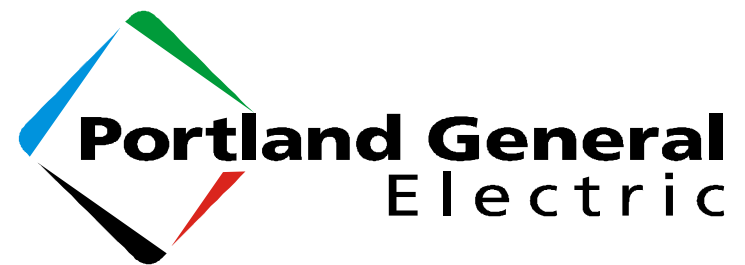




# Investor Meetings

March 2010



# Cautionary Statement

## Information Current as of February 25, 2010

Except as expressly noted, the information in this presentation is current as of February 25, 2010 — the date on which PGE filed its Annual Report on Form 10-K for the year ended December 31, 2009 — and should not be relied upon as being current as of any subsequent date. PGE undertakes no duty to update the presentation, except as may be required by law.

## Forward-Looking Statements

This presentation contains statements that are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended.

Forward-looking statements include statements regarding earnings guidance; statements regarding future load, hydro conditions and operating and maintenance costs; statements regarding the future impact of SB 408; statements regarding future capital expenditures; statements regarding future financings and PGE’s access to capital and cost of capital; statements regarding PGE’s future liquidity; statements regarding the cost, completion and benefits of capital projects; statements regarding future generation and transmission projects, including those set forth in the Company’s Integrated Resource Plan; statements concerning future operation of the Company’s Boardman coal plant; statements concerning the outcome of the 2011 general rate case and the timing of a final order from the OPUC; statements regarding the outcome of any legal or regulatory proceeding; as well as other statements containing words such as “anticipates,” “believes,” “intends,” “estimates,” “promises,” “expects,” “should,” “conditioned upon,” and similar expressions. Investors are cautioned that any such forward-looking statements are subject to risks and uncertainties, including reductions in demand for electricity and the sale of excess energy during periods of low wholesale market prices; the outcome of the 2011 general rate case filing; regulatory approval and rate treatment of the smart meter project and Phase III of the Biglow Canyon Wind Farm project; operational risks relating to the Company’s generation facilities, including hydro conditions, wind conditions, disruption of fuel supply, and unscheduled plant outages, which may result in unanticipated operating, maintenance and repair costs, as well as replacement power costs; the costs of compliance with environmental laws and regulations, including those that govern emissions from thermal power plants; changes in weather, hydroelectric and energy market conditions, which could affect the availability and cost of purchased power and fuel; changes in capital market conditions, which could affect the availability and cost of capital and result in delay or cancellation of capital projects; unforeseen problems or delays in completing capital projects, resulting in the failure to complete such projects on schedule or within budget; the outcome of various legal and regulatory proceedings; and general economic and financial market conditions. As a result, actual results may differ materially from those projected in the forward-looking statements. All forward-looking statements included in this presentation are based on information available to the Company on the date hereof and such statements speak only as of the date hereof. The Company assumes no obligation to update any such forward-looking statements, except as required by law. Prospective investors should also review the risks and uncertainties listed in the Company’s most recent Annual Report on Form 10-K and the Company’s reports on Forms 8-K and 10-Q filed with the United States Securities and Exchange Commission, including Management’s Discussion and Analysis of Financial Condition and Results of Operations and the risks described therein from time to time.

# Portland General Investment Highlights

## “Pure-play” electric utility

- Vertically integrated, regulated electric utility
- Attractive service territory and constructive regulatory dialogue
- Regulated ROE of 10.0%

## Operational excellence

- Diversified, high-performing generation portfolio
- Well-managed power supply operations
- High quality, well-maintained T&D system
- High customer satisfaction: Recognized by J.D. Powers and Associates 2009 Survey<sup>(1)</sup>

## Low-risk growth plan

- Significant regulated capital investments as identified in Integrated Resource Plan drive rate base growth
- Natural gas generation and renewable resource investment opportunities
- Track record of completing projects on time and within budget

## Prudent financial strategy

- Investment grade ratings of BBB / Baa2 (unsecured)
- Target capital structure: 50% debt, 50% equity
- Focus on maintaining a strong balance sheet and adequate levels of liquidity

