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Green Power Programs in Washington: 2010 Report to the Legislature

Analysis of utility programs designed to offer electricity customers products composed of renewable resources

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Report to the Legislature
Rogers Weed, Director

Acknowledgements

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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 Washington State Department of Commerce (COM) and the Washington Utilities and Transportation Commission (UTC). This is the seventh reporting year.

The following are key findings:

For each year the green power report has been compiled, utility programs when combined, show overall increases in participation, revenue and kilowatt-hour sales. Over the past year some utilities have modified their programs to better target customers, maintain competitive rates, and/or broaden their mix of renewables.

Wind continues to outpace other options as a fuel source in green power program portfolios. The power sources comprising the aggregate fuel mix of the green power programs in 2009: Wind 69.8% Landfill gas 20.6%, Biomass 7.5%, Hydropower (incremental), and 1.8%, Solar 0.3%.

Utilities are building their programs with green power acquired by: owning or investing in plants generating green power and then reselling those products to their customers, contracting with renewable generators for a portion of that plants’ generation for resale, purchasing a green product from BPA, or buying renewable energy credits on the open market. There are a number of Washington State utilities outside of this report that also use these methods to offer renewably sourced power to their customers. Their fuel mix information may be found the Department of Commerce Website.

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 Commerce (formerly 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 2007 and January through September of 2008. It gives a summary of each utility’s program, participation levels, program revenues and electricity sales.

To assist the utility reporting process, Commerce 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 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, Clallam County PUD, Clark 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

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).

programs and continue to purchase it. This product ensured that BPA's utility customers had ready access to a specific green power product. Four surveyed utilities are currently purchasing EPP: Clark County PUD, Orcas Power and Light Cooperative, Peninsula Light Company, and Pacific County PUD #2.

Overview of Survey Results

All utilities had green power programs in 2007. All programs but one, Grant County PUD, appear active. In terms of notable program changes since the last survey, utilities reported the following:

- Clark County PUD is implementing a stronger Solar 4R Schools program through Bonneville Environmental Foundation in the local school districts and targeting specific commercial sectors.
- Puget Sound Energy, based on the need to maintain a competitive rate for bulk purchases, has changed the resource mix for bulk purchasers. It is now different than the one for residential and small/medium commercial businesses. In 2009, the bulk resource portfolio included wind, landfill gas, and low-impact Hydro from resources located in WA, OR, and ID. In 2010 it will also include a moderate percentage of out-of-region wind RECs.
- Starting in 2010, Seattle City Light changed its Green Up resource mix to include geothermal, biomass and wind. (Power content label is published on their website per Green-e Energy disclosure requirements.)
- Snohomish County PUD started 2009 with the old Planet Power program, which launched on Jan. 1, 2002. The old Planet Power program offered a block product based on wind RECs (\$3/150kWh). They discontinued that program on March 30, 2009 and launched two new programs on March 31, 2009. They converted all residential customers to a new contribution program that uses program revenues to build small-scale renewable projects, together with related education. They named that program Planet Power (i.e., the new Planet Power program). The second program is like the old Planet Power program because it too is a block product based on RECs (\$3/350 kWh). The main differences are the block size and the eligibility (only businesses can participate). They contacted all business customers on old Planet Power and told them they would convert them automatically to Green Blocks unless they notified them that they wanted to be in the new Planet Power program. All stayed with Green Blocks.

Table 1 summarizes state-level results for 2002 through 2010. The data for 2008 and 2010 are an annualized estimate based on the reported months³. Total participation, revenue and kilowatt-hour sales have increased each year of the program.

Table 1 – Washington State Summary Data

	Total kWh sales of green power	Total Revenue from green power programs	Total number of green power program participants
2002	19,762,528	\$632,282	12,196
2003	51,924,642	\$1,254,067	17,795
2004	104,435,100	\$1,911,861	26,341
2005	167,600,236	\$2,689,387	29,187
2006	265,873,502	\$3,528,107	31,909
2007	410,556,491	\$4,819,880	35,984
2008 Projected*	484,133,391	\$5,405,065	40,820
2009	495,023,552	\$5,551,841	unavailable
2010 Projected*	498,953,050	\$5,788,367	47,320
Factor increase since 2002	25.2	9.2	3.9
% change since 2008	3.06%	7.09%	15.92%

³ Projection data for 2008 includes the months of January thru September. Projection data for 2010 includes the months of January thru June for Clark County PUD, January thru July for Clallam County PUD, January thru August for Avista, Benton County PUD, Lewis County PUD #1, Mason County PUD #3, Orcas Power and Light Cooperative, and Pacific County PUD #2. The remaining ten utilities include projection data for January thru September.

