

## Harvest Wind Project



Built in 2009, part of Cowlitz PUD's plan to meet the state's renewable power requirements under I-937

# COWLITZ PUD

## Our Changing Power Future

*October 11, 2011*

**COWLITZ COUNTY**  
"CUSTOMER-OWNED for CUSTOMER BENEFIT"

# What's driving higher rates?

- **Cost of power/reduced sales**
  - Large reduction in wind sales revenue
  - Wholesale power cost increase
    - Includes loss of Grant PUD hydro
- **Conservation funding**
  - Voter approved I-937 mandates
- **Taxes (based on higher rates)**

**Total = \$20 million**

## ***“Rates are rising much more than the PUD predicted a year ago. Why?”***

- By far the biggest factor is the fact that we are now budgeting for a **reduction of \$10.8 million** in wind power sales in 2012.
- On its own, this revenue reduction would cause about an 11% rate increase.
- This was not expected when we projected our 2011-2012 rates a year ago.
- It only became apparent in August-September that we would have to plan for dramatically lower wind sales in 2012.
- Wind sales have been a benefit to rates since 2007, but will not be in 2012.

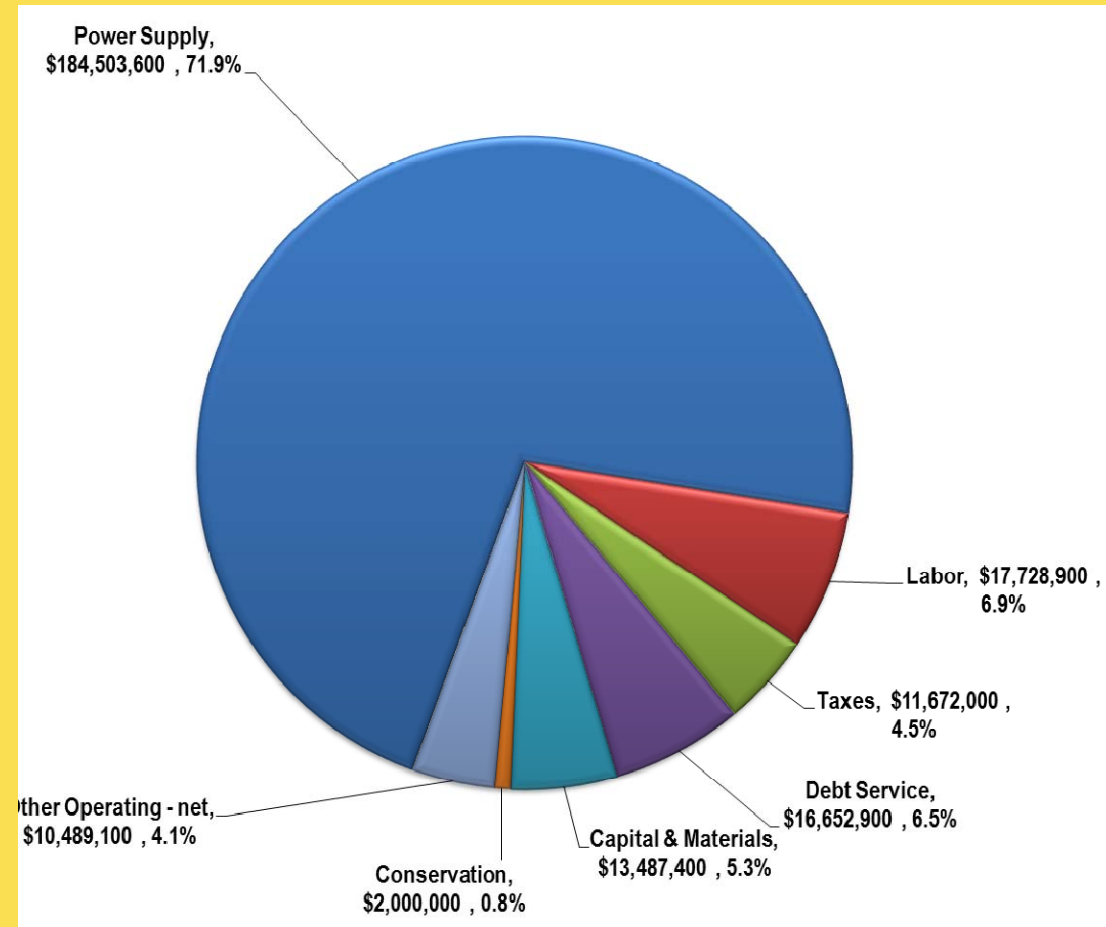
# What's driving higher costs/reduced sales?

- Market power prices currently in a downturn
- Amended renewable power law in CA
- I-937 taking effect in 2012
- New BPA contract and rate increase
- Loss of Mid-Columbia hydro
- Energy conservation program funding
- Long-term plan to rebuild and maintain the electrical infrastructure in Cowlitz County

# WHAT'S NOT DRIVING HIGHER RATES

Labor cuts don't offer a "silver bullet" like you might see in a school, city or county budget

- Wages and benefits make up 7% of the PUD budget.
- Labor expenses are projected to decrease by \$127,100 in 2012.
- The PUD's 2012 labor budget is projected at \$17.73 million – less than the new costs driving the rate increase.
- **For example:** If the PUD cut its workforce in half by laying off 80 employees, it would save \$9 million. That would be impractical and would drastically reduce services – and still leave a 9% rate increase on the table today.



# Wind Resources

**Initiative 937 – approved in 2006 by voters. Sets Renewable Portfolio Standards (RPS), and requires expenditures for cost-effective energy conservation.**

- **2012:** 3% of power supply from new renewable resources.
- **2016:** Increases to 9%
- **2020:** Tops out at 15%

## **Cowlitz PUD acted early**

### **205 MW White Creek Wind (46%):**

Invested \$110 million. Began commercial operation in Nov. 2007.

