

Bruce A. Measure
Chair
Montana

Rhonda Whiting
Montana

W. Bill Booth
Idaho

James A. Yost
Idaho



Dick Wallace
Vice-Chair
Washington

Tom Karier
Washington

Melinda S. Eden
Oregon

Joan M. Dukes
Oregon

September 9, 2010

MEMORANDUM

TO: Council Members

FROM: Tom Eckman and Charles Grist

SUBJECT: 2009 Regional Conservation Achievements

Each year the Regional Technical Forum (RTF) conducts an assessment of regional conservation achievements. The RTF's 2009 assessment found that programs operated by Bonneville, the region's public and private utilities, the Energy Trust of Oregon and the Northwest Energy Efficiency Alliance (NEEA) acquired 217 average megawatts of saving. Savings in 2009 were slightly lower than the 235 average megawatts achieved the previous year. However, between 2005 and 2009 the region has captured 938 average megawatts of savings. This five-year total is more than 30% above the Council's 5th Plan's five-year conservation target of 700 average megawatts. The energy saved by 2009 is similar to the amount of energy produced in a year by the Columbia Generating Station nuclear power plant. Figure 1 shows the cumulative savings achieved in the region and the 5th Plan conservation target.

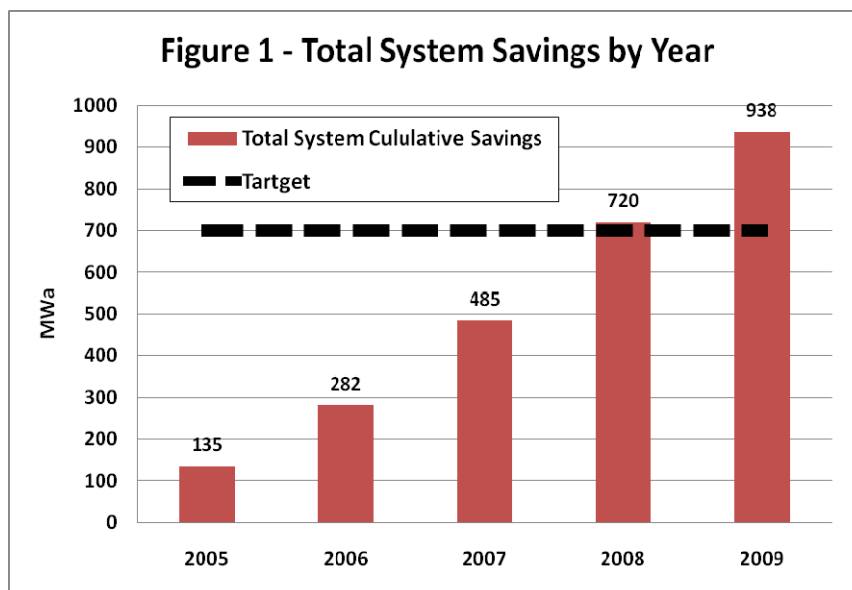
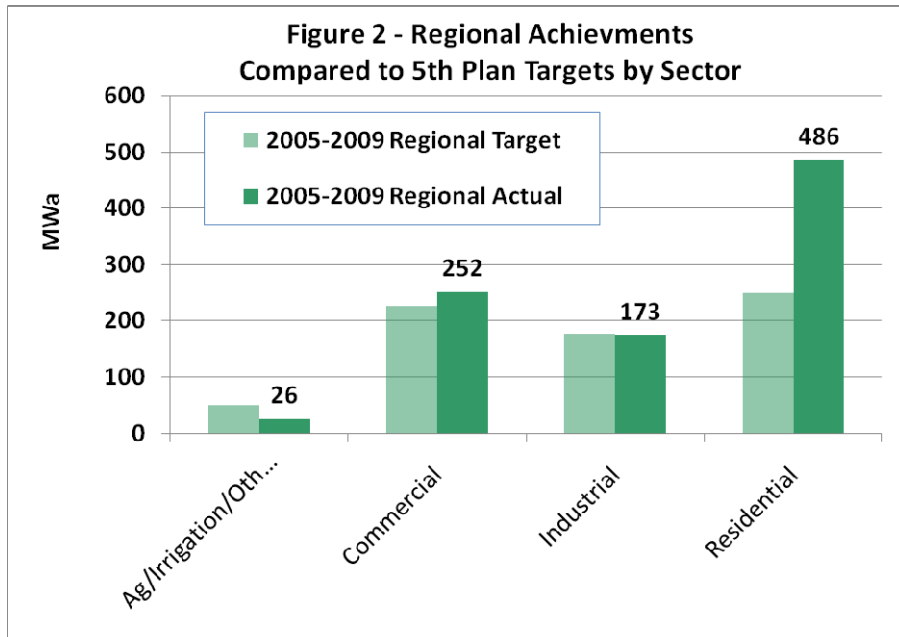


Figure 2 compares the 5th Plan’s annual conservation targets with the actual regional achievements by sector. The region accomplished nearly double



the 5th Plan’s savings target for the residential sector and met or exceeded the plan’s targets in all but the Agriculture/Irrigation sector. Staff estimates that just over 40% (205 MWha) of the savings in the residential sector came from the highly-successful regional programs to increase the use compact fluorescent lamps (CFLs). While CFLs did produce a significant portion of the residential sector savings it is important to note that the region would still have accomplished the 5th Plan’s target for the residential sector without securing any savings from CFLs.

