

**EXHIBIT NO. \_\_\_(KJH-6HC)  
DOCKET NO. UE-07\_\_\_/UG-07\_\_\_  
2007 PSE GENERAL RATE CASE  
WITNESS: KIMBERLY J. HARRIS**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY, INC.,**

**Respondent.**

**Docket No. UE-07\_\_\_  
Docket No. UG-07\_\_\_**

**FIFTH EXHIBIT (HIGHLY CONFIDENTIAL) TO THE  
PREFILED DIRECT TESTIMONY OF  
KIMBERLY J. HARRIS  
ON BEHALF OF PUGET SOUND ENERGY, INC.**

**REDACTED  
VERSION**

**DECEMBER 3, 2007**



**RESOURCE ACQUISITION UPDATE**  
**June 11, 2007**

Roger Garratt  
Director, Resource Acquisition

# Agenda

- Short List Status
- Renewable Acquisition
- Gas-Fired Generation
- Wind Integration
- Other Resource Opportunities

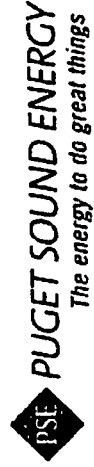
# 2005 Final Short List Status

Natural Gas	Goldendale	Calpine	277	ownership	Mar-07	Complete			
PPA	Winter On Peak Energy		150	4 year PPA	2008-2012	Complete			
Wind	Klondike III	PPM Energy	50	20 year PPA	Dec-07	Under Negotiation			
PPA	Annual On Peak Energy		100-300	6 year PPA	2007-2013				
Geothermal			15	25 year PPA	12/1/2008 - 11/30/2032	Pending			
Natural Gas	Redacted		280	15 year tolling PPA	1/1/2012- 12/31/2025	Unlikely			
Natural Gas			8	ownership	Mar-07	Unlikely			

