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Green Power Programs in Washington: 2007 Report to the Legislature

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Green Power Programs in Washington: 2007 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 statute –_which customers may purchase voluntarily. The law asks utilities to report annually on the progress of these voluntary green power programs to the Department of Community, Trade and Economic Development (CTED) and the Washington Utilities and Transportation Commission (UTC). This is the sixth reporting year.

The following are key findings:

- All 16 utilities affected by the law have submitted data for this report. All but one of these utilities, Grant County Public Utility District, has an active program with customers participating. In addition, two utilities not affected by the law, Orcas Power and Light and Pacific County PUD #2, voluntarily operate green power programs; their data is included here.
- Between January and September 2007, customers purchased 295,214,634 kilowatt-hours (kWh), or 33.7 average megawatts (aMW), of green power through voluntary green power programs. The estimated annual 2007 green power sales represent a 48 percent increase over 2006 sales.
- Wind-powered electricity represented 96 percent of the year-to-date (ytd) green power sales, or 378,355,556 kilowatt-hours (43.19 aMW). Wind-produced electric energy increased 123 percent in 2007 compared to 2006 production.
- 35,984 utility customers in Washington are participating in these voluntary utility programs. This is a 13 percent increase in customer participation since 2006.
- While eight utility programs have grown in total green power revenues received through voluntary customer purchases, nine others had reductions in the overall sales of green power projected for 2007 compared to 2006.

Apart from these green power programs, in 2006, Washington’s electric utilities included in their standard rate base power 48.9 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 2006 combined with 2006 voluntary green program sales are about 170 aMW, or 1.97 percent of total utility retail electricity sales in Washington.

Introduction

Engrossed House Bill 2247, enacted in 2001,¹ 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.”² This law also requires the electric utilities to report annually the details of their green power programs to CTED and the UTC until 2012. Upon receiving the data each year, the agencies must prepare and submit a report to the Legislature. This report provides an update on performance of green power programs using data for 2006 and January through September of 2007. 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 not covered by the law, Orcas Power and Light and Pacific County PUD #2, responded voluntarily.

Background

The law gives utilities two options to provide 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 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, not including large-scale hydropower. A small group of electric utilities in Washington began to purchase EPP prior to the establishment of green power programs and continue to purchase it. This 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 EPP in 2006.

¹ L2001, ch. 214.

² 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. RCW 19.29A.090(3). 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. RCW 19.29A.010(30).

Overview of Survey Results

All utilities had green power programs in 2007. All programs but one, Grant County PUD, appear active. In its comments to policy makers regarding green power programs, Grant County PUD notes the following:

“As the owner/operator of the nation's largest non-federal hydroelectric project, our customers are keenly aware of the renewable nature of hydropower. We have an investment in the Nine Canyon Wind Project that delivers wind power to our customers. In addition, we have made a substantial investment in upgrading the turbines at Wanapum Dam to deliver more power by using the same amount of water. When these two items are paired, we find that our customers do not see the benefit of purchasing additional renewable power, when they consider their existing electricity to be provided by renewable resources.”

In terms of notable program changes since the last survey, utilities reported the following:

- Clark County PUD states that it has increased marketing efforts and is partnering with commercial Green Lights customers to promote the program within the community. It also reports the addition of a new option for LEED new construction projects and the addition of a new option for residential customers to sign up as an average percentage of its total usage.
- Orcas Power and Light reports a notable increase in Go Green signups over the past 8 months.³
- In April 2007, Puget Sound Energy lowered the cost of its green power products from 2 to 1.5 cents/kWh for residential and commercial customers and from 1 to 0.6 cents/kWh for large volume purchases. It also introduced a 100 percent purchase option for all customers rather than just for large volume purchasers.
- Tacoma Power reported that its single bulk account purchaser (Fort Lewis) has shifted its green power purchases to another source, consistent with other Department of Defense facilities.

Table 1 summarizes state-level results for 2002 through 2006 plus an annualized estimate based on the first nine months of 2007. Total participation, revenue and kilowatt-hour sales have increased each year of the program.

³ Orcas Power and Light Cooperative's optional program has the highest participation rate of all utilities, at 5.05 percent of all Orcas customers.

