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# Green Power Programs in Washington: 2006 Report to the Legislature

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# Green Power Programs in Washington: 2006 Report to the Legislature

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## Executive Summary

Washington State RCW 19.29A.090 directs larger electric utilities to offer their customers a green power electricity product - electricity that comes from environmentally benign sources such as wind, solar, landfill gas and other sources identified in the statute - which customers may purchase voluntarily. The law asks utilities to report annually on the progress of these voluntary green power programs to the Washington Utilities and Transportation Commission (WUTC) and the Department of Community, Trade and Economic Development (CTED). This is the fifth reporting year.

The following are key findings:

- All 16 utilities affected by the law have submitted data for this report. All but one utility has an active program with customers participating. Two additional utilities, Orcas Power and Light and Pacific County PUD #2, voluntarily operate green power programs; their data are included in this report.
- Between January and September 2006, customers purchased 209,664,821 kilowatt-hours (kWh), or 23.9 average megawatts (aMW), of green power through voluntary green power programs. The estimated annual 2006 green power sales represent a 67 percent increase over 2005 sales.
- Wind-powered electricity represented 87 percent of the year-to-date (ytd) green power sales, or 182,756,786 kilowatt-hours (20.86 aMW).
- 31,909 utility customers in Washington are participating in these voluntary utility programs. This is a 9 percent increase in customer participation since 2005.
- Several utilities have bulk power prices to allow their large customers to secure high-volume green power purchases. Participants include state universities, military bases, government buildings, businesses and municipalities. The success of the bulk-power programs is evidenced in 2006 by a 67 percent increase in the program sales with only a 9 percent increase in the number of participating customers.

Apart from these green power programs, in 2005 Washington's electric utilities included in their standard rate base power sales to all of their retail customers 49.2 aMW of wind power, 67 aMW of biomass fueled electricity and 8.8 aMW of electricity generated from landfill gas. Non-hydropower renewable electricity sales from rate-based electricity sales in 2005 combined with 2005 voluntary green program sales are about 157 aMW or 1.84 percent of total utility retail electricity sales in Washington.

## Introduction

Engrossed House Bill 2247, enacted in 2001<sup>1</sup> and codified as RCW 19.29A.090, requires certain electric utilities in Washington State to offer their retail customers an option to purchase qualified alternative energy resources -- often referred to as “green power.”<sup>2</sup> RCW 19.29A.090 also requires the electric utilities to report annually to the UTC and CTED the details of their green power programs between 2002 and 2012. Upon receiving the data each year, the agencies must prepare and submit a report to the Legislature. This report provides an update on 2005 performance of green power programs using data for the full year, as well as January through September data for 2006. It gives a summary of each utility’s program, participation levels, program revenues and electricity sales.

To assist the utility reporting process, CTED surveyed the 16 consumer-owned and investor-owned electric utilities required to respond. Two smaller utilities, Orcas Power and Light and Pacific County PUD #2, responded voluntarily.

## Background

RCW 19.29A.090 gives utilities two options to provide their customers with qualified alternative energy resources: green power –the actual electricity produced by green power resources – and green tags. Green tags, often called “renewable energy credits,” are a type of currency used in the electricity industry to represent the environmental and social benefits of clean electricity production. They are separated from the electricity produced and is sold as a distinct product. A green tag represents the environmental attributes equivalent to a specific amount of electricity produced by renewable resources.

With green tags, the purchaser does not need to schedule or transmit the green power to a specific distribution utility or customer. Avista, Clark County PUD, Cowlitz County PUD, PacifiCorp, Puget Sound Energy, Seattle City Light, Snohomish County PUD and Tacoma Power sell green tags for their green power programs.

In 1999, the Bonneville Power Administration (BPA) began to sell a resource-specific electricity product, referred to as Environmental Preferred Power or EPP, to wholesale customers. EPP included a mix of renewable resources except large-scale hydropower. A small group of electric utilities in Washington began purchasing EPP prior to the establishment of green power programs and continue to purchase it. This

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<sup>1</sup> L2001, ch. 214.