**100 MW Harvest Wind (30%):** Invested \$50 million. Began commercial operation in December 2009.



**White Creek Wind Project**

# Wind Projects: Built Ahead of Need

## Overall for 2007-2011

- Wind resources not yet needed to meet I-937 or Cowlitz County loads
- Sold power on contract to California utilities at prices above our cost
- Budgeted sales of \$20 million in 2011
- Earned a net margin (over debt service) each year – best year was \$4.3 million in 2008
- Helped keep local rates lower while we began an aggressive and expensive rebuild of the electric system

# Market Swings, California Issues

## 2010-2011

- Market prices lower than 2007-2009, but with addition of Harvest Wind and good production still able to realize net margin.
- \$9 million in payments under 2010-2011 contract not yet approved by the California Public Utility Commission
  - No adequate reasons yet given why the CPUC would refuse to take up approval of the contract
  - The PUD is using legal channels to pursue the funds it is owed. We may be joined by other WA public utilities in a similar situation.
  - Represents money “not in the bank” which otherwise could have helped offset some of this rate increase.

# Market Swings, California Issues

## 2012

- **Market prices in the West projected to stay low**
  - Applies to power and the Renewable Energy Credits (RECs)
  - Natural gas prices are low, which drives power market prices lower. Low natural gas prices are not beneficial to a power generator that is long on resources, wanting to sell into the market.
- **California has changed things**
  - Amended renewable power law would restrict future out-of-state renewable power purchases by CA utilities.
  - We have “intervened” in the rulemaking process, fighting for our right to freely sell excess resources, here or there.
- **Bad combination, creates serious rate implications**
  - Poor market prices and uncertainty around the new law has led the PUD to project wind sales revenue to decrease from about \$20 million to \$9 million in 2012. (-\$10.8 million)

# Wind Resources: 2012 and Beyond



- Will use these resources to meet the new law as it goes into effect in 2012, which is another cost driver of this rate increase.
- Covers our I-937 needs until 2015. Will sell the excess.
- Currently expect to use all wind resources to meet I-937 mandates in 2016 – **No sales revenue.**

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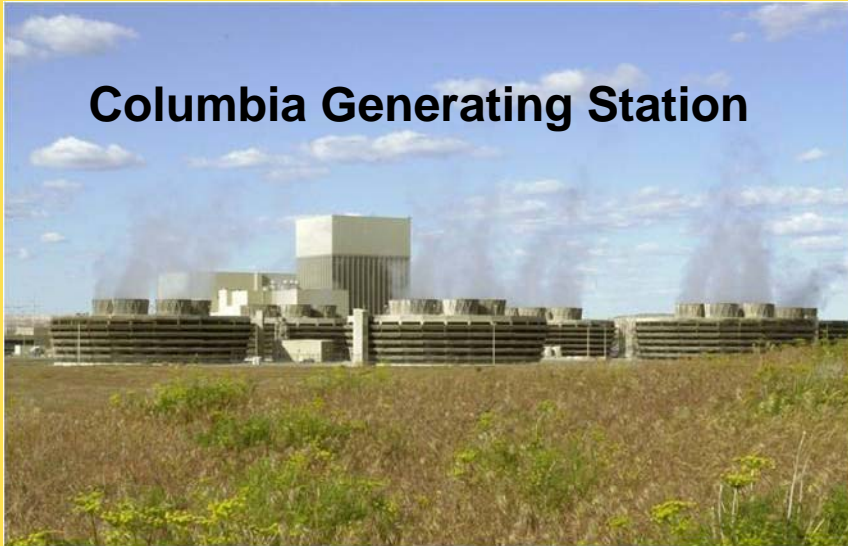
**PRO:** Power generated at White Creek/Harvest Wind costs less than other NW renewable projects of which we are aware.

**CON:** Melded cost of about \$70 per megawatt hour, double that of BPA Tier 1 power.

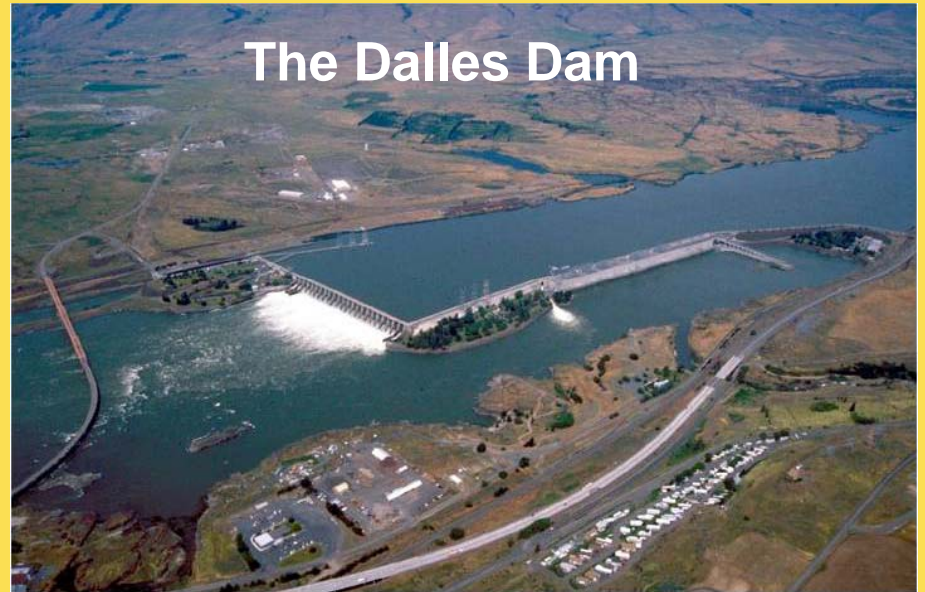
# Bonneville Power Administration

BPA is the federal agency which markets electricity from 31 Columbia and Snake River hydroelectric projects and one nuclear plant.