Table 1 - Washington State Summary Data

	2002	2003	2004	2005 ⁴	2006	2007*	factor increase since 2002	% change since 2006
Total kWh sales of green power	19,762,528	51,924,642	104,435,100	167,600,236	265,873,502	393,619,512	19.9X	48%
Total Revenue from green power programs	\$ 632,282	\$1,254,067	\$ 1,911,861	\$ 2,689,387	\$ 3,528,107	\$ 4,454,439	7.0X	26%
Total number of participants	12,196	17,795	26,341	29,187	31,909	35,984	3.0X	13%

* Annual 2007 estimate is based on extrapolating actual data for January through September.

⁴ 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

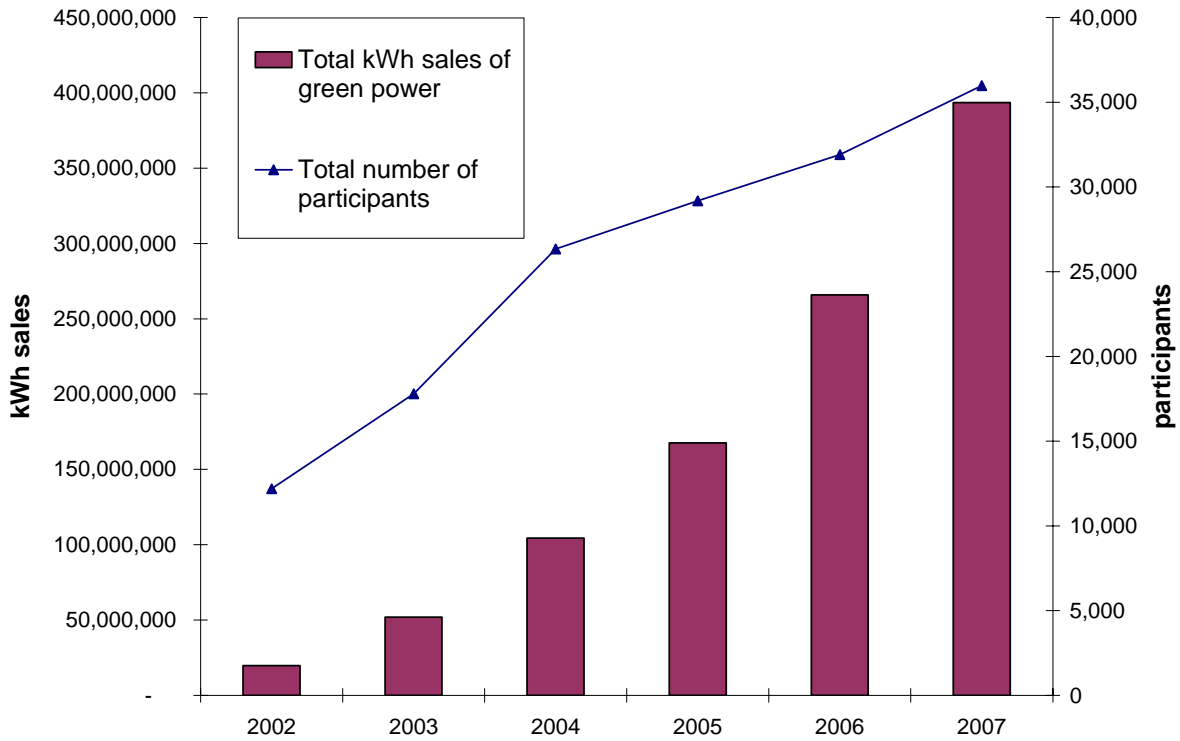


Table 2 describes each utility’s program by name and price. The programs are offered to all customers. The products vary in price, ranging from Avista’s low of \$0.003 per kWh to Chelan PUD’s high of \$0.217 per kWh. Most Washington utilities offer a “block” option to participants in their green power 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	SNAP producers are paid a premium for the power they produce. The price they are paid depends on the total amount of voluntary contributions received from customers who want to “purchase” green power and the total amount of power generated in Chelan County.
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	Contract with Bonneville Environmental Foundation. Blocks are sold in 100 kWh segments for \$1.50.
Cowlitz County PUD	Renewable Resource Energy Program	Cowlitz PUD's Renewable Resource Energy program provides the opportunity for its customers to voluntarily support the use of environmentally friendly "green" power. By choosing to sign up for the Renewable Resource Energy program, PUD customers are agreeing to pay a supplemental charge of \$2.00 per block of 100 kWhs of green power.
Grant County PUD	Alternative Energy Resources	This program allows customers to purchase qualified alternative energy resources required by RCW 19.29A.090. For each block of alternative energy resources purchased, customer has the right to claim that it has acquired renewable resources under the District's program (\$2.00 per 100 kWh block).
Grays Harbor County PUD	Green Power Program	\$3.00 per 100 kWh block
Lewis County PUD #1	Green Power Program	\$2.00 per 100 kWh block
Mason County PUD #3	Mason Evergreen Power	\$1.00 per 100 kWh block, or 100% green power for an additional one cent per kWh
Orcas Power and Light Cooperative	Go Green	\$4.00 per 100 kWh block, or All Green for an additional 4 cents per kWh over the regular member rate for all kWh used.
PacifiCorp	Blue Sky - Standard Option	\$1.95 per 100 kWh block
	Bulk Option	Bulk pricing is available to customers who purchase 1,212 blocks or more and can range from \$0.71 to \$1.94 per 100 kWh/block depending upon the number of blocks purchased.
Peninsula Light Company	Green by Choice	\$2.80 per 100 kWh block
Puget Sound Energy	Green Power Plan	\$2.00 per 100 kWh block with a \$4.00 minimum purchase.
	Bulk Option	\$0.01 per kWh
Seattle City Light	Seattle Green Power (original program)	Contribution based
	Seattle Green Up (new program)	SCL uses its share of the Stateline Wind Project to meet Green Up program demand. \$.015 per kWh, marketed to residential customers at flat rates of \$3, \$6 or \$12 per month.
Snohomish County PUD	Planet Power	\$3.00 per 150 kWh block
Tacoma Power	EverGreen Options	Tacoma Utilities purchases 100% new wind-generated green tags from the BPA. \$.012 per kWh.
	Bulk Option	\$0.006 per kWh
Pacific County PUD #2	Green Power	\$1.05 per 100 kWh block

