

**EXHIBIT NO. ___(RG-5HC)
DOCKET NO. UE-09___/UG-09___
2009 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-09___
Docket No. UG-09___**

**FOURTH EXHIBIT (HIGHLY CONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF
ROGER GARRATT
ON BEHALF OF PUGET SOUND ENERGY, INC.**

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MAY 8, 2009

2008 RFP Phase I Update

Meeting with WUTC Staff

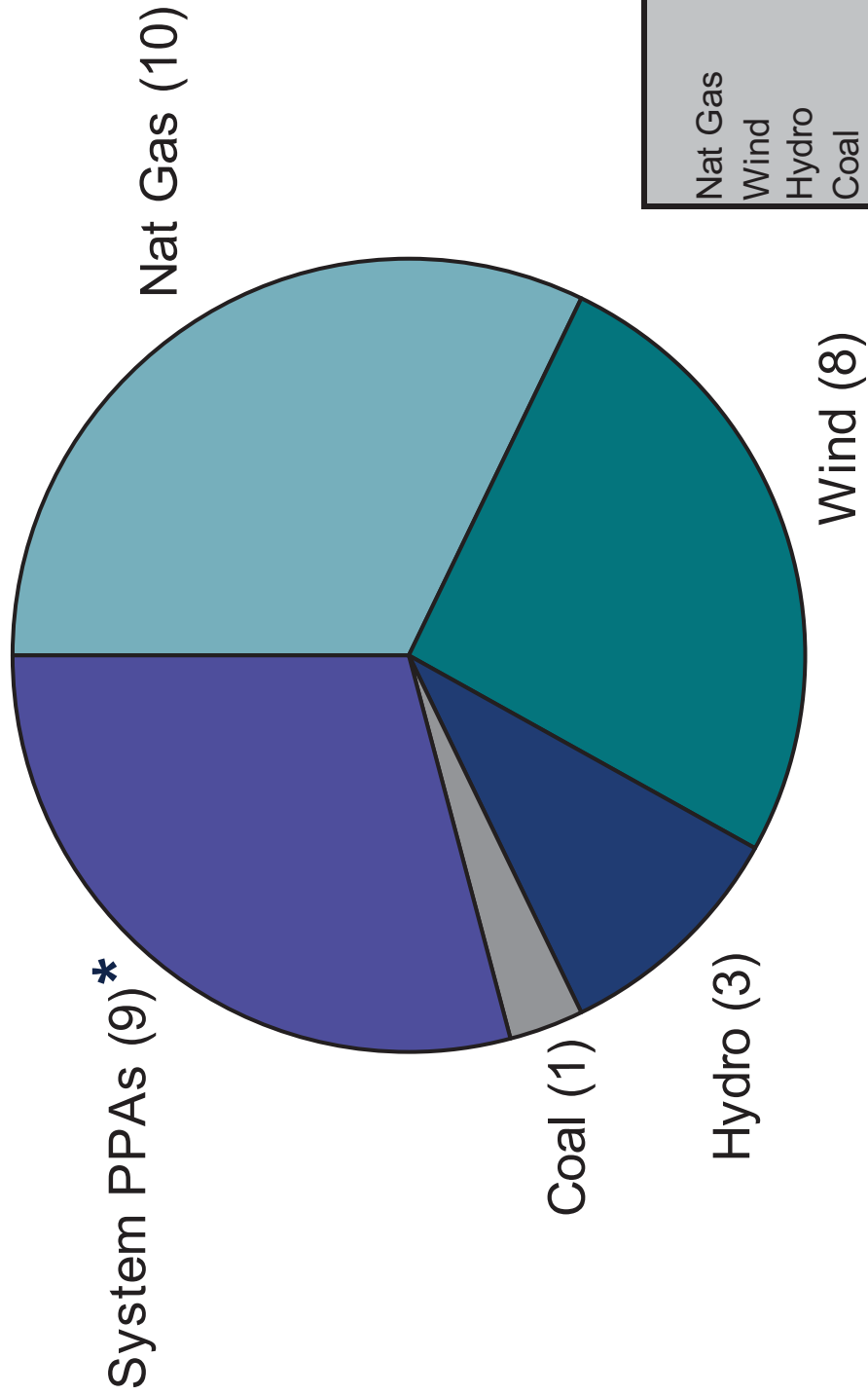
May 28, 2008



Agenda

- ◆ Proposals Received
- ◆ Market Observations
- ◆ Rising Resource Costs
- ◆ Quantitative Selection Metrics
- ◆ Phase I Candidate List
- ◆ Phase II Model & Scenario Updates