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

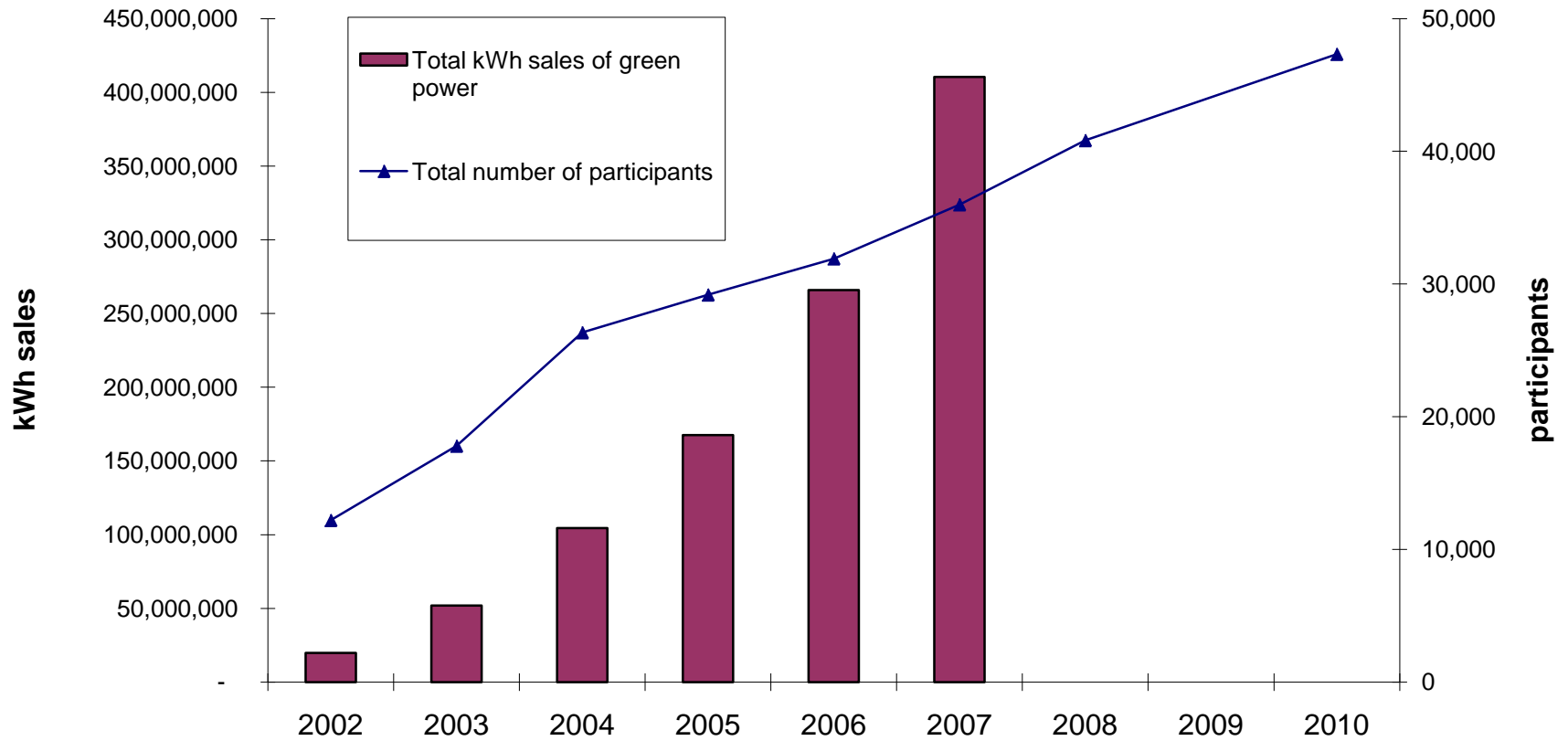


Table 2 gives the description of each utility’s program as provided by the utility. The programs are offered to all customers. The products vary in price, ranging from Avista’s low of \$0.003 per kWh to Grant PUD’s high of \$2.00 per kWh. The median cost of green power among the programs included in the analysis is \$0.017 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	Each block costs \$1 and covers the premium to purchase 300 kilowatt-hours (kWh) of environmentally preferred energy (green tags).
Benton County PUD	Green Power Program	Benton PUD’s Green Power Program is a voluntary \$ donation not tied to kWh’s.
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	Product based on landfill gas power generation; \$.07 per kWh. This price includes actual electricity whereas other utility programs reflect the incremental cost of green power.
	Bulk Option	\$0.071/kWh
Clark County PUD	Green Lights Program	Green Lights are sold in blocks of 100 kWh. Blocks are sold for \$1.50 each. Wholesale contract for program is through Bonneville Environmental Foundation.
Cowlitz County PUD	Renewable Resource Energy Program	Cowlitz County PUD has partnered with Bonneville Environmental Foundation to offer our customers the option of purchasing green tags / carbon offsets. Our customers are directed to a Cowlitz PUD branded page on the BEF Web site that allows them to estimate their carbon footprint and then purchase any amount of offsets they desire at a supplemental charge of \$2.00 per block of 100 kWhs of green power. Our customers’ purchases are tracked by use of a promo code they enter at the time of purchase. Cowlitz does not sell green tags directly to our customers.
Grant County PUD	Alternative Energy Resources	\$2 per block of 100 kWh
Grays Harbor County PUD	Green Power Program	Voluntary green power program available for purchase by customers for \$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	Customers have two purchasing options: \$1 per 100-kWh to direct 100% of their purchase for an additional 1 cent per kWh
Orcas Power and Light Cooperative	Go Green	Total voluntary program designed to promote the purchase of EPP; \$4.00 per 100 kWh block