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Per WAC 480-07-160

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# RPS Compliance Strategy

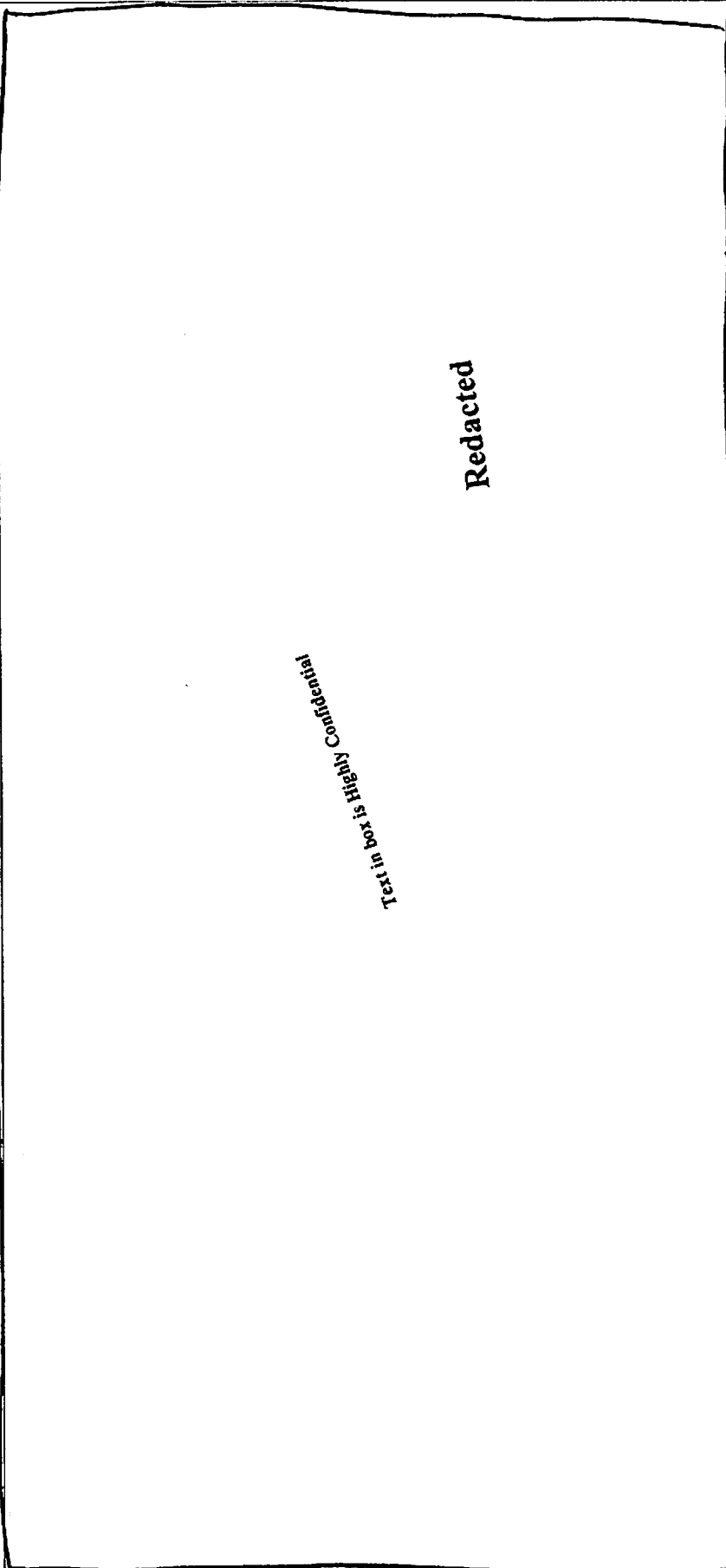
Future Renewable Acquisitions

Under Active Consideration: K3 +  +  + HR In-fill + WH Solar +

Existing Renewables: Hopkins Ridge + Wild Horse

- - - - - PSE 10% Goal

— RPS Requirement



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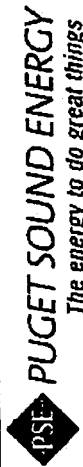


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# Identified Renewable Opportunities

Project	Developer	County	State	Status	MW
Klondike III	PPM Energy	Sherman	OR	Construction	226
Stalene III	FPL Energy	Umatilla	WA/OR	Permitted	204
Nine Canyon Phase III	Energy Northwest	Benton	WA	Permitted	32
Combine Hills II	Eurus Energy America, Inc.	Umatilla	OR	Permitted	63
Leaning Juniper II	PPM Energy	Gilliam	OR	Planned	100
White Creek I, II	Last Mile Electric Cooperative	Klickitat	WA	Permitted	205
Arlington	Horizon / CEP	Gilliam	OR	Permitted	104
Kittitas Valley	Horizon	Kittitas	WA	Planned	130
Biglow Canyon	Portland General Electric	Sherman	OR	Planned	450
Whiskey Ridge	Horizon	Kittitas	WA	Planned	44
Windy Point I, II	Cannon Power	Klickitat	WA	Permitted	250
Shepherds Flats	Caithness	Morrow	OR	Permitted	750
Goodnoe Hills	Windtricity	Klickitat	WA	Permitted	125
Elkhorn Valley I, II	Horizon	Union	OR	Permitted	404
Vantage	Invenery	Kittitas	WA	Planned	92
Seven Mile Hill	UPC Wind Partners	Wasco	OR	Planned	50
Summit Ridge	K3 Wind, LLC	Wasco	OR	Planned	10
Reardan Twin Buttes	Energy Northwest	Lincoln	WA	Potential	50
Curry County	Pacific Windpower	Curry	OR	Potential	100
Pendleton Wind Project	SeaWest	Umatilla	OR	Potential	85
Desert Claim	enXco	Kittitas	WA	Planned	180
Arlington II	Horizon	Gilliam	OR	Potential	100
Hector Ridge	Windtricity Ventures, LLC	Klickitat	WA	Permitted	60
Rock Island	Pacific Renewable Energy	Douglas	WA	Planned	130
JV Columbia/Garfield Co Projects	PSE / RES	Columbia	WA	Potential	600