**Columbia Generating Station**



**The Dalles Dam**



# Bonneville Power Administration

## Prior to October 1, 2011...

- Over 90% of our wholesale power was purchased from BPA (and still is today).
- BPA made it easy...we connected new customers on request, then counted on BPA to sell us exactly the right amount of electricity to serve them at exactly the right time.
- BPA sold the excess power generated when water was plentiful and bought excess power when water is down.
  - The net dollar impact of BPA selling and buying power showed up every two years with a “true up” through new Priority Firm (PF) rates.

# New BPA contract – October 2011

- **RATES INCREASED 7.8%:** A significant part of your power bill is used by BPA to pay for Federal and state-mandated fish and wildlife protection costs – 25%-30%.
- **BPA POWER AND TRANSMISSION COSTS** represent well over half our total annual electric budget. (\$174 million)
- **HIGH WATER MARK** – Utilities now receive a set allocation of “**Tier 1**” power from BPA every year through 2028.
- **MEETING OUR OWN LOAD GROWTH:** Electrical needs above-and-beyond our “high water mark” is our responsibility to procure.

# New BPA contract – October 2011

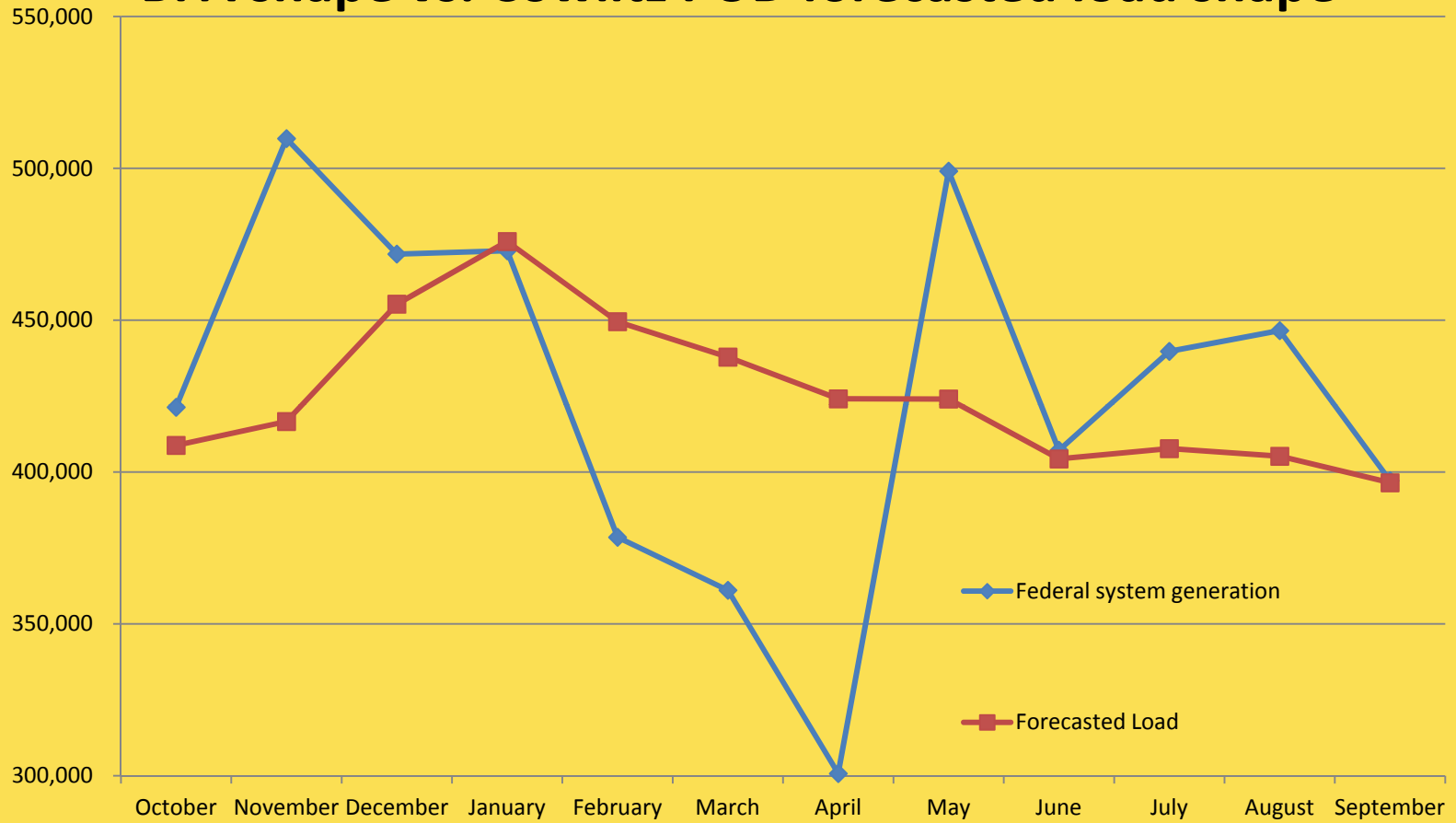
- **MEETING OUR OWN LOAD GROWTH:** With a set amount of BPA power available, our choice was to:
  - ✘ Develop our own resources, rather than rent
    - Purchase resources from another generator
    - Buy BPA “Tier 2” power, at prevailing market prices.
- **RATE IMPACT:** All three options come at a cost higher than BPA Tier 1 power.
- Cowlitz PUD selected the first option and built White Creek and Harvest Wind ahead of need.

