



Department of Commerce
Innovation is in our nature.



Renewable and Conservation Portfolio Standards – Industrial Opportunities

Chuck Murray
NASEO Conference Fall 2013

PNW Conservation History

- Since 1980, **half of the growth in demand** for electricity in the Northwest has been met with energy efficiency.
- As a result of the conservation savings, we didn't have to build 8-10 new coal- or gas-fired generating plants. This means we emitted 15 million tons less carbon-dioxide in 2008 alone.
- The average cost of these savings to utilities has been **less than 2 cents per kilowatt-hour**, which is less than the roughly 3 cents per kilowatt-hour the Bonneville Power Administration currently charges its electric-utility customers. Energy efficiency costs about 20 percent as much as wind power, which currently costs 8 to 12 cents per kilowatt-hour.
- Because consumers didn't have to buy 4,000 average megawatts of electricity **in 2008, they paid \$1.8 billion less for electricity** — even after accounting for the cost of energy-efficiency programs in their electric rates.
- NWCouncil.org



WA Energy Independence Act (EIA or I-937)

Established By Ballot Initiative 937 (2006)

WA electric utilities > 25,000 customers

Conservation

- all available conservation that is cost-effective, reliable, and feasible.

Renewable Generation

- 3%-2012
- 9%-2016
- 15% -2020
- Cost cap option – when the incremental cost of renewable energy is 4% of retail revenue



WA Energy Independence Act - Conservation

(1) Each qualifying utility shall pursue all available conservation that is cost-effective, reliable, and feasible.

(a) By January 1, 2010, using methodologies consistent with those used by the Pacific Northwest electric power and conservation planning council in its most recently published regional power plan, each qualifying utility shall identify its achievable cost-effective conservation potential through 2019. At least every two years thereafter, the qualifying utility shall review and update this assessment for the subsequent ten-year period.

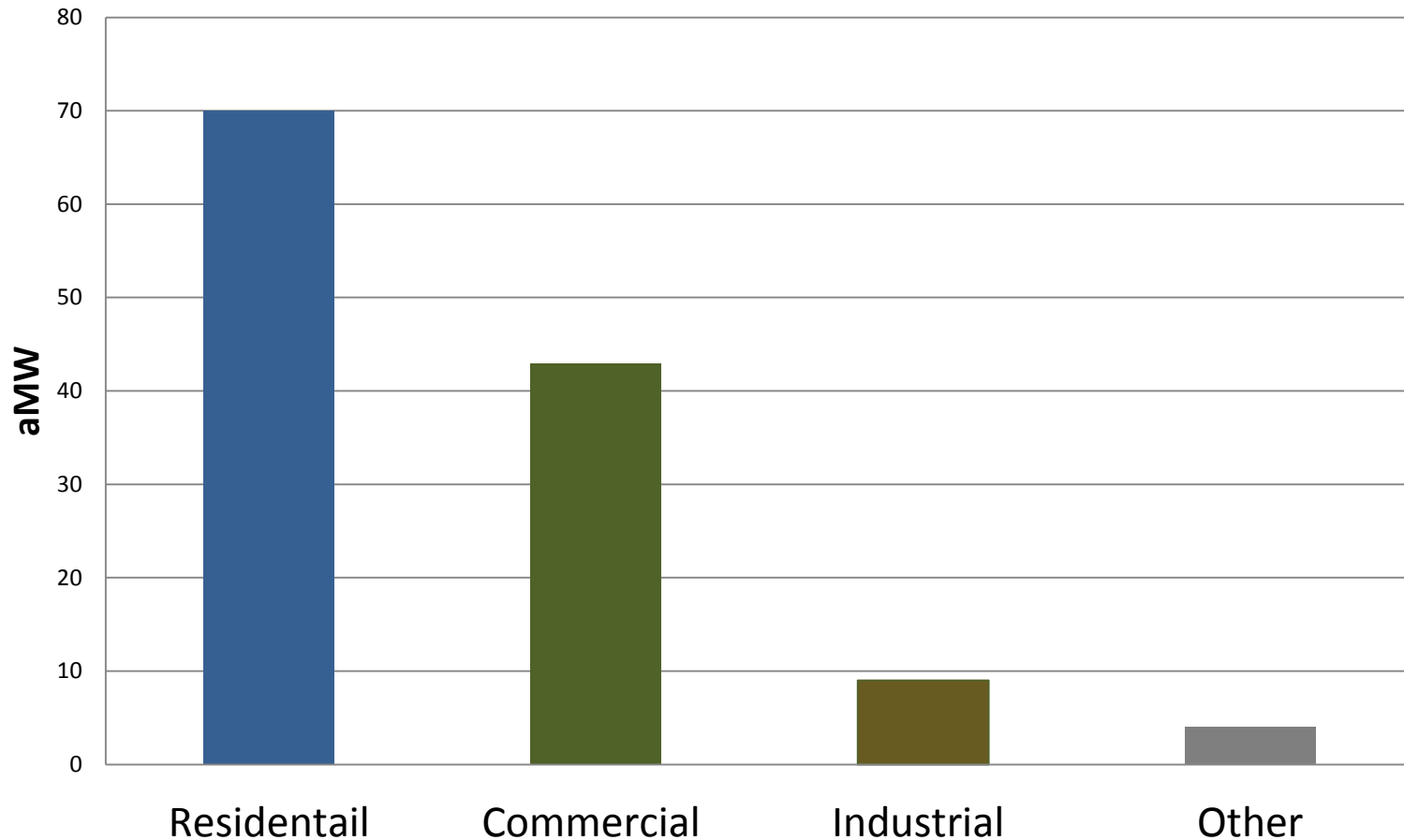
(b) Beginning January 2010, each qualifying utility shall establish and make publicly available a biennial acquisition target for cost-effective conservation consistent with its identification of achievable opportunities in (a) of this subsection, and meet that target during the subsequent two-year period. At a minimum, each biennial target must be no lower than the qualifying utility's pro rata share for that two-year period of its cost-effective conservation potential for the subsequent ten-year period.

