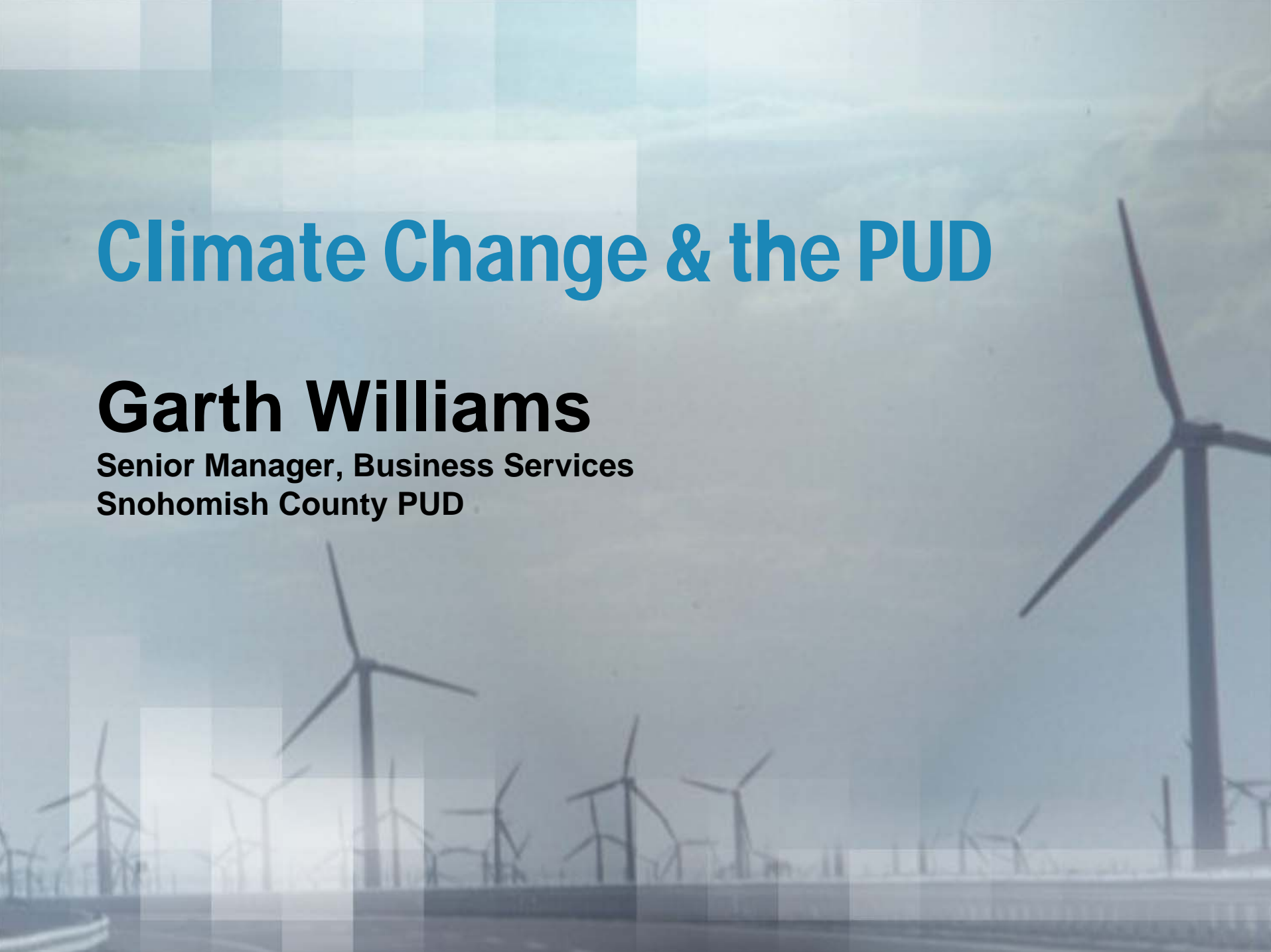


# Climate Change & the PUD

**Garth Williams**

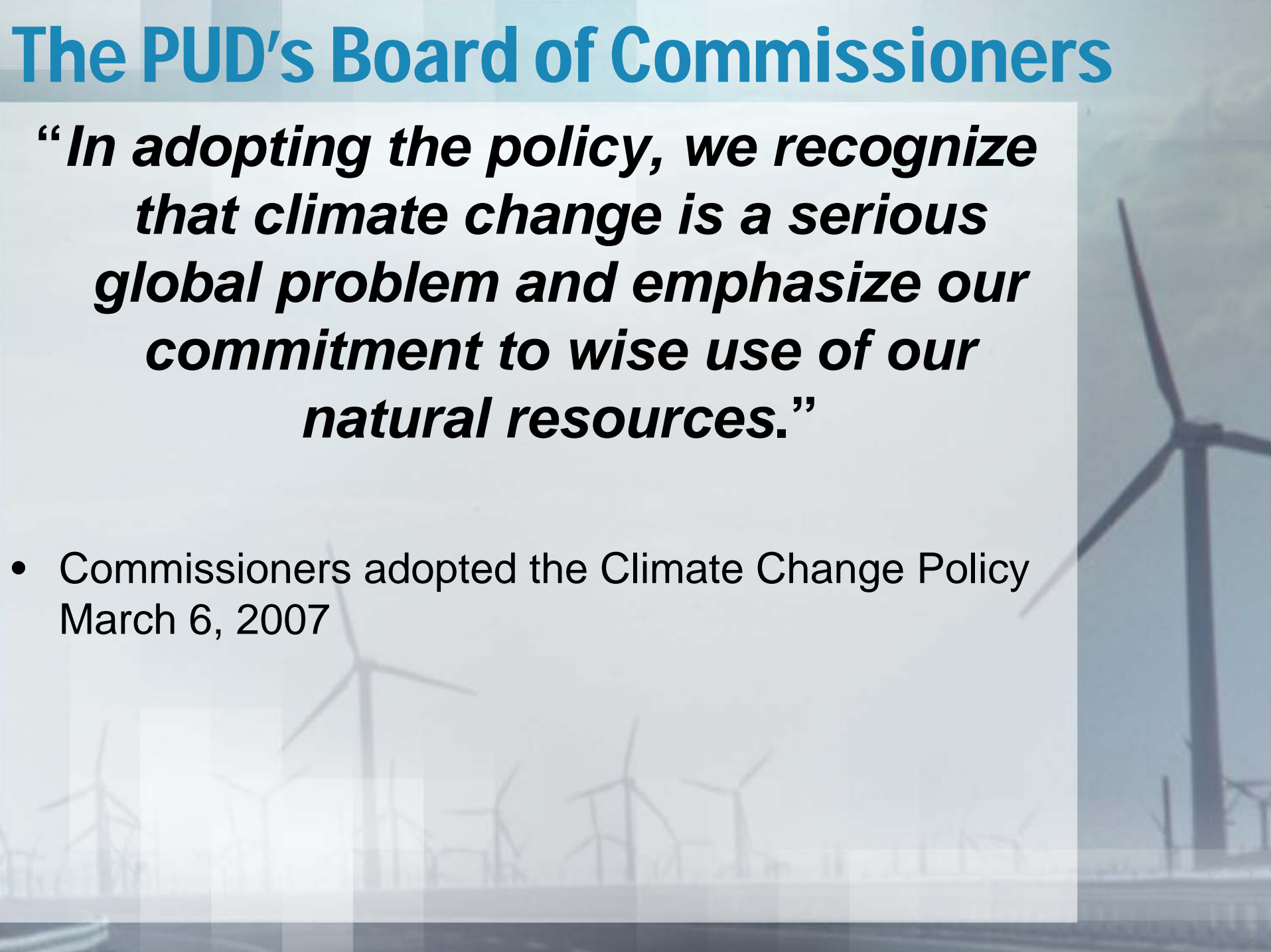
**Senior Manager, Business Services  
Snohomish County PUD**



# The PUD's Board of Commissioners

***“In adopting the policy, we recognize that climate change is a serious global problem and emphasize our commitment to wise use of our natural resources.”***

- Commissioners adopted the Climate Change Policy March 6, 2007



# The Policy

- **Climate Principles adopted**
  - Legislative direction
  - Consider economic impact on consumers
  - Recognize & credit historical investments
  - Compatible approaches
  - Clear regulatory framework
  - No cross subsidies from the NW



# The Actions

- **Climate Strategies**

- Reduce PUD's energy usage
- Fully comply with I-937
- Use Integrated Resource Planning Standards
- Monitor emerging technologies
- Educate customers
- Influence public policy
- Support innovative manufacturing
- Recognize employee efforts
- Seek non-generation GHG reductions



# Integrated Resource Plan (IRP)

The background of the slide features a blurred image of a wind turbine field. The turbines are dark in color, and the sky is a light, hazy blue. The overall aesthetic is clean and modern, emphasizing renewable energy.