PacifiCorp	Blue Sky - Standard Option	In 2009 RECs were purchased from a variety of suppliers and green tags secured were associated with generation from the facilities and suppliers identified below on behalf of all Blue Sky Block customers; \$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 \$0.0071/kWh to \$0.0194 /kWh depending on the number of blocks purchased (\$0.70 per block plus \$1,500/year or \$125/month administrative fee).
Peninsula Light Company	Green by Choice	Members can purchase blocks of green power at a rate of \$2.80 per 100kWh
Puget Sound Energy	Green Power Plan	\$2 per 160 kWh block or 0.0125/kWh
	Bulk Option	0.006/kWh
Seattle City Light	Green Up	RECs supplied to Green Up customers in 2009 were sourced from SCL's Stateline Wind resource (power and RECs purchased through agreement with Iberdrola Renewables); \$0.015 per kWh.
Snohomish County PUD	Planet Power (old)	The old Planet Power program offered a block product based on wind RECs (\$3/150kWh). We discontinued that program on March 30, 2009.
	Planet Power (new)	A new contribution program that uses program revenues to build small-scale renewable projects, together with related education.
	Green Blocks	a block product for eligible businesses based on RECs; \$3/350 kWh.
Tacoma Power	EverGreen Options	Supplied through purchases of renewable energy credits from the Bonneville Power Administration. These RECS are from three wind developments – Stateline, Klondike, and Condon.; \$0.01 per kWh.
Pacific County PUD #2	Green Power	BPA EPP is what we purchase; \$1.05 per 100 kWh block
Franklin PUD ⁴	Generation Green	PUD customers may purchase green power in 100 kilowatt-hour blocks, at a cost of five dollars per block, per month. The purchase directly helps offset the funding and development of new, renewable energy resources.

⁴ Franklin PUD's program Generation Green is a new addition that is not included in this analysis.

Statewide Green Program Fuel Resources

During the first part of 2010⁵, total voluntary green power program sales were 362,576,383 kWh⁶. In 2009, 495,023,552 kWh were sold through these programs. Nearly seventy percent of the power offered in these programs is wind power. The total quantity of wind-generated power sold through the programs was 345,680,291 kWh. The programs also sold 101,970,206 kWh of electricity generated from landfill gas, 36,960,661 kWh generated from dairy biogas and biomass, 9,008,362 kWh of endorsed hydro-electricity and 1,404,033 kWh of solar electricity.