These savings came at a very low cost to the utility system compared to new power costs and even compared to wholesale market prices. The levelized cost of the energy efficiency savings to the region’s utility system was about \$15 per MWh. The low cost of conservation was partly a result of the rapid acquisition of CFL bulbs and other relatively low-cost measures. In 2009, utility expenditures per annual average megawatt saved have increased compared to earlier years.

For comparison purposes, the levelized cost of power from new wind generating facilities, like the recently completed Biglow Canyon, are in the range of about \$100 per MWh. The conservation is also low cost when compared to average annual wholesale power prices during the 2005-2009 period which ranged \$30 to \$60 per MWh. Over the five-year period, the savings to the electric utility system was about \$1 billion if it is valued at wholesale power prices. Regional utility system expenditures on conservation were \$292 million in 2009, up about \$70 million over 2008. Total utility system expenditures on conservation for the 2005-2009 period were about \$1 billion.

Staff will develop additional detail on the energy efficiency accomplishments for presentation at the September meeting in Bend.

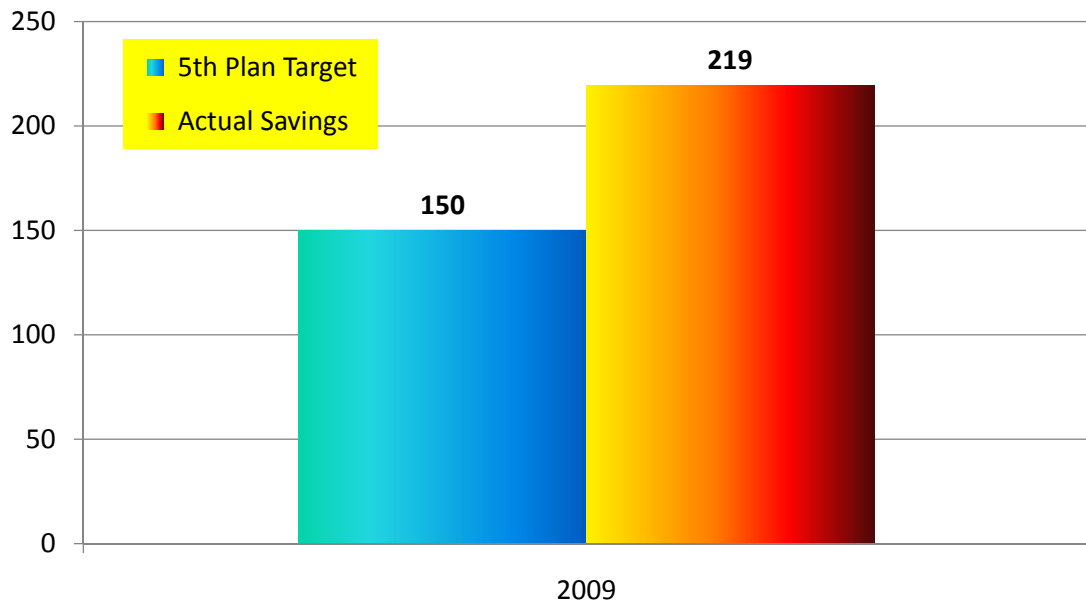
Regional Conservation Progress Review of Regional Savings from 2005 - 2009

September 21, 2010

Reported Savings from Utility, Bonneville, NEEA and Energy Trust of Oregon

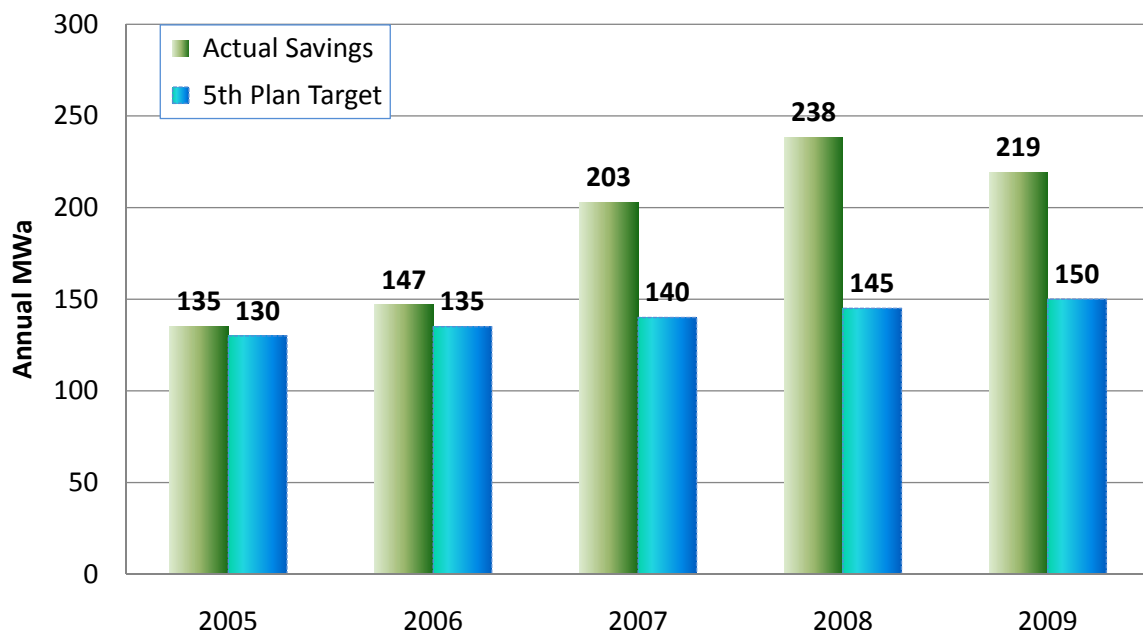
- Data From RTF Survey, Bonneville & NEEA Reports
 - Adjustments for
 - Line losses
 - Duplication
 - Non-reporting utilities
 - 5th Power Plan “baselines”
- Total Regional Savings Are Larger
 - Today’s Report Does not yet include:
 - Savings from Building Codes & Federal Standards enacted after 5th Plan was adopted
 - Non-Programmatic Savings (Consumers who adopted efficiency measures, but did not participate in utility, BPA or ETO programs)
- Plan’s Targets Include Savings From These Mechanisms