**Stability:**  
**Dividend Yield**

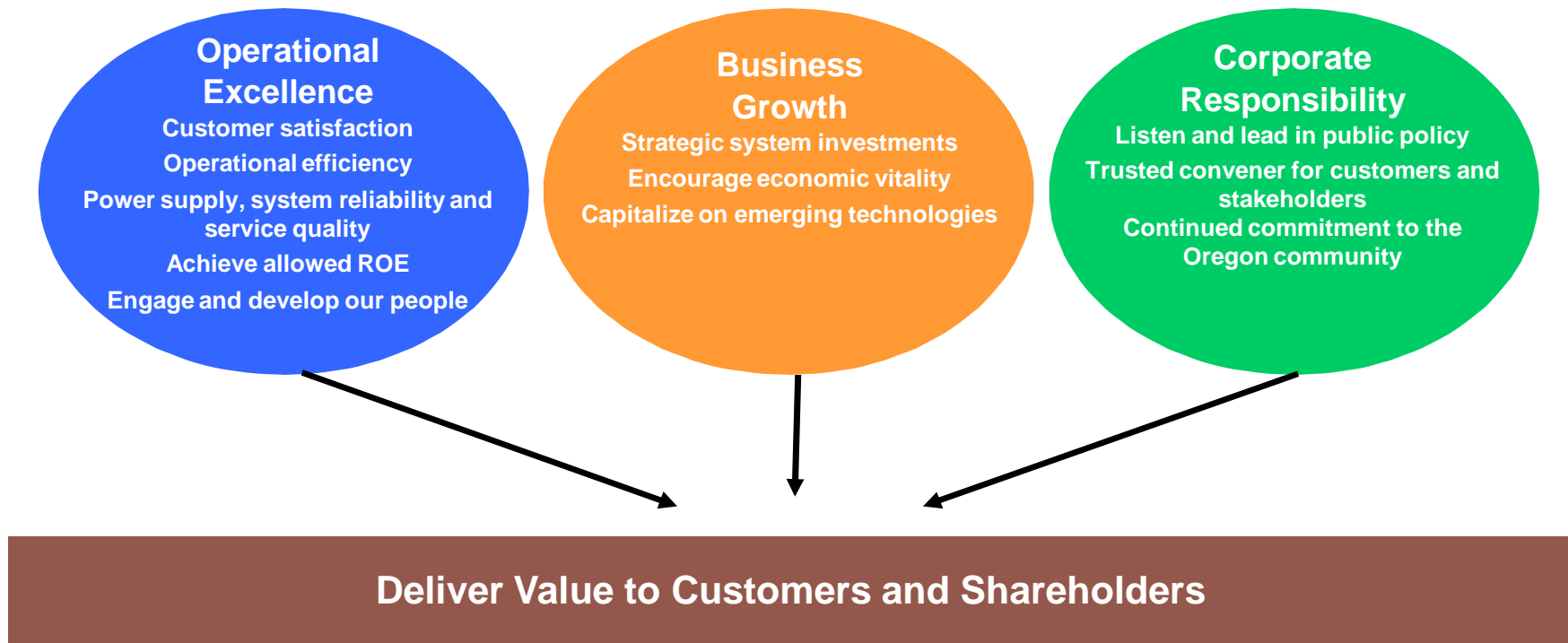
**Attractive total return proposition**

**Growth:**  
**EPS growth**

(1) PGE received the highest numerical score among electric utilities in the West region in the proprietary J.D. Power and Associates 2009 Electric Utility Business Customer Satisfaction Study<sup>SM</sup>. Study based on 15,434 interviews with U.S. business electric customers measuring 19 utilities in the West (AZ, CA, ID, NM, NV, OR, UT, WA, WY). Proprietary study results are based on experiences and perceptions of consumers/businesses/business users surveyed in April-June and September-December 2008. Your experiences may vary.

# Portland General Strategic Direction

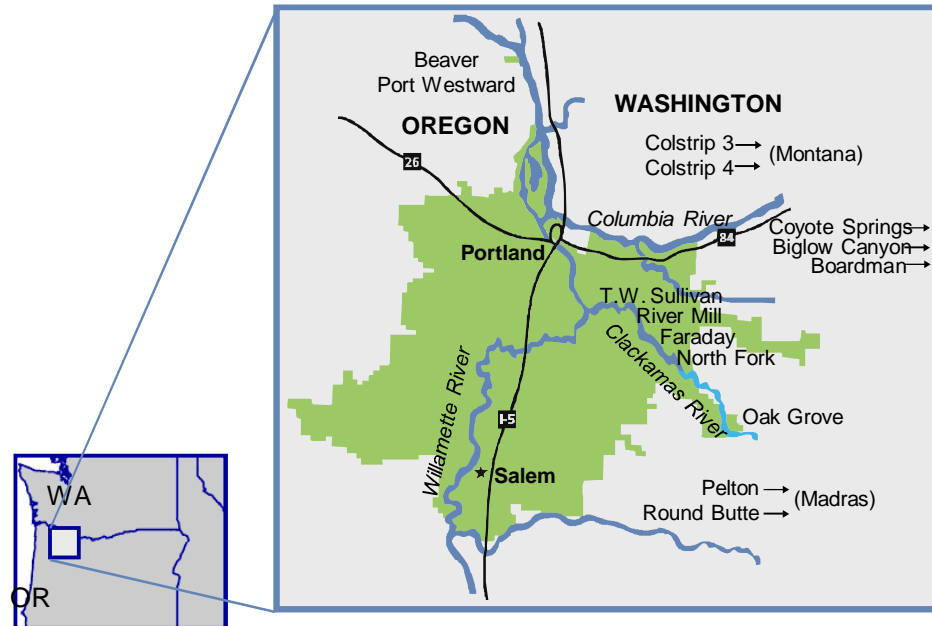
**Mission:** To be a company our customers and communities can depend upon to provide electric service in a safe, responsible and reliable manner, with excellent customer service, at a reasonable price.



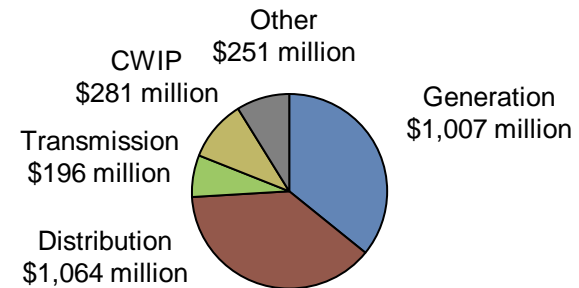


# Attractive Regulated Business Profile

- Vertically integrated electric utility
  - Single-state jurisdiction
  - Virtually 100% regulated business
  - No holding company structure
- Attractive, compact service territory with 815,739 retail customer accounts<sup>(1)</sup>
- Opportunities for investment in core utility assets
- Diversified and growing customer base



**Net Utility Plant**



**Net Utility Plant – \$2,799 million<sup>(2)</sup>**

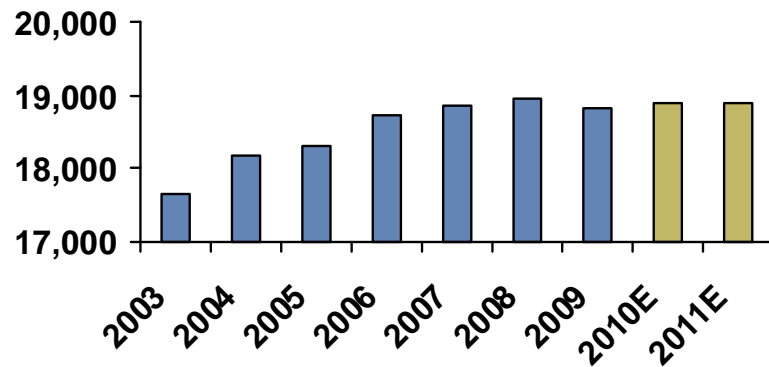


(1) As of December 31, 2009.  
 (2) Source: 2008 FERC Form 1.

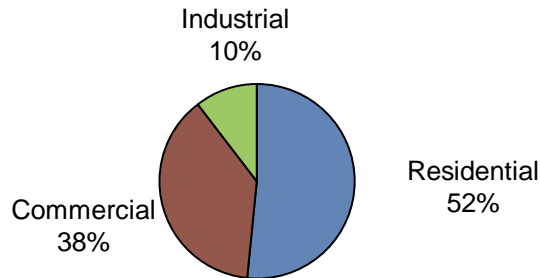
# Attractive Service Territory

## Weather Adjusted Annual Load <sup>(1)</sup>

Annual Load  
(thousands of MWH)



## 2009 Retail Revenues <sup>(2)</sup> by Customer Group



Total = \$1.6 Billion

- Compounded annual load growth<sup>(3)</sup> and customer growth of 1.5% from 2003 - 2008
  - Oregon is a leading in-migration state
- 2009 loads<sup>(3)</sup> declined 2.4% over 2008
  - Primary driver: Industrial declines in commodity and resource industries
- 2010 and 2011 loads<sup>(3)</sup> are forecast to be flat over 2009
  - Expansion in high-tech partially off-set by declines in commodity and resources industries
  - Flat commercial sector with slight declines in residential loads
- Long-term annual load growth forecast of 1.9% through 2030

