



Bonneville Power Administration's
Integrated Program Review
**Energy Efficiency and
Renewable Resources**
Technical Workshop

Monday, May 24, 2010

Purpose and Objectives of Workshop

- **Provide background information on BPA's Energy Efficiency Program, including accomplishments and costs.**
- **Present Fiscal Year (FY) 2009 actual expenditures and FY 2010 budgets for BPA's Energy Efficiency Department.**
- **Present Energy Efficiency's proposed budget for FY 2011-13, including assumptions that shaped the program funding levels.**
- **Present Energy Efficiency's proposed out-year capital budgets (FY 2014-2017).**
- **Describe the impacts to the program if a 5% reduction were taken.**
- **Provide an opportunity for stakeholders to review and ask questions regarding the proposed spending levels.**

History of BPA's Energy Efficiency Program

- **Consistent with the Northwest Power Act, BPA works with its wholesale power customers to acquire the public power share of all cost-effective conservation identified in the Northwest Power and Conservation Council's Power Plan.**
- **Over the last 28 years (1982-2009), BPA and its customers have saved more than 1,100 average megawatts (aMW) of electricity through energy efficiency and conservation.**
 - These savings (on a firm energy basis) are equivalent to the generation from the region's nuclear plant (Energy NW) and exceed the individual output of all but two federal dams (Grand Coulee and Chief Joseph).
 - Cumulative savings have reduced annual carbon emissions by more than 3.9 million tons.
 - Conservation also helps reduce or defer transmission, distribution, and power purchase costs.
- **Under the 5th Power Plan (2005-09), the public power target was ~260aMW or an average of 52aMW/year.**
- **Actual public power savings under the 5th Power Plan reached 310aMW.**
- **In its FY 2010 Rate Case, BPA assumed that the 6th Power Plan would set targets for public power at ~70aMW/year. (This estimate ended up being low).**
 - The rate credit and BPA's bilateral contracts were projected to achieve 36 aMW at a cost of \$2.0M/aMW,
 - Market transformation was expected to yield 14.5 aMW at a cost of \$1.0M/aMW, and
 - Utilities were expected to self-fund 19.3 aMW/year

Achieving 6th Power Plan Targets

In its 6th Power Plan (FY 2010-14), the public power target was set at 504aMW (~101aMW/year), a near doubling over the 5th Power Plan Target of 260aMW (52aMW/year).

Public power will achieve these targets by acquiring savings in three categories (See Table 1.):

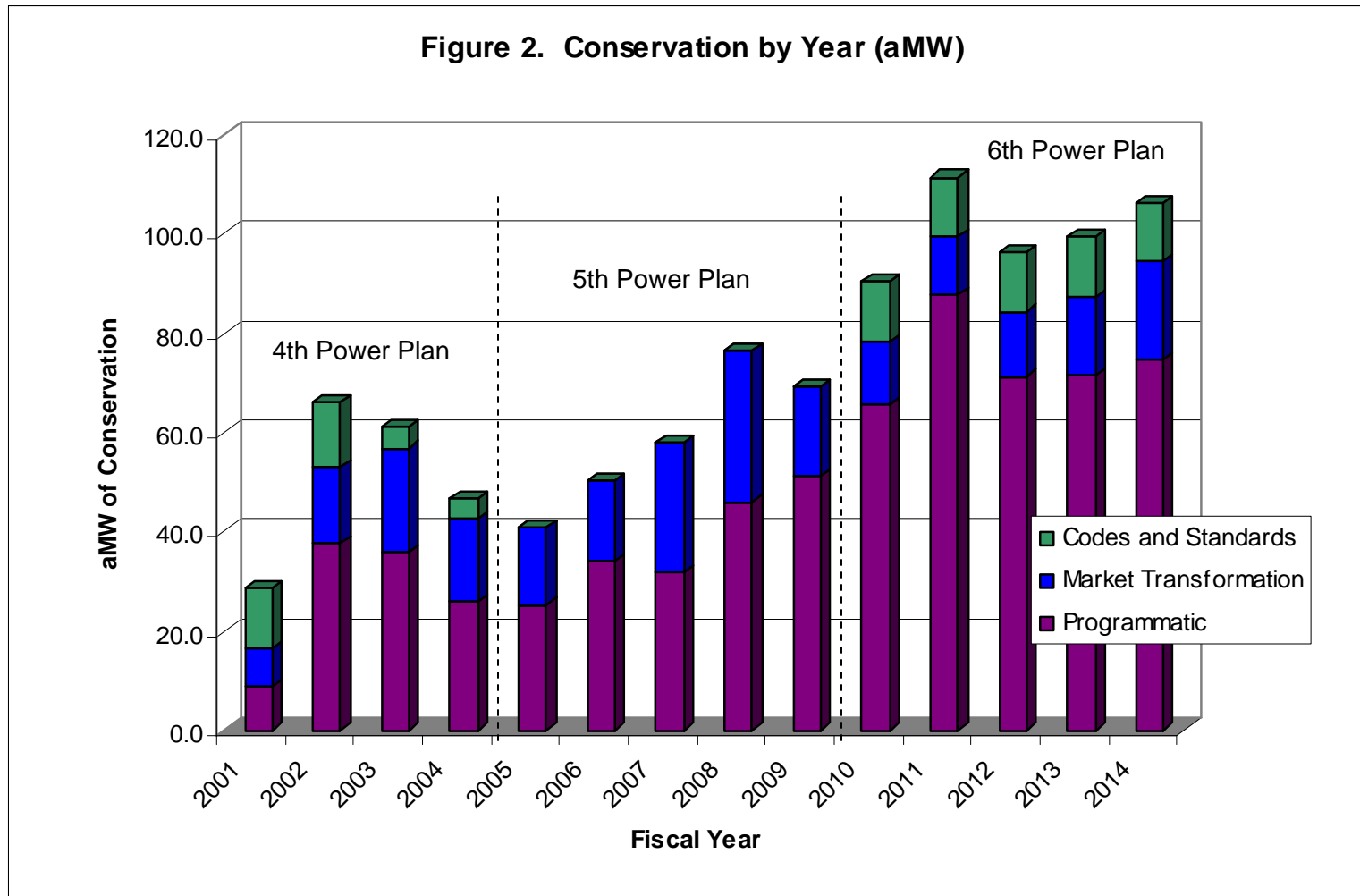
- **Non-Programmatic Savings:** BPA anticipates that ~12% (60aMW) of the 6th Power Plan target can be met through non-programmatic measures such as market-induced savings, tax credits, codes and standards, and non-BPA ARRA funding.
 - BPA will track and account for these savings, but will not offer incentives for achieving them.
- **Market Transformation:** BPA anticipates that ~14% (73aMW) of this target will be achieved through market transformation activities undertaken by the Northwest Energy Efficiency Alliance (NEEA).
 - BPA, along with other public utilities, currently supports NEEA with expense funding.
- **Programmatic Savings:** The remaining 74% (371aMW) of the 6th Power Plan target will be met through BPA and utility-funded programs in all sectors of the economy.
 - Consistent with BPA's Post 2011 Proposal, BPA proposes to fund 75% (278aMW) of this these savings and assumes that 25% (93aMW) will be achieved through utility self-funding.