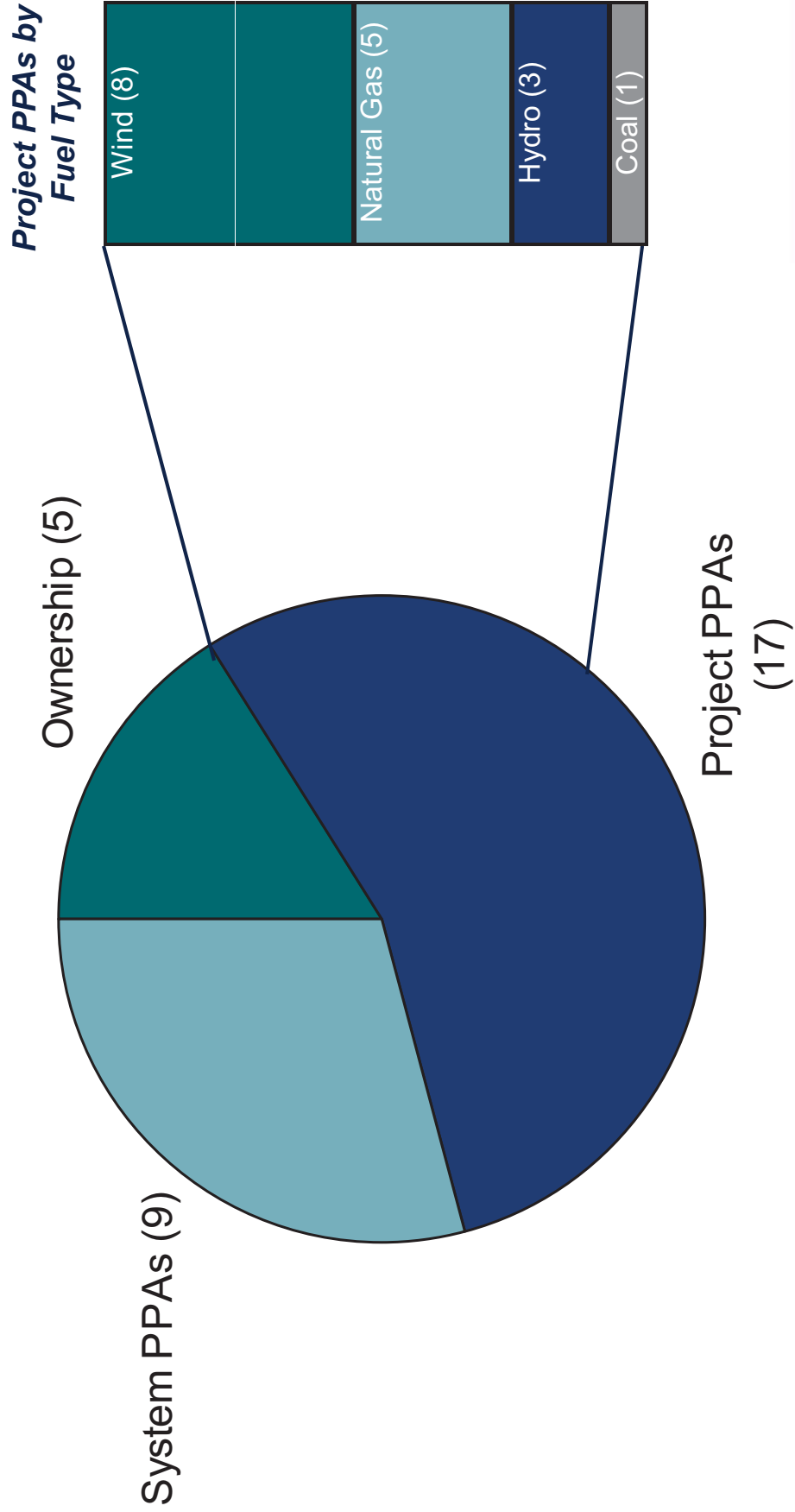
Proposals Received – 31 Proposals and 5,390 MWs