# Renewable Opportunities (cont'd)

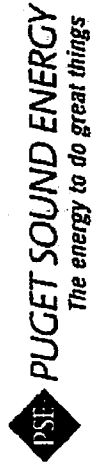
Project	Developer	County	State	Status	MW
China Hollow	Sherman County	Sherman	OR	Potential	1.5
Columbia Wind Ranch	Cielo Wind	Klickitat	WA	Potential	80
Dalles	Columbia Energy Partners	Polk	OR	Potential	
Gordon Ridge	Sherman County	Sherman	OR	Potential	10
Klickitat Wind	Klickitat Co PUD/Wind Turbine Co.	Klickitat	WA	Potential	15
Langlois Hills	Horizon	Curry / Coos	OR	Potential	130
Mar-Lu	Columbia Energy Partners	Gilliam	OR	Potential	5
Rattlesnake Hills	Columbia Energy Partners	Yakima	WA	Potential	
Saddleback	Horizon	Skamania	WA	Potential	70
West Butte	Horizon	Crook	OR	Potential	50
Willow Creek Winds	Invenery	Gilliam / Morrow	OR	Planned	72
Burnt River	Horizon	Baker	OR	Potential	200
Mabton	Columbia Energy Partners	Yakima	WA	Potential	
Pueblo Mountains	Horizon	Harney	OR	Potential	90
Saddle Mountain	Horizon	Grant	WA	Potential	300
Stinkingwater Mts.	Horizon	Harney	OR	Potential	300
Threemile Canyon Wind Farm	Momentum Renewable Energy	Morrow	OR	Potential	15
Withrow	Douglas Co PUD	Douglas	WA	Potential	70
Horse Heaven	Pacific Winds	Benton	WA	Terminated	150
Maiden Wind Project	Pacific Winds	Benton	WA	Terminated	150
Tieton	-	Yakima	WA	Potential	100
Half Moon	-	-	ID	Potential	100
Svenson - Reed Point	West	Stillwater	MT	Potential	400
White Buffalo	West	-	MT	Potential	255

**Total = 105 MW**

# Targeted Renewables

IMW	COD	Project	Developer	County	State	CF	Notes
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Redacted							
1,724	TOTAL						

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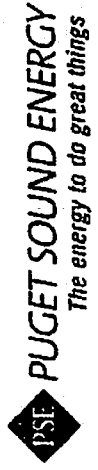




# Natural Gas Opportunities

				State	Commercial	COB
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Per WAC 480-07-160



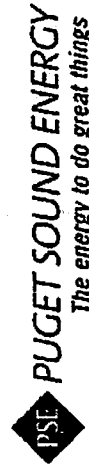
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# Reciprocating engines for wind integration

- Increased wind in PSE resource portfolio will consume load-following capability
- [redacted] are well suited for providing ancillary services:
  - ◆ Supplemental reserves (10-minute start)
  - ◆ Spinning reserves
  - ◆ Regulation and frequency response
  - ◆ Load following and hourly dispatch
  - ◆ Remote monitoring and control
  - ◆ Black-start capability
- Existing PSE locations available

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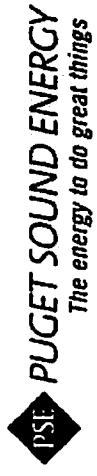


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# Other Resource Opportunities

- [Redacted] – Bridging PPAs / Cash Flow Hedging
- [Redacted] – Bridging PPAs / Cash Flow Hedging
- [Redacted] – Bridging PPAs / Cash Flow
- [Redacted] – ancillary services
- [Redacted] – Coal to pipeline-quality gas