# Constructive Regulatory Environment

- **Oregon Public Utility Commission**
  - Governor-appointed Commission with staggered four-year terms (Ray Baum-Chair 8/2011, John Savage 3/2013, Susan Ackerman 3/2012<sup>(1)</sup>)
- **Cost of Capital and Return on Equity**
  - 10.0% Allowed Return on Equity, 50% Debt, 50% Equity
- **Forward Test Year**
  - Filed General Rate Case on February 16, 2010 for 2011 test year
- **Net Variable Power Cost Recovery**
  - Annual Update Tariff <sup>(2)</sup>
  - Power Cost Adjustment Mechanism <sup>(2)</sup>
- **Decoupling**
  - Effective February 1, 2009 for two-year trial period
- **Renewable Energy Standard**
  - Standard requires that PGE serve 25 percent of its retail load from renewable sources by 2025
- **Renewable Adjustment Clause (RAC)**
  - PGE can recover costs of renewable resources through a separate tracker
- **Integrated Resource Plan**
  - Acknowledgement standard
  - 2009 IRP - longer-term analysis to address resource decisions through 2020

# Operational Excellence

## Operational Efficiency

- Ongoing investments to improve quality of service, reduce costs and generate adequate returns
- Smart Meter Program
  - Capex: \$130-\$135 million
  - Projected annual operational savings

## Customer Satisfaction

- Highest customer satisfaction with business electric service in Western U.S. according to J.D. Power and Associates 2009 Electric Utility Business Customer Satisfaction Study<sup>SM (1)</sup>
- Residential customer satisfaction ratings among the highest in the industry



- Highly reliable system with 89 percent plant availability in 2009
- On-going infrastructure investments to ensure high level of reliability, safety and customer satisfaction
  - Invested more than \$775 million in the last 5 years in transmission, distribution, and existing generation

## Well Maintained, High-Quality System

(1) PGE received the highest numerical score among electric utilities in the West region in the proprietary J.D. Power and Associates 2009 Electric Utility Business Customer Satisfaction Study<sup>SM</sup>. Study based on 15,434 interviews with U.S. business electric customers measuring 19 utilities in the West (AZ, CA, ID, NM, NV, OR, UT, WA, WY). Proprietary study results are based on experiences and perceptions of consumers/businesses/business users surveyed in April-June and September-December 2008. Your experiences may vary.

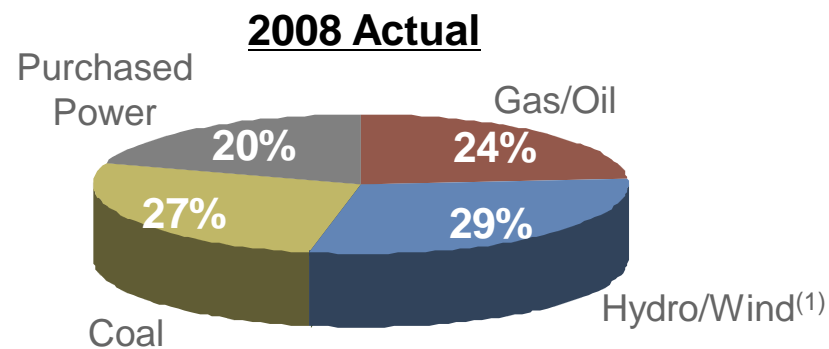
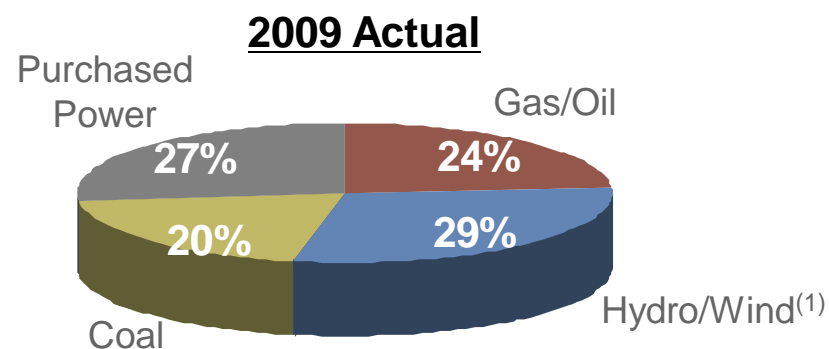


# Operational Excellence

## Average Resource Capacity (at 12/31/09)

	Physical Capacity	% of Total Capacity
<b>Hydro</b>		
Deschutes River Projects	298 MW	6.6%
Clackamas/Willamette River Projects	191	4.2
Hydro Contracts	698	15.4
	<u>1,187</u>	<u>26.2</u>
<b>Natural Gas/Oil</b>		
Beaver Units 1-8	529 MW	11.7%
Coyote Springs	233	5.1
Port Westward	413	9.1
	<u>1,175</u>	<u>25.9</u>
<b>Coal</b>		
Boardman	374 MW	8.3%
Colstrip	296	6.5
	<u>670</u>	<u>14.8</u>
<b>Wind<sup>(2)</sup></b>		
Wind Contracts	35 MW	0.8%
Biglow Canyon Phase I & II	100	2.2
	<u>135</u>	<u>3.0</u>
<b>Net Purchased Power</b>		
Short-/Long-term	1,363 MW	30.1%
<b>Total</b>	<b>4,530 MW</b>	<b>100.0%</b>

## Power Sources as % of Retail Load

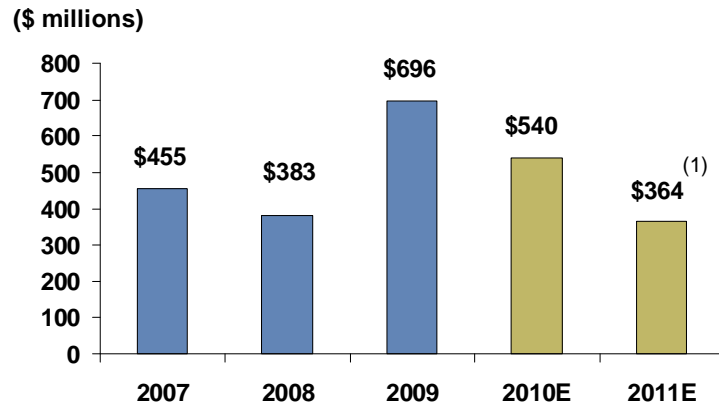


(1) Includes PGE owned and purchased hydro resources and PGE owned and purchased wind resources.

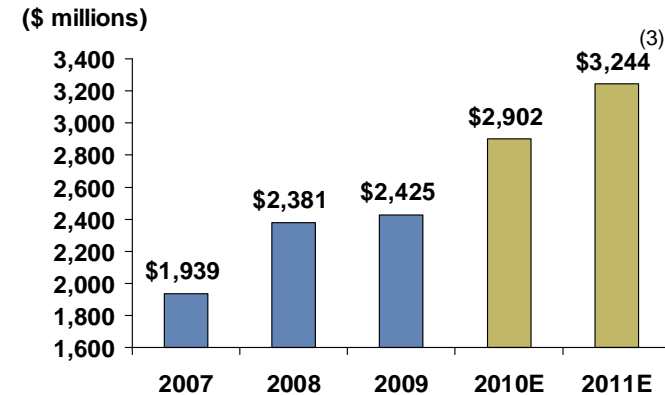
(2) Physical capacity for wind resources provided in average megawatts.