Achieving 6th Power Plan Targets

Table 1. Summary of Savings and Targets in the 6th Power Plan by Year (aMW, 2010-2014)

Funding Source	2010	2011	2012	2013	2014	6 th Power Plan Total
<u>Market Transformation and Non-Programmatic Savings</u>						
Market Transformation (NEEA)	12.8	11.7	13.1	15.8	19.9	73
Non-Programmatic	12.0	12.0	12.0	12.0	12.0	60
Sub-Total						133
<u>Programmatic Savings</u>						
BPA Programs	49.2	65.8	53.5	53.6	55.9	278
Utility Self Funded	16.4	21.9	17.8	17.9	18.6	93
Sub-Total						371
Public Power Target	90.4	111.4	96.4	99.3	106.4	504

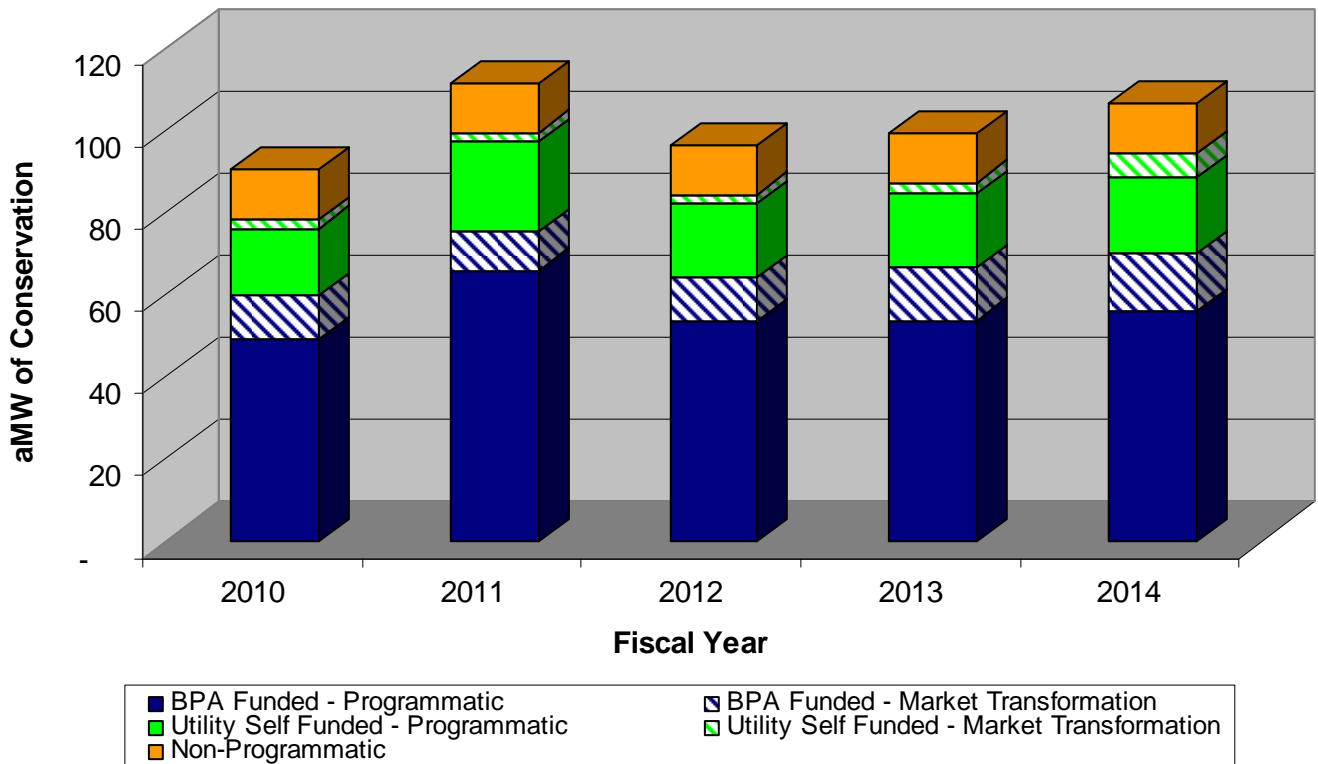
Increasing Conservation: Actuals* (FY 2001-08) and Targets (FY 2010-14)