## ***Purpose***

- **Ensure sufficient resources are available at a reasonable cost to meet our customer's demand**
  - Pursue all cost-effective conservation
  - Secure low-cost BPA power
  - Fill load growth from renewable energy sources

## ***Other Considerations***

- Cost
- Reliability
- Risk & Operational Constraints
- Environmental stewardship and legislative compliance

# IRP's Preferred Plan

## New resources forecast by 2020:

- Conservation 96 aMW
- BPA Power (secured for 2012) 50 aMW
- Wind (online now) 60 aMW
- Biomass/Landfill Gas 20 aMW
- Small Hydro 5 aMW
- Tidal 5 aMW
- Geothermal 90 aMW



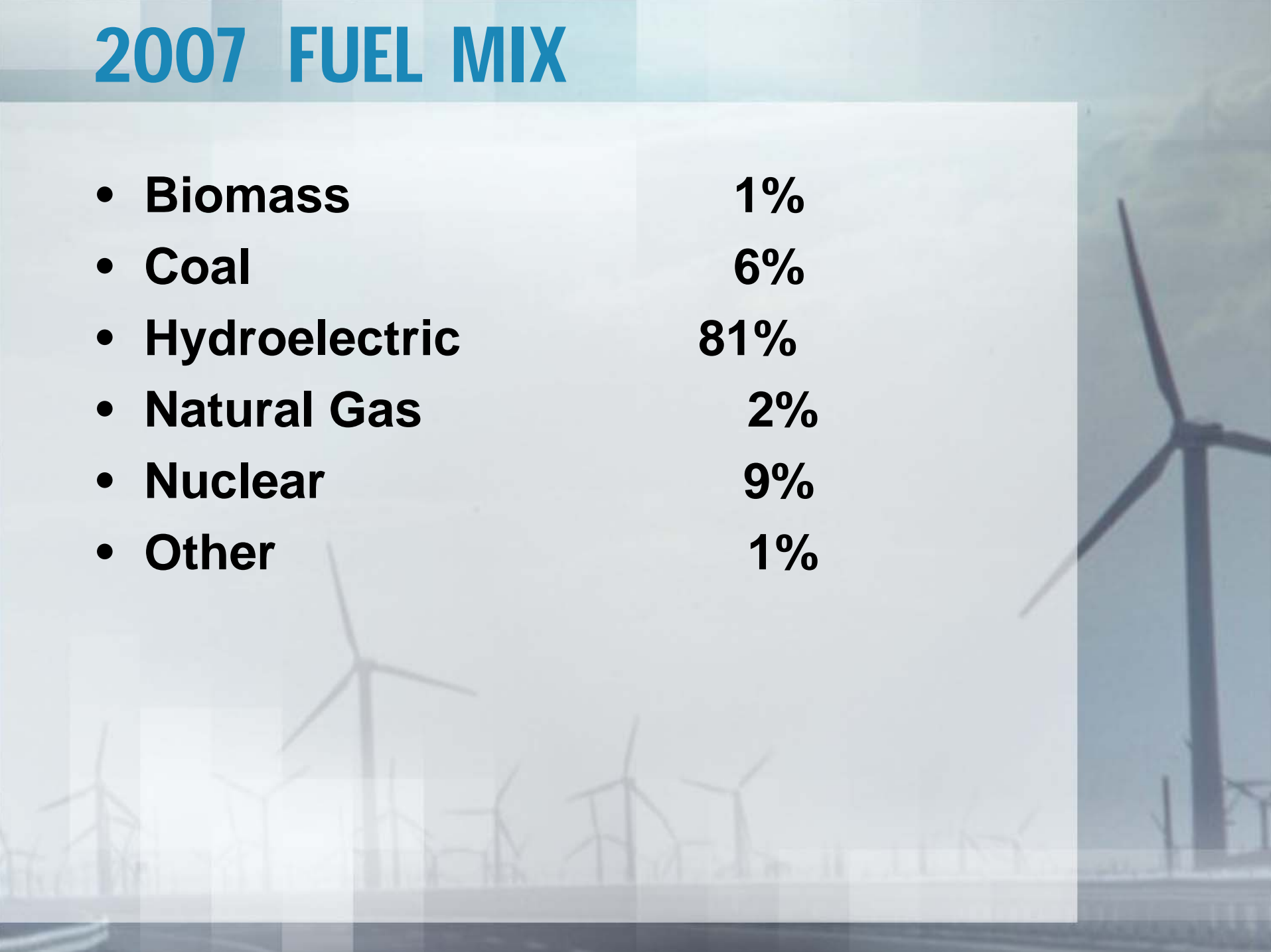
# 2007 Sources of Energy

- **BPA – over 85%**
- **Jackson Hydroelectric Project - 4%**
- **Kimberly-Clark Cogeneration and Hampton Biomass Projects - 3%**
- **Klickitat County PUD Landfill Gas - 1%**
- **Other Long Term Contracts - 4%**

[Beginning in 2008, the PUD began adding its first wind energy purchases]

# 2007 FUEL MIX

- **Biomass** 1%
- **Coal** 6%
- **Hydroelectric** 81%
- **Natural Gas** 2%
- **Nuclear** 9%
- **Other** 1%



# Key Initiatives - Conservation

- Reduces our need for new resources by 50% over the next 20 years
- Also aligns with State Initiative 937 – Conservation and Renewable Portfolio Standard
- Truly is our lowest cost, lowest risk, and least environmental impact resource
- And it is the right thing to do: economic stewardship
- Full support and commitment from the PUD GM & Commissioners



# Conservation Programs

- **Commercial & Industrial**

- Cash Incentives for Efficiency Retrofits
- Cash Incentives for New Construction
- Cash Rebates
  - Kitchens
  - Small Lighting
  - Network PC Power Management
- Also working on RCM and Tuning, Operations & Maintenance programs
- PowerTrend Tool



# Conservation Programs

- **Residential – *nearly a 30 year history***
  - Weatherization, Windows & Heating Efficiency
  - Appliance Rebate
  - CFL Coupons
  - Refrigerator/Freezer Recycling
  - New construction Energy Star
  - Low Income Housing Improvement
  - Energy Hotline Assistance
  - Green Energy Credits



# Key Initiatives - Tidal

- Received \$1.2 million in funding from US Dept. of Energy
- \$475,500 allotment from Senate Energy & Water Development Committee
- \$484,000 in grants from the BPA
- Anticipated capacity of 1 aMW by 2016 and 5 aMW by 2020