Regional Savings Far Exceeded 5th Plan's 2009 Target



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5th Plan's Savings Targets Were Exceeded in Every Year



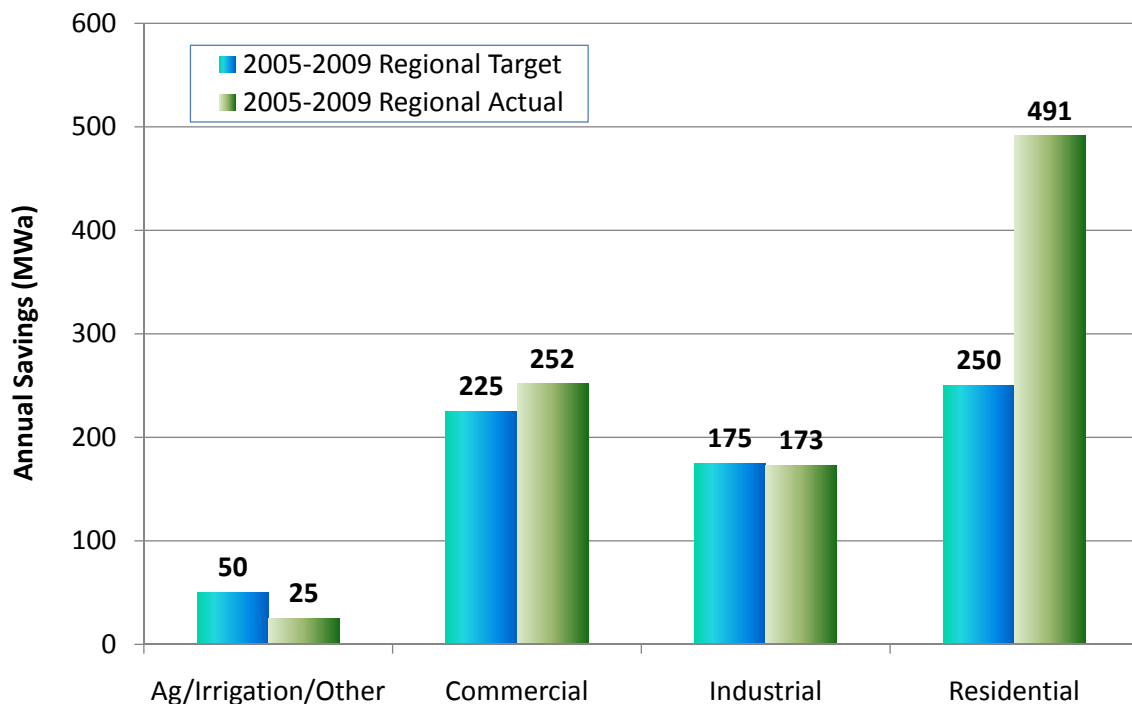
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We Vanquished the 5th Plan's Five Year Conservation Target