# Financial impact of new BPA contract

**BEGINNING OCTOBER 2011:** The PUD is managing it's own “**Slice of the System**” (or share of the water).

- BPA no longer provides a cushion.
- **More subject to swings in the market:** The revenue from the sales of excess power and the cost of purchasing additional power will go right to our bottom line.
- Will result in more frequent rate changes...possible annual adjustments.
  - Based on experience of existing Slice utilities adjustments may be up or down

# BPA shape vs. Cowlitz PUD forecasted load shape

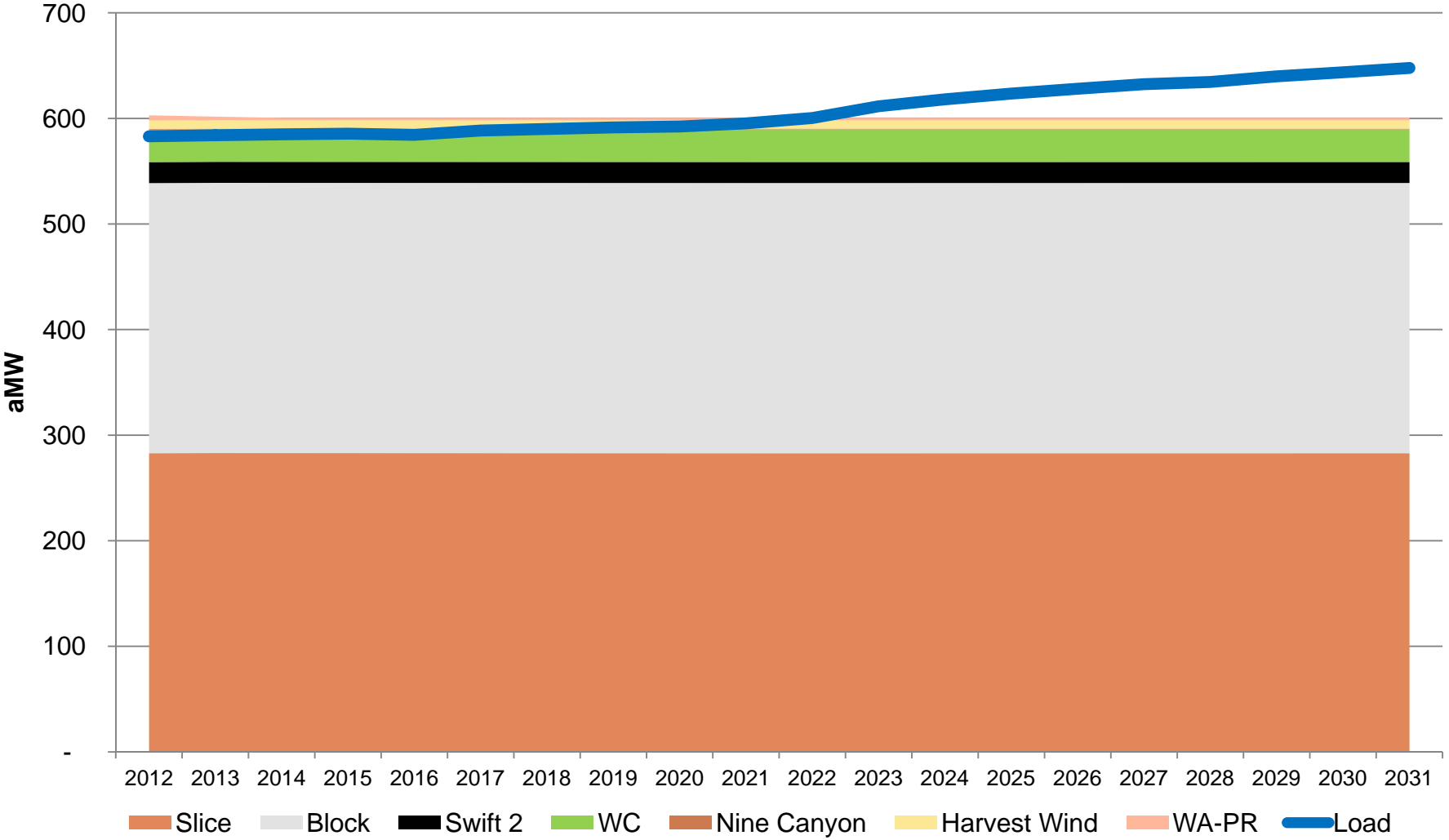


**Q: “Why doesn’t the PUD just cut its BPA power purchases and use its wind power instead?”**

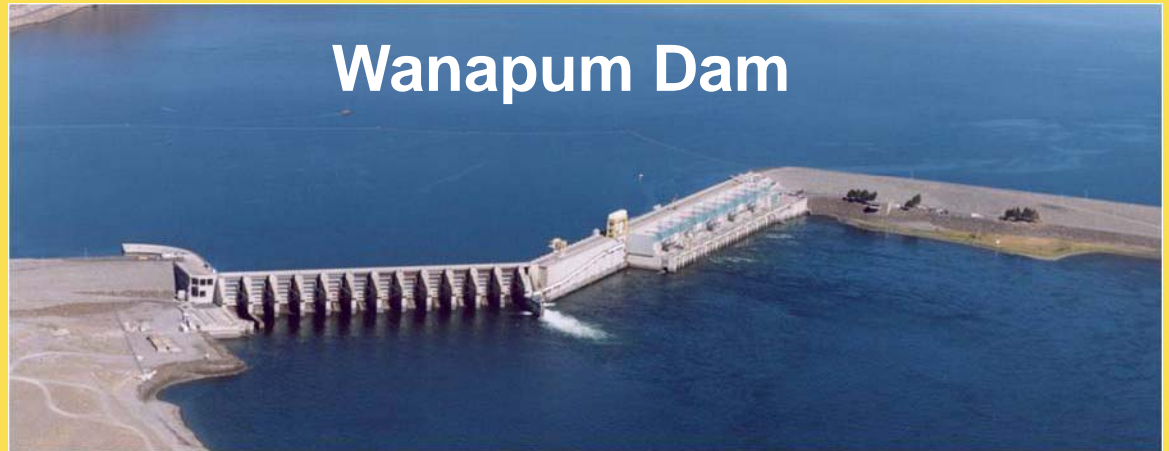
**A: That would cost our customers millions for many years to come.**

- BPA’s prices may be rising, but it is still – **by far** – our lowest cost resource.
- Our agreement with BPA provides for a set allocation of power through 2028.
- If we were to give up some of that allocation today, it would be lost until at least 2028.
- As we showed earlier, the wind resources cost about 2x our BPA cost.
- We will continue to sell the excess wind power and seek favorable prices