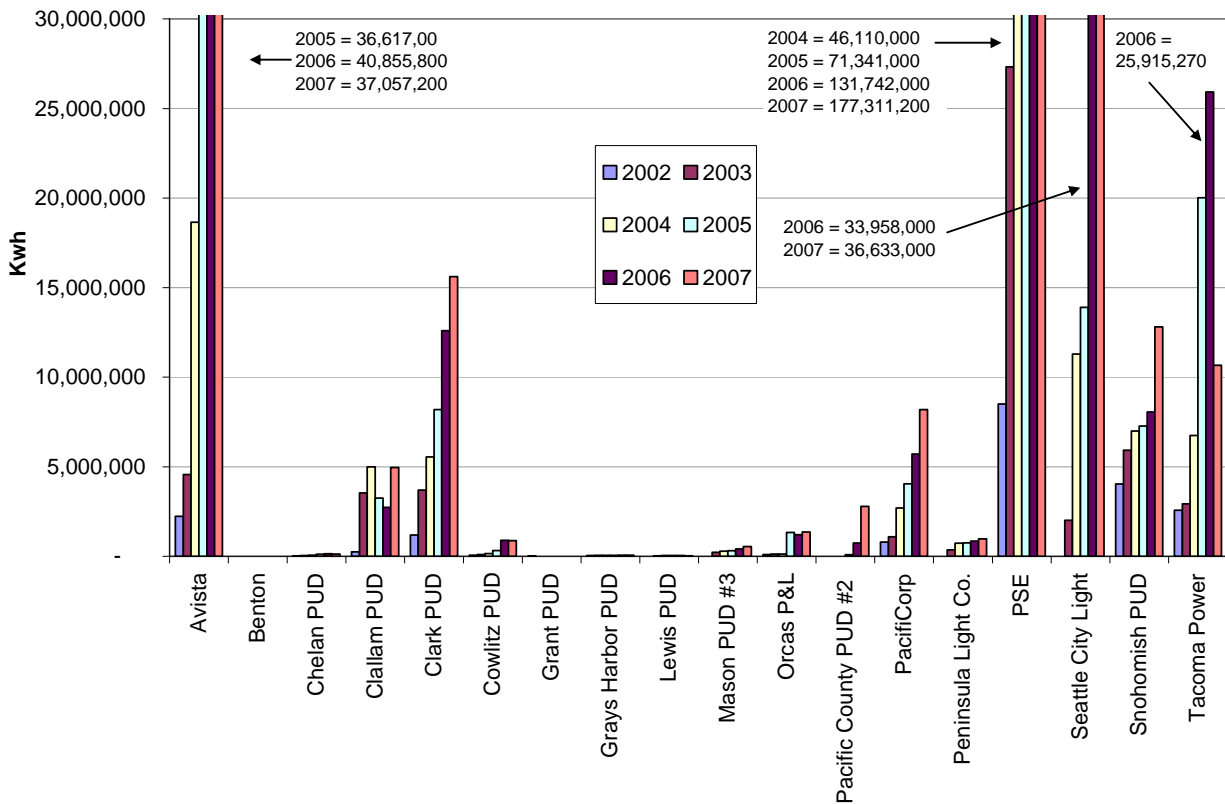
Statewide Green Program Fuel Resources

Between January and September 2007, total green power program sales were 295,214,634 kWh (33.7 aMW). Ninety-four percent of the power offered in these programs is wind power. The total quantity of wind-generated power sold through the programs was 277,849,455 kWh. The programs also sold 5,616,542 kWh of electricity generated from landfill gas, 11,386,120 kWh generated from dairy biogas and biomass, 8,257 kWh of endorsed hydro-electricity and 354,259 kWh of solar electricity.

Green Power Sales Volume

Figure 2 outlines the amount of green power sold by each of the utilities during each of the first five years of the program. To compare data, the agencies have estimated the total customer purchases of green power through these programs in 2007 to be 393,619,512 kWh, or 44.9 aMW.⁵ Table 3 is included to describe results of the programs of 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 2002-2007*



⁵ Actual data are available through September 2007. Annual sales for 2007 were estimated based upon sales continuing at current levels.

Table 3 Green Power Program kWh Sales by Utility 2002- 2007*

	2002	2003	2004	2005	2006	2007*
Avista	2,224,750	4,564,615	18,646,746	36,617,700	40,855,800	49,409,600
Benton PUD**	--	--	--	--	--	--
Chelan PUD	28,507	34,329	64,840	105,133	140,626	123,060
Clallam PUD	244,179	3,534,336	4,991,521	3,247,989	2,730,365	4,953,749
Clark PUD	1,178,666	3,689,100	5,545,000	8,189,000	12,590,000	15,609,333
Cowlitz PUD	55,690	97,078	148,171	318,229	880,974	871,868
Grant PUD***	9,500	-	-	-	-	-
Grays Harbor PUD	33,500	48,500	53,400	50,700	57,600	62,400
Lewis PUD	-	22,400	35,200	32,600	32,600	21,067
Mason PUD #3	-	217,900	282,600	309,540	405,386	543,311
Orcas P&L	99,400	125,600	117,361	1,322,531	1,206,115	1,350,994
Pacific County PUD #2	-	-	-	81,100	736,000	2,775,984
PacifiCorp	783,000	1,076,800	2,695,300	4,049,100	5,711,400	8,190,667
Peninsula Light Co.	4,772	361,428	725,778	746,000	851,706	976,340
PSE	8,496,000	27,313,000	46,110,000	71,341,000	131,742,000	236,414,933
Seattle City Light	-	2,000,000	11,294,000	13,905,000	33,958,000	48,844,000
Snohomish PUD	4,037,231	5,914,065	6,985,955	7,268,100	8,059,659	12,806,607
Tacoma Power	2,567,333	2,925,491	6,739,228	20,016,514	25,915,270	10,665,600
TOTAL	17,195,195	48,999,151	97,695,872	167,600,236	265,873,502	393,619,512