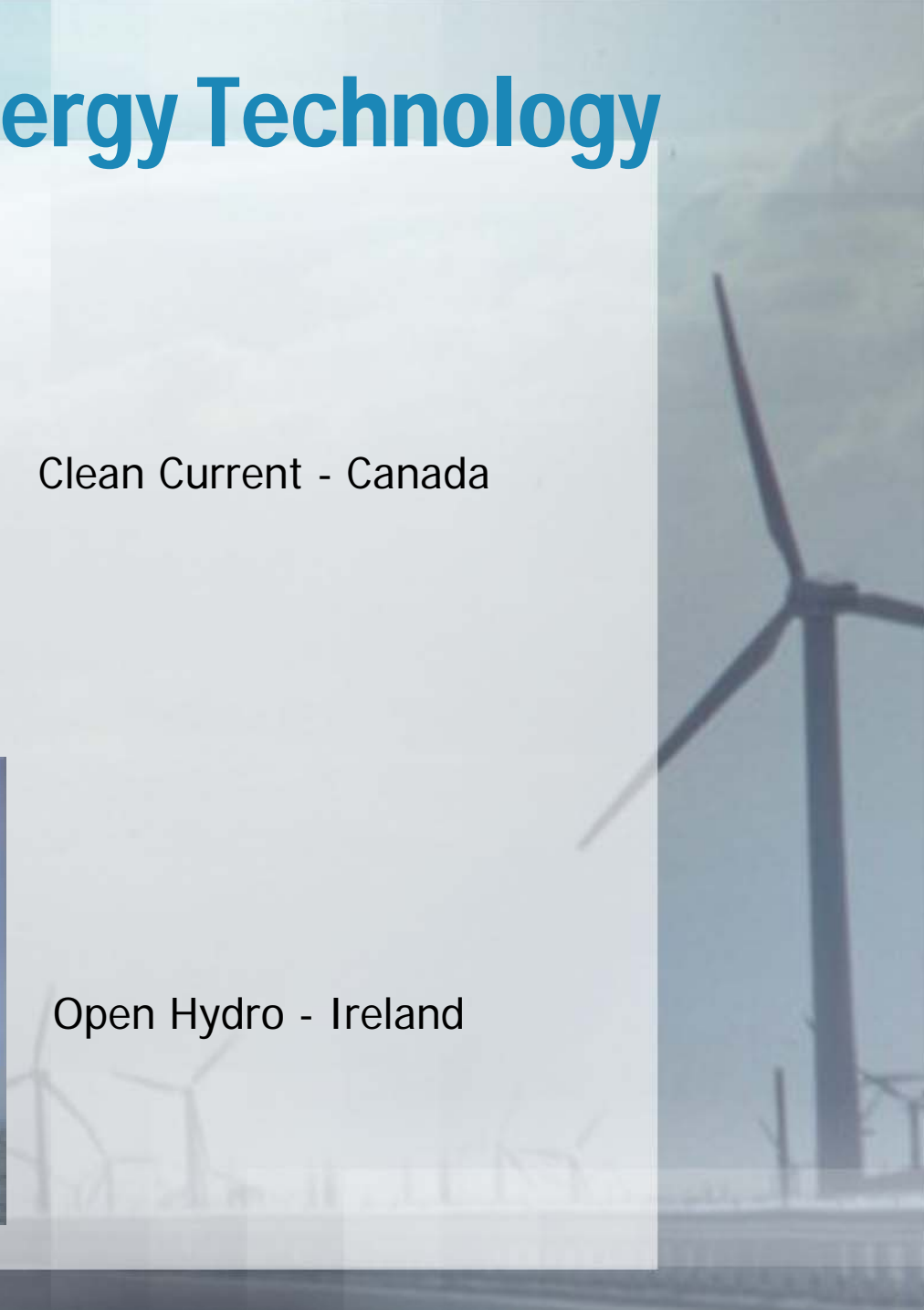
# Key Initiatives Energy Technology



Clean Current - Canada



Open Hydro - Ireland



# Key Initiatives - Geothermal

- Received grants from the House Appropriations Committee for research
- Completed preliminary assessment of the Cascade Mountain region
- Currently developing next phase our geothermal exploration plan
- Anticipated capacity of 30 aMW by 2016 and 90 aMW by 2020



# Key Initiatives - Wind

- **White Creek Wind Project**
  - Long-term power purchase agreement for 20 MW capacity. Began receiving wind in January 2008.
- **Wheat Field Wind Project**
  - Long-term power purchase agreement for 97 MW capacity. Will begin receiving wind April 2009.
- **Hay Canyon Wind Project**
  - Long-term power purchase agreement for 100 MW capacity. Began receiving wind in March 2009.