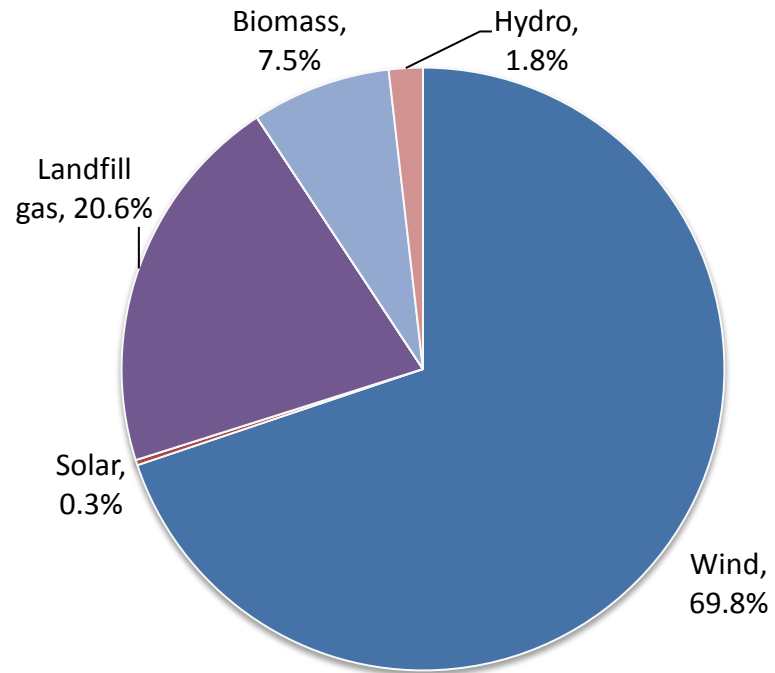


Figure 2 - 2009 Fuel Mix for Voluntary Green Power Programs

Green Power Sales Volume

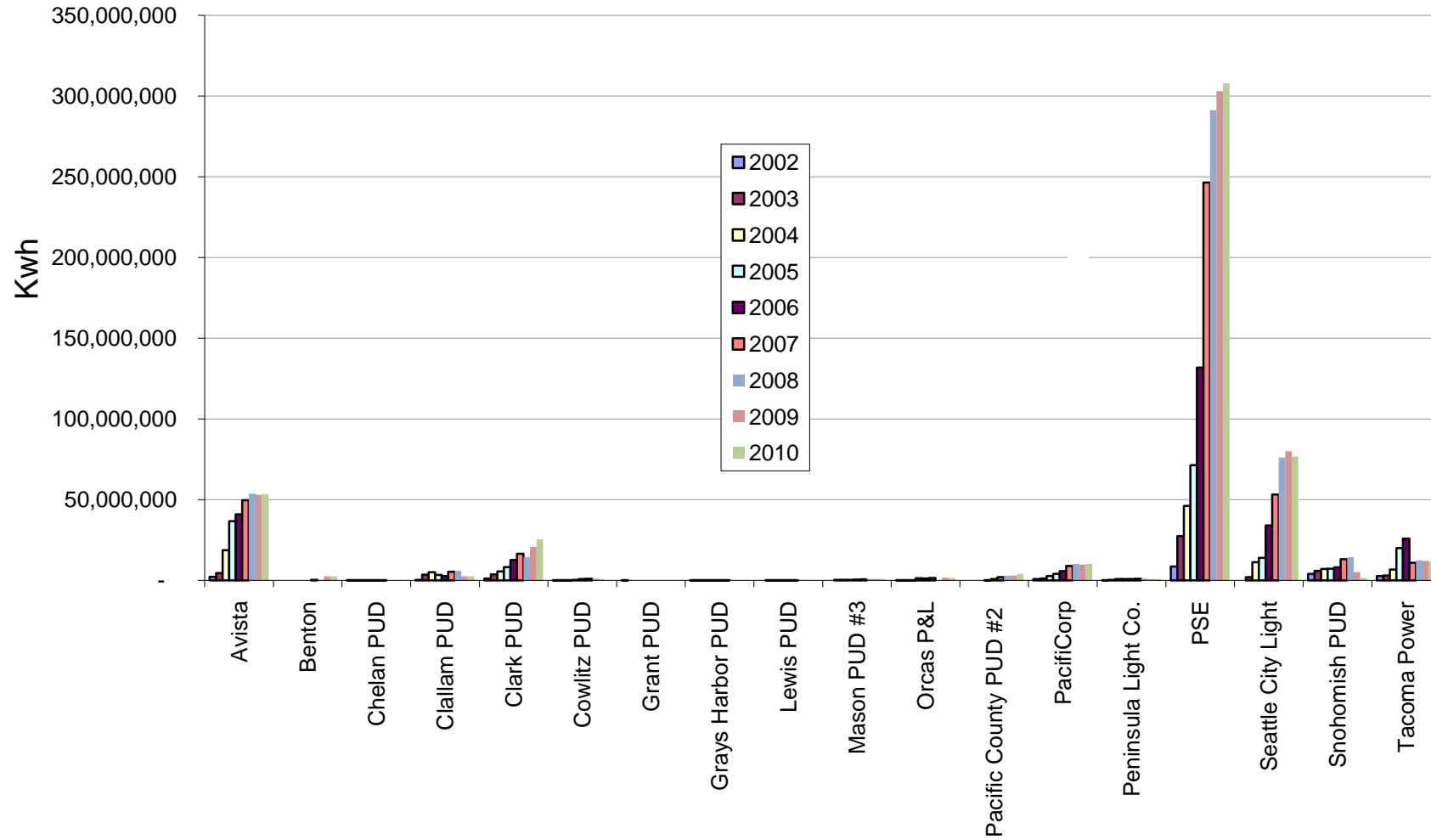
Figures 3 and 4 indicate the amount of green power sold by each of the utilities during each of the first eight years of the program⁷. These two figures show the same data at different scales to provide an accurate visual portrait of all utilities sales volume. Table 3 includes the numerical results. Grant County PUD is the only utility that reports no customers, no sales and no revenue from a specific green power program.