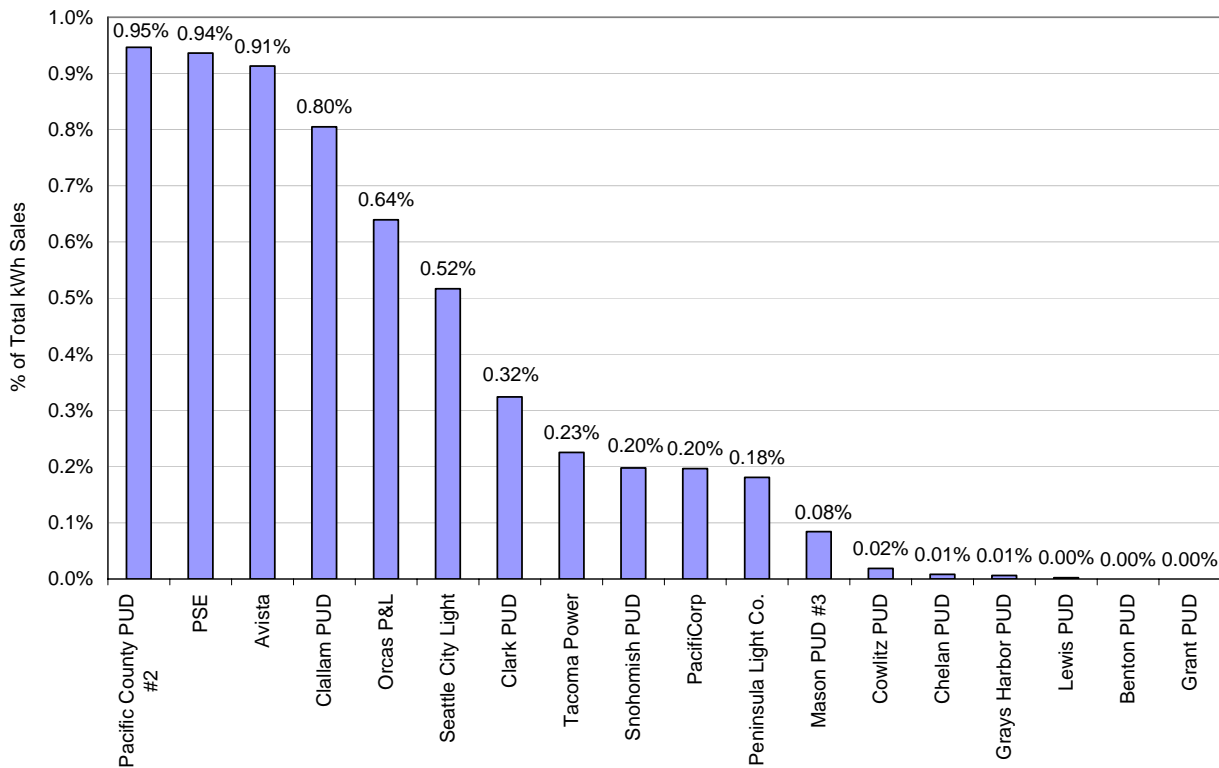
* 2007 is an estimate based on sales through September.

** Benton County PUD has a contribution-based program. It buys green power and uses it for all of its customers. Customers who participate are volunteering to pay extra to help offset the additional cost of the green power. Therefore, it has participants and revenue but not kWh sales.

*** According to its survey response, roughly 2.5% of Grant County PUD's energy sales are renewable-qualified based on its existing resource mix. Grant County PUD's remaining power is from nonqualified-renewable hydro resources. As a result, Grant County PUD does not market its Alternative Energy Resources program, and therefore has no customers or sales under the program.

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. Pacific County PUD #2, PSE, Avista, Clallam PUD and Orcas Power and Light 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. The revenues from this program represent actual kWh sales whereas other programs represent just the incremental cost of the green power product.

Figure 3 - Green Power Sales as a Percent of Total Utility Sales,* 2007



* Based on 2007 Green Power sales as a percent of 2006 total utility sales.

Several consumer-owned utilities purchase renewable power or renewable powers tags on behalf of all their customers and then offer 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 2006 to serve electricity to all their customers. The state’s fuel mix disclosure data indicate that these utilities sold 48.9 aMW of wind power, 67 aMW of biomass-fueled electricity, and 8.8 aMW of electricity generated by landfill gas in 2006 to all of their Washington retail customers.⁶

⁶ Fuel Mix Disclosure Process, facilitated by the Department of Community, Trade and Economic Development, spring 2006, <http://www.cted.wa.gov/site/539/default.aspx>

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 5.05 percent, followed by Seattle City Light at 1.77 percent, Pacific County PUD #2 at 1.69 percent, Puget Sound Energy at 1.68 percent, and Peninsula Light Co. at 1.45 percent. Statewide, there are 35,984 customers (1.29 percent of eligible customers) voluntarily making the decision to purchase these differentiated green power products in the sixth year of the programs.