# Business Growth

## Capital Expenditures



## Rate Base (Average) <sup>(2)</sup>



- Attractive, near-term regulated growth opportunities through capital investment focused on renewable resources and core utility assets
- 2010 capital investments funded through cash from operations and new debt issuances. Significant new capital investments beyond 2010 funded through cash from operations and issuances of debt and equity with a targeted capital structure of 50/50

(1) 2011E capital expenditures does not include potential additional IRP self-build options and assumes \$65 million of Boardman Phase II 2040 option.

(2) 2007 and 2008 average rate base as filed in the OPUC regulatory Results of Operations Report. 2009 average rate base includes the 2009 General Rate Case average rate base of \$2.278 billion plus Biglow Canyon Phase II, and Smart Metering Project. 2010E average rate base includes 2009 General Rate Case average rate base of \$2.278 billion plus Biglow Canyon Phase II & III, Smart Metering Project and the Selective Water Withdrawal project.

(3) 2011E average rate base per Exhibit 309 in 2011 General Rate Case

# Business Growth

## Biglow Canyon Wind Farm

- Columbia Gorge, eastern Oregon
- 450 MW total installed capacity
- Total cost approximately \$1 billion
- Completion of Biglow Canyon Phase III will bring PGE's load served by renewables to approximately 11 percent <sup>(1)</sup>



	Phase I	Phase II	Phase III
<b>Nameplate Capacity</b>	<b>125 MW, 76 turbines</b>	<b>150 MW, 65 turbines</b>	<b>175 MW, 76 turbines</b>
<b>MW per unit</b>	<b>1.65 Megawatts</b>	<b>2.3 Megawatts</b>	<b>2.3 Megawatts</b>
<b>Cost (w/AFDC)</b>	<b>\$255 million</b>	<b>\$321 million</b>	<b>\$428 million</b>
<b>Online date</b>	<b>December 2007</b>	<b>August of 2009</b>	<b>Third Quarter of 2010</b>
<b>Vendor</b>	<b>Vestas</b>	<b>Siemens</b>	<b>Siemens</b>

(1) As defined by Oregon's Renewable Energy Standard

# Business Growth: General Rate Case

- General rate case filed in February 2010 based on a 2011 test year
  - 2011 average rate base of \$3.2 billion
  - 10.5% requested ROE based on a 50/50 capital structure
- Proposed revenue increase of \$125 million for a 7.4% rate increase driven primarily by:

<u>Driver/Cost</u>	<u>Revenue Increase</u>
Investment and Related Costs <sup>(1)</sup>	4.3%
Higher O&M Costs <sup>(2)</sup>	5.1%
Power Cost Recovery	(2.0)%

1) Includes Biglow Canyon Phase III, Clackamas River Relicensing and other investment related costs. Also includes the increase in ROE from 10.0% to 10.5% which represents a 0.75% revenue increase

2) Includes impact of negative load growth from loads used to set current rates (2009 test year)

# Business Growth: General Rate Case (cont'd)

## Policy Objective Proposals

### **Power Cost Adjustment Mechanism:**

- Deadbands narrowed and made symmetrical at a fixed amount of \$10 million
- 90/10 sharing outside of deadbands continued
- Earnings test deadbands eliminated

### **Boardman Automatic Adjustment Clause**

- PGE allowed to change prices to reflect an OPUC – determined operating life
- Base case assumption is plant operating through 2040

### **Decoupling**

- Continue with current mechanism

### **Key Proposed Accounting Orders**

- Major storm damage recovery
- Pension automatic adjustment clause
- Environmental mitigation & remediation expense recovery
- Collateral cost recovery for power supply operation

# Business Growth: General Rate Case (cont'd)

## Schedule

- Process expected to take 10 months, with new prices proposed to be effective January 1, 2011
- General Rate Case filing available at [www.PortlandGeneral.com](http://www.PortlandGeneral.com) <sup>(1)</sup>

## Timing: 2010 <sup>(2)</sup>

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<u>February</u> Case Filed	<u>June</u> Staff and Intervener Reply Testimony	<u>July</u> POR Rebuttal Testimony	<u>August</u> Staff and Intervener Surrebuttal Testimony	<u>September</u> POR Sursurrebuttal Testimony	<u>Oct/Nov</u> Hearings and Briefs	<u>December</u> Commission Decision	<u>January 2011</u> Prices Effective
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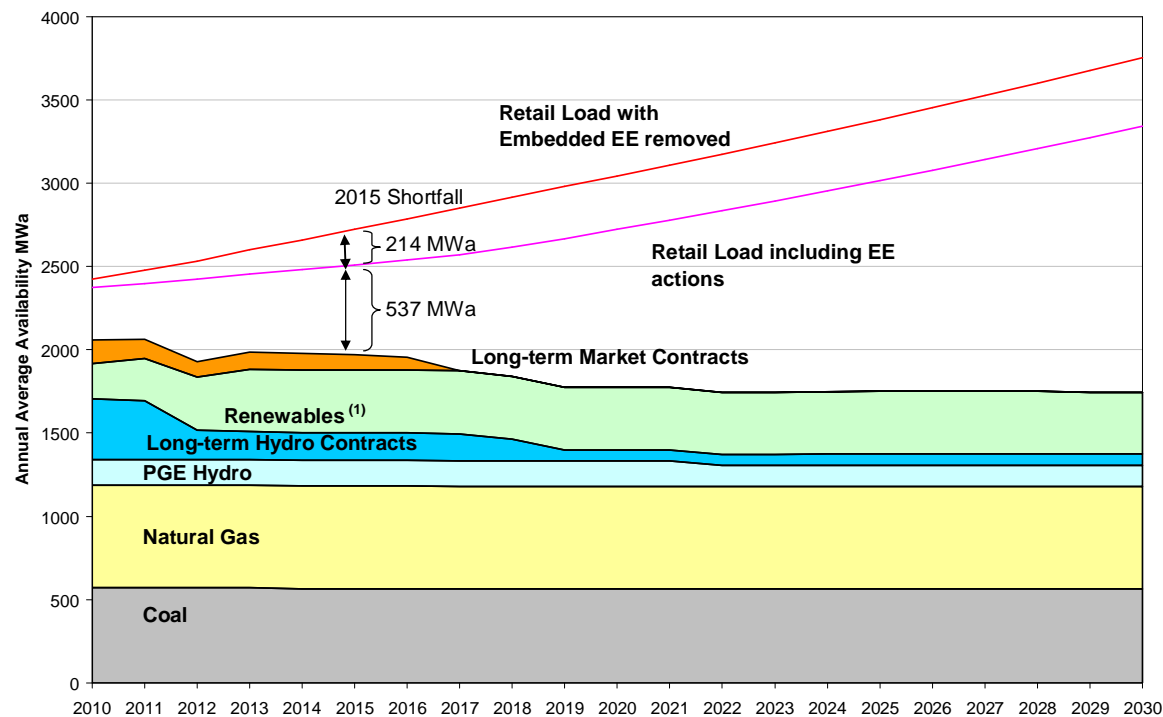


# Business Growth

## Load Growth

**PGE's long-term retail load is expected to grow consistently while certain long-term power purchase contracts expire, driving the need for additional generation capacity**

**Load/Resource Forecast (2)**



- In 2015 we project a capacity shortfall of 1,724 MW**

Note: Assumes 1.9% load growth through 2030 and energy supply based on plant capabilities under normal hydro and operating conditions.