<sup>2</sup> The requirement is codified in RCW 19.29A.090. A “qualified alternative energy resource” is electricity produced from generation facilities fueled by wind, solar energy, geothermal energy, landfill gas, wave or tidal action, gas produced during the treatment of wastewater, qualified hydropower or biomass. Small (or rural) utilities were exempted. A “small utility” is any consumer-owned utility with 25,000 or fewer electric meters in service, or that has an average of seven or fewer customers per mile of distribution line.

product ensured that BPA's utility customers had ready access to a specific green power product. Clallam County PUD, Orcas Power and Light and Peninsula Light purchased EPP in 2005. Pacific County PUD began purchasing in 2006.

## Overview of Survey Results

All utilities had green power programs in 2006. All programs but one, Grant County PUD, appear active. Table 1 summarizes state-level results for 2002 through 2005 plus an annualized estimate based on the first nine months of 2006. Total participation, revenue and kilowatt-hour sales have increased each year of the program.

**Table 1 - Washington State Summary Data**

	2002	2003	2004	2005 <sup>3</sup>	2006*	factor increase since 2002	% change since 2005
Total kWh sales of green power	19,762,528	51,924,642	104,435,100	167,600,236	279,553,095	16.3x	67%
Total Revenue from green power programs	\$ 632,282	\$1,254,067	\$ 1,911,861	\$ 2,689,387	\$ 4,113,187	6.5x	53%
Total number of participants	12,196	17,795	26,341	29,187	31,909	2.7x	9%

\* Annual 2006 estimate is based on extrapolating actual data for January through September.

Some utilities are noticing rapid growth in green power purchases by large commercial customers. Seattle City Light sold nearly 5 million kwhs to two large customers in 2005 and over 22 million kwhs to four large customers in 2006. In 2005, Puget Sound Energy (PSE) had 6 large customers with annual purchases totaling 58 million kwhs. In 2006, five additional companies increased the annual purchases by another 8 million kwhs. PSE anticipates 40 million additional kwhs will be purchased annually beginning in 2007. Cowlitz County PUD and Tacoma Power both sold over 70 percent of their green power to large customers. Additionally, Clallam County PUD, Clark County PUD, PacifiCorp, Snohomish County PUD and Pacific County PUD all sold bulk quantities of green power to large customers in 2005 and/or 2006.

<sup>3</sup> 2005 data have been revised from the Green Power Program in Washington: 2005 Report to the Legislature to reflect complete 2005 data reported this year.