⁵ Data for 2010 includes the months of January thru June for Clark County PUD, January thru July for Clallam County PUD, January thru August for Avista, Benton County PUD, Lewis County PUD #1, Mason County PUD #3, Orcas Power and Light Cooperative, and Pacific County PUD #2. The remaining ten utilities include projection data for January thru September.

⁶ Benton County PUD included \$9,600 donated through August 2010 kWh sales based on 2009 REC values

⁷ See footnote 5.

Figure 3 – Green Power Program kWh Sales 2002-2010*, Full Scale – to 350,000,000 kWh



*Projection data for 2008 includes the months of January thru September. Projection data for 2010 includes the months of January thru June for Clark County PUD, January thru July for Clallam County PUD, January thru August for Avista, Benton County PUD, Lewis County PUD #1, Mason County PUD #3, Orcas Power and Light Cooperative, and Pacific County PUD #2. The remaining ten utilities include projection data for January thru September.

Figure 4 – Green Power Program kWh Sales 2002-2010*, Small Scale – to 25,000,000 kWh

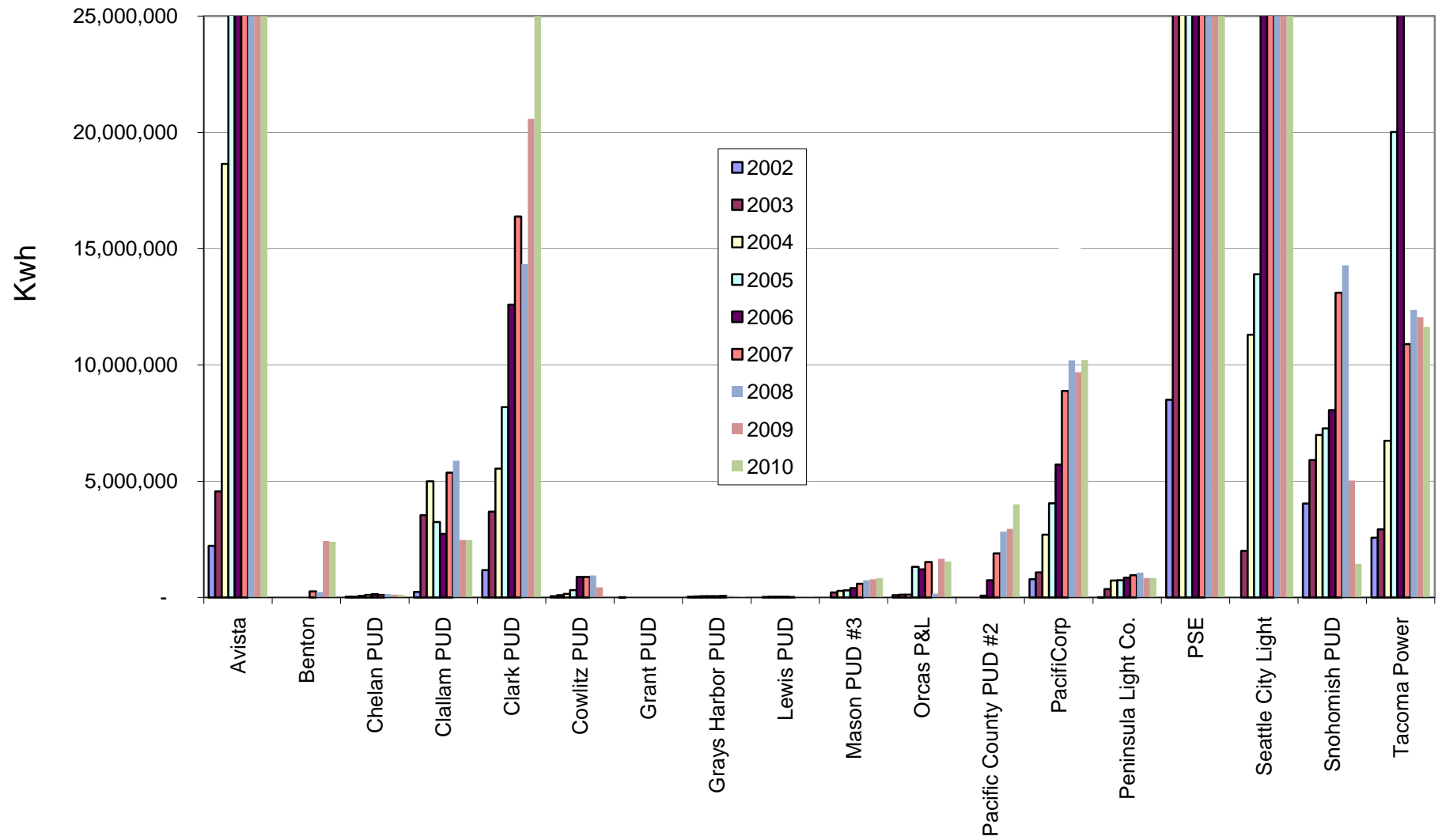


Table 3 – Green Power Program kWh Sales by Utility 2002-2010*

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Avista	2,224,750	4,564,615	18,646,746	36,617,700	40,855,800	49,667,400	53,627,700	52,949,400	53,327,700
Benton**	-	-	-	-	-	258,898	224,227	2,430,000	2,400,329
Chelan PUD	28,507	34,329	64,840	105,133	140,626	106,901	142,373	116,063	124,445
