

EXHIBIT NO. ____ (WJE-3C)
DOCKET NO. UE-07 ____
2007 PSE PCORC
WITNESS: W. JAMES ELSEA

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

Docket No. UE-07 ____

**SECOND EXHIBIT (CONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF
W. JAMES ELSEA
ON BEHALF OF PUGET SOUND ENERGY, INC.**

**REDACTED
VERSION**

MARCH 20, 2007

Aurora and PSM Phase 2 Analysis (4/14/2006)

Gas price correction noted 7-19-06

Table 1. PSE Scenario Values Referenced on Global Insights Natural Gas Scenarios

Scenario	Reference Current Trends	Reserve/ Overbuild	High Price/Green World	Low Gas Price	Notes
WECC Demand (AURORA)	Reference (from EPIS) WECC Average Growth Rate 1.8%	Reference (from EPIS) WECC Average Growth Rate 1.8%	Low WECC Average Growth Rate 1.1%	Reference WECC Average Growth Rate 1.8%	Low Growth Rate is 60% of Reference Growth Rate for each area
Gas Price (Nominal \$ Levelized for 2007-2026)	Global Insights Reference; Levelized, plus Kioderx forwards 2007 – 2010 \$X.XX/MMBTU	Global Insights Reference; Levelized, plus Kioderx forwards 2007 – 2010 \$X.XX/MMBTU	Global Insights High Price; Levelized, plus Kioderx forwards 2007 – 2010 \$X.XX/MMBTU	Global Insights Low Economic Growth; Levelized; Kioderx forwards 2007 – 2008 \$X.XX/MMBTU	Global Insights (12/05) and Kiodex forwards (2007- 2010) as of 12/19/2005
Coal Price (\$2004/mmBtu)	\$0.90 – PRB \$1.00 – Rockies \$1.10 – NW \$1.25 - SW	\$0.90 – PRB \$1.00 – Rockies \$1.10 – NW \$1.25 - SW	Reference	Reference	Source: Platts 2004 Coal Market Research and M. Jones. Price increases 0.75% real per year.
PSE Demand (PSM)	Reference	Reference	Low	Reference	Most recent PSE load forecast.
Generic Resource Costs	PSE	PSE	PSE	PSE	
Carbon Costs (AURORA)	NCEP Nominal \$/ton by year: 2010: \$5.00 2015: \$6.38 2020: \$8.14	NCEP Nominal \$/ton by year: 2010: \$5.00 2015: \$6.38 2020: \$8.14	Clean Power (Jeffords) Nominal \$/ton by year: 2010: \$21.00 2015: \$31.17 2020: \$45.35	NCEP Nominal \$/ton by year: 2010: \$5.00 2015: \$6.38 2020: \$8.14	NCEP increases 2.5% real per year. Clean Power increases about 4% per year real over 20 years
SO2 (PSM)	Clear Skies Nominal \$/ton by year: 2010: \$978 2015: \$1435 2020: \$2105	Clear Skies Nominal \$/ton by year: 2010: \$978 2015: \$1435 2020: \$2105	Clean Air (Carper) Nominal \$/ton by year: 2010: \$1481 2015: \$2175 2020: \$3191	Clear Skies Nominal \$/ton by year: 2010: \$978 2015: \$1435 2020: \$2105	

Scenario	Reference Current Trends	Reserve/ Overbuild	High Price/Green World	Low Gas Price	Notes
NOX (PSM)	Clear Skies Nominal \$/ton by year: 2010: \$297 2015: \$436 2020: \$640	Clear Skies Nominal \$/ton by year: 2010: \$297 2015: \$436 2020: \$640	Clean Air (Carper) Nominal \$/ton by year: 2010: \$5742 2015: \$2012 2020: \$1522	Clear Skies Nominal \$/ton by year: 2010: \$297 2015: \$436 2020: \$640	
RPS (AURORA)	Meet all WECC RPS by 2026. Wind 20,901 MW Solar 500 MW Geo 1014 MW Bio 375 MW Mkt. Builds Wind 2,200 MW	Meet all WECC RPS by 2026. Wind 20,901 MW Solar 500 MW Geo 1014 MW Bio 375 MW Mkt. Builds Wind 2,200 MW	Meet all non-wind RPS by 2026. Solar 500 MW Geo 1014 MW Bio 375 MW Mkt. Builds Wind 28,800 MW	Meet all RPS through 2011. Wind 7,615 MW Solar 241 MW Geo 558 MW Bio 263 MW Mkt. Builds No More	Only Wind renewables in builds.
PTC For Wind	2007-2009: \$19 2010-2011: \$10 2012-2026: \$0	2007-2009: \$19 2010-2011: \$10 2012-2026: \$0	2007-2009: \$19 2010-2011: \$10 2012-2026: \$0	2007-2009: \$19 2010-2011: \$10 2012-2026: \$0	Credit in nominal \$/MWh.
Overbuild	No	Yes; Net Additions are approx. 30% greater in 2015 and 10% greater in 2025	No	No	