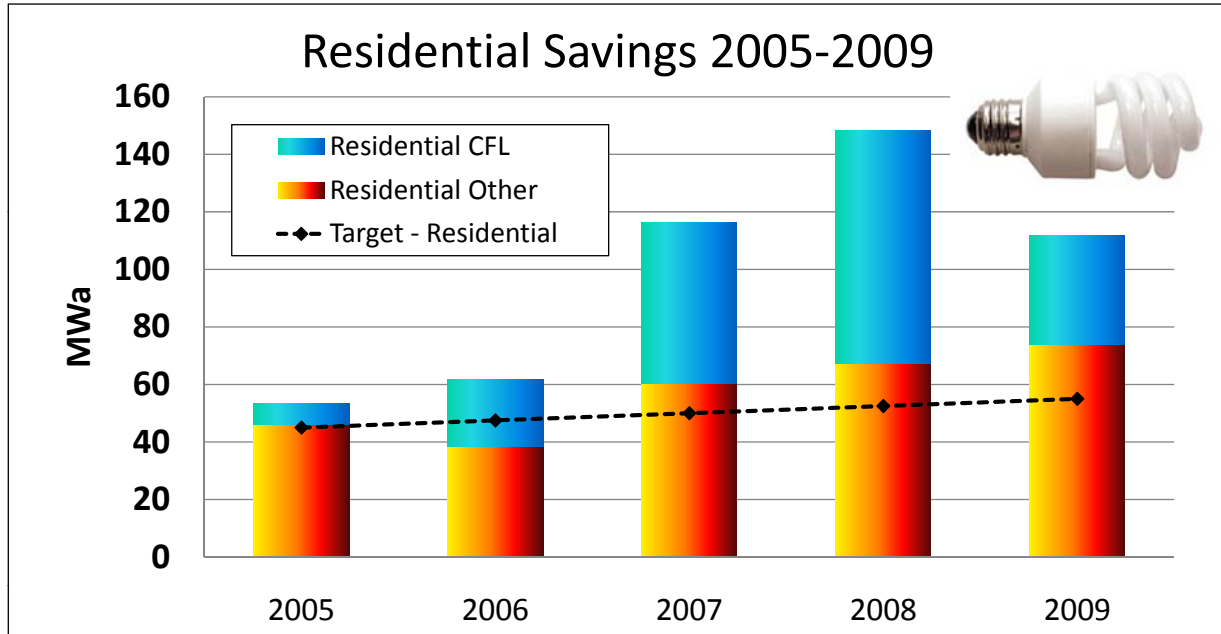
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Savings Met or Exceeded 5th Plans' Targets in All Sectors But Agriculture



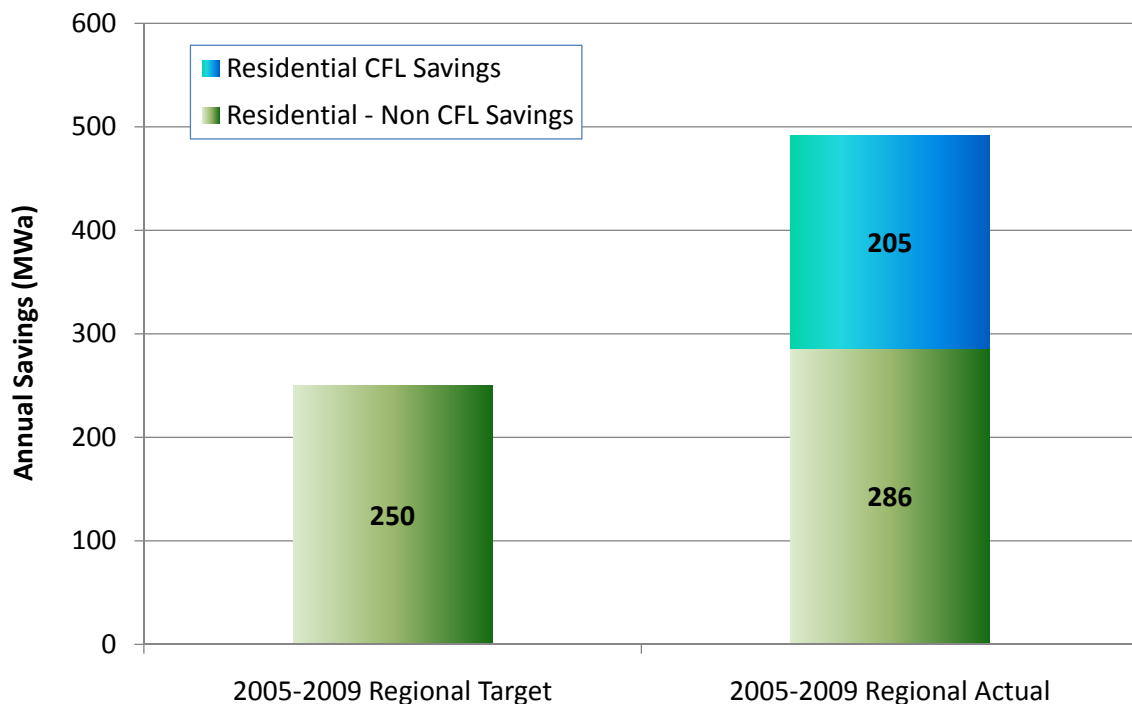
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Residential Success Due to CFLs