# Our future resource picture

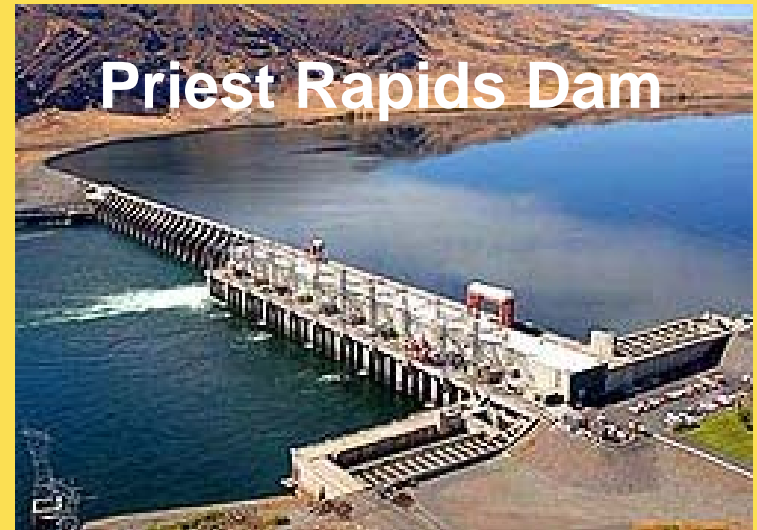


# Mid- Columbia Hydro



- Grant PUD built Wanapum Dam and Priest Rapids Dam in the late 50s.
- Cowlitz PUD was one of several NW utilities that entered into a contract to purchase power from these hydroelectric projects beginning in the late 1950s.
- **Our cheapest wholesale power resource – has been a great benefit to helping keep our rates lower than most utilities in the region.**
- In 2011 represented about 6.5% of our non-industrial wholesale power needs.

# Mid-Columbia Hydro



- Economic development in Grant County makes it necessary for Grant PUD to keep more of its hydropower “at home.”
- Minimal amount of this power now available to other buyers like Cowlitz PUD. Will be replaced by BPA power, our next lowest-cost option, but at a higher cost.
- **Will add about \$3 million on our bottom line for power resource costs beginning in 2012.**
- **Unfortunately marks the end of the ultra low cost hydro that has helped Cowlitz PUD be among the regional leaders for low residential rates.**

<b>Resource</b>	<b><u>2011</u> % of Load</b>	<b>2011 Cost (per MWH)</b>	<b><u>2016</u> % of load</b>	<b>2016 Cost (per MWH)</b>
<b>BPA</b>	82.7%**	\$35	80.5%**	\$36+
<b>Mid-Columbia (Grant PUD)</b>	6.5%	\$20	0.7%	\$20
<b>White Creek Harvest Wind</b>	0.0%	N/A	9.0%	\$70
<b>Swift No. 2</b>	10.5%	\$38	9.8%	\$38
<b>Nine Canyon</b>	0.3%	\$78	N/A	N/A

*\*\*Represents loads minus large industrial customers.*

# Energy Conservation

**Cowlitz PUD has “passed-through” nearly \$60 million of BPA conservation funds since 1982**

- Insulation, windows, appliance rebates, CFLs, heat pumps, water heaters, commercial lighting, industrial motors and processes, street lighting, etc.
- I-937 includes mandates for energy conservation standards
- New BPA contract reduces BPA conservation funding
- Beginning in 2012, Cowlitz PUD will budget \$2 million annually to supplement energy conservation programs.

***“I conserve power and you raise my rates!”*** – Yes, conservation funding does raise rates, but those who conserve energy will lower their own costs.

