as the ConMod conservation savings have expired and are therefore not included in Table A.

TABLE E: BPA's Historical Conservation Costs, FY 1982 – 2000 (\$ 000) ⁸

Fiscal Year	Residential	Commercial	Industrial	Con/Mod	Agricultural	Multi-Sector Acq.	Program & Support Costs	Third Party Financing Costs	Debt Service Payments Adjustment	Various Costs Adjustment (e.g. Bond Transaction Costs)	Total Incremental Costs	Total Cumulative Costs
1982	\$50,346	\$11,247	\$0	\$0	\$0	\$0	\$5,321	\$0	\$0	\$0	\$66,914	\$66,914
1983	\$162,114	\$39,892	\$1,409	\$0	\$895	\$0	\$2,689	\$0	\$0	\$0	\$206,999	\$273,913
1984	\$57,374	\$8,656	\$513	\$0	\$1,309	\$0	\$7,242	\$0	\$0	\$0	\$75,094	\$349,007
1985	\$77,907	\$26,553	\$957	\$0	\$2,098	\$0	\$20,232	\$0	\$0	\$0	\$127,747	\$476,754
1986	\$79,898	\$13,007	\$1,013	\$0	\$3,546	\$0	\$7,458	\$2,125	(\$2,048)	\$0	\$104,999	\$581,753
1987	\$60,651	\$7,546	\$2,233	\$0	\$1,918	\$0	\$11,008	\$4,250	(\$2,047)	(\$10,000)	\$75,559	\$657,312
1988	\$40,979	\$14,144	\$3,297	\$1,881	\$2,166	\$3,950	\$8,483	\$4,250	(\$2,045)	(\$10,000)	\$67,105	\$724,417
1989	\$37,269	\$15,467	\$5,889	\$4,726	\$1,428	\$3,000	\$5,479	\$4,250	(\$2,048)	(\$11,748)	\$63,712	\$788,129
1990	\$40,016	\$18,062	\$5,681	\$6,063	\$1,428	\$3,232	\$3,515	\$2,125	(\$2,043)	\$0	\$78,079	\$866,208
1991	\$49,808	\$19,554	\$6,181	\$6,254	\$3,257	\$2,959	\$3,495	\$0	(\$1,983)	\$0	\$89,525	\$955,733
1992	\$80,949	\$25,334	\$8,397	\$4,553	\$2,593	\$6,673	\$4,134	\$0	(\$1,986)	\$0	\$130,647	\$1,086,380
1993	\$89,241	\$32,485	\$13,899	\$4,179	\$2,187	\$7,944	\$8,119	\$0	(\$1,905)	\$0	\$156,149	\$1,242,529
1994	\$77,726	\$45,764	\$22,383	\$6,462	\$2,617	\$17,133	\$8,210	\$6,212	(\$6,453)	\$0	\$180,054	\$1,422,583
1995	\$49,783	\$23,061	\$17,346	\$4,045	\$1,712	\$26,676	\$7,915	\$12,824	(\$7,408)	\$0	\$135,954	\$1,558,537
1996	\$29,071	\$13,540	\$9,839	\$4,595	\$1,227	\$34,330	\$7,863	\$12,824	(\$7,483)	\$0	\$105,806	\$1,664,343
1997	\$10,744	\$7,770	\$3,988	\$2,744	\$338	\$16,373	\$13,700	\$12,624	(\$7,305)	\$0	\$60,976	\$1,725,319
1998	\$5,767	\$10,495	\$3,764	\$2,358	\$173	\$12,857	\$19,200	\$12,023	(\$7,670)	\$0	\$58,967	\$1,784,286
1999	\$4,233	\$5,888	\$1,902	\$280	\$49	\$20,438	\$13,500	\$6,012	(\$11,637)	\$0	\$40,665	\$1,824,951
2000	\$2,531	\$85	\$0	\$0	\$5	\$0	\$20,550	\$0	(\$7,447)	\$0	\$15,724	\$1,840,675
Total	\$1,006,407	\$338,550	\$108,691	\$48,140	\$28,946	\$155,565	\$178,113	\$79,519	(\$71,508)	(\$31,748)	\$1,840,675	

⁸ Program and program support costs include the overhead costs of the Energy Efficiency Group and other conservation support costs.