Clallam PUD	244,179	3,534,336	4,991,521	3,247,989	2,730,365	5,366,179	5,874,237	2,472,146	2,472,423
Clark PUD	1,178,666	3,689,100	5,545,000	8,189,000	12,590,000	16,380,000	14,330,550	20,580,200	25,322,400
Cowlitz PUD	55,690	97,078	148,171	318,229	880,974	883,481	944,360	438,620	14,667
Grant PUD	9,500	-	-	-	0	0	0	0	0
Grays Harbor PUD	33,500	48,500	53,400	50,700	57,600	62,500	61,867	47,400	43,600
Lewis PUD	-	22,400	35,200	32,600	32,600	25,800	51,200	30,000	30,000
Mason PUD #3	-	217,900	282,600	309,540	405,386	586,271	739,095	783,940	830,573
Orcas P&L	99,400	125,600	117,361	1,322,531	1,206,116	1,527,147	163,881	1,665,492	1,546,373
Pacific County PUD #2	-	-	-	81,100	736,000	1,895,988	2,828,784	2,952,888	4,005,984
PacifiCorp	783,000	1,076,800	2,695,300	4,049,100	5,711,400	8,887,200	10,195,200	9,690,400	10,215,150
Peninsula Light Co.	4,772	361,428	725,778	746,000	851,706	960,240	1,066,933	840,000	840,000
PSE	8,496,000	27,313,000	46,110,000	71,341,000	131,742,000	246,405,800	291,166,599	303,046,167	307,938,640
Seattle City Light	-	2,000,000	11,294,000	13,905,000	33,958,000	53,137,600	76,071,600	79,907,000	76,758,133
Snohomish PUD	4,037,231	5,914,065	6,985,955	7,268,100	8,059,659	13,100,025	14,284,560	5,029,258	1,446,691
Tacoma Power	,567,333	2,925,491	6,739,228	20,016,514	25,915,270	10,890,975	12,360,225	12,044,578	11,635,943
TOTAL	17,195,195	48,999,151	97,695,872	167,600,236	265,873,502	410,142,405	484,133,391	495,023,552	498,953,050