- (1) Includes 122 MWa needed to meet 2015 Renewable Portfolio Standard
- (2) Load/Resource Forecast Data from Integrated Resource Plan filed in November 2009.

# Business Growth

## Integrated Resource Planning Process

- Under OPUC guidelines, PGE is required to file an Integrated Resource Plan (IRP) within two years of acknowledgment of the previous plan.
- The IRP requires that the primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.
- Goal is Commission acknowledgement of the IRP Action Plan. Acknowledgement is not approval for ratemaking purposes but the Commission has stated that it will give “considerable weight” to utility actions that are consistent with the acknowledged IRP.
- This is an open public planning process.

### Schedule:

- November 2009: Plan filed
- March/April 2010: Addendum filing to propose 2020 alternative plan for Boardman
- Second Half 2010: OPUC acknowledgment action plan

# Business Growth

## 2009 Integrated Resource Plan (IRP)<sup>1</sup> includes:

- A long-term analysis of resource requirements to serve customers
- Expected resource requirements to include expansion of energy efficiency, additional renewable resources, purchase power agreements and new facilities to meet energy and capacity needs.
- Potential Capital Projects :
  - **New energy resources** <sup>(2)</sup>
    - 300 – 500 MW natural gas facility
      - Earliest date available - 2015
    - 122 MWa of renewable resources <sup>(3)</sup>
      - Earliest date available 2012
  - **New capacity resources** <sup>(2)</sup>
    - Up to 200 MW natural gas facility
      - Earliest date available 2013
  - **Emissions controls at Boardman Coal Plant** <sup>(4)</sup>
    - Two potential options:
      - Complete three phases of emission controls and run plant to 2040
      - Complete first phase of emissions controls and run plant to 2020
  - **Transmission**
    - **Cascade Crossing – 200 mile, 500-kV transmission line**
      - Approximate capital cost \$610 million for single circuit line
      - Approximate capital cost \$825 million for double circuit line
      - Completed by 2015



(1) Per the November 5th IRP filing  
(2) PGE will conduct separate RFPs for the baseload energy resource, renewable resource and capacity resource, and will bid into each RFP with its own benchmark resource.  
(3) Needed to meet Oregon's 2015 Renewable Energy Standard  
(4) See pages 34 & 35 in the appendix for additional detail

# Prudent Financial Strategy

## Target Capital Structure 50% Debt, 50% Equity

### 2010

#### **Debt Issuance**

- PGE anticipates issuing approximately \$250 million in 2010
  - Issued \$70 million of First Mortgage Bonds (FMBs) in January at 3.46%
  - Plan on issuing \$121 million of Pollution Control Bonds backed by FMBs in March at 5.0%
- Issuance proceeds:
  - 2010 maturities of \$186 million
  - Biglow Canyon Phase III
  - Other capital projects

#### **Equity Issuance**

- Additional equity issuance is not expected until after 2010.

### 2009

#### **Debt Issuance**

- Issued \$130 million of FMBs in January
  - \$63 million at 6.5%
  - \$67 million at 6.8%
- Issued \$300 million of FMBs in April at 6.1%
- Issued \$150 million of FMBs in November at 5.4%

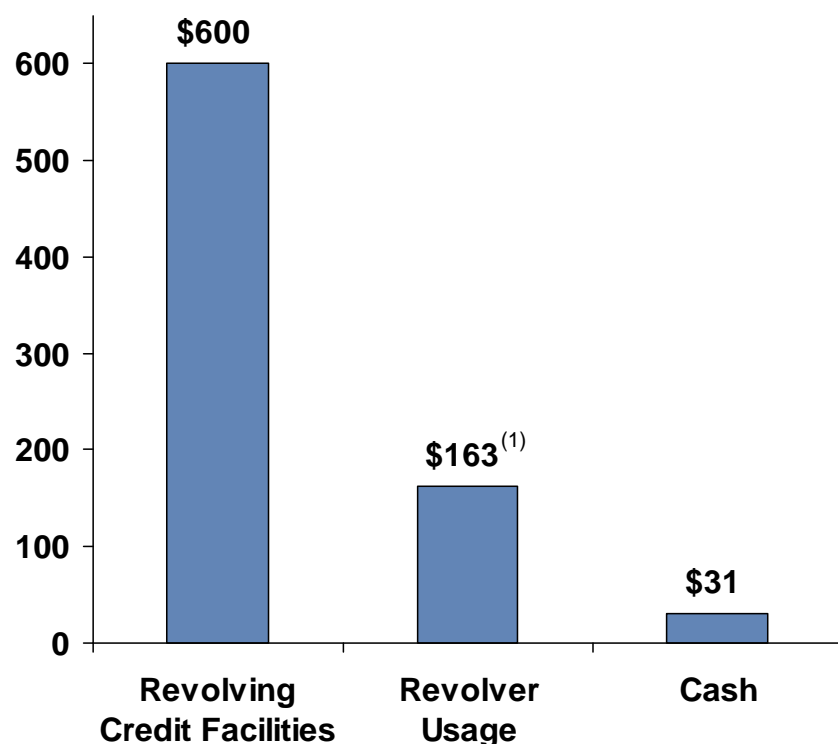
#### **Equity Issuance**

- Issued 12.5 million shares of common stock in March 2009 for net proceeds of \$170 million

# Prudent Financial Strategy

## Liquidity (as of 12/31/09)

(\$ millions)



- \$370 million revolving credit facility
  - \$360 million matures in July 2013
  - \$10 million matures in July 2012
- \$30 million revolving credit facility matures in June 2012
- \$200 million revolving credit facility matures in December 2012
- Margin deposits posted by PGE as of December 31, 2009 were \$200 million <sup>(2)</sup>
  - Margin deposits create a cash flow timing difference but have minimal impact on earnings
  - Margin roll-off<sup>(3)</sup>
    - Approximately 64% in 2010
    - Approximately 25% in 2011

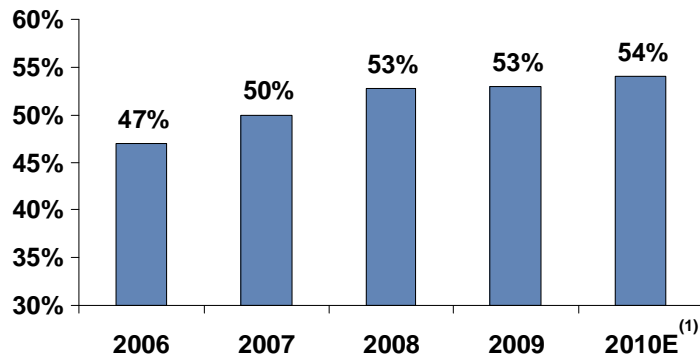
(1) Represents 100% letters of credit. On December 31, 2009, there were no draws on the revolver and no outstanding commercial paper.