NOTES ON TABLES D & E

The costs in the tables are “accrued” expenditures – the amount actually invoiced in a given year. The expenditures reported have been “loaded” to include all direct costs (measure costs, installation, administrative and program evaluation costs) related to conservation, indirect costs associated with BPA’s Energy Efficiency Program (load forecasting, planning and economic analysis) and a share of other corporate overhead. The costs reported in the table do not include interest expense on conservation borrowing.

BPA’s historical conservation costs have not always been reported consistently from year to year. Prior to 1988, costs were allocated to specific sectors and to resource planning. Starting in 1988, some resource planning costs were allocated to specific sectors. In addition, two new cost categories were created: multisector acquisitions and miscellaneous costs. (Miscellaneous costs have been replaced with other support cost categories.)

Although this change in categories makes it difficult to do a year-by-year comparison of sector costs, the change more accurately reflects expenditures. Multisector acquisitions cover more than one sector and include costs for billing credits, competitive acquisitions, and financial and technical assistance programs. Program and support costs are not sector specific and consist of resource planning costs and various overhead costs associated with conservation activity through FY 1986. Program and support costs shown in FY 1996 are costs related to the new Energy Efficiency organization. In FY 1995, BPA was reorganized and also implemented a new accounting system. This resulted in some changes in how costs were accounted for and reported. Every attempt was made to allocate costs to the correct categories.

BPA has performed a thorough review of conservation costs. Third party costs have been realigned to show them consistent with Federal Treasury borrowing (capital costs) which are tracked as the money is spent. Third party financing costs have been reassigned to the first five years after the bond proceeds were made available.

SPECIAL NOTE:

Dividing the dollars in tables D and E by the energy savings in tables A, B or C does not take into consideration the varying lifetimes and characteristics of energy resources and is, therefore, not an appropriate calculation. For example, 1 aMW of energy savings from a new residential building code program with an expected lifetime of 70 years cannot be equated with 1 aMW of savings from a program having a much shorter life.

The simple division method also is inappropriate because:

- Some savings were achieved in Pay for Performance or Competitive Acquisition contracts. These savings are reported as first year savings while the cost is paid from year-to-year expense budgets over a number of years.
 - Most savings were paid for from the capital budget and costs were amortized through federal borrowing. BPA's cost for these projects shows up as the capital cost and not the year-to-year amortization payments. Therefore, the way savings are treated is consistent year-to-year, while the costs are a mixture of predominantly capital with a substantial expense component.
 - The cost tables make no distinction between capital and expense payments. This means not all year-to-year costs can be directly compared to any single year savings reported.
 - Certain individual projects may receive funding in one year, but the savings may not be achieved until the following year.
-

GLOSSARY

Average megawatt (aMW):	aMW refers to a unit of energy output over a year, equivalent to the energy produced by the continuous operation of one megawatt of capacity over a period of time; also an average of one million watts transferred over a period of time (often a year, thus average annual megawatts). One aMW is the equivalent of 8,760,000 kWh (24 hrs/day*365 days/year*1000).
BPA Direct Funded:	Various savings fall under this category of funding, and include BPA contributions for market transformation, one-time grants for pilot projects (agricultural), and direct installations of measures during BPA-funded audits under the Energy Smart Grocer program.
Billing Credit:	Adjustment to the BPA customer's electric power bill or the equivalent cash payment for a reduction in the customer's net requirement of capacity and energy purchased from BPA resulting from a conservation activity independently undertaken.
Conservation Acquisition Agreement (CAA):	CAA is a resource acquisition contract with utility customers intended to reduce BPA's load obligation through mechanisms for delivering energy savings.
C&I:	This refers to the Commercial and Industrial (C&I) sectors and programs that serve both sectors.
Conservation and Renewable Discount (C&RD):	C&RD was a component of BPA's 2002 Wholesale Power Rates. C&RD is a credit that was available to BPA's regional wholesale power customers that took action to further conservation and renewable resource development in the region.
Compact fluorescent light (CFL):	A CFL is an energy efficient electric light used primarily in residential applications. The CFL is a fluorescent bulb that normally can be screwed into any standard lighting fixture. Some models can only be used with special fixtures designed to insure the lights are not replaced with inefficient incandescent light bulbs.
Competitive Acquisition:	BPA's process of soliciting and selecting conservation and generating resources from customers and non-customers for long-term use by means of systematic criteria.
Conservation Augmentation (ConAug):	ConAug was a resource acquisition component of BPA's system augmentation effort intended to reduce BPA's load obligation through mechanisms for delivering energy savings.

