

Washington Utilities and Transportation Commission

Mission Statement
The WUTC protects consumers by ensuring that utility and transportation services are fairly priced, available, reliable, and safe.



Efficiency Resources in Washington State

Nicolas Garcia
Policy Advisor

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Energy Efficiency in WA *The Pacific Northwest is Different*



- Vast amounts of hydro power¹
 - average water year: 16,000 aMW
 - critical water year: 12,000 aMW
 - Serves about 60% of WA load
- Vast amounts of *inexpensive* hydro power
 - retail rates averaged less than \$0.04/kWh throughout the 1990's
- Hydro power is very versatile – can easily follow load

¹ Northwest Power and Conservation Council's Fifth Power Plan

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Energy Efficiency in WA

First Stage – 1980s



RCW 80.28.025(1) Encourage Energy Conservation

The commission shall adopt policies to improve the efficiency of energy end use, (and encourage renewable resources).

These policies shall allow a 2% additional return on investment for energy efficiency measures.

To qualify the energy efficiency measure's cost per unit of energy delivered must be less than or equal to that of conventional energy resources.

Law sunset in 1990.

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Energy Efficiency in WA

Second Stage – 1990 - 1993



1987 WUTC adoption of Least Cost Planning rule

1990 Legislature extended the 2% incentive return for conservation in support of building codes

1992 Puget Power Rate Case Settlement

Puget agreed not to seek the 2% incentive return

Settlement included a Periodic Rate Adjustment Mechanism (PRAM) – a type of decoupling

Settlement also included a conservation incentive mechanism. Puget ultimately received a \$7M shareholder bonus for \$60M efficiency investment

Washington Water Power No incentive

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Energy Efficiency in WA

Third Stage – 1994 -1999



Expected Shift to Market Competition – Tariff Rider

Washington Water Power: Nation's first System Benefit Charge (a distribution surcharge of about \$1/month):

"WWP could have responded to competitive pressures by abandoning energy efficiency investments. Instead, recognizing the customer and shareholder value inherent in cost-effective energy savings, the company looked for and found a new solution..."

– Ralph Cavanaugh

Puget Power

- 1995 PSE issued \$200M in conservation bonds
- 1996 PRAM discontinued
- 1997 PSE adopted a tariff rider

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Energy Efficiency in WA

Fourth Stage – 2000-2001



West Coast Energy Crisis

PSE

- Spent \$14.8M on conservation. Acquired 19.3 aMW of conservation.
 - Had projected to spend ~\$8M and get 6.6 aMW

Avista

- 7 emergency programs. Acquired 16.4 aMW
- Spent \$12.4M more on conservation than collected by the tariff rider.
 - Had projected to spend ~\$8M and get 4 aMW

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Energy Efficiency in WA

Fourth Stage – 2000-2001



West Coast Energy Crisis -- Demand Response

PSE

- Personal Energy Management – TOU
Average customer shifted about 14kWh per month to off-peak periods
- Electricity Conservation Incentive Credit
Monthly savings about 120,000MWh

Avista

- Energy Buy-Back – saved about 43,000MWh/month

PacifiCorp

- Customer Energy Challenge – saved 29,000MWh

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Energy Efficiency in WA

Fifth Stage – 2002-present



Recovery

Post 2001 Conservation largely driven by IRPs.

Planning All utilities have improved their ability to integrate DSM potential modeling into resource planning.

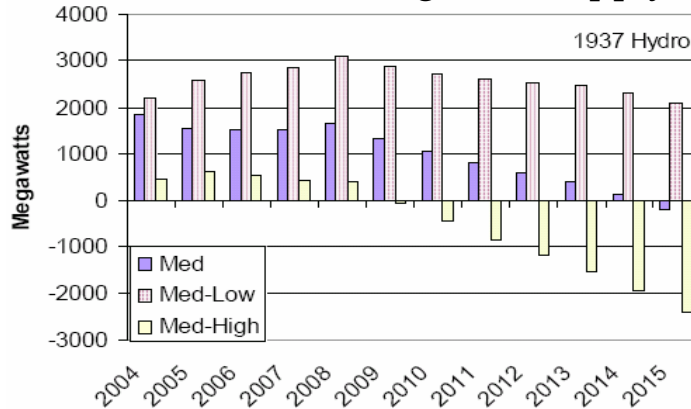
PSE

- As a result of a 2002 settlement stipulation, subject to financial penalties for not meeting savings targets.