(2) Consists of \$56 million in cash and \$144 million in letters of credit.

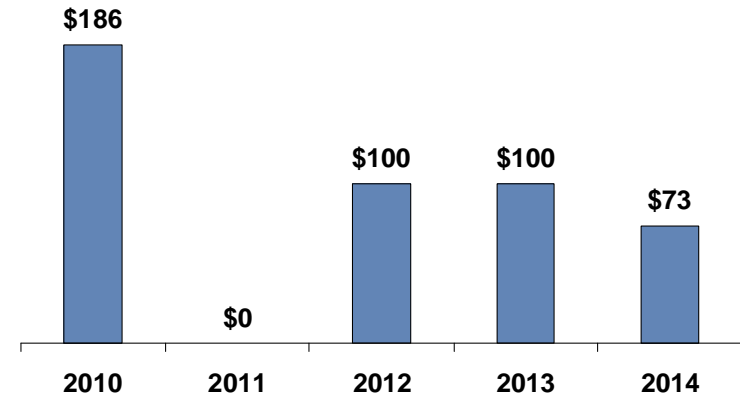
(3) Assumes market prices remain unchanged from December 31, 2009.

# Prudent Financial Strategy

## Debt/Capitalization



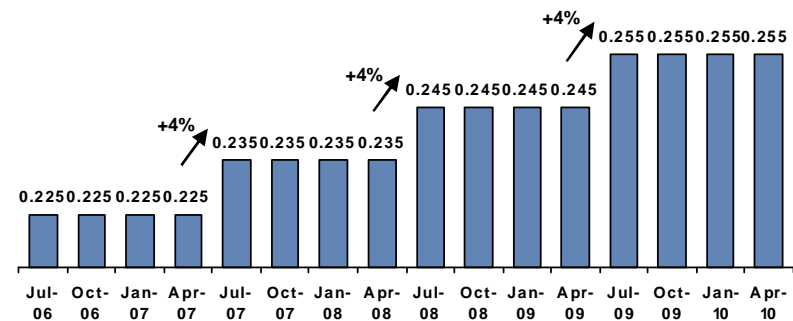
## Manageable Near-term Debt Maturities



## Credit Ratings

	Senior Secured	Senior Unsecured	Outlook
S&P	A-	BBB	Stable
Moody's	A3	Baa2	Positive

## Dividend Growth<sup>(2)</sup>



(1) Includes \$250 million of debt issuance in 2010  
 (2) Dividend as of payable date



# Portland General Investment Highlights

“Pure-play”  
electric  
utility

Operational  
excellence

Low-risk  
growth  
plan

Prudent  
financial  
strategy

**Stability:**

**Dividend Yield**

**Attractive total  
return proposition**

**Growth:**

**EPS Growth**

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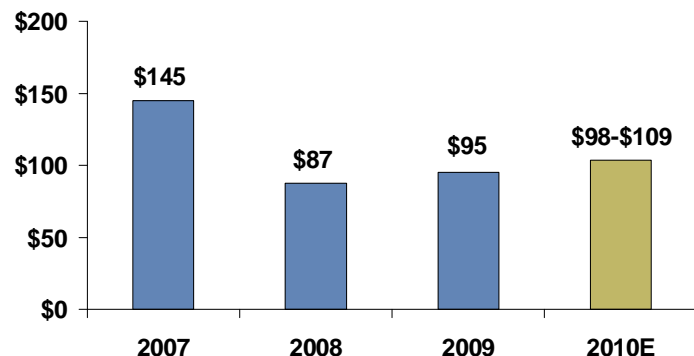
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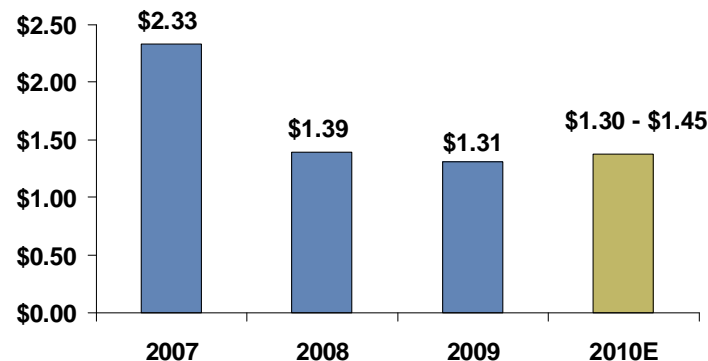
# Recent Financial Results

## Net Income

(\$ millions)



## Earnings per Share (diluted)



## Key Items (\$ earnings per diluted share)

### 2007

- Boardman deferral (+\$0.26)
- California settlement (+\$0.06)
- Non-qualified benefit plan assets (+.05)
- Senate Bill 408 (+\$0.18)

### 2008

- Trojan Refund Order Provision (-\$0.32)
- Non-qualified benefit plan assets (-\$0.19)
- Beaver oil sale (+\$0.10)
- Senate Bill 408 (-\$0.10)

### 2009

- Boardman Deferral (-\$0.15)
- Selective Water Withdrawal (-\$0.05)
- Non-qualified benefit plan assets (+\$0.07)
- Senate Bill 408 (-\$0.11)