Conservation Modernization (ConMod):	ConMod was a legacy conservation program designed to save energy in the Northwest aluminum industry. The program was designed to save energy by offering a 5-mill incentive for every kWh of energy saved to produce one pound of aluminum.
Conservation:	Conservation means any reduction in electric energy consumption resulting from an increase in the efficiency of electric energy use, production, or distribution, the direct application of a renewable resource or by modifications in consumer behavior that decrease energy consumption.
Conservation activity:	A project or program deemed as a conservation effort.
Consumer-owned utility:	Consumer-owned utility can include a municipal electric utility, a public utility district, an irrigation district, a cooperative, a mutual corporation or association that is engaged in the business of distributing electricity to one or more retail electric customers.
Conservation Rate Credit (CRC):	CRC is a component of BPA's Wholesale Power Rates. CRC is a credit that is available to BPA's regional wholesale power customers that take action to further conservation development in the region.
Commercial and Residential End Use Study (CREUS):	CREUS provided electric energy usage information on various types of loads typically found in either commercial or residential buildings. Businesses and homes were randomly selected throughout the region and various end-use loads were monitored for several months. The data was collected and analyzed. A few businesses installed some measures during 1989 based on the energy-use data.
Direct Acquisition:	Programs that pay for energy efficiency measures that result directly from actions taken, such as installing measures, rather than by paying someone for activities like code enforcement or other programs that indirectly cause conservation to occur. Acquisition is a term from the Regional Act used where conservation activity is equivalent to, and as reliable as, acquiring actual generation-produced energy. Under the Regional Act, acquisition of energy, whether through conservation or through generation, must be done under contracts that allow for rigorous verification.
Directly Served Customer:	Direct-service industries and also federal agencies that buy electricity directly from BPA for their own use.
Direct Service Industries (DSI):	Industrial customers, primarily aluminum smelters, which purchase power directly from BPA.

Energy Conservation Measures (ECMs):	Materials or equipment installed or activities implemented to produce electric energy savings. A specific action or installed device that saves energy. Also referred to as a conservation measure.
Energy Savings Plan (ESP):	A conservation program that acquired energy savings specifically from conservation projects in the industrial sector.
Energy Smart Grocer (ESG):	ESG is a regionwide refrigeration program delivered by a third-party contractor, PECCI, and directly funded by BPA, for the region's public utilities. This program provides refrigeration energy audits, installs marketing measures, and facilitates retrofits in hard-to-reach markets, such as supermarkets, grocery stores, convenience stores, schools and other end-use refrigeration in the commercial market sector.
Energy Smart Design (ESD):	ESD was a conservation program initially designed to award builders for significant savings features in new commercial buildings. It eventually became a standard design program to increase efficiency above codes and to change building practices to bring about codes enforcing higher building efficiency standards.
Expanded Standard Offer (ESO):	The ESO for commercial and industrial lighting under ConAug was based upon set payments for specific lighting measures that save energy above standard lighting practices.
Energy Savings Plan (ESP):	ESP was a legacy conservation program that provided incentives for improvements in energy efficiency in industrial processes (other than in the aluminum industry, i.e., ConMod). This program served both new and existing industries. The program depended upon good audits or design reviews to identify potential cost effective savings. Actual savings and the amount of incentive paid were determined through pre and post metering for existing industrial processes or between estimated use and actual metered use in new industrial plants.
Federal:	A key principle in federal projects is that BPA funds must produce incremental conservation that would otherwise not be delivered. In late January 2001, BPA began to develop load reduction projects at federal properties in Pacific Northwest load following service areas.
Commercial Incentives Pilot Program (CIPP):	CIPP was a payment for performance endeavor under BPA sponsorship that provided financial reimbursement to utilities for energy conservation measures installed by commercial customers.