**Figure 1 - Washington State Total Green Power Program Sales and Number of Program Participants**

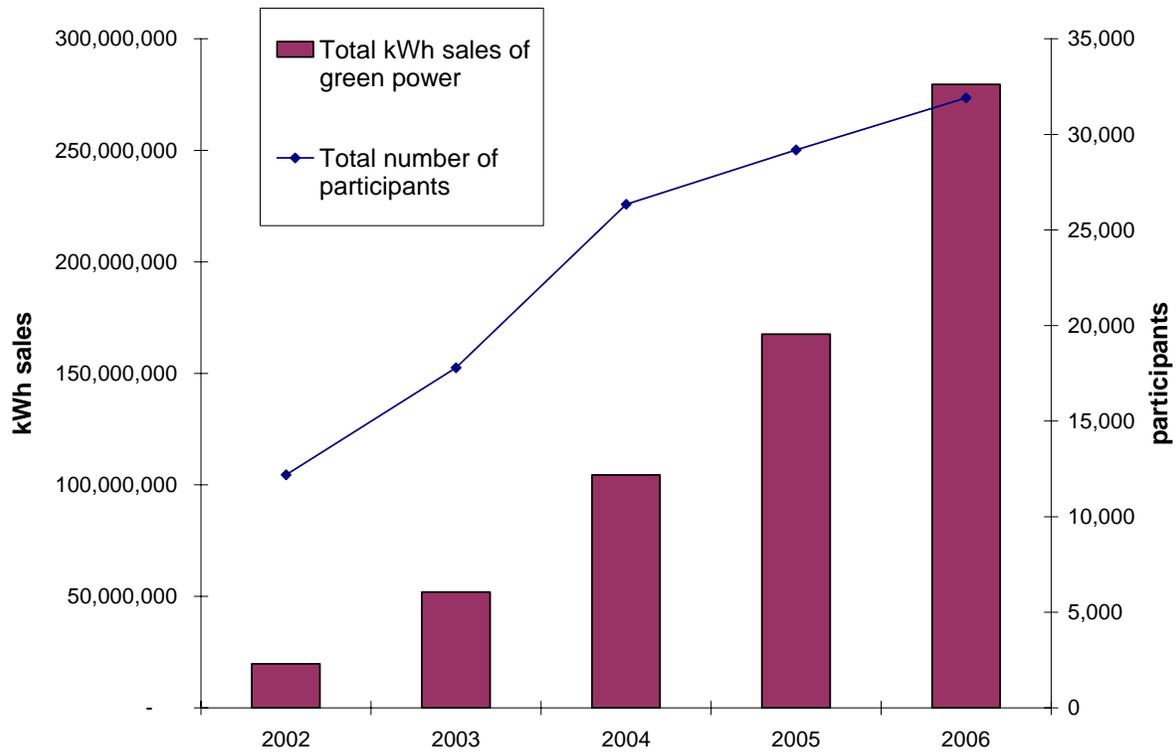


Table 2 describes each utility’s program by name and price. The programs are offered to all customers. The products vary in price, ranging from Avista’s low of \$0.003 per kWh to Chelan’s high of \$0.27 per kWh. Most Washington utilities offer a “block” option to participants in their green power programs. A “block” of power refers to a specific number of kWh combined into a block; the participant pays a flat rate for each block of power. Customers have the option of buying any amount of blocks of green power each month. For example, Avista markets its program as a “Buck a Block” selling 300 kWh of wind power in one block for \$1.00. Benton County PUD has a contribution-based program in which participants contribute to the higher cost of blending green power into the utility’s general electricity mix which is sold to all customers. The additional green power is not sold separately on a per-kWh basis to the participants.

**Table 2 - Description of Utility Green Power Programs**

Avista	Buck-A-Block	\$1 per 300 kWh block
Benton County PUD	Green Power Program	Unrestricted donation toward green power blended with electricity sold to all customers.
Chelan County PUD	SNAP - Sustainable Natural Alternative Power	\$0.27 per kWh
Clallam County PUD	No name	\$.069 per kWh. This price includes actual electricity whereas other utility programs reflect only the incremental cost of green power.
Clark County PUD	Green Lights Program	\$1.50 per 100 kWh block
Cowlitz County PUD	Renewable Resource Energy Program	\$13.00 per 1,000 kWh block
Grant County PUD	Alternative Energy Resources	\$2.00 per 100 kWh block
Grays Harbor County PUD	Green Power Program	\$3.00 per 100 kWh block
Lewis County PUD No 1	Green Power Program	\$2.00 per 100 kWh block
Mason County PUD #3	Mason Evergreen Power	\$2.00 per 100 kWh block
Orcas Power and Light Cooperative	Go Green	\$3.50 per 100 kWh block
PacifiCorp	Blue Sky - Standard Option	\$1.95 per 100 kWh block
	Bulk Option	Price is based on a sliding scale. \$.70 per 100 kWh/block plus a fixed charge of \$125 per month. Washington non-residential customers can choose either the standard block or the bulk pricing option.
Peninsula Light Company	Green by Choice	\$2.80 per 100 kWh block
Puget Sound Energy	Green Power Plan	Minimum: \$4.00 per 200 kWh block. Additional: \$2.00 per 100 kWh blocks.
	Bulk Option	\$0.01 per kWh
Seattle City Light	Seattle Green Power (original program)	Contribution based
	Seattle Green Up (new program)	\$.015 per kWh
Snohomish County PUD	Planet Power	\$3.00 per 100 kWh block
Tacoma Power	EverGreen Options	\$.015 per kWh
	Bulk Option	\$.006 per kWh
Pacific County PUD #2	Green Power	\$1.05 per 100 kWh block