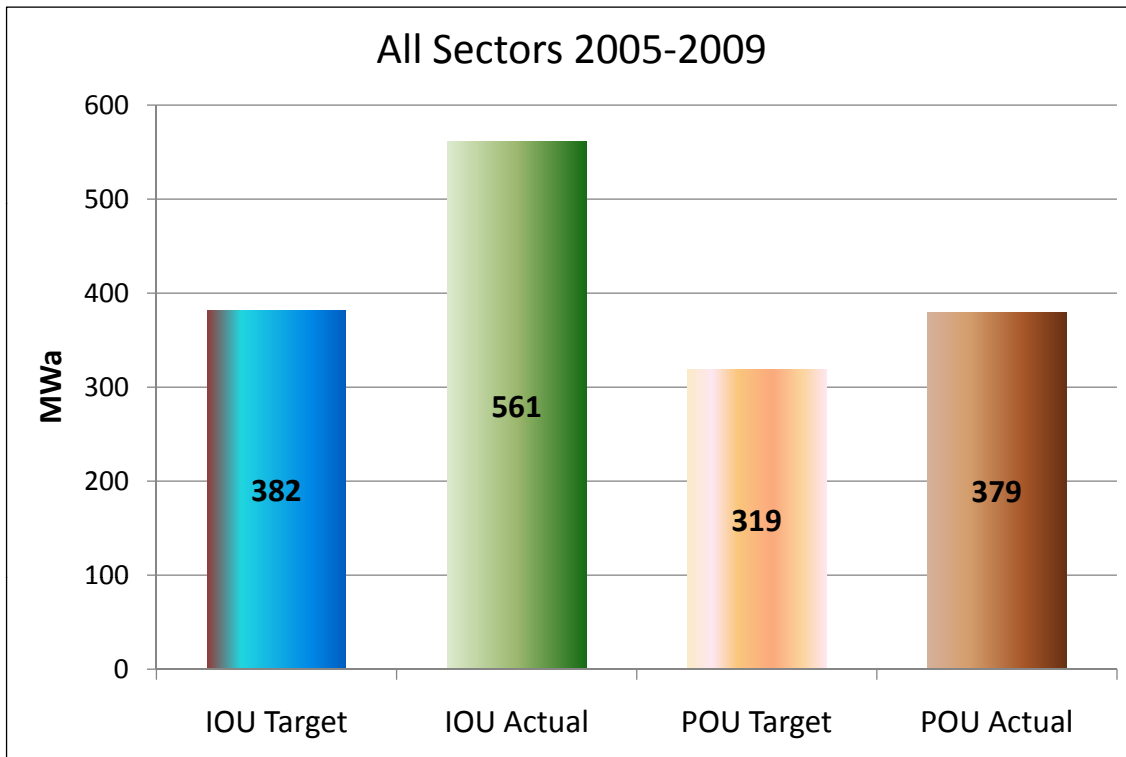


Market Transformation Savings from CFL Tapering Off

But Residential Sector Targets Were Met Without CFL Savings

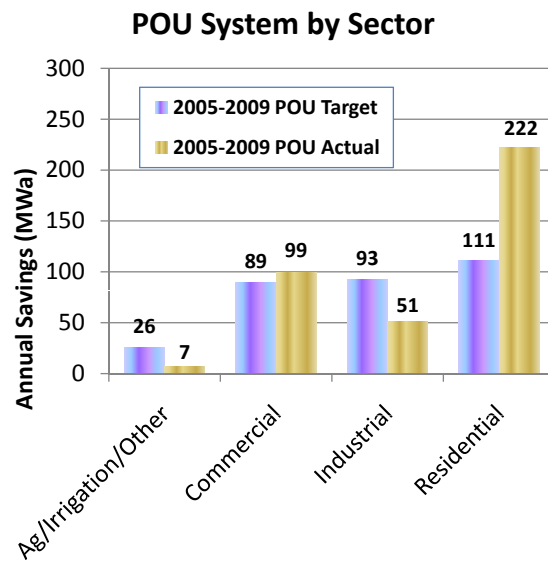
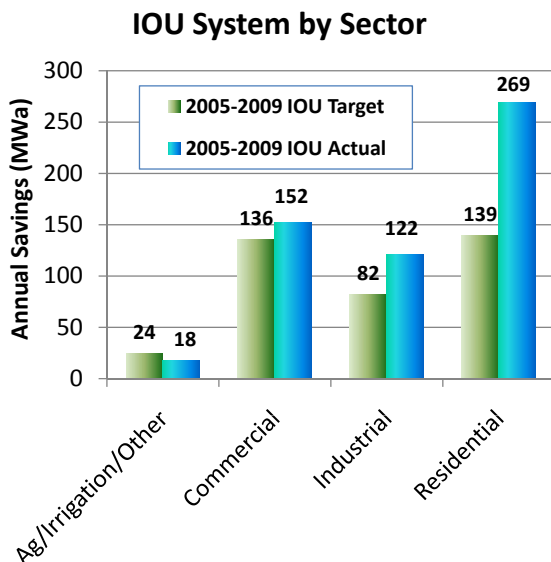


Both IOUs & POU Exceeded Targets



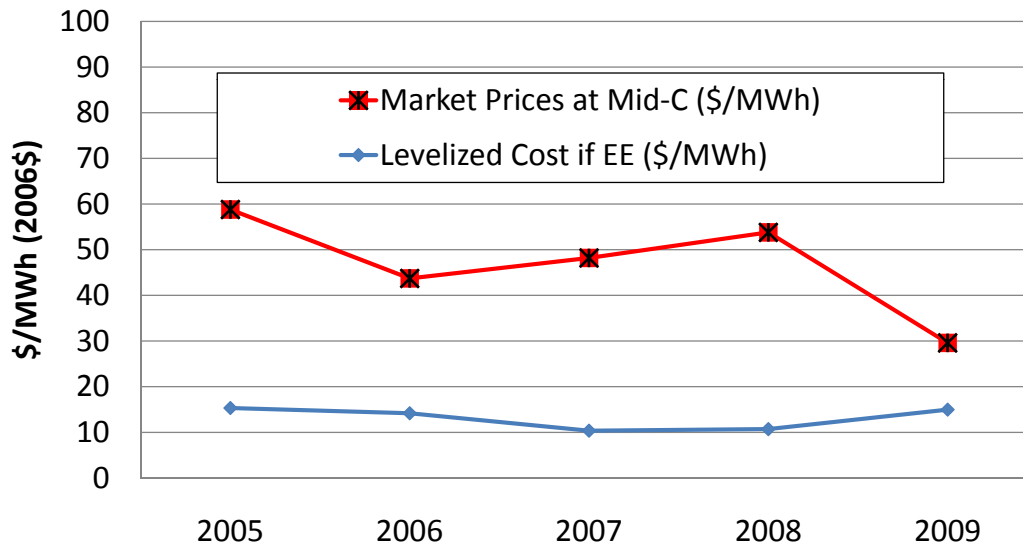
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IOUs Exceeding in All Sectors POUs Exceeding in Res & Commercial POU Industrial Expansion Launched 2010