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Energy Efficiency in WA Sixth Stage 2006-???

Demand is closing in on supply



Northwest Power and Conservation Council's Fifth Power Plan

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Energy Efficiency in WA Sixth Stage 2006-??

High Energy Prices

PSE's Energy Efficiency RFP:

- **Resource Programs:** Install of high-efficiency equipment and technologies at customer premises. Minimum project size 5,000 MWh/year savings within 2 years.
- **Pilot Projects:** Small-scale programs to introduce new energy efficiency measures or to deliver programs to market segments with low historic participation rates.

2005 Savings target: 20 aMW

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Energy Efficiency in WA

Sixth Stage 2006-?



High Energy Prices

Avista

Determined it needed a 10-25% increase in conservation funding to support its 2005 IRP:

- **Pilot Projects:** Air conditioning, lighting as well as large commercial and industrial specific projects.

Savings Target: 5.5 aMW

Energy Efficiency in WA

Future Steps



PSE 2006 - 2025 Electric Technical and Achievable Potential

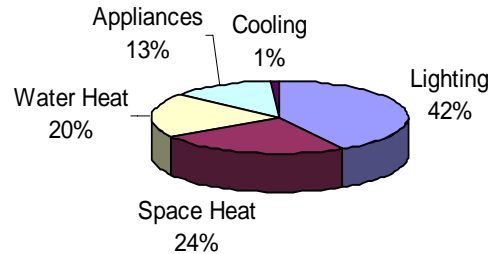
Sector	2025 Total Load (aMW)	20-Year Cumulative Potential	
		Technical	Achievable
Residential	1,450	375.8	133.4
Commercial	1,578	503.7	147.6
Industrial	158	15.9	15.9
Total	3,186	895.4	296.9

From PSE's 2005 Least Cost Plan

Energy Efficiency in WA

Future Steps

Distribution of Electric Conservation Potential for Residential Customers



Energy Efficiency in WA

Future Steps

PSE Demand-Response Potentials Summary - 2025

Sector	Direct Load Control	TOU	Critical Peak	Curtailement Contracts	Demand Buy-Back
Industrial					
Technical Potential (MW)	-	4.9	19.8	12.2	14.8
Achievable Potential (MW)	-	1.7	7.4	2.7	4.4
Commercial					
Technical Potential (MW)	-	14.8	164.5	66.4	75.5
Achievable Potential (MW)	-	5.2	72.1	14.9	22.6
Residential					
Technical Potential (MW)	381.3	121.5	202.5	-	-
Achievable Potential (MW)	95.3	42.5	75.9	-	-
Total*					
Technical Potential (MW)	381	141	387	79	90
% of System Peak	11.20%	4.10%	11.40%	2.30%	2.70%
Achievable Potential (MW)	95	49	155	18	27
% of System Peak	2.80%	1.50%	4.60%	0.50%	0.80%
Average Cost (\$/kW)	\$55.00	\$44.10	\$21.60	NA	NA
Average Cost (\$/mWh)	NA	NA	NA	\$154.70	\$154.70

Energy Efficiency in WA

Policy Observations



Conservation programs must be compatible with system characteristics

All rate designs create incentives – make sure the incentives you create align with your desired outcome.

Consumer education and knowledge are important parts of any conservation strategy

New programs must be carefully design so that their effects can be reliably measured₁₅

Energy Efficiency in WA

Policy Observations



Participation by interest groups helpful

Learn from others

Retain minimum level of commitment to conservation to keep program viable

Pick your CEOs wisely