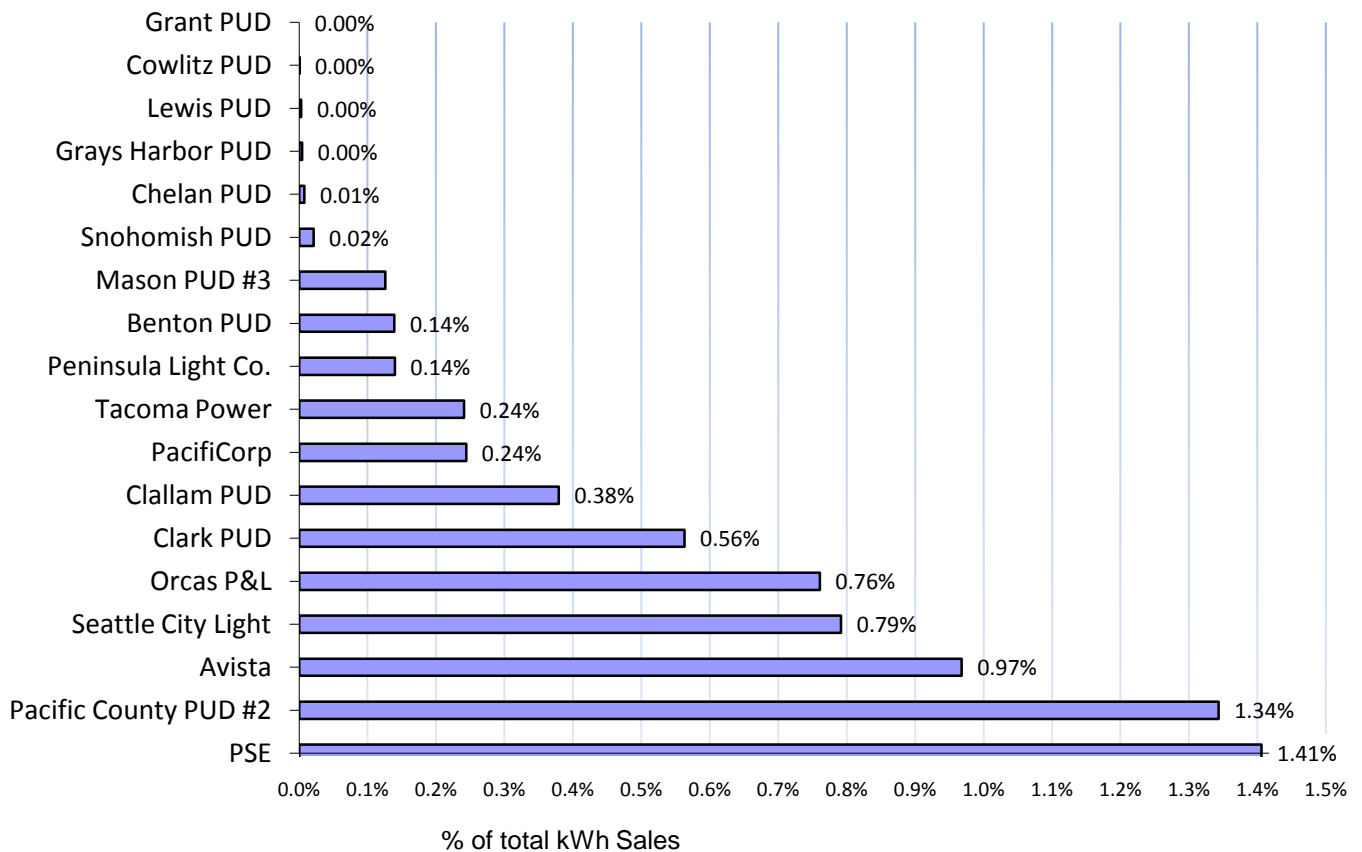
* 2007 is an estimate based on sales through September.

** 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.

Figure 5 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. PSE, Pacific County PUD #2, Avista, Seattle City Light, 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.

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.