*Note: Data for 2009 is draft

Achieving Increased 6th Power Plan Targets

Figure 3. Funding Mechanisms for Achieving the 6th Power Plan Targets



Supporting Conservation Acquisition: BPA's Expense Budget

- **To meet the aggressive 6th Power Plan targets, BPA's expense budget will be used to capture non-programmatic savings, support market transformation through NEEA, and undertake the full range of activities needed to design, market, support, and evaluate conservation measures.**

- **Expense Spending Drivers:**
 - Due to anticipated changes in Federal lighting standards, compact fluorescent lamps (CFLs), which were the largest single contributor to past savings, will not count towards the target beginning in 2012.
 - Achieving higher targets without CFLs requires marketing and program support to achieve deeper market penetration from existing measures and to develop opportunities for implementing a more diverse measure set.
 - More than 50% of the megawatts in the 6th Power Plan must come from technologies for which program design, piloting, and evaluation work is necessary to make them program ready.

Conservation Expense Budget Proposal: FY 2009-13

Energy Efficiency	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
CONSERVATION ACQUISITION	6,475,416	14,000,000	14,000,000	16,700,000	16,250,000	16,250,000
CONSERVATION RATE CREDIT	23,494,740	28,000,000	29,500,000	29,500,000	-	-
DSM TECHNOLOGIES	686,431	1,600,000	-	-	-	-
ENERGY EFFICIENCY DEVELOPMENT	10,212,332	20,500,001	20,500,000	11,500,000	11,500,000	11,500,000
GENERATION CONSERVATION R&D	2,337,550	3,200,000	-	-	-	-
LEGACY	1,421,067	1,025,118	1,622,089	1,000,000	1,000,000	900,000
LOW INCOME WEATHRZTN & TRIBAL	6,568,649	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
MARKET TRANSFORMATION	9,631,134	14,500,000	14,500,000	13,000,000	13,500,000	14,500,000
Total	60,827,319	87,825,119	85,122,089	76,700,000	47,250,000	48,150,000

- **Conservation Acquisition (Expense)** – This program supports the full range of acquisition support activities including: planning and evaluation, marketing, sector support, load management, and EE’s planning, tracking, and reporting systems. This program also supports engineering services (aka DSM technologies) which was formerly a stand-alone budget line-item.
- **Conservation Rate Credit** – Equal to ½ mil times load, this funding is provided to utilities to undertake approved conservation measures. Per the Post 2011 proposal, the CRC is set to end in 2011 and all BPA funding for conservation acquisition will flow through one funding mechanism.
- **Energy Efficiency Development** – This rate neutral budget is used for energy efficiency work that is reimbursed by utilities or governmental entities.
- **Generation Conservation R&D** – BPA’s energy efficiency development and emerging technology work is funded through the Technology Innovation (TI) organization. In 2009 and 2010, this budget was transferred from TI and managed by EE.
- **Legacy** – Funds 3 contracts (with NORESCO, Tacoma and Port Angeles) for conservation measures installed in the 1990’s.
- **Low Income Weatherization** – Provides grants to states and tribes for low income weatherization work.
- **Market Transformation** – Supports conservation acquisition through the Northwest Energy Efficiency Alliance (NEEA).

BPA’s Energy Efficiency staffing and overhead costs were discussed in the “Power Internal Operating Costs” workshop.

	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
Conservation Support: Non-Generation Operations	\$ 8,647,189	\$ 8,848,903	\$ 10,542,500	\$ 10,339,196	\$ 10,477,905	\$ 10,703,225

Conservation Acquisition

- **In addition to support for non-programmatic savings and market transformation, BPA's FY2012-13 proposed funding levels will support utility and direct acquisition programs that are expected to yield an annual average of ~54aMW, or 75% of programmatic savings necessary to achieve the 6th Power Plan Targets.**

- **Acquisition Spending Drivers: There are 2 primary drivers behind BPA's increased budget proposals for conservation acquisition –**
 1. **Increased Targets –** This budget proposal includes funding to acquire 54 aMW of the programmatic savings target (up from 36aMW of programmatic savings under the WP-10 rate case)
 2. **Increased Costs –** Several factors will contribute to increased conservation costs in FY2012-13:
 - An increase in the “avoided cost,” moves higher cost measures into the 6th Power Plan target.
 - Due to anticipated changes in federal lighting standards, compact fluorescent lamps (CFLs), which were the largest single contributor to past savings, will not count towards the target beginning in 2012.
 - As market penetration rates are reached, BPA anticipates that it will need to acquire more conservation from higher cost measures (e.g., HVAC, weatherization, and ductless heat pumps)

Conservation Acquisition Budget Proposal (FY 2009-13)

	2009 Actuals ²	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
Conservation Acquisition*	16,594,456	15,000,000	47,000,000	47,000,000	124,000,000	132,000,000
Conservation Rate Credit ^a	23,494,740	28,000,000	29,500,000	29,500,000	-	-
	40,089,196	43,000,000	76,500,000	76,500,000	124,000,000	132,000,000

* Includes funding in FY'10-'11 for EE Central (a system replacing the PTR). Note the FY2010 OY budget is \$39M

^a The CRC is assumed to cease as a funding mechanism beginning in FY'12

Capital v Expense

- **In the FY 2010-11 rate period, BPA funded programmatic conservation through its capital and expense budgets.**
 - BPA provided an annual average of \$29M in expense funding for the Conservation Rate Credit (CRC), and
 - An annual average of \$43M in capital funding was provided for conservation acquisition through utility and 3rd party contracts
- **Per the Post-2011 Proposal, it is assumed that the Conservation Rate Credit will phase out after FY2011. Starting in 2012, BPA will use one funding mechanism to support all programmatic conservation.**
- **This conservation could be capitalized or expensed.**