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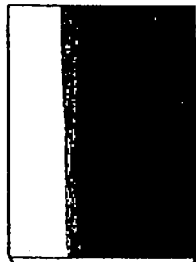
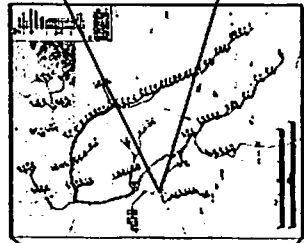
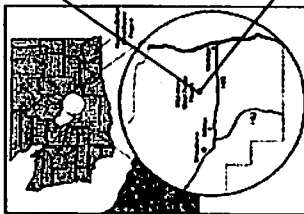
# Appendix



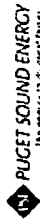
# Renewables – Implementation Projects

## Wild Horse Solar Demonstration Project

- 500 kW Project – 300 homes at peak
- Triple the solar capacity in WA
- Largest in the Pacific Northwest by a factor of four
- ~5 Acre Footprint
- \$4-5 million in capital costs
- Target completion in fall of 2007
- Located at Wild Horse Wind Farm near Ellensburg, WA
- First in nation wind-solar facility
- Excellent sun - same solar resource as Houston
- Already disturbed land
- Existing transmission and operational synergies
- Added tax benefits from co-location

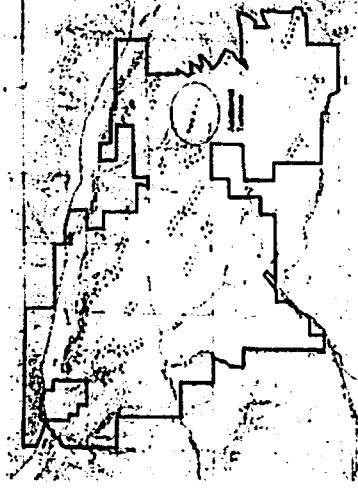


Primary Solar Site - Former quarry, too high for wind turbines (FAA airspace concerns)

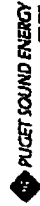


## Hopkins Ridge In-Fill Project

**Location:** Columbia County  
**Size:** 7.2 MW - Add back in 769-771, which were replaced prior to closing.  
**Capacity Factor:** 32.66%  
**Turbines:** 4 - Vestas V80s  
**Real Estate:** 1.6MW  
**Interconnection:** Under Lease from DNR  
**Transmission:** Tucuman - BPA Existing BPA Agreement<sup>1</sup>  
**Permitting:** Permitted  
**Levelized Cost:** \$74.53/MWh  
**Portfolio Benefit:** \$4.9 MM  
**Benefit Ratio:** 0.3553  
**Capital Cost/MW:** \$1,893



<sup>1</sup> Assumes 34.1% from GH Report and 1.42% discount for storage of generation >150MW.  
<sup>2</sup> Assumes use of existing 150MW of transmission, split above 150MW





**RESOURCE ACQUISITION UPDATE**  
**July 20, 2007**

Roger Garratt  
Director, Resource Acquisition

# 2007 Resource Acquisition

## Completed

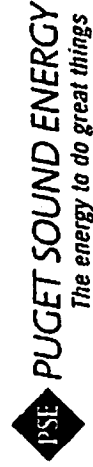
Fuel	Project	Owner / Developer	MW	Offer	COB/Term	Status
Natural Gas	Goldendale	Calpine	277	Ownership	Mar-07	Complete
PPA	Winter On Peak Energy	[Redacted]	150	4 year PPA	2008-2012	Complete
Wind	Klondike III	PPM Energy	50	20 year PPA	Dec-07	Complete
PPA	Partial Sumas Energy Replacement	Lehman	50	~4 year PPA	2009-Q1, 2013	Complete

## Pending Resource Opportunities

Fuel	Project	Owner / Developer	MW	Offer	COB/Term	Status
PPA	Ancillary Services	[Redacted]	100	1-2 year PPA		In discussion
PPA	[Redacted]		75/25	~4 year PPA	2009-Q1, 2013	Expected completion - July 24, 2007
Wind	Greenfield Opportunities	PSE or PSE/Joint Development Partner				Exploratory

