

**EXHIBIT NO. ___(RG-23)
DOCKET NO. UE-11___/UG-11___
2011 PSE GENERAL RATE CASE
WITNESS: ROGER GARRATT**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

**Docket No. UE-11___
Docket No. UG-11___**

**TWENTY-SECOND EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF
ROGER GARRATT
ON BEHALF OF PUGET SOUND ENERGY, INC.**

JUNE 13, 2011



DATE: August 30, 2010
TO: Paul Wetherbee
FROM: Michael Mullally
SUBJECT: Aug 4 *Bloomberg New Energy Finance* Article Analysis Summary

Bloomberg New Energy Finance (Aug 4, 2010) reported results of a member survey that collected information on Wind Turbine Generator (“WTG”) contracts negotiated in 2010 for delivery in 2010 and 2011. Key survey results and a comparison to LSRWP, Phase 1 follow.

Wind Turbine Generator Pricing

According to the subject article:

Average pricing in the Americas for contracts negotiated in 2010 for delivery in 2010 and 2011 falls in the range \$1.36m/MW-\$1.48m/MW.

Included in the Bloomberg survey pricing quote is base equipment, site transportation, and five year O&M. PSE negotiated a price of \$488.8 million with Siemens for the 342.7 MW LSRWP, Phase 1. Included in PSE pricing is turbine erection, which is not a standard option with the majority of OEMs. For comparative purposes, the Siemens’ cost estimate for this service has been netted out.

	Min	Max
Bloomberg Cost Estimate (\$/MW)	1,360,000	1,480,000
Siemens Total (\$/MW)	1,426,247	1,426,247
Siemens Total Less Erection (\$/MW)	1,351,247	1,376,247
Adjusted Siemens vs. Bloomberg Min (\$/MW)	- \$8,753	\$16,247
Adjusted Siemens vs. Bloomberg Min (%)	- 0.64%	1.19%

The terms of the PSE transaction for LSRWP, Phase 1 turbines compares favorably to the Bloomberg survey. PSE negotiated terms that are at the low end of or more favorable than the range of pricing quoted in the article. The low end of the Bloomberg WTG pricing range was \$1.36 million per megawatt of installed capacity. The comparable Siemens price is between \$1.35 and \$1.38 million per megawatt of installed capacity (after netting out the Siemens’ erection estimate of between \$50,000 and \$75,000 per MW of capacity). PSE WTG pricing is between .64% below and 1.19% above the minimum of the industry range as quoted by Bloomberg.

Worth noting is the notion that PSE understands the options included as part of the LSRWP, Phase 1 turbine contract. However, it is not possible to conclude from the information given which options PSE is receiving as part of its contract that the comparative price points are excluding.



O&M Pricing

The article states the following about O&M pricing:

Full service operation and maintenance prices displayed a slight decrease, averaging EUR 29,000-35,000/MW per year for the first five years of operation, down from EUR 34,000-42,000/MW. More importantly, an increasing number of contracts are being agreed for 15 years of O&M, as manufacturers attempt to capture these revenues and make more competitive offerings.

As of August 4, 2010, Oanda.com quotes the Euro / Dollar exchange rate at .76. Therefore, using the Bloomberg rates the annual O&M cost for the 342.7 MW Phase 1 project would fall in the range of \$13 to almost \$16 million per year. PSE negotiated a substantially lower five year O&M contract with costs anticipated to range between \$6 and \$6.5 million.

	Min	Max
Bloomberg O&M Rate (Eur/MW/Yr)	29,000	35,000
Euros / Dollar (8/4/10)	0.75662	0.75662
Bloomberg O&M Rate (\$/MW/Yr)	38,328	46,258
Bloomberg O&M Rate (342.7MW farm \$/Yr)	13,135,127	15,852,740
Siemens O&M Rate (342.7MW farm \$/Yr)	5,938,779	6,472,269
	-	-
Siemens vs. Bloomberg Min (\$/Yr)	\$7,196,348	\$6,662,858
Siemens vs. Bloomberg Min (%)	- 54.79%	- 50.73%

Again, it is important to note that PSE pricing includes bumper to bumper coverage, with the exception of Force Majeure events. We cannot confirm that the comparative Bloomberg pricing is similarly inclusive.