## Statewide Green Program Fuel Resources

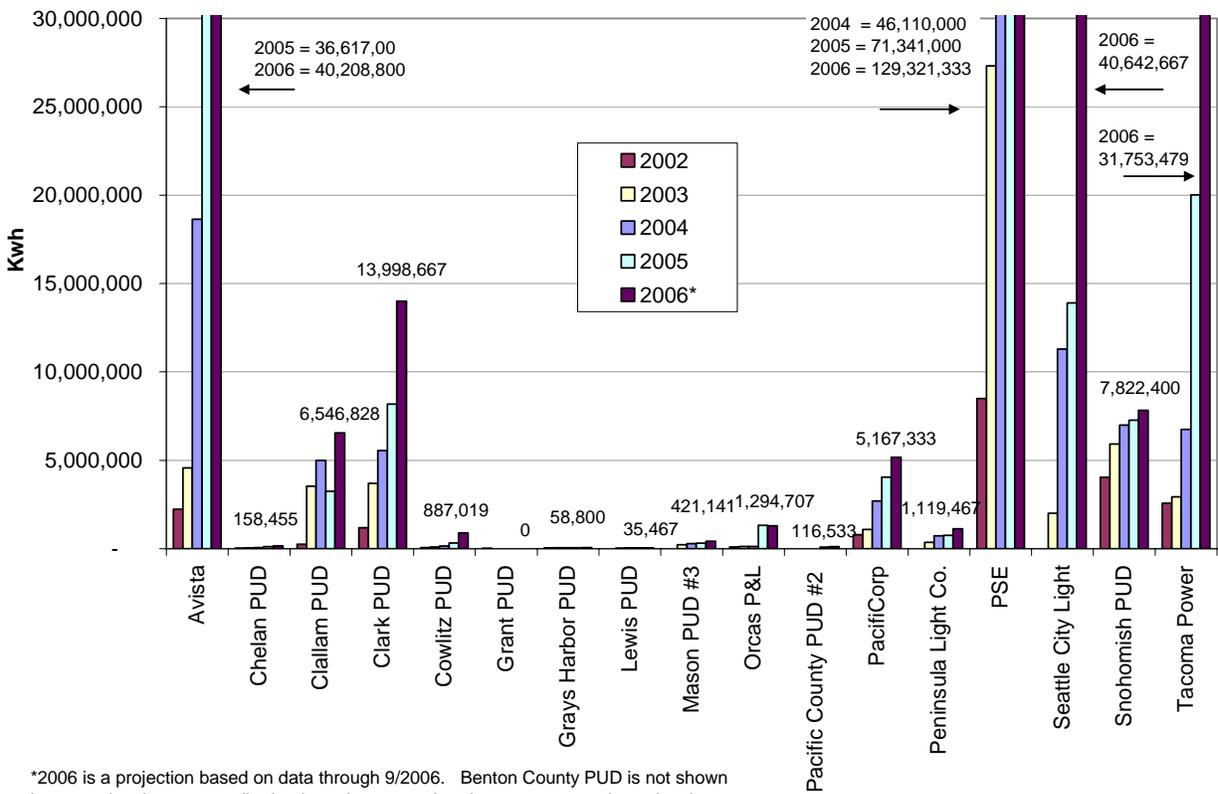
Between January and September 2006, total green power program sales were 209,664,821 kWh (23.9 aMW). Eighty-seven percent of the power offered in these programs is wind power. The total quantity of wind-generated power sold through the

programs was 182,756,786 kWh. The programs also sold 19,182,995 kWh generated from landfill gas, 5,287,756 kWh of electricity generated from dairy biogas and biomass, 1,928,627 kWh of endorsed hydro-electricity and 508,657 kWh of solar electricity.

## Green Power Sales Volume

Figure 2 provides the amount of green power sold by each of the utilities the first four years of the program. To compare data, the agencies have estimated<sup>4</sup> the total customer purchases of green power through these programs in 2006 to be 279,553,095 kWh, or 31.9 aMW. Table 3 includes results of the programs for participating small utilities. Grant County PUD is the only utility that reports no customers, no sales and no revenue from a specific green power program. Benton County PUD does purchase a mix of landfill gas and wind but does not provide actual kWh sales because it operates a contribution-based program. In mid 2004, Seattle City Light transitioned from a contribution-based program to a green-tag, fixed-price program.