Projected Conservation Budgets in FY 2013-17

	2013 IPR	2014 IPR	2015 IPR	2016 IPR	2017 IPR
Conservation Acquisition	\$ 132,000,000	\$ 140,000,000	\$ 145,000,000	\$ 180,000,000	\$ 190,000,000

FY 2014-2017 Program Drivers

Increasing Targets:

- **FY 2014** – In the final year of the 6th Power Plan, BPA, in collaboration with its public utility customers, is anticipated to need to acquire approximately 75aMW to achieve the Plan's 5-year targets. BPA's FY 2014 capital proposal reflects funding to acquire approximately 56aMW or 75% of that conservation (excluding non-programmatic savings and market transformation which are expense funded).
- **FY 2015-17** – To achieve 85% of regional load growth through conservation over the next 20 years, the 7th Power Plan (FY 2015-19) is likely to include even higher conservation targets.

Cost of Measures:

- **FY 2014** – With the phase out of low-cost CFLs, BPA expects that it will cost about \$2.5M/aMW to implement the mix of measures needed to achieve the targets in FY14.
- **FY 2015-17** – Due to uncertainty about the mix of cost-effective measures that will be ready for implementation under the 7th Power Plan, these budgets reflect an assumption that the cost/aMW will remain constant. BPA will re-examine this assumption in future IPR processes.

Funding Assumptions:

- If the region is more / less successful in reaching the targets than anticipated, BPA could adjust program levels to reflect higher or lower percentages of utility self-funded acquisition in future rate periods.
- It is also assumed that BPA's technology innovation program will provide sufficient funding to support BPA's portion of the technology development, demonstration and pilot projects necessary to fill the energy efficiency pipeline with new measures.

Energy Efficiency – Reduction Scenario

Energy Efficiency	2012 IPR	2012 IPR Reduction Scenario	Delta	2013 IPR	2013 IPR Reduction Scenario	Delta
CONSERVATION ACQUISITION	16,250,000	14,971,952	1,278,048	16,250,000	14,939,676	1,310,324
CONSERVATION RATE CREDIT	-	-	-	-	-	-
DSM TECHNOLOGIES	-	-	-	-	-	-
ENERGY EFFICIENCY DEVELOPMENT	11,500,000	11,500,000	-	11,500,000	11,500,000	-
GENERATION CONSERVATION R&D	-	-	-	-	-	-
LEGACY	1,000,000	1,000,000	-	900,000	900,000	-
LOW INCOME WEATHRZTN & TRIBAL	5,000,000	4,606,755	393,245	5,000,000	4,596,823	403,177
MARKET TRANSFORMATION	13,500,000	13,500,000	-	14,500,000	14,500,000	-
Total	47,250,000	45,578,707	1,671,293	48,150,000	46,436,499	1,713,501

Notes: Beginning in FY 2012, funding for the Conservation Rate Credit was moved to the capital program. Beginning in FY 2011, funding for DSM Technologies (aka engineering services) was imbedded in the expense Conservation Acquisition program. The Generation Conservation R&D budget is held in Technology Innovation until the SOY.

FY 2012-13 Impacts Resulting from Reduction Scenario:

- EE evaluated a reduction to its expense program of ~\$1.7 million/year (equivalent to 5% of its expense program after excluding the rate-neutral EE Development program). Such a reduction would reduce EE's program to an annual average of \$1 million below the equivalent FY10 SOY budgets. Such cuts would jeopardize BPA's ability to achieve the aggressive conservation targets in the 6th Power Plan.
- Several of BPA's conservation expense programs are non-discretionary (e.g., Legacy) or tied to current agreements (e.g., Market Transformation), thus a 5% reduction would be focused on two program areas:
 - **Conservation Acquisition:** This cut would reduce BPA's expense conservation acquisition program to 4% below FY 2010 levels.
 - **Low Income Weatherization:** This cut would reduce the Low Income Weatherization program to 8% below FY 2010 levels.
- For another impact to reducing energy efficiency see Conservation Support in the Power Non-Generation Operations program.

Energy Efficiency – Reduction Scenario Impacts

Program Line Item	Description of Reduction	\$ Amount of Reduction	Impact of Reduction	Risk
<p>Conservation Acquisition</p>	<p>Reduce BPA’s expense conservation acquisition program to 4% below FY10 levels.</p>	<p>\$1.3 million per year</p>	<p>Risk having insufficient resources to hire the contract labor necessary to move new measures into programs, verify savings, and capture non-programmatic savings.</p> <p>Would also impact engineering support and would likely result in less support for the implementation and evaluation of regional load management pilot projects.</p>	<p style="text-align: center;">High</p>
<p>Low Income Weatherization</p>	<p>Reduce the Low Income Weatherization program to 8% below FY10 levels.</p>	<p>\$0.4 million per year</p>	<p>State and tribal low income weatherization programs rely on this stable source of funding to manage their programs and bring in other grants and federal cost-share</p>	<p style="text-align: center;">High</p>

Renewable Resources

Renewable Resources

Renewable Resources	2009 Actuals	2010 SOY	2011 WP-10 Rate Case	2011 IPR	2012 IPR	2013 IPR
RENEWABLE CONSRV/TN RATE CRDT	6,322,572	4,000,000	2,500,000	2,500,000	-	-
RENEWABLES	31,080,399	35,413,410	36,004,919	37,258,267	37,669,778	38,141,097
RENEWABLES R&D	840,008	1,664,963	6,132,945	5,039,948	6,642,045	6,960,264
Total	38,242,980	41,078,373	44,637,864	44,798,215	44,311,823	45,101,361

Program Description

- BPA's Policy goal for renewable resources is to ensure the development of its share of all cost-effective regional renewable resources forecasted in the 6th Power Plan at the least possible cost to BPA ratepayers. BPA's share will be based on the public power customers share of regional load growth (about 40 percent). Any renewables acquired by BPA for service to preference customers, acquired by preference customers with or without assistance from BPA, counts toward this goal.