First Year Savings:	Most BPA programs are reported in terms of the savings that occur in one year, although the cost effectiveness of measures is based on the expected life of the measure. Measures often last 10, 20 or more years. Therefore, total savings are calculated by multiplying the first year savings times the measure life.
Fiscal Year (FY):	A 12-month accounting period used by BPA that runs from October 1 to September 30.
Flex Agreements:	Contracts with utilities to use money “flexibly” from one program or sector to another without seeking approval on each change. This provided utilities with the opportunity to move funds provided by BPA from one sector to another where there were cost-effective opportunities to achieve without going through an approval process. The program required that the average cost per kWh saved would be equal to or less than the average cost for conservation were it allocated out into the various individual programs that were available to the utilities. For example, residential weatherization costs more than industrial, so if the utility increased expenditures on residential above the allocated budget, it had to find other less costly kWh savings or repay the difference to BPA.
Fuel Choice:	A possible unintended result that a consumer might choose to use electrical energy rather than gas or another fuel due to incentives for energy efficiency measures for electrically heated homes or electrical industrial and commercial uses.
High Water Mark:	See Utility-Funded (High Water Mark)
HVAC:	Heating, ventilation and air conditioning systems (HVAC) include furnaces, ducts, air control system filters, baffles, motors, vents, sensors and chillers. These systems present many efficiency improvement opportunities. HVAC systems are found in houses and industrial facilities, but the primary use of the term is associated with cooling, heating and venting of air within large commercial structures.
Incremental Savings:	BPA conservation funding is to be used by BPA customers for energy efficiency savings and related activities beyond what they are required by law and/or regulatory requirements to accomplish, i.e., incremental savings.
Investor-owned utility (IOU):	An IOU is a corporation owned by investors that meets the definition of an electrical company that is engaged in distributing electricity to more than one retail electric customer.

Invitation to Reduce Load through Conservation (IRLC):	IRLC refers to ConAug contracts that utility customers began signing in FY 2001. Various energy conservation measures are authorized for installation through the IRLC portion of contracts. The umbrella contract for each utility is a Purchase of Conservation Agreement (PCA).
Irrigation Rate Mitigation Product (IRMP):	The Irrigation Rate Mitigation Product is a rate reduction provided to utilities with large irrigation loads during May through August of the irrigation season. This is the result of a BPA policy to provide support to irrigated agriculture when economic conditions would otherwise cause those loads to decline.
Irrigation Hardware:	Equipment that includes items such as sprinklers, pumping plants, fittings, and mainlines used to reduce operating pressure, and pipeline and pump modifications.
Irrigation Scheduling:	By careful measurement of soils for water content, air temperature, wind speed and other weather information, irrigation can be planned (scheduled) in such a way that crop growth is optimized and water use reduced. Using less water saves electricity because less water must be pumped up to the fields and forced through irrigation systems.
Legacy:	Legacy refers to the conservation activities started prior to the year 2000 that are still operating. These include Low-Income Weatherization,” the Energy Northwest pay-for-performance contract, the Tacoma Fort Lewis program and some others with minor savings impacts.
Line loss:	The electric energy lost (dissipated) in transmission and distribution lines. Varies with the current (amperes) of the line.
Load-following:	Load-following generally refers to automatic adjustments in generation which follow changes in customer load in order to maintain a continuous balance between loads and generation.
Long-Term Super Good Cents:	The final version of the New Residential Construction program that was designed to save energy and to influence code development. Long-term refers to the fact that this program was increased above the existing code standards and was to be available for some years after codes were achieved.
Low-Income:	Low-income means household income that is at or below 125 percent of the federal poverty level.
Low-Income Residential Weatherization (States):	Weatherization of the residences of low-income households helping conserve energy resources in states and reducing the need to obtain energy from more costly conventional energy resources. The program mitigates the rising energy costs that make it difficult for low-income citizens to adequately heat their homes.