### 2010

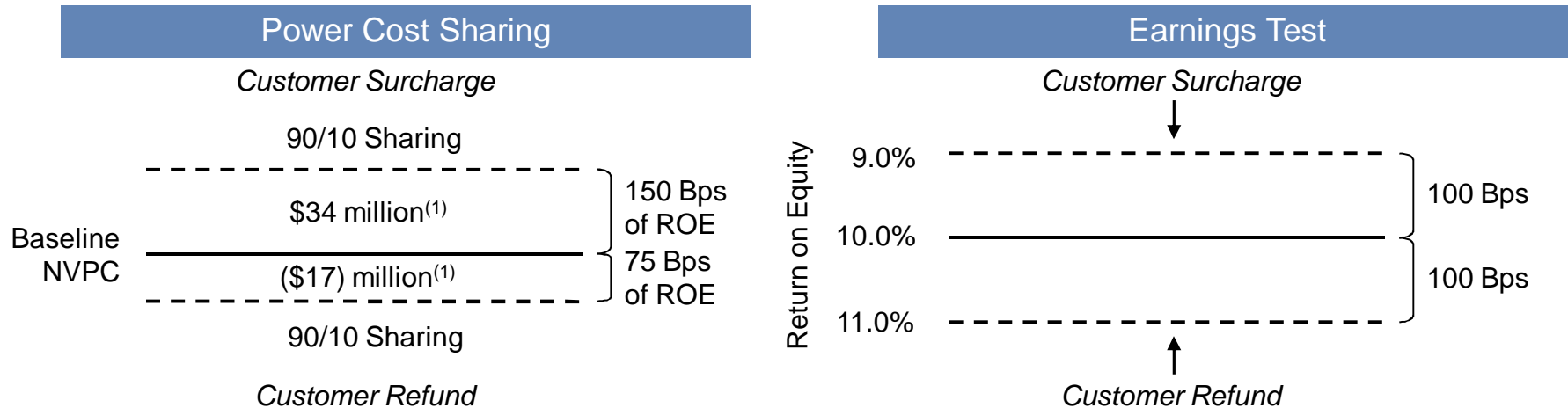
- As of February 25, 2010, earnings guidance was restated at \$1.30 to \$1.45 per diluted share.

# Recovery of Power Costs

## Annual Power Cost Update Tariff

- Annual reset of rates based on forecast of net variable power costs (NVPC) for the coming year. Following OPUC approval, new prices go into effect on or around January 1 of the following year.

## Power Cost Adjustment Mechanism (PCAM)



- PGE absorbs 100% of the costs/benefits within the deadband, and amounts above or below the deadband are shared 90% with customers and 10% with PGE.
- An annual earnings test is applied as part of the PCAM.
  - Customer surcharge occurs to the extent it results in PGE's actual ROE being no greater than 9.0%
  - Customer refund occurs to the extent it results in PGE's actual ROE being no less than 11.0%

(1) Deadband for 2010 is \$34 million above and \$17 million below baseline net variable power costs

# Decoupling Mechanism

- The decoupling mechanism is intended to allow recovery of reduced revenues resulting from a reduction in sales of electricity resulting from customers' energy efficiency and conservation efforts
  - A condition of the decoupling mechanism is a reduction in the Company's allowed ROE from 10.1% to 10.0% which reflects the OPUC's view of a reduction in Company risk. The ROE refund is estimated at approximately \$1.9 million annually
- Implemented under a new two-year tariff that includes a Sales Normalization Adjustment mechanism (SNA) for residential and small non-residential customers ( $\leq 30$  kW) and a Lost Revenue Recovery mechanism (LRR), for large non-residential customers (between 31 kW and 1 MWa)
  - The SNA is based on the difference between actual, weather-adjusted usage per customer and that projected in PGE's recent general rate case. The SNA mechanism covers approximately 57% of base revenues
  - The LRR is based on the difference between actual energy-efficiency savings (as reported by the ETO) and those incorporated in the applicable load forecast. The LRR mechanism covers approximately 20% of base revenues
- On January 31, 2009, PGE filed an application with the OPUC to defer, for later rate-making treatment, potential revenues associated with the new decoupling mechanism as well as revenues associated with an ROE refund
- Mechanism effective February 1, 2009
- Estimated refund to customer's for fiscal year end 2009, of \$6.8 million (subject to review and approval by the OPUC)

(in millions)	Q1	Q2	Q3	Q4	2009 YE
Sales Normalization Adjustment	\$0.8	(\$1.5)	(\$1.9)	(\$1.9)	(\$4.5)
ROE Adjustment	(\$0.3)	(\$0.5)	(\$0.5)	(\$0.5)	(\$1.8)
Loss Revenue Adjustment				(\$0.5)	(\$0.5)
<b>Total adjustment</b>	<b>\$0.5</b>	<b>(\$2.0)</b>	<b>(\$2.4)</b>	<b>(\$2.9)</b>	<b>(\$6.8)</b>



# Decoupling Mechanism

## Simplified Decoupling Example

### Assumptions:

- Residential customer
- Monthly Kwh usage: 1,000
- Cost per Kwh: \$0.10
- Weather adjusted decrease in monthly usage: 10%
- PGE cost structure: 50% power costs and 50% all other costs

### Analysis:

Base monthly bill:	$1,000 \times \$0.10 = \$100$
Revised monthly bill due to energy efficiency and/or conservation:	$900 \times \$0.10 = \$90$
Reduction in revenue from customer	$= \$10$

### PGE cost structure of lost revenue:

- \$5 in power costs
- \$5 in all other costs (fixed costs)

### Financial impact on PGE:

- Power costs: Approximately \$0 earnings impact on PGE, assuming power sold on the market at PGE average cost in prices
- All other costs: Approximately \$0 earnings impact due to \$5 booked as a regulatory asset for future recovery from customers (**through the decoupling mechanism**)

# Oregon Senate Bill 408

- Beginning January 1, 2006, SB 408 requires the OPUC to track estimated income taxes collected by Oregon utilities in rates and compare this amount to adjusted taxes paid to taxing authorities by the utility or corporate consolidated group. The OPUC may establish deferral accounts to capture the difference
- SB 408 requires an annual rate adjustment if difference between taxes authorized to be collected by the utility and taxes paid by the utility to taxing authorities exceed \$100,000
- Report for prior calendar year is filed in October with the refund or collection beginning in June of the following year. For example:
  - The 2008 report of taxes paid was filed in October 2009. New tariff goes into effect June 2010, if necessary
- Primary issue for PGE is the so called “double whammy” effect, due to the OPUC adopting a fixed reference point for margins and effective tax rates. The double whammy can result in unusual outcomes and increased financial volatility in certain situations. The OPUC stated in the final order that it will be responsive to concerns related to the consequences of the double whammy problem, and may address those concerns in other regulatory proceedings
- Historical/expected outcomes:
  - 2006: Customer refund of approximately \$37.2 million plus accrued interest
  - 2007: Customer collection of \$14.7 million plus accrued interest
  - 2008: Customer refund of approximately \$10 million plus accrued interest
  - 2009: Customer refund of approximately \$13 million plus accrued interest

# Energy Action Plan

## 2009 Integrated Resource Plan - Energy

Energy Action Plan in MWa <sup>(1)(2)</sup>	
	<b>2015</b>
<b>Thermal Resource Actions</b>	
Combined Cycle Combustion Turbine	406
Combined Heat & Power	2
Boardman Lease Contract	72
<b>Renewable &amp; EE Resource Actions</b>	
ETO Energy Savings Trust	214
Existing Contract Renewals	66
RPS Compliance	122
Biomass	-
Geothermal	-
Solar PV	-
<b>To Hedge Load Variability</b>	
Short- and Mid-term Market Purchases	100
<b>Subtotal</b>	<b>982</b>
(Surplus) / deficit met by market	(109)
<b>Total Resource Actions</b>	<b>873</b>