Figure 5 – Green Power Sales as a Percent of Total Utility Sales, 2010*



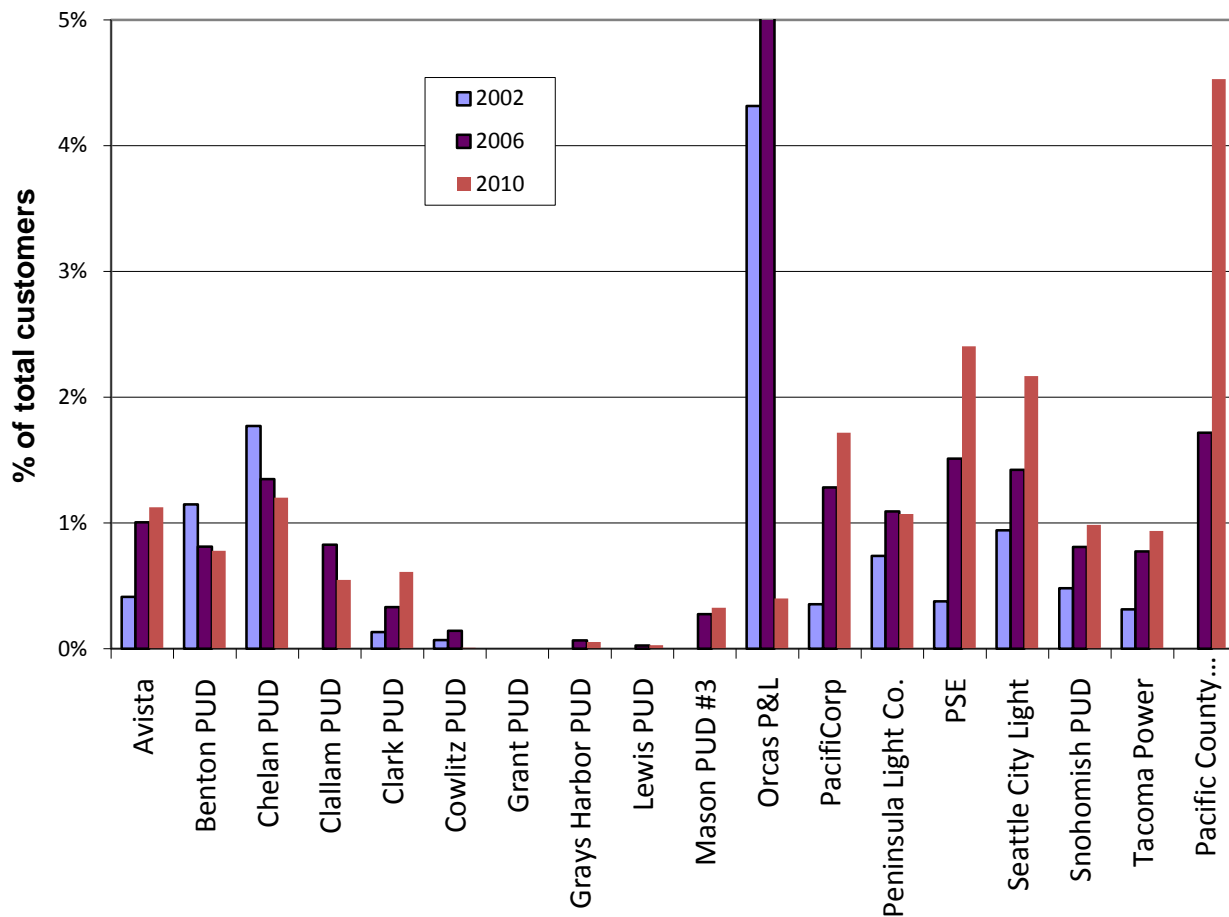
* Based on 2010 Green Power sales as a percent of 2009 total utility sales.

In addition to these voluntary programs, many Washington electric utilities acquired non-hydropower renewable resources in 2009 to serve electricity to all their customers. For information about other ways green power is being generated in Washington please refer to the Department of Commerce web site, where you will find Biennial Energy Reports and Fuel Mix Disclosure data.

Customer Participation

Figure 6 indicates the level of customer participation by utility as a percentage of total customers. Pacific County PUD #2 has the highest participation rate at 4.53 percent, followed by Puget Sound Energy at 2.40 percent, Seattle City Light at 2.17 percent, PacifiCorp at 1.72 percent, and Chelan PUD at 1.20 percent. Statewide, there are 47,320 customers (1.65 percent of eligible customers) voluntarily making the decision to purchase these differentiated green power products.

Figure 6 - Customer Participation Rate in Voluntary Green Power Programs, 2002, 2006, & 2010



Comments from Utilities

The survey gave utilities the opportunity to make comments to policy makers. Only two utilities had anything additional to add:

“Thanks for your collection, aggregation and sharing of this information statewide.”

-Tacoma Power

“This reporting requirement should be discontinued following the implementation of the Energy Independence Act since it would be duplicative of the reporting required for the Act and, in some aspects, it is inconsistent with the Act. As it relates to this study, Grant County PUD is in a unique position with our Alternative Energy Resources program. As the owner/operator of the nation’s largest non-federal hydroelectric project, our customers are keenly aware of the renewable nature of hydropower. In the past year, Grant PUD generated more than 82,000 kWhs of renewable energy. 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 in purchasing additional renewable power, when they consider their existing electricity to be provided by renewable resources.”

-Grant County PUD

Conclusions

The voluntary programs resulted in 360,176,054 kilowatt-hours of green power sales in Washington for the first part of 2010⁸. Utilities sold 345,680,291 kWh of wind power, 36,960,661 kWh of electricity generated by biomass, 101,970,206 kWh of electricity generated from landfill gas, 1,404,033 kWh of solar-electricity, and 9,008,362 kWh of endorsed hydro-electricity through their programs. If this level of sales continues for the remainder of the year, estimated sales for 2010 will reach 498,953,050, a 25 fold increase over 2002.

For more details on the original individual utility programs, see the 2002 Green Power Report Appendix at http://www.commerce.wa.gov/commerce/documents/ID_1407_Publications.pdf.

⁸ Projection data for 2010 includes the months of January thru June for Clark County PUD, January thru July for Clallam County PUD, January thru August for Avista, Benton County PUD, Lewis County PUD #1, Mason County PUD #3, Orcas Power and Light Cooperative, and Pacific County PUD #2. The remaining ten utilities include projection data for January thru September.