Key Products and Outputs

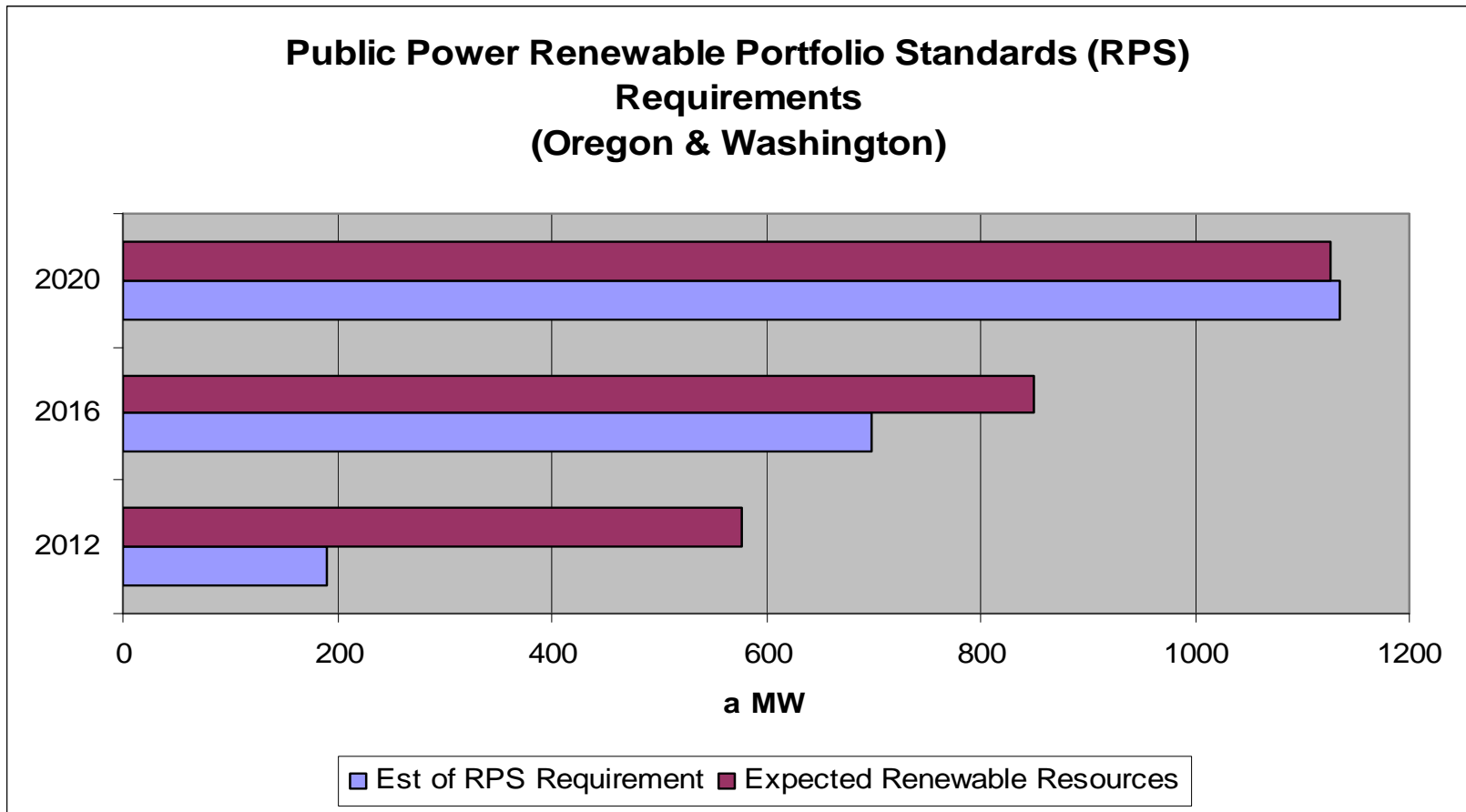
- BPA supports renewable energy development by purchasing 65 aMW (248 MW) from seven wind projects.

Renewable Resources

Renewables Rate Credit Changes for FY 2012-13

- The Renewables Rate Credit Program will end in FY 2011. The program was ramped down in FY 2010 and FY 2011 based on customer input in Integrated Program Review 2 (IPR2) with the intention of ending the program in FY 2012.
- Public power appears to be on track to meet the Renewable Portfolio Standards through 2020

Renewable Resources



RPS Requirement based on estimated customer load times state-specific renewable requirement.

Renewable Resources data from customer-filed Integrated Resource Plans.