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# Targeted Renewables

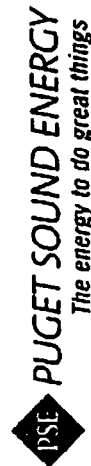
MW	COB	Project	Developer	County	State	CFE	Notes
7	2008	Hopkins Ridge Infill	PSE	Columbia	WA	35.0%	Turbine & Service Agreements under negotiation
<b>1545 TOTAL</b>							

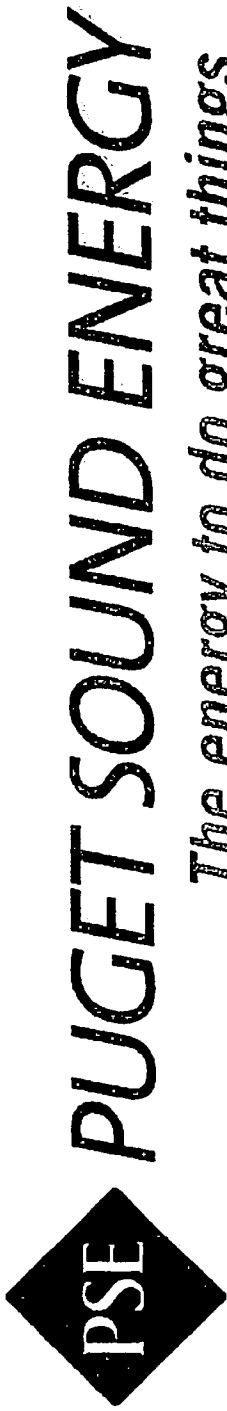
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Note: PSE is actively following all the projects above. Out of this list, 420 aMW of incremental renewable resources is needed to meet the RPS requirement.

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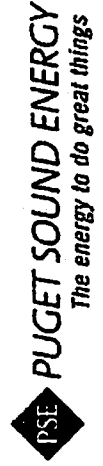
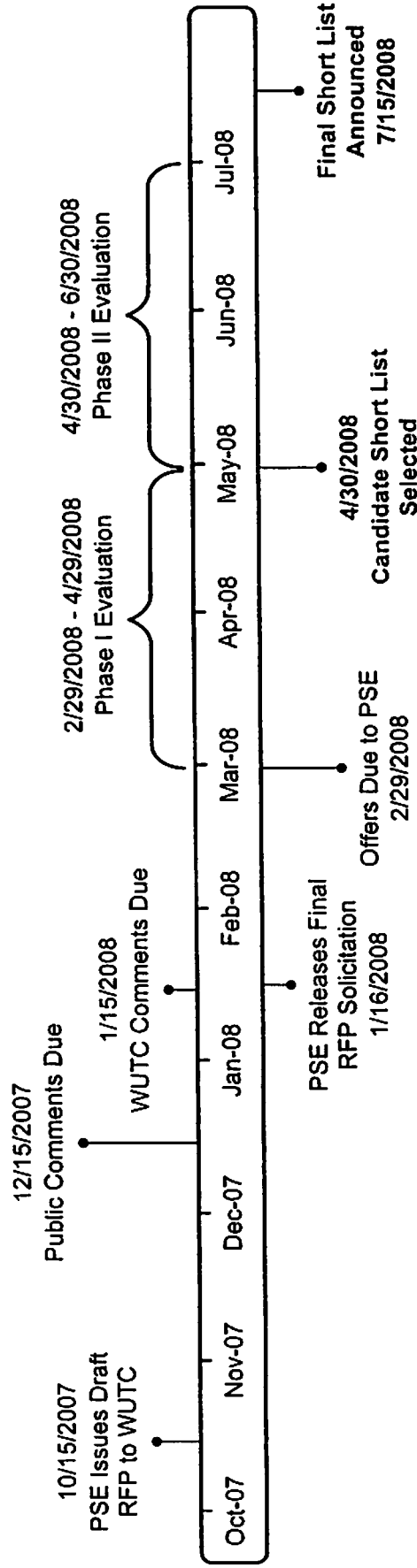