Table 2. Optimization Build Limits for WECC

Resource	Reference	Reserve/ Overbuild	High Price/Green World	Low Gas Price	Notes
Coal	Builds can start in 2010 and are limited to 9 areas in the WECC. Coal builds are limited to meet load growth only within each area.	Reference	Reference	Reference	See Table 3 for limits by year and by area by 2007-2026.
IGCC	Builds can start in 2014 for 10 areas in the WECC. Coal builds are limited to meet load growth only within each area.	Reference	Reference	Reference	See Table 4 for limits by year and by area by 2007-2026.
CCCT	Builds can start in 2007.	Reference	Reference	Reference	See Table 5 for limits by year and by area by 2007-2026.
SCCT	Builds can start in 2007	Reference	Reference	Reference	See Table 6 for limits by year and by area by 2007-2026.
Wind	Builds start in 2007	Reference	Reference	Reference	See Table 7 for limits by year and by area by 2007-2026.
Unretires	All	All	All Non-Coal	All	Unretire keeps uneconomic plants available for peaking capacity.
Overbuild	No	Yes Model builds 9 GW more WECC supply resources by 2015 than in the reference case.	No	No	In the reserve case, the demand in the WECC is increased approximately 1 % per year over the reference demand for 6 years. The model is optimized to this demand level and then the hourly run uses this build result with the reference demand.

Table 3. Assumptions for Scrubbed Sub-Critical Pulverized Coal

Source: R:\Acquisition\2005 RFP Prep\Quantitative Analysis Preparation\Model Assumptions\Coal\Update Coal Limits V8.xls

Annual Build Limits by Area

Area	Area Name	Begin Date	Annual Max	Overall Max	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
44	OR-Ea	0	0	0																	
45	PG&EN	0	0	0																	
46	SCE+	0	0	0																	
47	BC	0	0	0																	
48	ID-So	1/1/2012	0	0																	
49	MT	1/1/2012	NA	2			1				1				1						
50	WY	1/1/2013	NA	2						1			1		1						
51	CO	1/1/2010	NA	3	1			1			1			1	1						
52	NM	1/1/2010	NA	2	1						1			1	1						
53	AZ	1/1/2013	NA	3				1			1		1	1	1						
54	UT	1/1/2012	NA	2			1				1		1		1						
55	NVNo	1/1/2011	NA	1					1			1			1						
56	AB	1/1/2011	NA	2		1					1		1		1						
59	BajaN	0	0	0																	
60	NVSo	1/1/2011	NA	2		1			1			1			1						
78	IID	0	0	0																	
79	LDWP+	0	0	0																	
80	SF	0	0	0																	
81	ZP26+	0	0	0																	
82	SDGE+	0	0	0																	
83	SMUD	0	0	0																	
90	ID-Ea	0	0	0																	
91	OR-We	0	0	0																	
92	WA-Ctr	0	0	0																	
93	Oly	0	0	0																	
94	PACW	0	0	0																	
95	PSNo	0	0	0																	
96	SeaTac	0	0	0																	
97	Spok	0	0	0																	
Total	Units		10	19																	
	MW			11,400																	

Note: Plant size is 600 MW.

Table 4. Assumptions for IGCC

Source: R:\Acquisition\2005 RFP Prep\Quantitative Analysis Preparation\Model Assumptions\Coal\Update Coal Limits V8.xls

Annual Build Limits by Area																	
Area	Area Name	Begin Date	Annual Max	Overall Max	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
44	OR-Ea	0	0	0													
45	PG&EN	0	0	0													
46	SCE+	0	0	0													
47	BC	0	0	0													
48	ID-So	2014	NA	1									1				1
49	MT	2014	NA	1						1			1			1	
50	WY	2014	NA	2							1			1			1
51	CO	2014	NA	3					1			1			1		
52	NM	2014	NA	2					1			1			1		
53	AZ	2014	NA	4	1			1			1			1			
54	UT	2014	NA	2									1			1	
55	NVNo	2014	NA	1				1			1			1			1
56	AB	2014	NA	4			1			1			1			1	
59	BajaN	0	0	0													
60	NVSo	2014	NA	3		1			1			1			1		
78	IID	0	0	0													
79	LDWP+	0	0	0													
80	SF	0	0	0													
81	ZP26+	0	0	0													
82	SDGE+	0	0	0													
83	SMUD	0	0	0													
90	ID-Ea	0	0	0													
91	OR-We	0	0	0													
92	WA-Ctr	0	0	0													
93	Oly	0	0	0													
94	PACW	0	0	0													
95	PSNo	0	0	0													
96	SeaTac	0	0	0													
97	Spok	0	0	0													
Total	Units		10	23													
	MW			5,750													

Note: Plant size is 250 MW.