Figure 4 - Customer Participation Rate in Green Power Programs 2002-2007

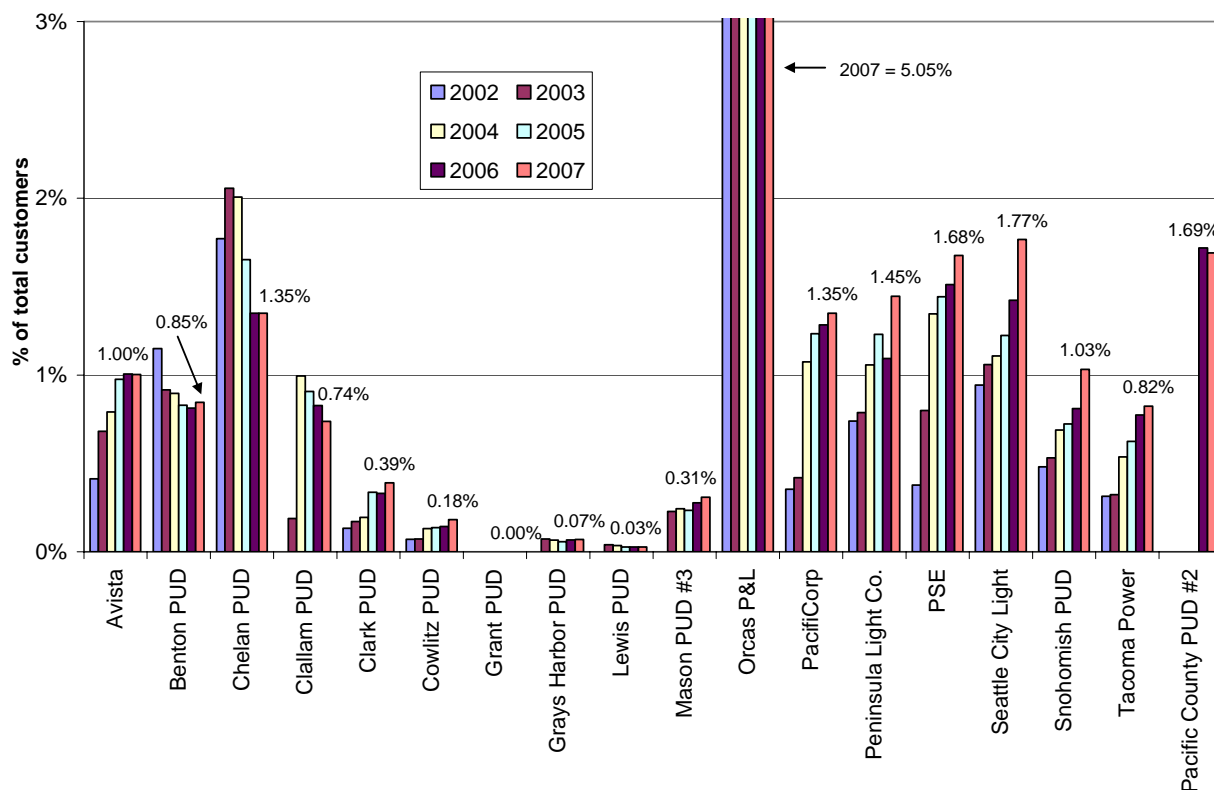
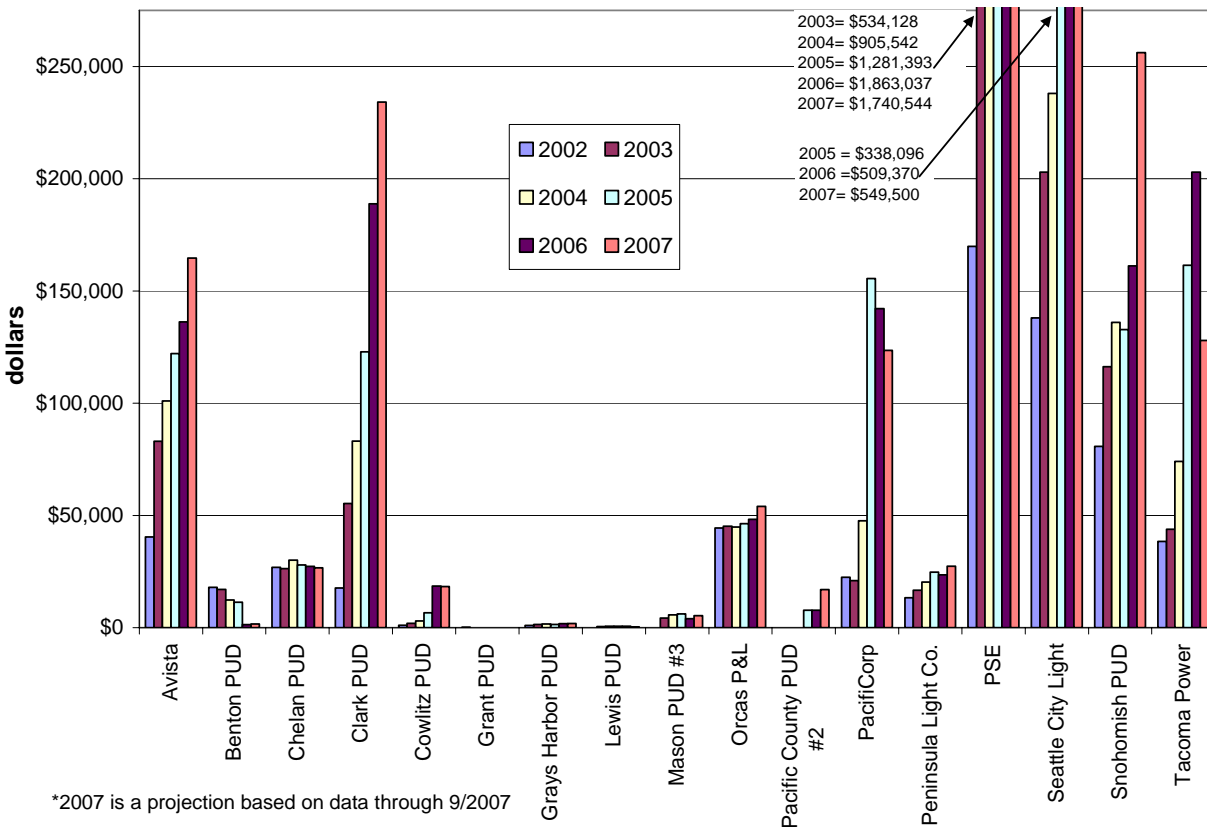