**Figure 2 – Green Power Program kWh Sales 2002-2006\***



<sup>4</sup> Actual data is available through September 2006. Annual sales for 2006 were estimated based upon sales continuing at current levels.

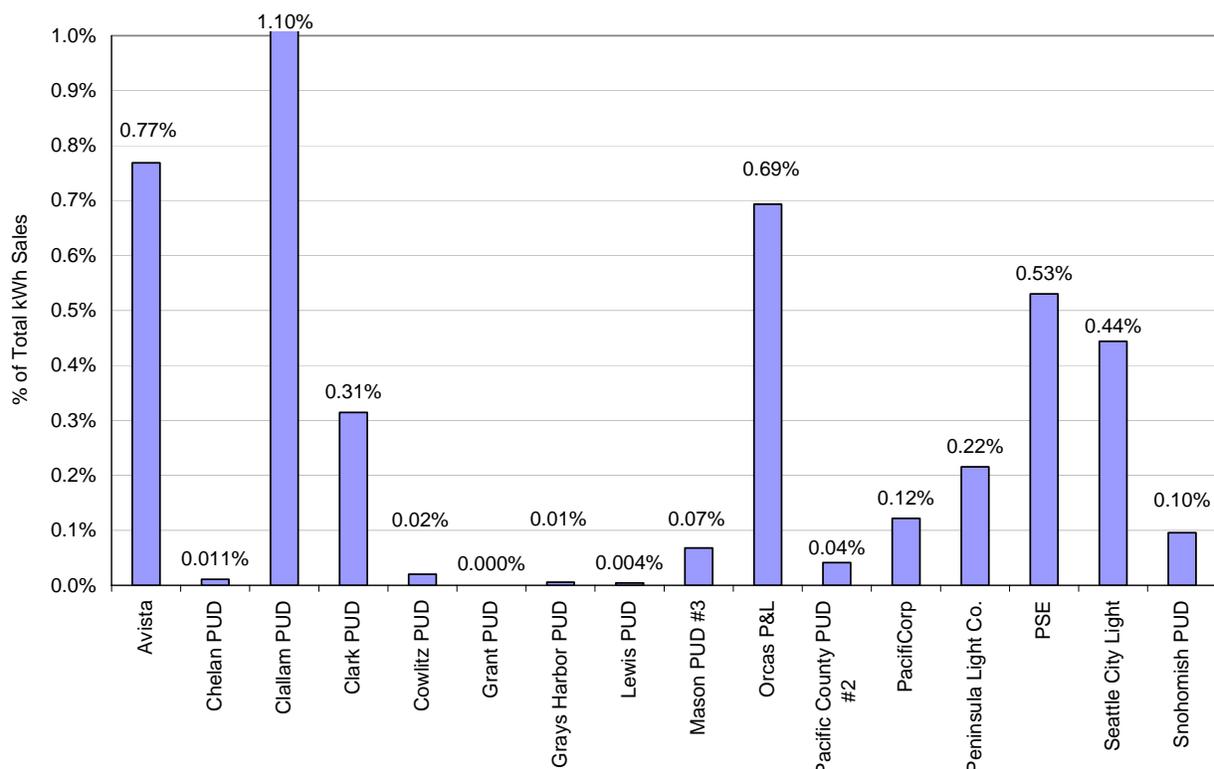
**Table 3 Green Power Program kWh Sales by Utility 2002-2006\***