Table 5. Assumptions for CCCT gas/oil Adv

Source: R:\Acquisition\2005 RFP Prep\Quantitative Analysis Preparation\Model Assumptions\

Coal\Update Coal Limits V8.xls

Area	Area Name	Begin Date	Annual Max	Overall Max	Notes
44	OR-Ea	2007	5	50	
45	PG&EN	2007	10	100	
46	SCE+	2007	20	150	
47	BC	2007	5	50	
48	ID-So	2007	5	50	
49	MT	2007	5	50	
50	WY	2007	5	50	
51	CO	2007	10	100	
52	NM	2007	10	100	
53	AZ	2007	10	100	
54	UT	2007	10	100	
55	NVNo	2007	5	50	
56	AB	2007	10	50	
59	BajaN	2007	5	50	
60	NVSo	2007	4	50	
78	IID	2007	10	50	
79	LDWP+	2007	10	50	
80	SF	2007	10	50	
81	ZP26+	2007	10	50	
82	SDGE+	2007	10	50	
83	SMUD	2007	10	50	
90	ID-Ea	2007	10	50	
91	OR-We	2007	10	50	
92	WA-Ctr	2007	10	50	
93	Oly	2007	10	50	
94	PACW	2007	10	50	
95	PSNo	2007	10	50	
96	SeaTac	2007	10	50	
97	Spok	2007	10	50	
Total	Units		259	1800	
	MW			990,000	Plant size is 400 MW.

Table 6. Assumptions for SCCT Adv

Source: R:\Acquisition\2005 RFP Prep\Quantitative Analysis Preparation\Model Assumptions\
Coal\Update Coal Limits V8.xls

Area	Area Name	Begin Date	Annual Max	Overall Max	Notes
44	OR-Ea	2007	10	100	
45	PG&EN	2007	20	150	
46	SCE+	2007	20	150	
47	BC	2007	5	50	
48	ID-So	2007	5	50	
49	MT	2007	5	50	
50	WY	2007	5	50	
51	CO	2007	10	100	
52	NM	2007	10	100	
53	AZ	2007	20	150	
54	UT	2007	5	50	
55	NVNo	2007	10	100	
56	AB	2007	10	50	
59	BajaN	2007	5	50	
60	NVSo	2007	5	50	
78	IID	2007	10	50	
79	LDWP+	2007	10	50	
80	SF	2007	10	50	
81	ZP26+	2007	10	50	
82	SDGE+	2007	10	50	
83	SMUD	2007	10	50	
90	ID-Ea	2007	10	50	
91	OR-We	2007	10	50	
92	WA-Ctr	2007	10	50	
93	Oly	2007	10	50	
94	PACW	2007	10	50	
95	PSNo	2007	10	50	
96	SeaTac	2007	10	50	
97	Spok	2007	10	50	
Total	Units		285	1950	
	MW			448,500	Plant size is 230 MW

Table 7. Assumptions for Wind

Source: R:\Acquisition\2005 RFP Prep\Quantitative Analysis Preparation\Model Assumptions\
Coal\Update Coal Limits V8.xls

Area	Area Name	Begin Date	Annual Max	Overall Max	Notes
44	OR-Ea	1/1/2007	1	20	
45	PG&EN	1/1/2007	1	20	
46	SCE+	1/1/2007	1	20	
47	BC	1/1/2007	1	10	
48	ID-So	1/1/2007	1	10	
49	MT	1/1/2007	1	20	
50	WY	1/1/2007	1	20	
51	CO	1/1/2007	1	20	
52	NM	1/1/2007	1	10	
53	AZ	1/1/2007	1	10	
54	UT	1/1/2007	1	10	
55	NVNo	1/1/2007	1	10	
56	AB	1/1/2007	1	10	
59	BajaN	1/1/2007	0	0	
60	NVSo	1/1/2007	1	10	
78	IID	1/1/2007	1	10	
79	LDWP+	1/1/2007	1	10	
80	SF	1/1/2007	0	0	
81	ZP26+	1/1/2007	0	0	
82	SDGE+	1/1/2007	0	0	
83	SMUD	1/1/2007	0	0	
90	ID-Ea	1/1/2007	1	10	
91	OR-We	1/1/2007	1	20	
92	WA-Ctr	1/1/2007	1	20	
93	Oly	1/1/2007	0	0	
94	PACW	1/1/2007	1	20	
95	PSNo	1/1/2007	0	0	
96	SeaTac	1/1/2007	0	0	
97	Spok	1/1/2007	1	20	
Total	Units		21	310	New limit of 2 plants per year.
	MW			31,000	Plant size is 100 MW.