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Average Utility Cost of All Efficiency Acquired Is Still Very Low Cost \$13/MWh*



* Levelized Cost of 2005-2009 Efficiency @ 13-year measure life,
Utility Cost Only

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2005-2009 Efficiency Savings 941 MWa

Energy savings
equivalent to the
annual output of
a large nuclear
power plant



Columbia Generating Station near
Richland, WA

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2005-2009 Efficiency Spending = **\$1 Billion**

Similar to the cost of a large wind farm,
but produces five times the annual output



Biglow Canyon Wind Farm

- 217 turbines over 5 years
- Cost about \$1 billion
- 150 MWa annual energy output
- Completed September 2010
- Levelized cost about \$100/MWh



New Nuclear Plant

- Cost about \$5.5 billion
- 900 MWa annual energy output
- Levelized cost about \$100/MWh
- Not Available 2005-2009

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Projected Lifecycle Regional Power Cost Savings from 2005-09 Conservation Accomplishments

\$2.9 Billion*

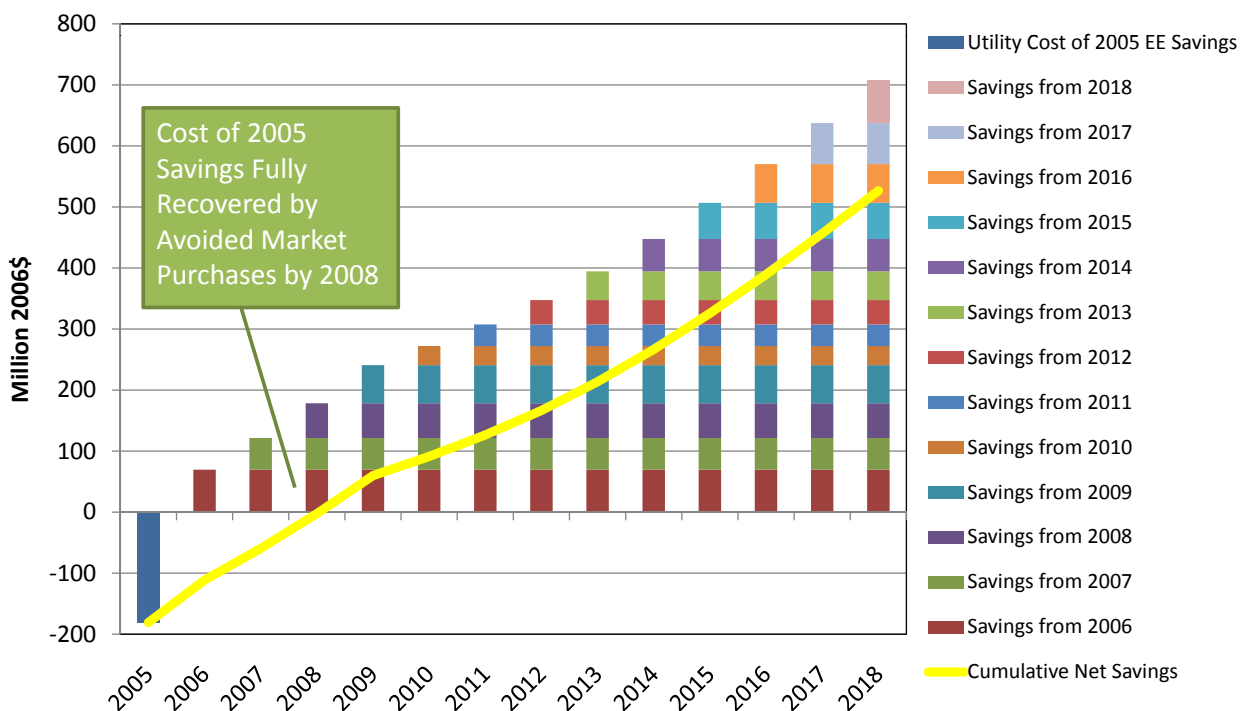
*Present Value of 2005-2009 Conservation Savings Compared to Supplying Region with Equivalent Amount of Power from Wholesale Market Purchases Over the Life of the Conservation Measures