Renewable Resources

Renewables Changes for FY 2012-13

- Renewable Power Purchases
 - **Support costs cover on-going solar and wind data collection, memberships, publications, and other support services. The support costs are forecast to be about \$700,000 per year.**
 - **Renewables category includes Renewable energy power purchases from seven wind projects. The renewable energy power purchase costs are approximately \$33 million per year. The Fourmile Hill Geothermal project is not expected to begin power deliveries until FY 2018, and its expenses are not included.**
- Support Costs
 - **Solar and Wind Data Collection**
 - **Wind Station Monitoring and Maintenance**
 - **Professional Organization Membership Fees**
 - **Western Renewable Energy Generation Information System (WREGIS) Fees**
 - **Communications and Leases for Anemometer Towers**
 - **Project Development and Environmental Impact Statement**
 - **Corporate charges for Legal Support**
- Facilitation/Resource Development
 - **Renewables facilitation is discontinued.**
 - **The Wind Integration Team (WIT) funding of \$2 million per year from Renewables facilitation will end in FY 2011. Power Services' expenses for the WIT will be funded in FY 2012 and FY 2013 by the unspent Green Energy Premium revenue remaining at the end of FY 2011.**
 - **\$4 million per year for Resource Development which may include resource studies, generation options, generation input purchases, or resource purchases prior to inclusion in next rate case.**

Renewable Resources

RENEWABLES PROGRAM COST FORECAST FOR THE 2010 INTEGRATED PROGRAM REVIEW						
Line		2010 BPA Rate Case FY 2010 (\$)	2011 BPA Rate Case FY 2011 (\$)	IPR FY 2011 (\$)	IPR FY 2012 (\$)	IPR FY 2013 (\$)
1	RENEWABLES PURCHASE COSTS					
2	<i>Wind</i>					
3	<i>Foote Creek I</i>					
4	<i>Foote Creek II</i>					
5	<i>Foote Creek IV (generation)</i>					
6	<i>Condon</i>					
7	<i>Stateline</i>					
8	<i>Klondike I</i>					
9	<i>Klondike III</i>					
10	<i>Subtotal</i>	\$ 30,829,381	\$ 31,402,818	\$ 32,548,630	\$ 32,954,464	\$ 33,418,630
	<i>Solar</i>					
11	<i>Ashland Solar Project</i>	0	0	\$ -	\$ -	\$ -
	<i>Geothermal</i>					
12	<i>Fourmile Hill Geothermal Project</i>	0	0	\$ -	\$ -	\$ -
13	Total Purchase Power Costs	\$ 30,829,381	\$ 31,402,818	\$ 32,548,630	\$ 32,954,464	\$ 33,418,630
14	SUPPORT COSTS					
15	<i>Solar Data Collection - University of Oregon</i>	117,953	121,492	\$ 122,020	\$ 122,996	\$ 124,226
16	<i>Wind Data Collection - Oregon State University</i>	81,580	84,028	\$ 84,028	\$ 84,700	\$ 85,547
17	<i>Wind Station Monitoring and Maintenance</i>	180,578	180,000	\$ 180,000	\$ 181,440	\$ 183,254
18	<i>Membership Fees (UWIG, AWEA)</i>	13,000	13,000	\$ 13,000	\$ 13,104	\$ 13,235
19	<i>WREGIS Fees</i>	5,000	5,000	\$ 5,000	\$ 5,040	\$ 5,090
20	<i>Communications</i>		600	\$ 600	\$ 605	\$ 611
21	<i>Leases</i>		6,000	\$ 6,000	\$ 6,048	\$ 6,108
22	<i>Project Development/Environmental Impact Studies, Etc.</i>	142,937	153,435	\$ 277,712	\$ 279,934	\$ 282,733
23	<i>Corporate Charges - General Counsel</i>	21,705	22,682	\$ 21,277	\$ 21,447	\$ 21,662
24	Total Support Costs	562,754	579,637	\$ 709,637	\$ 715,314	\$ 722,467
25	FACILITATION/RESOURCE DEVELOPMENT COSTS					
26	<i>Wind Integration Team</i>	2,000,000	2,000,000	\$ 2,000,000	\$ -	\$ -
27	<i>Other Facilitation Projects</i>	2,000,000	2,000,000	\$ 2,000,000		
28	<i>Resource Development (resource studies, generation options, generation input purchases)</i>	-	-		\$ 4,000,000	\$ 4,000,000
29	Total Facilitation/Resource Development Costs	4,000,000	4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000
30	RENEWABLES	\$ 34,829,381	\$ 35,402,818	\$ 37,258,267	\$ 37,669,778	\$ 38,141,097
31	RENEWABLE RATE CREDIT	\$ 4,000,000	\$ 2,500,000	\$ 2,500,000	\$ -	\$ -
32	RENEWABLES PROGRAM COST FORECAST	\$ 38,829,381	\$ 37,902,818	\$ 39,758,267	\$ 37,669,778	\$ 38,141,097

Renewable Resources

Renewables Research, Development and Demonstration Changes for FY 2012-13

- The Renewables program will no longer budget for reinvestment of Green Energy Premiums in renewables research, development and demonstration (R,D&D). The Green Energy Premiums reinvestment in renewables R,D&D will be carried out through Technology Innovation, the Wind Integration Team, and a pumped storage project.
 - Technology Innovation is funded half by Power Services and half by Transmission Services. Power's share of Technology Innovation's budget averages \$6.8 million per year; of which an average of \$1.6 million per year is budgeted expressly for renewable-related projects.
 - Power Services' expenses for the WIT will be funded in FY 2012 and FY 2013 by the unspent Green Energy Premium revenue remaining at the end of FY 2011.
- Beginning in FY12, BPA will not reinvest Green Energy Premium revenues associated with the sale of Renewable Energy Certificates (REC) to customers with Environmentally-Preferred Power (EPP) options extending through 2016.