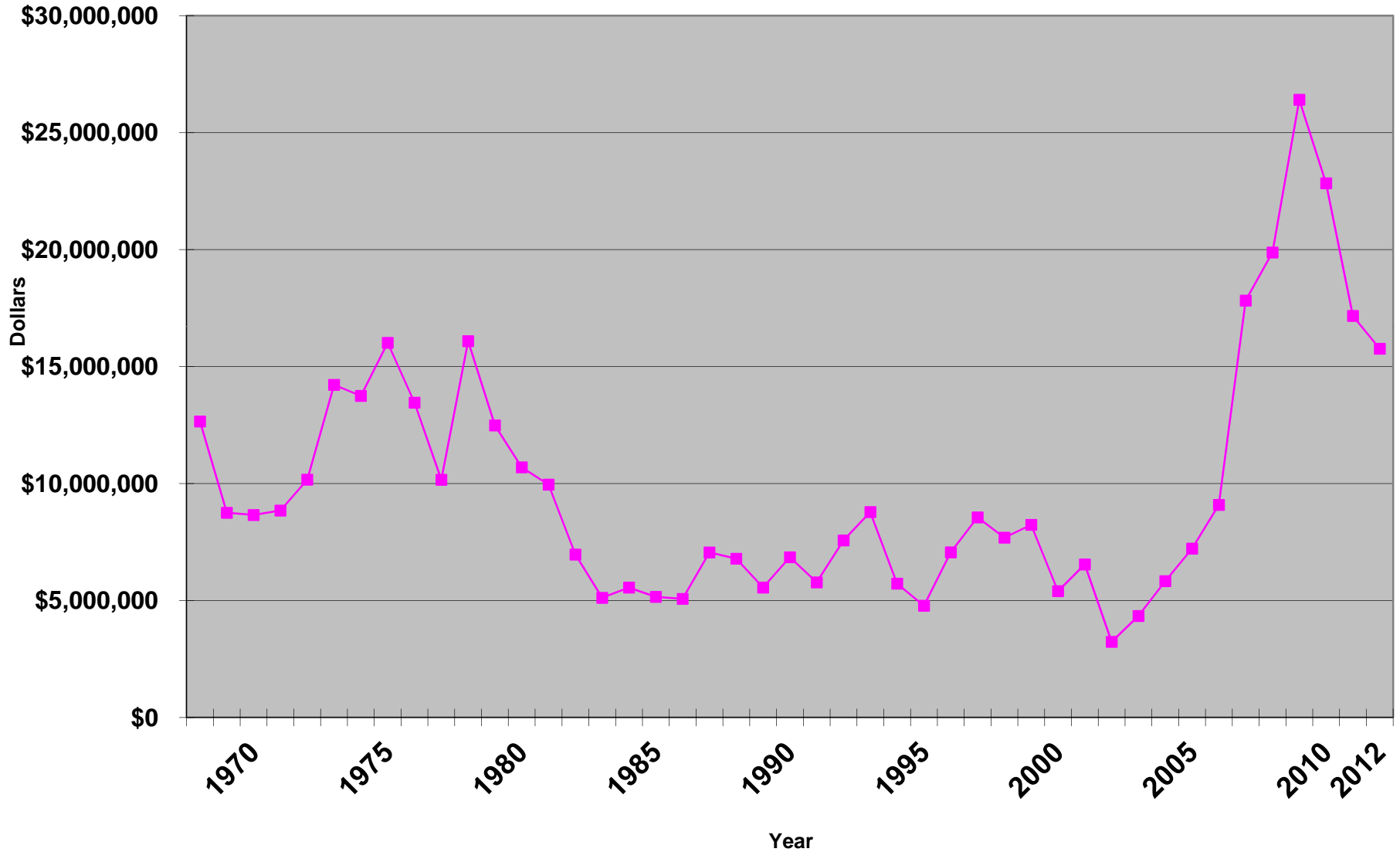
# Electrical Infrastructure

**It was apparent in 2005 that our distribution & transmission system was in need of rebuilding or major maintenance.**

- Had long been a philosophical belief at Cowlitz PUD that capital projects should only be financed out of rates.
- Thus, from 1982-2004 many needed improvements never got off the ground or were delayed.
  - Large rate increases in the 1980s related to WPPSS slowed spending on local infrastructure.
  - Discussion to deregulate the electric industry caused utilities to pull back on capital projects in the 1990s.
  - Large rate increases in 2000-2001 due to the West Coast Energy Crisis put capital needs on hold.
  - The canal wall failure and ensuing damage at Swift No. 2 in 2002 became our next major focus, causing further delay.

# CPI ADJUSTED Net Capital – Investments in Infrastructure

(Yearly Capital Budget minus Contributions-in-aid to construction)

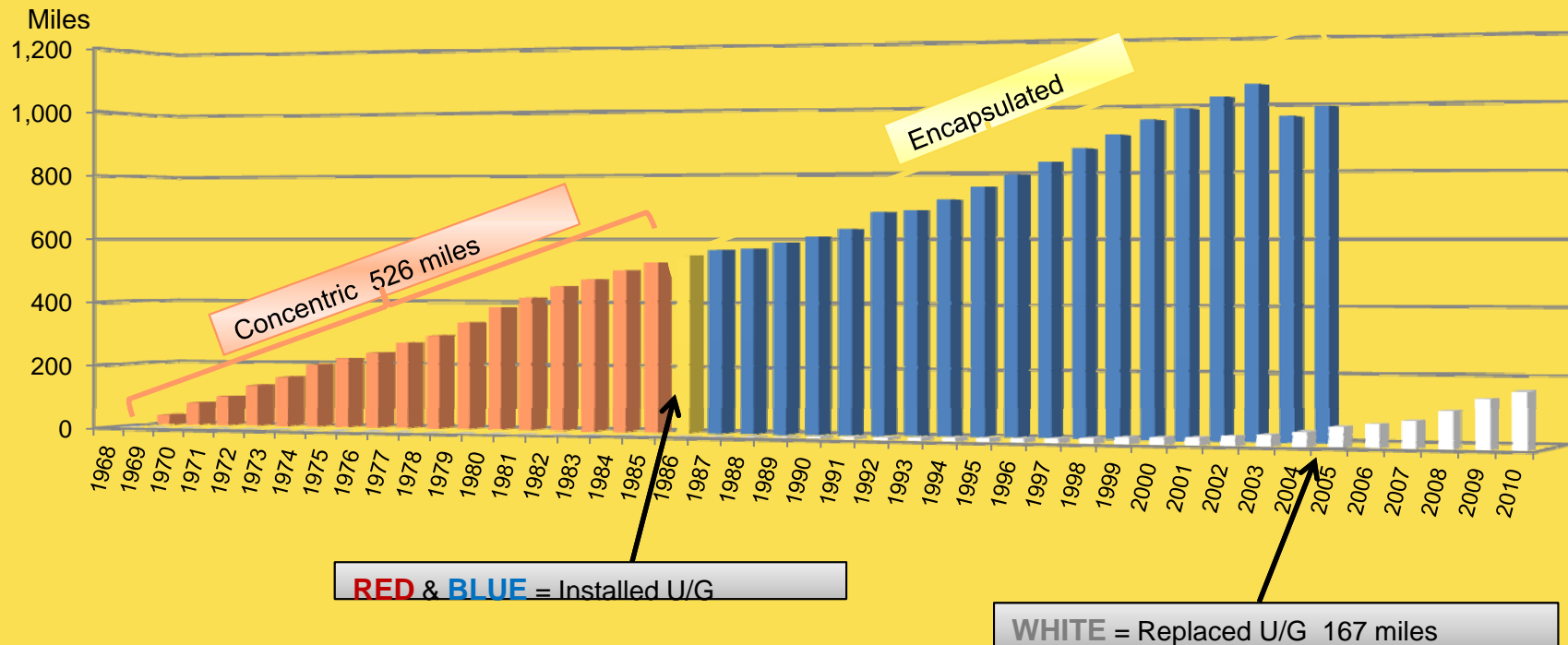


—■— CPI Adjusted Capital (Net)

# Electrical Infrastructure

- Board approved a Financial Policy in 2005 that set a guideline for financing capital expenditures.
- Capital improvements typically are for infrastructure with 20-50 year life.
- Cowlitz PUD issued bonds at the outset to finance the long-term plan over the coming years.
- About \$50 million remains in reserves dedicated for capital improvement projects
- 2012 debt service for capital improvements is \$16.7 million.