Appendix A: Bloomberg Press Release

From: Bloomberg New Energy Finance <news@newenergyfinance.com>

To: Garratt, Roger

Sent: Wed Aug 04 03:50:16 2010

Subject: Energy: Press Release | Third issue of the Wind Turbine Price Index shows no signs of a price recovery

Press Release

4 August 2010

Third issue of the Wind Turbine Price Index shows no signs of a price recovery

Dear Mr. Roger Garratt,

Company: Puget Sound Energy Inc

Press Release: Third issue of the Wind Turbine Price Index shows no signs of a price recovery

London and New York, 4 August – Wind turbine contract prices signed in 2010 for delivery in H2 2010 and H1 2011 continue to point to a significant decline compared to 2008 prices. This reduction amounts to some 15%, according to the third issue of the Wind Turbine Price Index (WTPI), published this week by leading industry analysis company Bloomberg New Energy Finance.

Bloomberg New Energy Finance analysis shows that turbine prices peaked at EUR 1.22m/MW for contracts signed in 2008 for delivery in H1 2009. Nevertheless, current over-supply in the global market - mainly due to financing issues for wind projects – has led to a sharp fall in pricing for contracts signed in 2010 for delivery in H2 2010 and H1 2011, with average prices coming at EUR 1.04m/MW. The Index shows no signs of a price recovery in the near future.

The Wind Turbine Price Index (WTPI), published twice a year, is based on confidential data provided by 22 turbine buyers – amongst them utilities/power players, independent power producers and project developers, as well as financial investors. The sample included nearly 110 individual contracts totaling 5.6GW of contracted capacity – or 25% of the annual wind market – the most authoritative reference for turbine pricing in the industry. The sample includes contracts in 24 different markets, with 14 manufacturers represented in the analysis.

Key findings include:

- Global turbine contracts signed in 2010 for delivery in H2 2010 and H1 2011 average EUR 1.04m/MW, down by 15% from peak values of EUR 1.22m/MW. This is close to the figure reported in the last WTPI, in December 2009. Contracts currently under negotiation for



delivery in H2 2011 show identical pricing at EUR 1.04m/MW, with no signs of a price recovery in the near future. Prices quoted in this report include the turbines plus transport to site (marine and overland) excluding VAT and all other construction costs.

- Markets with exposure to electricity prices display the largest decrease - especially the US where power purchase agreement prices have softened and those agreements are hard to secure. Average pricing in the Americas for contracts negotiated in 2010 for delivery in 2010 and 2011 falls in the range \$1.36m/MW-\$1.48m/MW. Pricing in Eastern European markets also showed a significant decrease with average pricing coming slightly above EUR 1.00m/MW for deliveries in 2010, down 24% from peak values of EUR 1.32m/MW.
- Several contracts for Tier 1 (leading) manufacturers with over-capacity in 2009-10 and large inventories showed values significantly below average - in some cases well below the EUR 1.00m/MW benchmark.
- Full service operation and maintenance prices displayed a slight decrease, averaging EUR 29,000-35,000/MW per year for the first five years of operation, down from EUR 34,000-42,000/MW. More importantly, an increasing number of contracts are being agreed for 15 years of O&M, as manufacturers attempt to capture these revenues and make more competitive offerings.
- Procurement officers for some of the main turbine buyers expect a further decrease in pricing in 2010 and 2011, of 4% and 1% respectively. They only expect price increases from 2013, a significantly more conservative attitude than in the previous report.

William Young, manager of the Wind Insight Service at Bloomberg New Energy Finance, said: "Expectations for turbine prices have never been so low, and the current market oversupply will continue for quite a while longer. That may not be great for wind turbine manufacturers, but the good news for the sector is that it will improve the competitiveness of wind with gas, coal and nuclear as a means of generating electricity."

The Bloomberg New Energy Finance Wind Turbine Price Index executive summary is available to Wind Insight Service subscribers here: <http://www.bnef.com/Insight/2050>.

Companies that provided data for inclusion in the Index have received a more detailed report free of charge. The Index will be updated twice a year, and we are in discussion with additional companies planning to participate. If your company has bought or sold wind turbines during 2008-10, and you would like to participate in the survey please email Eduardo Tabbush, who is responsible for producing the Index report (etabbush@bloomberg.net).

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