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006*</b>
Avista	2,224,750	4,564,615	18,646,746	36,617,700	40,208,800
Chelan PUD	28,507	34,329	64,840	105,133	158,455
Clallam PUD	244,179	3,534,336	4,991,521	3,247,989	6,546,828
Clark PUD	1,178,666	3,689,100	5,545,000	8,189,000	13,998,667
Cowlitz PUD	55,690	97,078	148,171	318,229	887,019
Grant PUD	9,500	-	-	-	-
Grays Harbor PUD	33,500	48,500	53,400	50,700	58,800
Lewis PUD	-	22,400	35,200	32,600	35,467
Mason PUD #3	-	217,900	282,600	309,540	421,141
Orcas P&L	99,400	125,600	117,361	1,322,531	1,294,707
Pacific County PUD #2				81,100	116,533
PacifiCorp	783,000	1,076,800	2,695,300	4,049,100	5,167,333
Peninsula Light Co.	4,772	361,428	725,778	746,000	1,119,467
PSE	8,496,000	27,313,000	46,110,000	71,341,000	129,321,333
Seattle City Light	-	2,000,000	11,294,000	13,905,000	40,642,667
Snohomish PUD	4,037,231	5,914,065	6,985,955	7,268,100	7,822,400
Tacoma Power	2,567,333	2,925,491	6,739,228	20,016,514	31,753,479
<b>TOTAL</b>	<b>17,195,195</b>	<b>48,999,151</b>	<b>97,695,872</b>	<b>167,600,236</b>	<b>279,553,095</b>

\*2006 is estimate based on sales through September.

Figure 3 provides the green power sales as a percentage of total utility retail sales to indicate relative activity at each utility and the resulting sales to customers for different types of programs. Avista, Clallam PUD, Orcas Power and Light and Tacoma Power have the highest green power sales penetration rates. Clallam PUD's program is unique within the state; it offers one inclusive green power product at one price for its customers. Those that choose to participate buy 100 percent of their electricity from Clallam's green power program.

**Figure 3 - Green Power Sales as a Percent of Total Utility Sales,\* 2006**



\*Based on 2006 green power sales as a % of 2005 total utility sales. Benton County PUD is not shown because they have a contribution-based program and do not separately track sales.

Several consumer-owned utilities purchase renewable power or renewable power tags on behalf of all of their customers and then offers some of this product at a separate, additional price to their green program participants

In addition to these voluntary programs, many Washington electric utilities acquired non-hydropower renewable resources in 2005 to serve electricity to all their customers. The state’s fuel mix disclosure data indicates that these utilities sold 49.2 aMW of wind power and 67 aMW of biomass-fueled electricity, and 8.8 aMW of electricity generated by landfill gas in 2004 to all of their Washington retail customers.<sup>5</sup>

## Customer Participation

Figure 4 indicates the level of customer participation by utility as a percentage of total customers. Orcas Power and Light Company has the highest participation rate at 4.8 percent, followed by Chelan County PUD at 1.6 percent, Puget Sound Energy at 1.5 percent, Pacific County PUD #2 at 1.5 percent, Seattle City Light at 1.24 percent.

<sup>5</sup> Fuel Mix Disclosure Process, facilitated by the Department of Community, Trade and Economic Development, spring 2006, <http://www.cted.wa.gov/DesktopDefault.aspx?TabId=73>.

Statewide, there are 31,909 customers (1.16 percent of eligible customers) that voluntarily decided to purchase these differentiated green power products during the fifth year of the programs.