# Capacity Action Plan

## 2009 Integrated Resource Plan - Capacity

Capacity Action Plan in MW <sup>(1)(2)(3)</sup>	
	Winter
	<u>2015</u>
<b>Thermal Resource Actions</b>	
Combined Cycle Combustion Turbine	441
Combined Heat & Power	2
Boardman Lease Contract	86
<b>Renewable Resource Actions</b>	
Existing Contract Renewals	167
RPS Compliance	18
Biomass	-
Geothermal	-
Solar PV	-
<b>To Hedge Load Variability</b>	
Short- and Mid-term Market Purchases	100
<b>Capacity Only Resources</b>	
Flexible Peaking Supply	200
<b>Customer-Based Solutions (Capacity Only)</b>	
Dispatchable Standby Generation	52
Demand Response	60
<b>Seasonally Targeted Resources</b>	
ETO Capacity Savings Target	315
Bi-seasonal Capacity	131
Winter-only Capacity	152
<b>Total Incremental Resources</b>	<b>1,724</b>

- (1) Data from Integrated Resource Plan filed in November 2009.  
 (2) Assumes normal hydro.  
 (3) Based on winter peak. Summer peak is 1,468 MW for 2015.

# Renewable Energy Standard

## Additional Renewable Resources

- Integrated Resource Plan addresses 122 MWa of wind or other renewable resources necessary to meet requirements of Oregon's Renewable Energy Standard by 2015

## Renewable Energy Standard

- Renewable resources can be tracked into rates, through an automatic adjustment clause, without a general rate case. A filing must be made to the OPUC by the sooner of the on-line date or April 1st in order to be included in rates the following January 1st. Costs are deferred from the on-line date until inclusion in rates and are then recovered through an amortization methodology.

<u>Year</u>	<u>Renewable Target</u>
<b>2011</b>	<b>5%</b>
<b>2015</b>	<b>15%</b>
<b>2020</b>	<b>20%</b>
<b>2025</b>	<b>25%</b>

- Biglow Canyon Wind Farm will bring PGE's load served by renewables to approximately 11 percent by the end of 2010

# Estimated RPS Position by Year (1)

- PGE will be in compliance with 2015 renewable resource requirement with addition on 122 MWa of renewables resources

	2011	2015	2020	2025
<u>Calculate Renewable Resource Requirement:</u>				
PGE retail bus bar load	2,442	2,624	2,886	3,179
Remove incremental EE	(16)	(86)	(135)	(135)
Remove Schedule 483 5-yr. load	<u>(27)</u>	<u>(28)</u>	<u>(28)</u>	<u>(28)</u>
<b>A) Net PGE load</b>	2,399	2,510	2,723	3,016
Renewable resources target load %	5%	15%	20%	25%
<b>B) Renewable Resources Requirement</b>	120	376	545	754
<u>Existing renewable resources at Bus:</u>				
Vansycle Ridge	8	8	8	8
Klondike II	26	26	26	26
Klondike II dedicated to PGE green tariff	-5	0	0	0
Sale of RECs	0	0	0	0
Biglow Canyon Phase I (year-end 2007)	48	48	48	48
Biglow Canyon Phases II and III (year-end 2008, 2010)	114	114	114	114
Post-1999 Hydro Upgrades	9	9	9	9
Pelton Round Butte LIHI Certification	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>
<b>C) Total Qualifying Renewable Resources</b>	250	255	255	255
<u>Compliance position &amp; RECs banking:</u>				
D) Excess/(deficit) RECs B4 new IRP Actions (C less B)	130	(122)	(290)	(499)
E) IRP Action Plan* - additional resources for 2015 compliance	0	122	122	122
F) Total PGE renewable resources (C plus E)	250	377	377	377
G) % of load served via RPS renewables (F divided by A)	10.4%	15.0%	13.9%	12.5%
H) Excess/(deficit) RECs after IRP Actions (D plus E)	<u>130</u>	<u>-</u>	<u>(168)</u>	<u>(377)</u>
<b>I) Cumulative Banked RECs after IRP Actions</b>	<b>709</b>	<b>1,408</b>	<b>1,185</b>	<b>200</b>
<b>J) Cumulative Non-LIH Banked RECs after IRP Actions</b>	<b>509</b>	<b>1,208</b>	<b>985</b>	<b>-180</b>
* Previously approved action from the 2007 IRP				

# Smart Grid

## Smart Meters

- Provides two-way communications with residential and commercial customers
  - Vendor: Sensus Metering Systems
  - Technology: FlexNet radio frequency technology
  - Deployment: 850,000 residential and commercial customer meters
  - Installed approximately 450,000 meters as of December 31, 2009 with estimated completion by the end of 2010
  - Estimated cost: \$130 million - \$135 million
  - OPUC approved limited term tariff: June 1, 2008 through December 31, 2010. After 2010 the project costs, net of savings, would be permanently incorporated into rates in a future rate case
- **Distribution System**
    - Pursuing direct load control programs
    - Optimizing distribution system through advanced technology



# Boardman BART Update

## Best Available Retrofit Technology (BART) for compliance with EPA Regional Haze Rule

### Alternative 2020 Plan:

- Phase 1, installation of low NO<sub>x</sub> burners and mercury controls, estimated completion by July 2011 with a total cost of \$40 million, excluding AFDC
- Plant operates through 2020 with two options after 2020
  - Plant ceases operation and is replaced with a new base load resource
  - Plant discontinues the use of pulverized coal as a fuel source
- OPUC has granted a delay in the IRP schedule and PGE will file an addendum to the plan in March/April 2010 proposing the 2020 plan
- Requires approval from the Oregon Environmental Quality Commission (OEQC)
- PGE will work with all stakeholders on acceptance and approval of the alternative plan



# Boardman BART Update (cont'd)

## 2040 Plan:

- **In June 2009, the OEQC adopted a rule that would require the installation of emissions controls at Boardman under a phased-in approach:**
  - Phase 1: Installation of low NOx burners and mercury controls estimated completion by July 2011 with a total cost of \$40 million, excluding AFDC
  - Phase 2: Installation of semi-dry scrubber and bag house to address mercury and sulfur dioxide removal, estimated completion by July 2014
  - Phase 3: Installation of Selective Catalytic Reduction for additional NOx controls, estimated completion by July 2017
  - Phases 1 and 2 would meet federal BART requirements. Phase 3 would meet the requirements to make reasonable progress towards haze emission reduction goals.  
PGE cost estimate for Phases 1, 2 and 3 for the controls required by the OEQC rule: \$520 to \$560 million <sup>(1)</sup>
- **In the November Integrated Resource Plan PGE recommended the long-term continued operation of Boardman through 2040 with the addition of controls called for in the OEQC rule. This recommendation is based upon the expected cost and risks relating to carbon dioxide emissions, replacement generation, coal and natural gas, and emissions controls required to meet the OEQC's rule.**
- **Schedule:**
  - EPA approval expected in 2010