# One Example - Underground Cable



- **1968 through 1984** - 526 miles of “concentric” cable installed. Has become prone to failure.
- **1985**: Began installing a stronger “encapsulated” cable.
- **By 2005** - 1,000 miles of underground installed overall. **About 2/3 of distribution system.**
- **Since 2007** have replaced an average of 20-30 miles per year of the old cable.
- **To date**: 185 miles of the old cable replaced, but still 341 miles remaining.
- **At 20 miles per year** all of the pre-1985 cable would not be replaced until 2029.
- **Costs about \$74,000 per mile or \$1.5 million to complete 20 miles per year.**

# Some major areas of concern

## In 2005...

- With growing electric demand upgrade needed of 69 kV to 115 kV.
- The average age of 42 substation transformers was 31 years
- 14 substation transformers, five voltage regulators and 16 substation breakers were 45 years or older.
- The Spirit Lake Highway Corridor and Lewis River Valley were experiencing more (and longer) power outages, due to weak infrastructure and a lack of redundancy in the transmission system.
- Line vehicles, tools, equipment and computer hardware and software needed replacement.

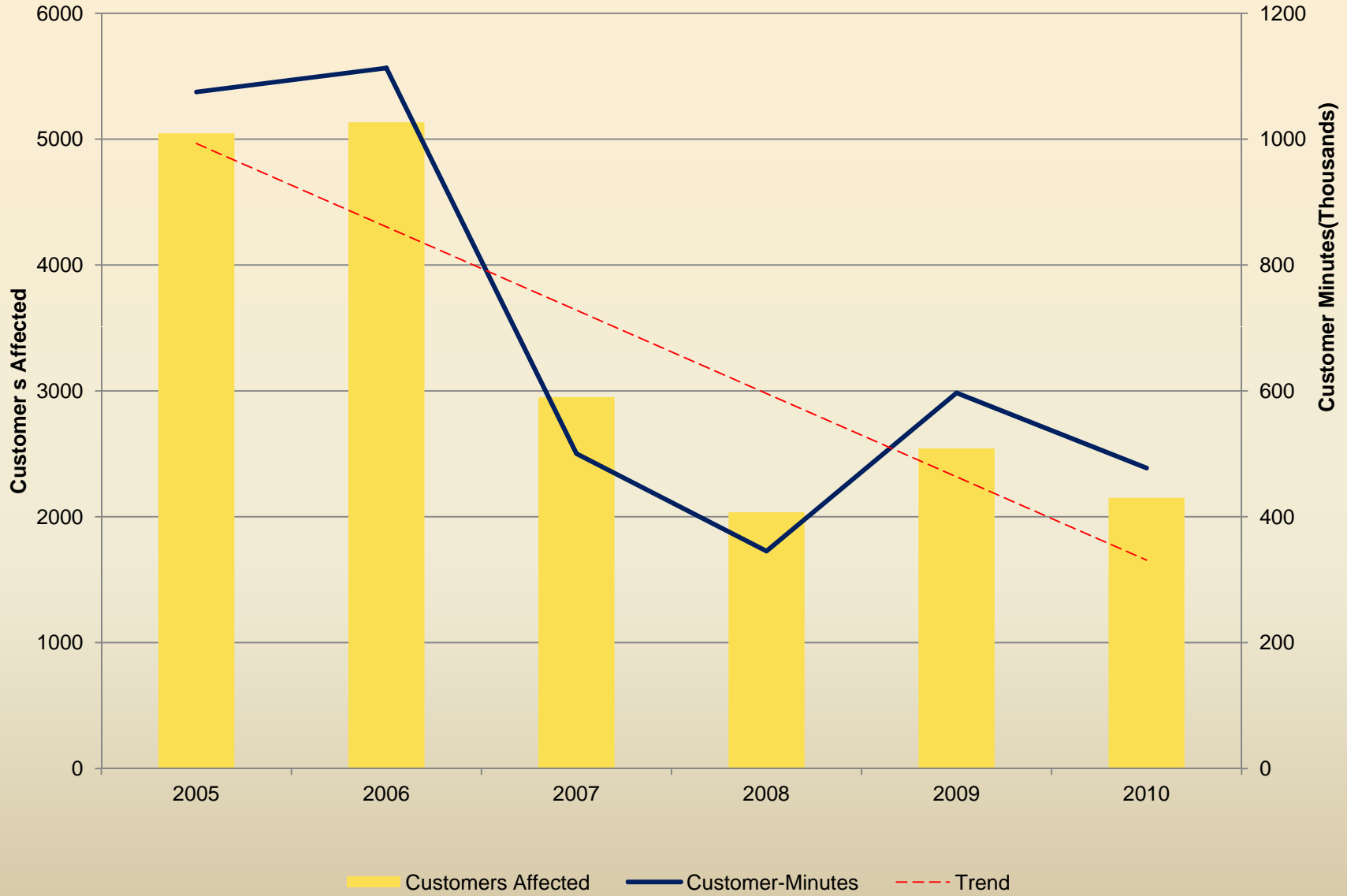
# Capital Improvement Plan

**Launched an aggressive 8-year plan in 2007. Highlights:**

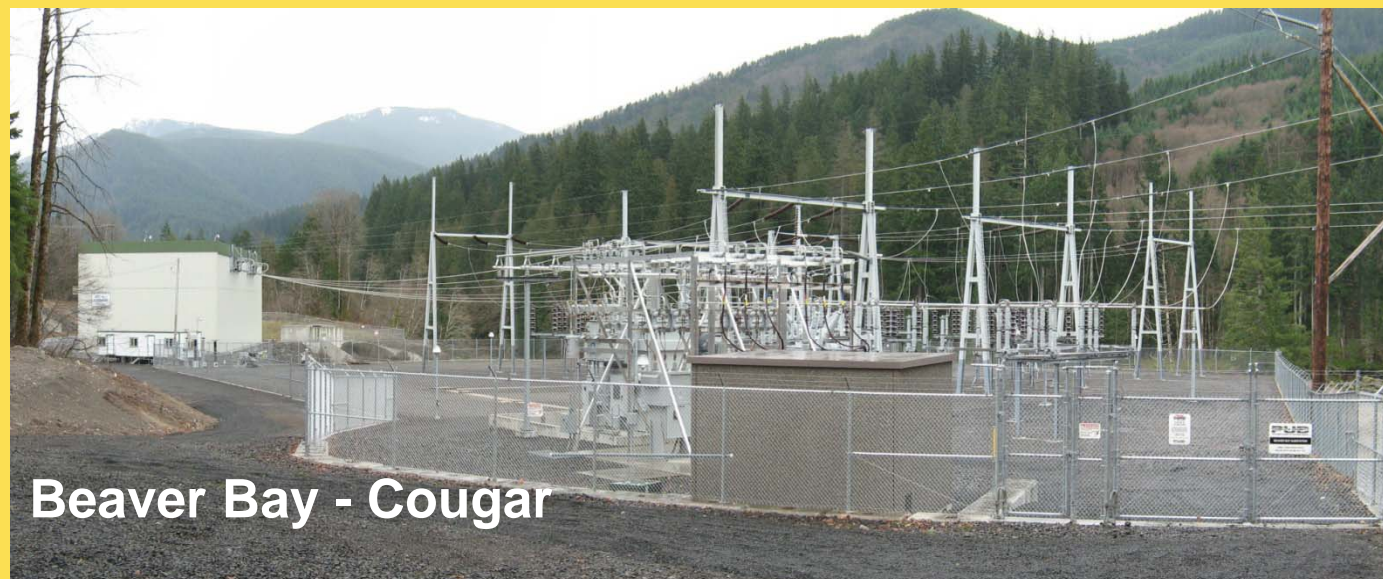
- **Advanced Metering Infrastructure** – will mean many new optional services for customers beginning in late 2012.
- Customer information services & financial **hardware/software systems.**
- **Update the electric distribution system** in the Lewis River Valley to improve reliability, including a new substation near Swift No. 2.
- **Rebuild and/or upgrade several substations** to 115kV for reliability, energy efficiency, load growth.
- **New System Control and Data Acquisition** (SCADA) system. Manages the electric system from the PUD Operation Center.
- **Annual replacement of 20 miles (or more) of underground lines.**
- Meet new Federal laws requiring measures to **increase security of our facilities and electrical grid**, and protection from cyber attack.