**Figure 4 - Customer Participation Rate in Green Power Programs 2002-2006**

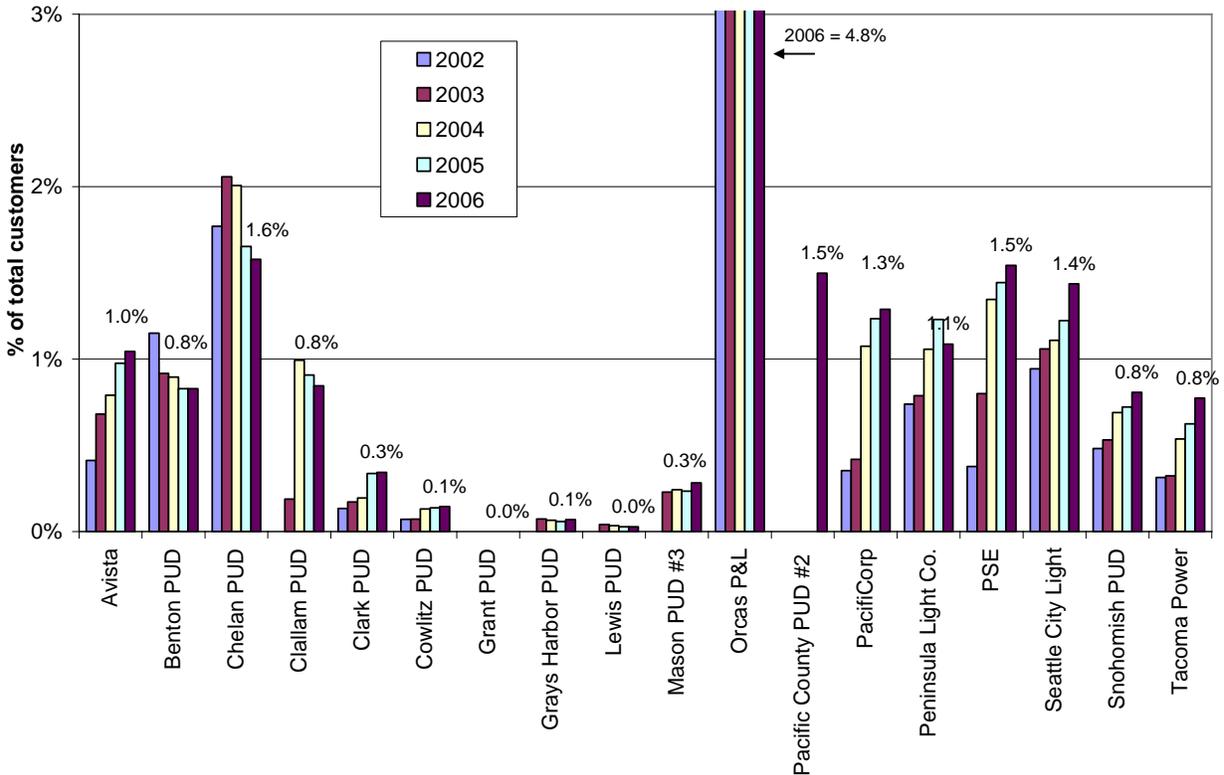
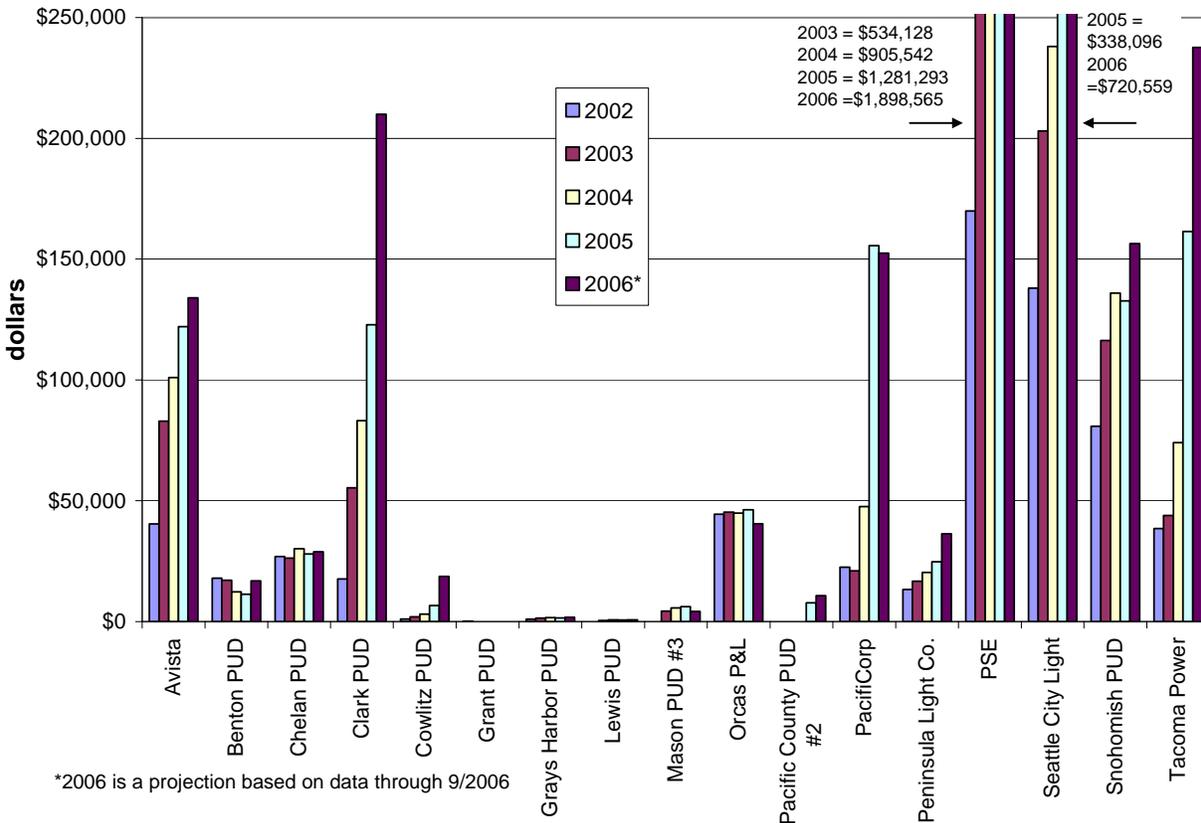