\$50 MWh penalty for non compliance



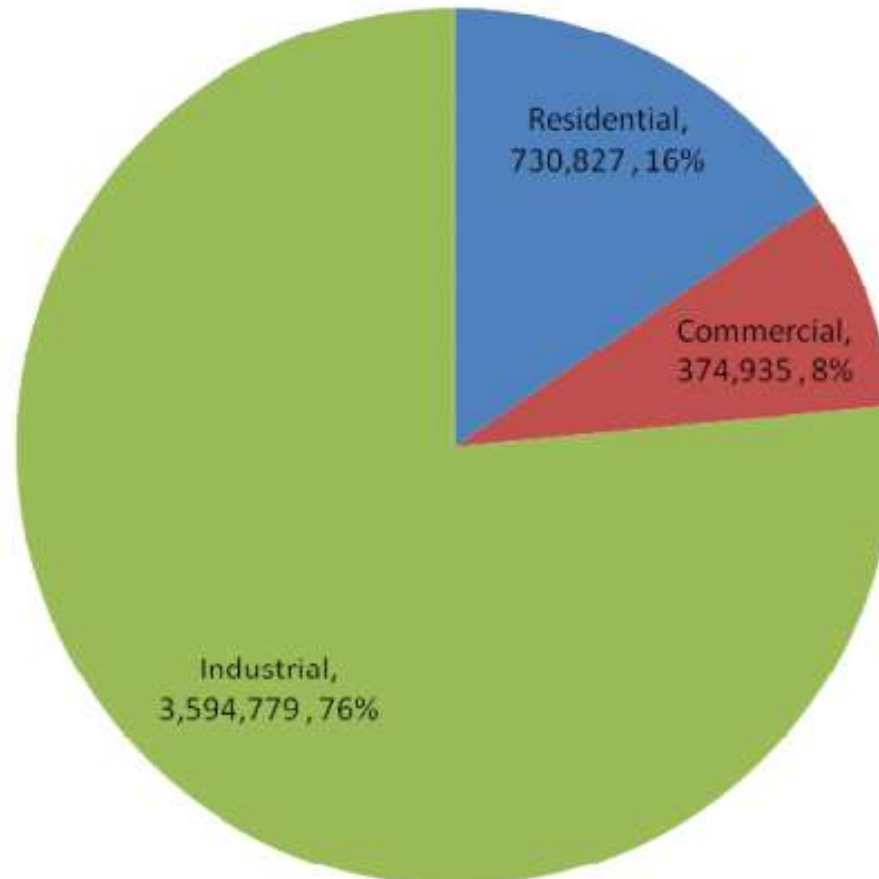
Utility Conservation 10 year Potential

(Snohomish PUD mid range estimate)