Figure 5 delineates annual revenues from green power sales by utility for 2002 through 2007. It indicates that eight of the programs have grown since last year, while those of nine utilities have decreased. Total revenue from Washington ratepayers' purchases and contributions of green power from these optional programs was \$3,528,107 in 2006 and is estimated to increase 26 percent to \$4,454,439 in 2007. Actual reported revenue for January through September of 2007 was \$3,340,829.

This revenue does not reflect the total cost of the electricity. Rather, 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 its data are not included in this chart.

Figure 5 - Revenues from Utility Green Power Programs for 2002 – 2007*



Comments from Utilities

In the survey, utilities were asked about thoughts concerning the appropriate role of the Green Power Report following implementation of Initiative 937 (“I-937”). Several commenters suggested that since I-937 requires utilities to provide some percentage of their power sales from approved renewable sources by 2012, the statutory requirement to offer green power options for customers after that time should be eliminated. Other commenters suggested that their current optional green power programs should continue and that reporting on them provides value to the state.

Some 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.”

Conclusions

The voluntary programs resulted in 295,214,634 kilowatt-hours or 33.7 aMW of green power sales in Washington for the first nine months of 2007. Utilities sold 277,849,455 kWh of wind power, 11,386,120 kWh of electricity generated by biomass, 5,616,542 kWh of electricity generated from landfill gas, 354,259 kWh of solar-electricity, and 8,257 kWh of endorsed hydro-electricity through their programs. If this level of sales continues for the remainder of the year, estimated sales for 2007 will reach 44.9 aMW, a 48 percent increase over 2006.

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.