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# **2008 RFP Update to EMC**

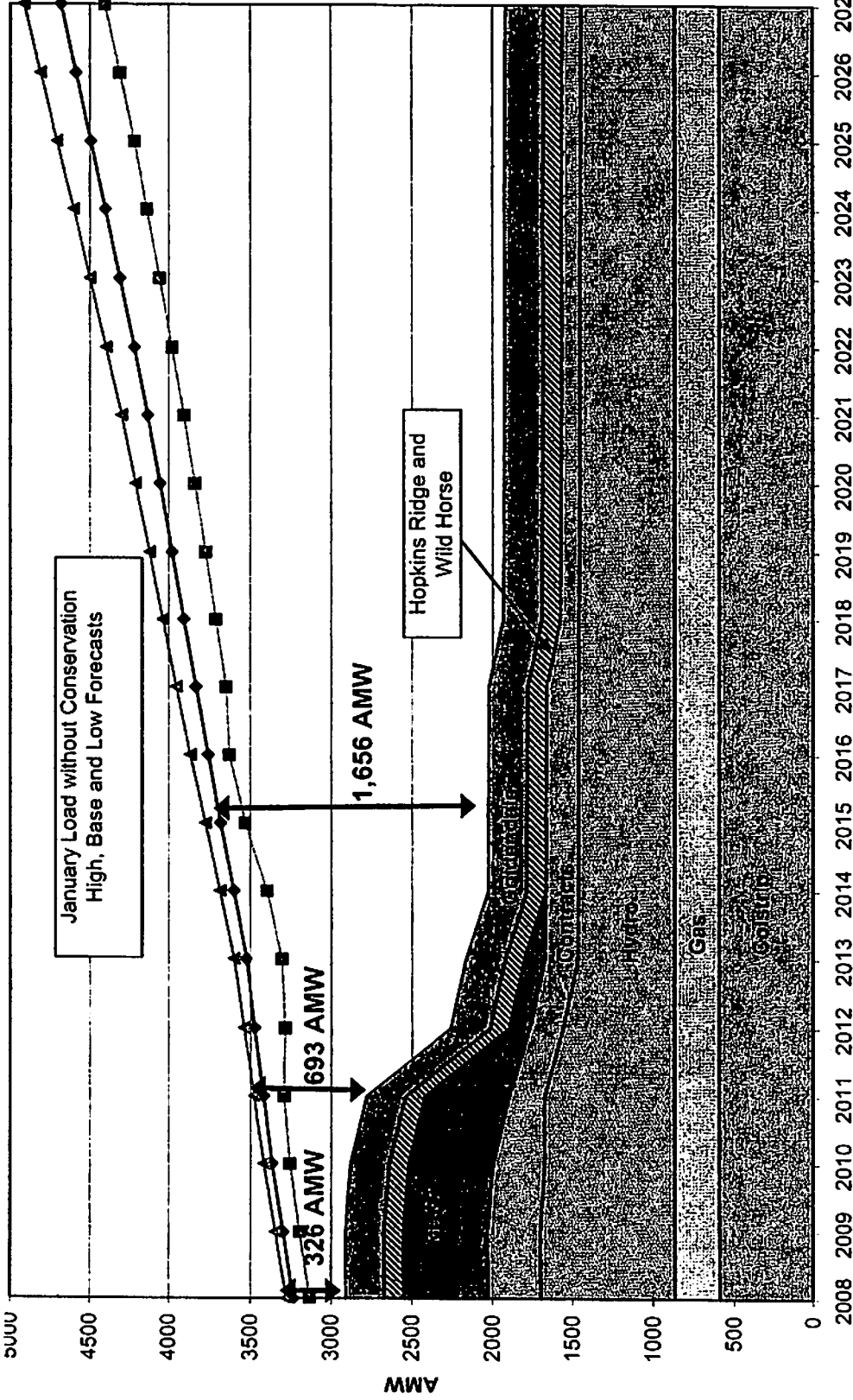
## **September 25, 2007**

# 2008 RFP Timeline



# Electric Energy Need

Energy Load Resource Balance – 2007 IRP



# Overview of the RFP

- Solicitation period 2008-2015
- Products Requested
  - ◆ Existing projects
  - ◆ Development assets (various stages)
  - ◆ Capacity proposals vs. self-build (Wartsila)
  - ◆ Power Bridging Agreements
  - ◆ Ancillary Services
- PSE Responds to Lessons Learned from 2005 RFP