# Impact of Underground Primary Failures – Outage Statistics

(Outage year - October through September)



**3 of 6 PUD  
substations  
built or  
rebuilt since  
2006**



**Beaver Bay - Cougar**



**7<sup>th</sup> Avenue - Longview**



**S. Silver Lake Road - Castle Rock**

# 2012 Residential Cost Comparison

## All Washington PUDs

PUD	Basic charge	1,500 kWh
Douglas (E. Wenatchee)	\$9.00	\$40.20
Chelan (Wenatchee)	\$7.85	\$48.29
Grant (Moses Lake)	\$12.00	\$72.42
Okanogan (Omak)	\$10.00	\$85.00
Lewis (Chehalis-May 2012)	\$13.00	\$91.40
Pend Oreille (Newport)	\$24.50	\$92.00
Pacific (Raymond, Ilwaco)	\$10.00	\$102.44
Skamania (Stevenson)	\$8.70	\$102.60
<b>COWLITZ - proposed</b>	<b>\$7.00</b>	<b>\$106.00</b>
Mason 3 (Shelton)	\$15.00	\$107.10
Benton (Kennewick)	\$10.50	\$107.85

PUD	Basic charge	1,500 kWh
Wahkiakum (Cathlamet)	\$12.00	\$111.75
Klickitat (Goldendale)	\$14.25	\$114.00
Clallam (Port Angeles)	\$18.60	\$116.10
Mason 1 (Hoodsport)	\$17.25	\$117.00
Ferry (Republic)	\$17.00	\$121.70
Grays Harbor (Aberdeen)	\$34.78	\$123.79
<b>Average, All WA utilities</b>		<b>\$124.05</b>
Franklin (Pasco)	\$17.00	\$126.65
Snohomish (Everett)	\$0.00	\$127.22
Clark (Vancouver) proposed	\$10.00	\$133.00
Kittitas (Ellensburg)	\$15.00	\$133.50

# 2012 Residential Cost Comparison

## A Regional Look

Utility (NW investor-owned utilities listed in blue)	Basic charge	1,500 kWh
Clatskanie PUD – Clatskanie	\$0.00	\$59.25
Clatskanie PUD – Rainier	\$0.00	\$74.25
<b>COWLITZ PUD - now</b>	<b>\$6.00</b>	<b>\$90.00</b>
Columbia River PUD - St. Helens, Rainier	\$8.00	\$99.05
<b>COWLITZ PUD - proposed</b>	<b>\$7.00</b>	<b>\$106.00</b>
Tacoma Public Utilities (April 2012))	\$5.50	\$112.08
<b>Avista</b> - Spokane, Pullman, Colfax, Clarkston	<b>\$6.00</b>	<b>\$121.51</b>
<b>PacifiCorp</b> – Yakima, Walla Walla	<b>\$6.00</b>	<b>\$122.35</b>
Seattle City Light (increased 18% in 2010)	\$3.50	\$123.14
Eugene Water & Electric	\$7.00	\$136.53
<b>Puget Sound Energy</b> – serves 1/3 of all WA electric consumers	<b>\$7.25</b>	<b>\$146.43</b>
<b>Portland General Electric</b>	<b>\$9.00</b>	<b>\$161.33</b>
<b>Average – all of United States</b>		<b>\$180.45</b>

**Thank you for coming tonight**

**Questions?**