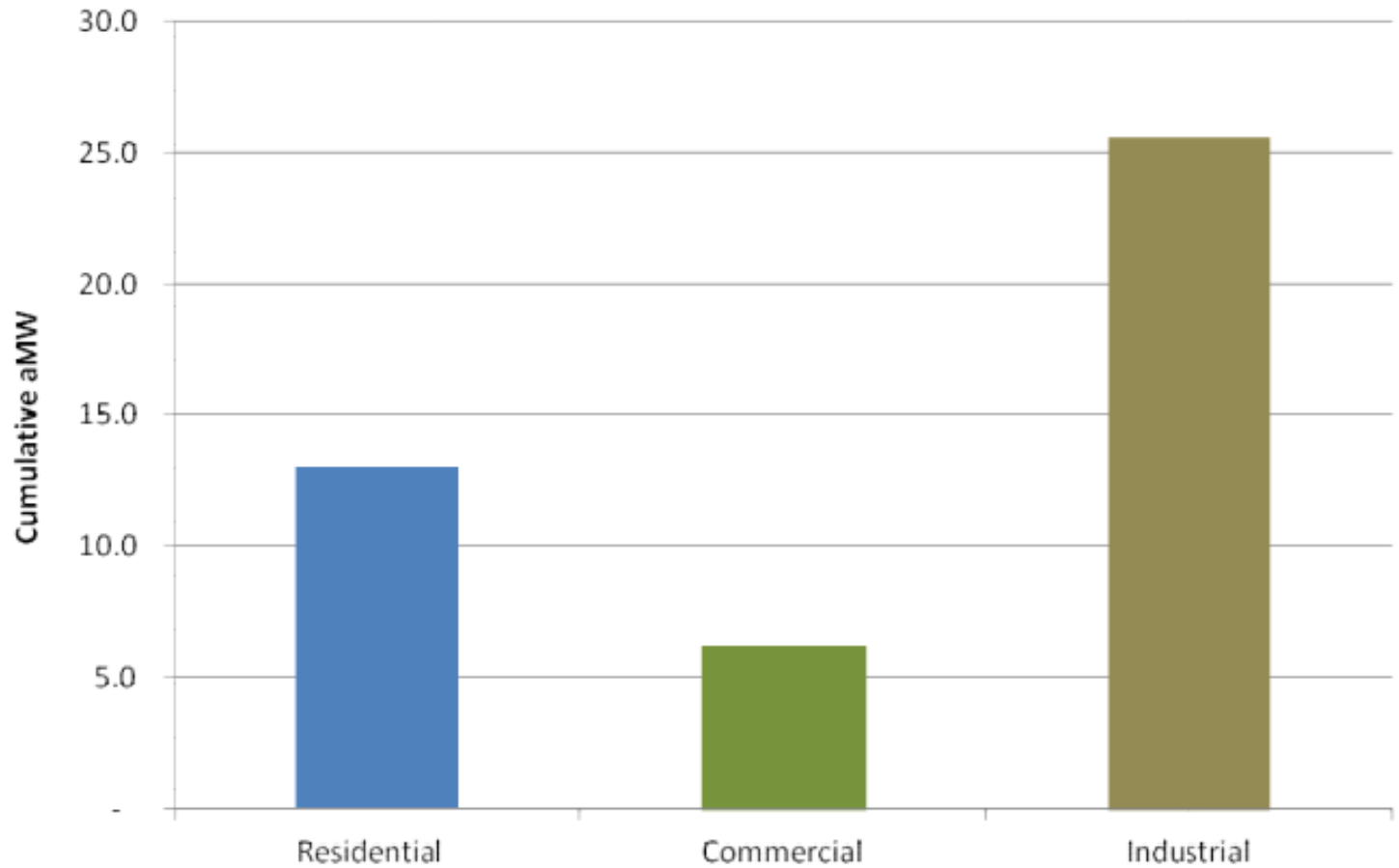
Cowlitz PUD Loads

Figure ES-2 Sector-Level Electricity Use, MWh, 2010



Cowlitz PUD Conservation Potential

Figure ES-7 Achievable Potential by Sector, 2021



***“NORPAC, BPA, and Cowlitz PUD
Partner on Largest Ever Northwest
Energy Efficiency Project”***





“NORPAC, BPA, and Cowlitz PUD Partner on Largest Ever Northwest Energy Efficiency Project”

North Pacific Paper Corporation

“Chip Pre-Treatment Interstage Screen Project”

These refining machines are driven by numerous electric motors that require thousands of connected horsepower, which makes the refining process very energy intensive.

New wood chip pre-treatment uses steam and chemicals to reduce pulp bleaching and brightening cost.

The inter-stage screening process now allows paper-ready fibers (wood fibers that do not require additional refining) to bypass the second stage of refining, which results in significant electrical energy savings.





“NORPAC, BPA, and Cowlitz PUD Partner on Largest Ever Northwest Energy Efficiency Project”

North Pacific Paper Corporation

Bonneville Power Administration \$21 million

Cowlitz County PUD \$3.9 million

NORPAC is funding the remaining \$35 million

Estimated Savings 100,000,000 kilowatt-hours per year.

Enough Savings to Power 8000 homes

Cowlitz PUD books 11 of 25 aMW potential

Sets a new bar for “achievable” conservation




EIA Cogeneration as Conservation

Each qualifying utility shall pursue all available conservation that is cost-effective, reliable, and feasible.

(c) In meeting its conservation targets, a qualifying **utility may count high-efficiency cogeneration owned and used by a retail electric customer to meet its own needs.**

The reduction in load due to high-efficiency cogeneration shall be ... counted towards meeting the biennial conservation target in the same manner as other conservation savings.





“Seattle City Light teams up with biggest customer, Nucor, to turn wasted heat into power”

Nucor is SCL’s largest customer - \$23 million per year

Nucor will spend \$3.5 million to bring a 1.1 megawatt capacity ORC generator online, which can produce a maximum of 5,450 megawatt-hours per year.