## 2005 Lessons Learned

RFP process would benefit from being quicker & more nimble

Lost opportunities for renewables prior to final shortlist impact selection

Prolonged evaluation of short-term

PPAs delays execution &

increases price risk

## 2008 Improvements

Overall timeline reduced by two months

Engage renewables respondents earlier to reduce drop outs

Evaluation process streamlined



**RESOURCE ACQUISITION UPDATE**  
September 25, 2007

Roger Garratt  
Director, Resource Acquisition & Emerging Technologies

# 2007 Resource Acquisition

## Completed

Fuel	Project	Owner /Developer	MW	Offer	COD/Term	Status
Natural Gas	Goldendale	Calpine	277	ownership	Mar-07	Complete
System Power	Winter On Peak Energy		150	4-year PPA	2008-2012	Complete
Wind	Klondike III	PPM Energy	50	20-year PPA	Dec-07	Complete
System Power			50	~4-year PPA	2009-Q1,2013	Complete
System Power			75/25*	~4-year PPA	2009-Q1,2013	Complete

\*75 MW Q1, Q3 and Q4; 25 MW Q2

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## Active Resource Opportunities

Fuel	Project	Owner /Developer	MW	Offer	COD/Term	Status
Wind	Hopkins Ridge Infill	PSE	7	Ownership	Jul-08	Under negotiation
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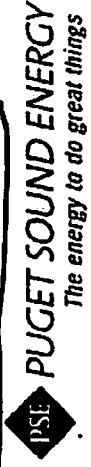


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# Targeted Renewable Opportunities for Future Acquisition & Improved Control

## Acquisition and Development Opportunities

AMW	SOB	Project	County	State	Notes
					Redacted

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## Joint Development Opportunities

AMW	SOB	Project	County	State	Notes
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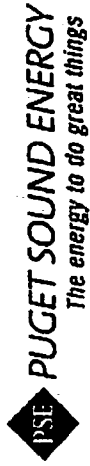


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**RESOURCE ACQUISITION UPDATE**  
**October 31, 2007**

Roger Garratt  
Director, Resource Acquisition & Emerging Technologies

# 2007 Resource Acquisition

Completed

Fuel	Project	Owner/Developer	MW	Offer	COD/Term	Status
Natural Gas	Goldendale	Calpine	277	ownership	Mar-07	Complete
System Power	Winter On Peak Energy		150	4-year PPA	2008-2012	Complete
Wind	Klondike III	PPM Energy	50	20-year PPA	Dec-07	Complete
System Power	<b>Redacted</b>		50	~4-year PPA	2009-Q1,2013	Complete
System Power			75/25*	~4-year PPA	2009-Q1,2013	Complete

\*75 MW Q1, Q3 and Q4; 25 MW Q2

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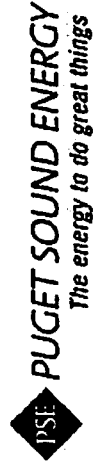
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# 2007 Resource Acquisition

## Active Resource Opportunities

Fuel	Project	Owner/Developer	MW	Offer	COE Term	Status
Natural Gas	Sumas Cogen	Sumas	133	Ownership	8-May-07	Under negotiation
Wind	Hopkins Ridge Infill	PSE	7	Ownership	Jul-08	Under negotiation
<i>Redacted</i>						

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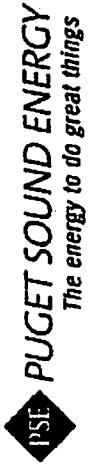


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