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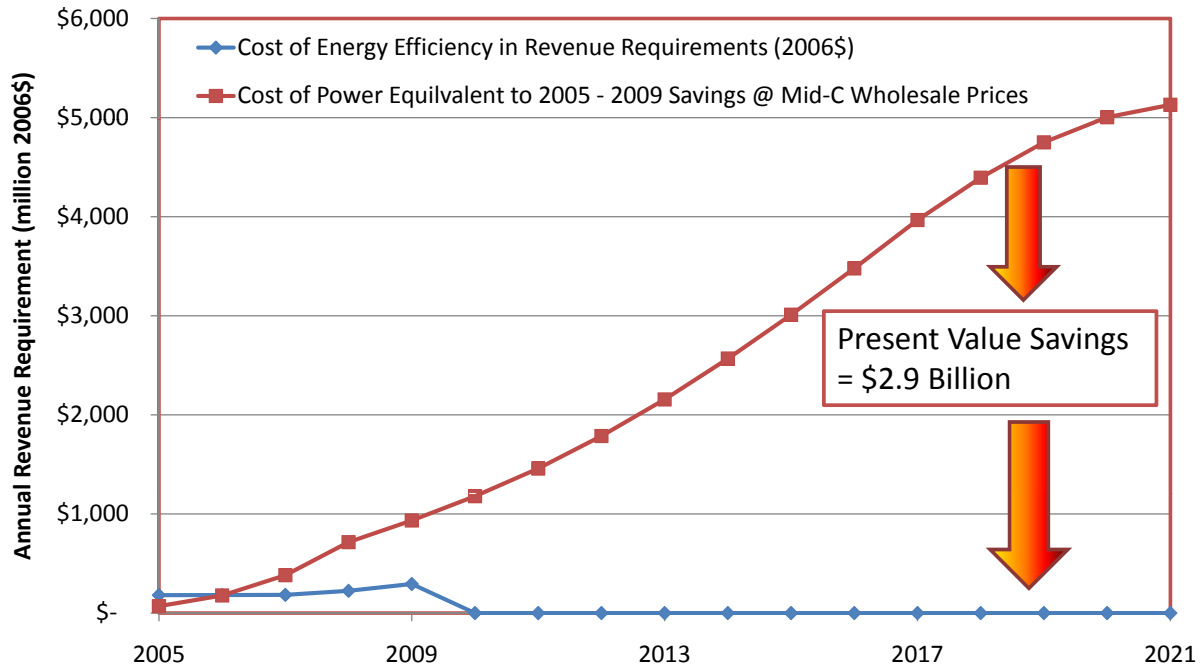
Basis of the Estimated Regional Power Cost Savings from 2005-09 Conservation

- Conservation Cost = Annual Utility Reported Expenditures for Conservation 2005 – 2009 (all cost assumed to be expensed, i.e. recovered in rates during the same year as savings were achieved)
- Power Cost Savings:
 - Savings begin year following “installation”
 - 2005 – 2009 = Valued at actual average annual wholesale market prices at Mid-C trading HUB
 - 2010 – 2022 = Valued at average 6th Plan’s *medium* annual wholesale market price forecast.
- Life of Conservation Savings = 13 years
 - Assumed shorter than average measure life of all measures in 5th Plan (14 years) due to proportion of CFL savings

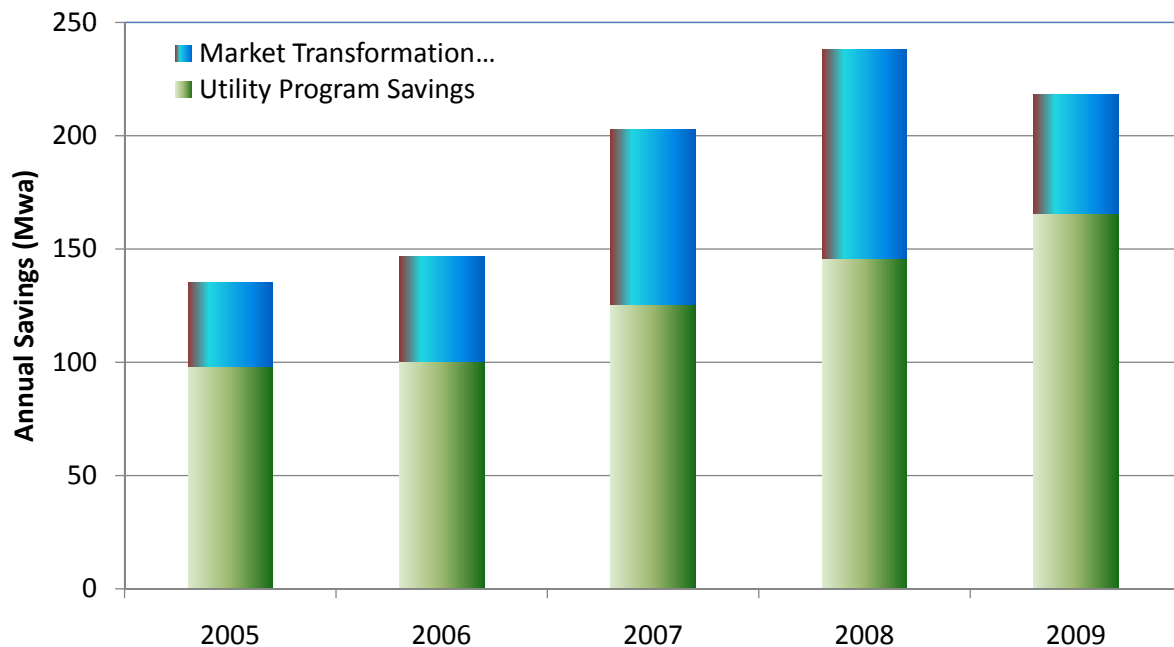
How Power Cost Savings Were Estimated Example -2005 Program Savings and Cost