Under a 12 year contract, SCL will pay 2 cents per kilowatt-hour produced by Nucor.

2 cents is similar to other conservation spending



EIA Renewables

wind;
solar energy;
geothermal energy;
landfill gas;
wave, ocean, or tidal power;
gas from sewage treatment facilities;
biodiesel fuel
Biomass

- commences operation after March 31, 1999
- some major rebuilds have been deemed “new”



EIA Renewables CHP?

wind;

solar energy;

geothermal energy;

landfill gas;

wave, ocean, or tidal power;

gas from sewage treatment facilities;

biodiesel fuel

Biomass





“Nippon Paper invests \$71M in 20MW biomass project in Washington state”

The new boiler serves two purposes. It drives a turbine to generate 20 MW of electric power and is then extracted at lower pressures and transported to the plant where it is used for drying in papermaking operations

The 160,000 tons of biomass required per year will be supplied by waste wood from the paper making process and import slash from the surrounding area – mostly from state forest

Generation is eligible renewable power under the EIA



Distributed Generation

"Distributed generation" means an eligible renewable resource where the generation facility or any integrated cluster of such facilities has a generating capacity of not more than **five megawatts**.

A qualifying utility may count **distributed generation at double the facility's electrical output** if the utility: (i) Owns or has contracted for the distributed generation and the associated renewable energy credits; or (ii) has contracted to purchase the associated renewable energy credits.





“Second Lynden-area digester to begin producing electricity from cow manure”

“The digester, located west of Lynden, will take manure from more than 2,000 dairy cows in Whatcom County, trap methane gas from 1.5 million gallons of manure decomposing in a tank, and burn the gas to generate electricity”





For more information

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Resources:

WA Energy Independence Act

<http://www.commerce.wa.gov/Programs/Energy/Office/Utilities/Pages/default.aspx>

NW Power Plan

<http://www.nwcouncil.org/energy/powerplan/>