# Wheat Field Wind Project



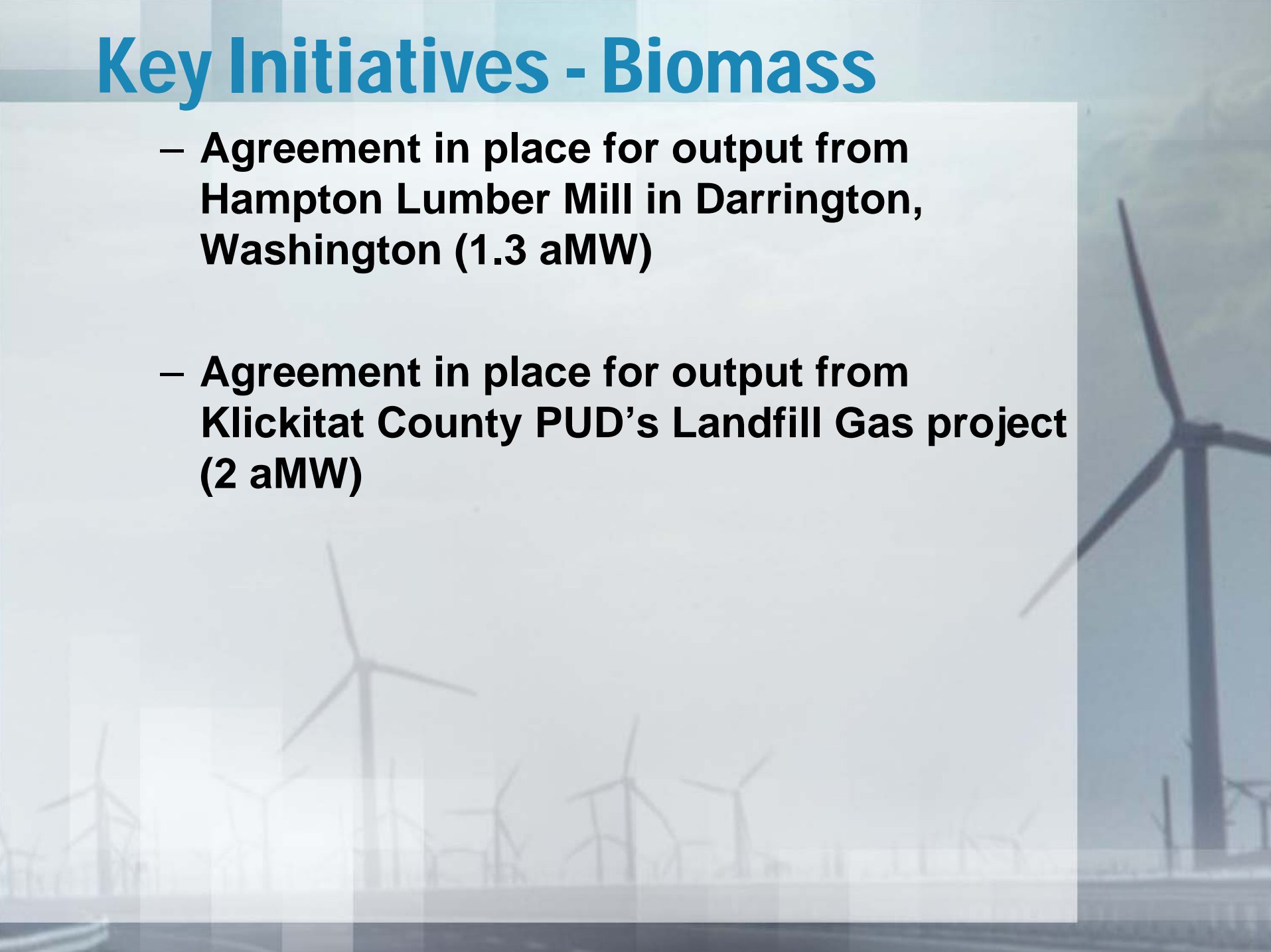
# Renewable Target for I-937

- **Requires utilities with loads above 25 MW to achieve all cost-effective conservation and to serve an increasing percentage of the utility's load with renewable resources.**
- **For Snohomish PUD, our targets are:**

Year	I-937 Target	aMW Target
2012	3%	26
2016	9%	80
2020	15%	137

# Key Initiatives - Biomass

- Agreement in place for output from Hampton Lumber Mill in Darrington, Washington (1.3 aMW)
- Agreement in place for output from Klickitat County PUD's Landfill Gas project (2 aMW)



# HAMPTON CO-GEN PLANT



# Key Initiatives – Low Impact Hydro

- Purchased Woods Creek, a 650 kW capacity project located east of Sultan.
- Acquired partially constructed Youngs Creek Hydroelectric Project (7.5 MW capacity), located east of Sultan. Construction to be completed by late 2011.
- Own 20% share of the Packwood Hydroelectric Project, a 27.5 MW capacity project (~2 aMW) operated by Energy Northwest.
- Also purchasing additional 7 aMW from Packwood project through 2011.
- Assessing opportunity for other economically viable small hydro projects.



# Woods Creek



# Key Initiatives - Solar

- **\$1 million solar program that provides incentives to customer to install small-scale projects**
- **Launched program March 26, 2009**
- **Green Power to fund solar demonstration projects on local public buildings**



# PUD's INTERNAL GREEN COMMITMENT

- The PUD formed an employee “Green Team”
- Recycle ~70% of total waste stream (everything from motor oil to office paper to batteries)
- Installing Energy Efficiency Measures in Buildings
- A National Leader in distribution system efficiencies
- Purchasing High Efficiency “80 Plus” Computers
- Purchased 6 Hybrid Cars
- Purchasing Hybrid Service Truck in 2010
- Over the past 25 years, the PUD has:
  - Conducted 90,000+ residential energy audits
  - Weatherized 60,000+ homes
  - Enrolled 3,400 customers in our Planet Power program



# Questions & Comments



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