Renewable Resources

Green Energy Premium (GEP) Reinvestment Forecast					
End of Fiscal Year (FY) 2011 Balance of GEP Revenue to Be Reinvested (Forecast)					
<i>(\$ thousands)</i>					
Line		BPA Organization	FY 2007-FY 2009	FY 2010	FY 2011
1	Renewables Technology Innovation	TI		\$1,910	\$2,070
2	Dollars spent on TI's Renewables FTE	TI		\$424	\$475
3	Wind Integration Team	P, L, SR		\$0	\$0
4	Pumped Storage	PG		\$750	\$300
5	Dollars spent on Pumped Storage FTE	PG		\$170	\$175
6	Total			\$3,254	\$3,020
7	Forecasted Revenues from GEP to be Reinvested		\$5,222	\$3,700	\$3,700
8	Unspent GEP Revenue at the End of the FY			\$446	\$680
9	Cumulative GEP Revenue Remaining to be Reinvested		\$5,222	\$5,668	\$6,348

Notes

1. All costs reflect Power Services and Corporate costs (Transmission Services costs are not included.).
2. All Full Time Equivalent (FTE) costs are fully loaded and assume the average Power Services' salary in each year.
3. There is a decision point regarding the pumped storage project in FY 2010 that will impact future spending forecasts.
4. Technology Innovation's costs do not include all research and development work related to Power Services (i.e. Hydro operations, Climate Change, etc.).
5. In the BPA 2010 rate case for FY 2010 and FY 2011, \$2 million per year to fund the Wind Integration Team was in the Renewables facilitation budget.

BPA Organizations

TI = Technology Innovation

P = Power Services

L = Legal

SR = Strategy Integration

PG = Generation Asset Management

Renewable Resources

Green Energy Premium (GEP) Reinvestment Forecast					
End of Fiscal Year (FY) 2011 Balance of GEP Revenue to Be Reinvested (Forecast)					
<i>(\$ thousands)</i>					
Line		BPA Organization	FY 2012	FY 2013	Two-year Total
1	Renewables Technology Innovation	TI	\$1,875	\$750	\$2,625
2	Dollars spent on TI's Renewables FTE	TI	\$444	\$171	\$615
3	Wind Integration Team	P, L, SR	\$1,800	\$1,800	\$3,600
4	Pumped Storage	PG	\$300	\$300	\$600
5	Dollars spent on Pumped Storage FTE	PG	\$181	\$186	\$367
6	Total		\$4,600	\$3,207	\$7,807

Notes

1. All costs reflect Power Services and Corporate costs (Transmission Services costs are not included.).
2. All Full Time Equivalent (FTE) costs are fully loaded and assume the average Power Services' salary in each year.

BPA Organizations

TI = Technology Innovation

P = Power Services

L = Legal

SR = Strategy Integration

PG = Generation Asset Management

Renewable Resources

Technology Innovation Renewables

(\$s in thousands)

	Planned Project Costs				Renewables Portion			
	2010	2011	2012	2013	2010	2011	2012	2013
1. Smart Grid Demonstration Project Renewables portion: 75%	\$2,000	\$2,500	\$2,500	\$1,000	\$1,500	\$1,875	\$1,875	\$750
2. Inter-area Oscillation Damping Renewables portion: 10%	\$350	\$350	\$0	\$0	\$35	\$35	\$0	\$0
3. Decision Support System for Tidal Energy Developments Renewables portion: 100%	\$160	\$160	\$0	\$0	\$160	\$160	\$0	\$0
4. Wind Integration Model Renewables portion: 100%	\$200	\$0	\$0	\$0	\$200	\$0	\$0	\$0
5. Normal & Emergency Operation Visualization Renewables portion: 10%	\$155	\$0	\$0	\$0	\$15	\$0	\$0	\$0
6. Renewables Projects anticipated from the R&D solicitation Renewables portion: 100%		>\$0	>\$0	>\$0		>\$0	>\$0	>\$0
TOTAL	\$2,865	\$3,365+	\$2,500+	\$1,000+	\$1,910	\$2,070+	\$1,875+	\$750+

Notes:

- In order to provide a conservative estimate, the renewables estimate only included funds according to the percentages listed under each line. We do not have estimates for lines 2 & 3 for 2012 & 2013 at this time. Lines 4 and 5 are not currently scheduled to be continued into 2011 and beyond. BPA plans to include renewables as an area of particular interest in its annual R&D solicitation. It is not known for certain how many renewables related projects we will select or what they will cost.
- Line 6 shows that we expect to have some renewables related projects in the out years but we will not know what those projects are until we complete the R&D solicitation for each year.

Renewable Resources

Technology Innovation Renewables FTE (\$s in thousands)				
	2010	2011	2012	2013
FTE	3.3	3.5	3.2	1.2
FTE Costs	\$424	\$475	\$444	\$171

FTE is calculated using the proportion of renewables dollars to the TI budget for projects. We anticipate that this will change depending on the results of the R&D solicitation and how many renewables related projects will be funded.

Renewable Resources

▪ Wind Integration Team Expenditures

- As part of the FY09 rate settlement agreement, the Wind Integration Team (WIT) was established. BPA agreed to make available \$2 million from the renewables facilitation funds in BPA's existing rates.
- This level of funding was continued in the FY2010 - 2011 rate case, in which \$2 million per year was included again in the renewables facilitation funds. It should be noted that in addition to the \$2 million from the renewables facilitation funds from Power Services, Transmission Services is funding a large share of the development of the WIT initiatives.
- As noted above, the renewables facilitation fund will not be available after FY2011. However, Green Energy Premium revenues may be used to fund Power Services' activities on WIT initiatives. We are forecasting Power Service's share to be \$830,000 for project cost and \$970,000 for FTE expense (this includes Power Services FTE and Power Services' share of FTE costs for Corporate and Legal staff working on WIT initiatives) per year for FY 2012 and FY 2013.

Renewable Resources

▪ Pumped Storage

- The current year funding is for an evaluation of hydro pumped storage to determine if it would be a cost effective tool to help BPA integrate wind in its balancing area. This work includes a Columbia Vista modeling effort and a high level review of pumped storage/wind integration capabilities at Grand Coulee Project's Keys Pump Generating plant and Banks Lake. At this time, the out year funding is a placeholder pending a decision later this year to continue with pumped storage studies.