2005-09 Conservation's Impact on Regional Power System Revenue Requirements

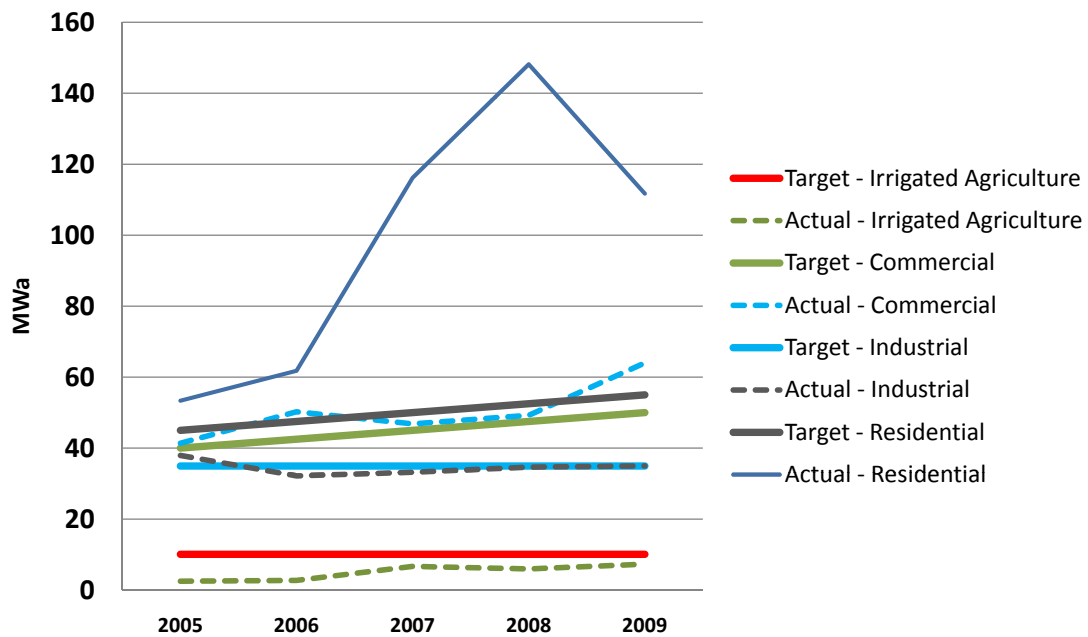


Why are 2009 Savings Lower Than 2008?

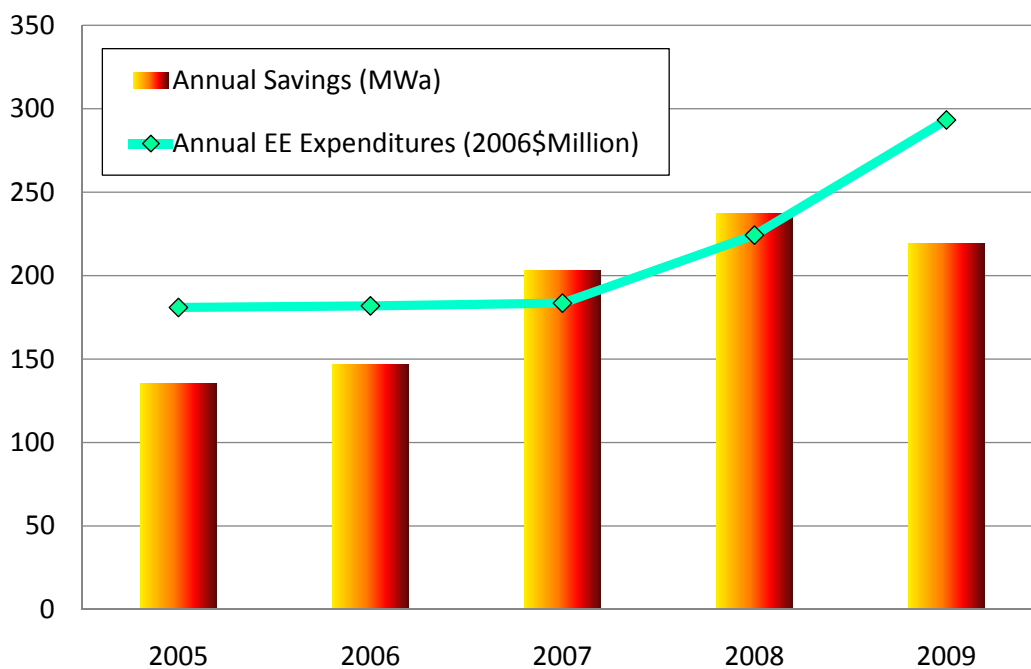


Three Years of Remarkable Residential Success 2007-2009

Total Regional Savings by Sector by Year



Utility Expenditures Are Increasing CFLs Kept First-Year Cost Low 2007-2008



To The Region's Utilities, Bonneville, Energy
Trust of Oregon & NEEA



Congratulations!