Limited Standard Offer (LSO):	The LSO was the first Standard Offer made to utilities within the ConAug program. It provided incentives for commercial buildings based upon set payments for specific lighting measures that saved energy above standard lighting practices.
Manufactured Home Acquisition Program (MAP):	MAP required Super Good Cents building standards certification at the manufactured home factory. A site “set-up” inspection followed factory certification in many instances..
Major Plants:	Energy conservation projects that involved industrial plants with significant electric loads. The top 100 industrial energy users were targeted for this program.
Market Transformation:	<p>A program designed to cause new technologies to be built or accepted as standard practice. Super Good Cents is an example of a program designed to change the home building standards and the market.</p> <p>Market Transformation now refers to a specific programmatic effort operated through the Northwest Energy Efficiency Alliance, which receives 50 percent of its funding directly from BPA, and additional funding from CRC and HWM contributions from utilities.</p>
Mill:	A unit of monetary value equal to 1/10 of a cent, or 1/1,000 of a dollar.
Model Conservation Standards (MCS):	MCS were called for in the Regional Act. The Northwest Power and Conservation Council, a policy group authorized through the Regional Act to set standards and plan for future conservation and power acquisition, and BPA worked together to set the Model Conservation Standards and to encourage utilities to create programs to begin promoting such standards. MCS was designed as an early step in Energy Efficiency Code Standards which three of the four Northwest states served by BPA eventually adopted.
Multisector:	Multisector is a catch-all term for a “pseudo sector” that makes no sector distinctions for applications through which the energy savings are achieved.
ODOE – Schools:	BPA’s support of the Oregon Department of Energy (ODOE) program for conservation assistance for schools.
Payment for Performance:	Mechanism through which payments were made over time as energy savings were verified. This mechanism gave utilities the autonomy they wanted and built their capability to be a reliable source of conservation.
PECI:	PECI consults with clients to achieve long-term energy savings through market transformation education and incentive programs that build demand for more efficient products and services.

PSP&L (PSE):	Former name of Puget Sound Energy, an IOU that serves some of the load in the Puget Sound region of Washington.
Sector:	Sector in the energy world refers to a segment of a market, such as residential, commercial, industrial and agricultural end-users. Each sector employs a different approach and program design specific to its contents.
Super Good Cents:	See listing for Long-Term Super Good Cents.
Savings with a Twist™ (SWAT):	SWAT is designed to help transform markets in rural areas by encouraging consumers to buy compact fluorescent lights (CFL). SWAT is a buy-down program that involves manufacturers. SWAT-discounted CFLs are sold at retail stores throughout the Pacific Northwest through seasonal campaigns, typically fall and winter.
System Efficiencies:	System Efficiencies refers to transmission line and transformer improvements that save energy, such as lower loss transformers (silicon core), reconductoring distribution lines with higher voltage and conservation voltage reduction, which lowers the voltage on distribution lines and saves energy during low load time periods.
Targeted Acquisition:	A contract that provided flexibility to determine the pace of a utility's delivery of conservation and to select the type of conservation produced.
Targeted Acquisition Program (TAP):	Local utilities create and offer commercial conservation programs for their customers and BPA purchases verified energy savings.
Technical Assistance Information:	Technical Assistance Information was provided by the various state energy offices for the Institutional Program (primary and secondary schools). This was a DOE sponsored effort with support from BPA and the states.
Third Party Financing:	A financial arrangement between BPA and other entities to use sources of capital other than BPA's borrowing authority from the US Treasury or congressional appropriations to fund new capital assets.
Utility:	In this document, "utility" refers to an electric utility that is either consumer-owned or investor-owned.
Utility Self-Funded (High Water Mark):	Beginning in FY 2007 through FY 2010, utilities can choose to self-fund conservation and achieve credit towards their High Water Mark under the tiered rates methodology which will go into effect in FY 2012. To be eligible, conservation activities must meet the same requirements as BPA-funded activities.

VendingMi\$er®:	A program to install energy savings controllers that cycle vending machines off and on during times in which usage has been minimal. The on/off cycle maintains the quality of the products sold (e.g., products needing refrigeration).
Water/Waste Water:	BPA began this program in March 2001 to make the water/wastewater (WWW) treatment process more energy efficient. Plants in locations served by load-following customers were eligible. WWW facilities are one of the largest energy users in a community.
Weatherization:	Modifying a building envelope to reduce energy consumption for heating or cooling. Weatherization measures include adding insulation, installing storm windows and doors, caulking cracks and adding weather stripping.