Figure 5 reports annual revenues from green power sales by utility for 2002 through 2006, indicating that 13 of the programs have grown since last year, while those of three utilities have decreased. Total revenue from Washington ratepayers' purchases and contributions of green power from these optional programs was \$2,689,386 in 2005 and is estimated to increase 52 percent to \$4,113,187 in 2006. Actual reported revenue for January through September of 2006 was \$3,084,890.

This revenue does not reflect the total cost of the electricity. It typically reflects the above-market cost of the renewable resource power and often includes the costs of program administration and marketing. The exception to this is Clallam County PUD, which charges its green power customers one inclusive rate for distribution, transmission, and power. Clallam County PUD's program revenues represent the total cost of the electricity, not just the incremental cost, and their data is not included in this chart.

**Figure 5 - Revenues from Utility Green Power Programs for 2002 – 2006\***



## Comments from Utilities

In the utility survey, commenters noted that attrition is becoming a significant issue. One utility said it lost 266 customers during the 12 month period ending September 2005; a 13 percent loss. They also note that in Washington, the passage of Initiative 937, which mandates that utilities comply with a mandatory renewable portfolio standard of 15 percent green power by 2020, may affect the willingness of customers to purchase green power products voluntarily. However, at least one other utility suggested that the decline could be reversed with more aggressive marketing.

Other utilities questioned the continued need for the voluntary program as more utilities integrate green resources into their power supplies. One utility observed that 28 of its customers pay extra for green power, primarily to cover the administrative costs of the program, while the other 40,000 customers get a similar percentage of green power for no incremental cost. “The whole concept of asking customers to voluntarily pay extra for green power just doesn’t make sense in a utility that is already incorporating a significant amount of green power into its resource mix,” the utility observed. “The time

and resources we spend on this program, though relatively minor in the overall scope of our activities, would be better spent on meaningful programs that would actually benefit our customers and the region.”

One utility conveyed support from their members regarding solar pre-heat systems both for water and in-floor heating systems.

## Conclusions

The voluntary programs resulted in 209,664,821 kilowatt-hours or 23.9 aMW of green power sales in Washington for the first nine months of 2006. Utilities sold 182,756,786 kWh of wind power, 5,287,756 kWh of electricity generated by biomass, 19,182,995 kWh of electricity generated from landfill gas, 508,657 kWh of solar-electricity, and 1,928,627 kWh of endorsed hydro-electricity through their programs. If this continues for the remainder of the year, estimated sales for 2006 will equal 31.9 aMW and will result in a 67 percent increase in sales over 2005.

During the coming year, UTC and the CTED intend to seek additional comment from utilities, consumer and environmental groups, and other stakeholders regarding the appropriate role of the green power program set forth in RCW 19.29A.090 following the implementation of Initiative 937 and increased investments by utilities in qualified alternative resources to meet their standard rate base power needs. We expect to include discussion of this matter in our 2007 report to the Legislature.

For more details on the original individual utility programs, see the 2002 Green Power Report Appendix at [http://www.cted.wa.gov/CTED/documents/ID\\_1407\\_Publications.pdf](http://www.cted.wa.gov/CTED/documents/ID_1407_Publications.pdf).