Renewable Resources – Reduction Scenario

Renewable Resources	2012 IPR	2012 IPR Reduction Scenario	Delta	2013 IPR	2013 IPR Reduction Scenario	Delta
RENEWABLE CONSRVTN RATE CRDT	-	-	-	-	-	-
RENEWABLES	37,669,778	37,469,778	200,000	38,141,097	37,941,097	200,000
RENEWABLES R&D	6,642,045	6,199,351	442,694	6,960,264	6,496,146	464,118
Total	44,311,823	43,669,129	642,694	45,101,361	44,437,243	664,118

FY 2012-13 Impact Resulting from Reduction Scenario:

- The decrease of \$200,000 per year is a reduction in the Resource Development program.
- The impact of a decrease for the Renewables Research & Development program will be explained in the Technology Innovation presentation as part of Agency Services at the May 25th workshop.

Program Line Item	Description of Reduction	\$ Amount of Reduction	Impact of Reduction	Risk
Renewables	5% of resource development program	\$0.2 million per year	Less money available to develop tools to manage variability of renewable generation: (smaller options contracts, less in-depth resource studies, smaller generation-input purchases etc.)	Medium

Next Steps

Detailed Workshop Schedule

2010 Integrated Program Review (IPR) Workshop Schedule

All workshops are subject to change as necessary

	Workshop Topic	Date	Time
-	Asset Management Overview <i>Pre-IPR meeting held at the Quarterly Business Review</i>	May 3, 2010	3:00-4:00 PM
1	Executive Welcome and Overview <i>Executive Welcome, Introductions, Process Overview Power, Transmission, Corporate overview</i>	May 10, 2010	9:00-1:00 PM
2	Federal Hydro Asset Strategy & Capital Discussion <i>FCRPS Hydro Asset Strategy Federal Hydro Capital Program for FY 2012-17</i>	May 13, 2010	9:00-12:00 PM
3	Transmission Asset Strategies & Capital Discussion <i>Transmission Asset Strategies Transmission Capital Programs for FY 2012-17</i>	May 17, 2010	9:00-4:00 PM
4	Transmission Expense <i>Transmission Expense Programs for FY 2012-13</i>	May 18, 2010	9:00-12:00 PM
5	Transmission Overflow <i>Discuss Remaining Topics, Follow Ups, Etc.</i>		1:00-4:00 PM
6	Power Internal Operating Costs, Acquisition/Ancillary Services & Residential Exchange <i>Power Internal Operating Cost for FY 2012-13 Power Acquisition and Ancillary Services for FY 2012-13 Residential Exchange Program for FY 2012-13</i>	May 19, 2010	9:00-12:00 PM
7	Columbia Generating Station (CGS) <i>CGS Expense and Capital Program for FY 2012-17</i>		1:00-4:00 PM



Detailed Workshop Schedule

2010 Integrated Program Review (IPR) Workshop Schedule

All workshops are subject to change as necessary

	Workshop Topic	Date	Time
8	FCRPS Hydro Operation & Maintenance Program and Cultural Resources <i>FCRPS Hydro O&M Program for FY 2012-13</i> <i>Cultural Resources Program</i>	May 20, 2010	9:00-12:00 PM
9	Fish & Wildlife, Lower Snake River Comp (LSRC) and Northwest Power Planning Council (NWPPC) <i>F&W Expense & Capital Program for FY 2012-17</i> <i>LSRC Program for FY 2012-13</i> <i>NWPPC Expense Program for FY 2012-13</i> <i>Columbia River Fish Mitigation (CRFM) FY 2012-17</i>		1:00-4:00 PM
10	Power Overflow <i>Discuss Remaining Topics, Follow Ups, Etc.</i>	May 24, 2010	9:00-12:00 PM
11	Energy Efficiency & Renewable Resources <i>Energy Efficiency Expense & Capital Program for FY 2012-17</i> <i>Renewable Resources for FY 2012-13</i>		1:00-4:00 PM
12	Facilities Asset Strategy <i>Facilities Asset Strategy</i>	May 25, 2010	9:00-10:30 AM
13	Information Technology (IT) Asset Strategy <i>IT Asset Strategy</i>		10:30-12:00 PM
14	Agency Services <i>Agency Services Expense & Capital Programs for FY 2012-2017</i>		1:00-4:00 PM
15	General Manager Meeting	June 8, 2010	9:00-12:00 PM
16	General Manager Meeting	July 13, 2010	9:00-12:00 PM



Ways to Participate

- All forums are open to the public and will be noticed on the Integrated Program Review (IPR) external website at: <http://www.bpa.gov/corporate/Finance/IBR/IPR/>.
- Representatives from the Corps of Engineers, Bureau of Reclamation and Energy Northwest will be participating in the IPR process including presentations.
- All technical and managerial workshops will be held at BPA Headquarters.
- If participating by phone please dial into the bridge at 503-230-5566, then any time during or after the message and the double beep, enter 3981#. Presentation material will be posted on the IPR external website prior to the workshop taking place.
- The IPR process will include a public comment period for proposed program spending levels. The comment period opens May 10, 2010 and will close on July 29, 2010.
- Comments can be submitted at any of the scheduled workshops or submitted in writing to:
 - Bonneville Power Administration, P.O. Box 14428, Portland, OR 97293-4428,
 - Email to comment@bpa.gov,
 - Faxed to (503) 230-3285



BPA's Financial Disclosure Information

- All FY 2010-2017 information has been made publicly available by BPA on May 18, 2010 and does not contain Agency-approved Financial Information.
- All FY 2007-2009 information has been made publicly available by BPA and contains Agency-approved Financial Information.
- All FY 2011 Rate Case data has been developed for publication in rates proceeding documents and is being provided by BPA.

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