	# of MW
Nat Gas	2588
Wind	862
Hydro	165
Coal	100
System PPAs	1675
Total	5390

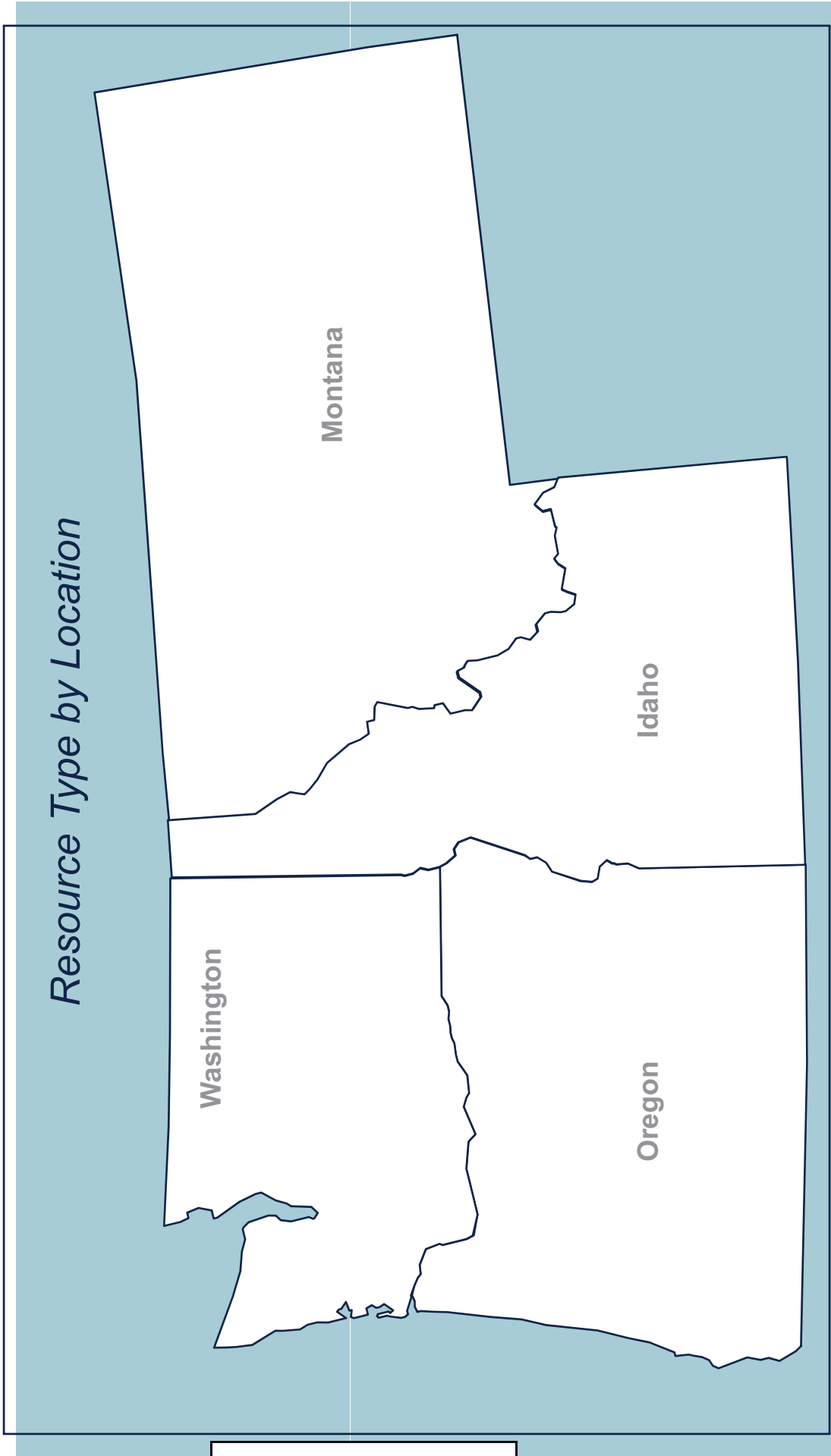
Proposals Received

Ownership vs. PPAs*



4 * Purchased Power Agreements (PPAs)

Proposals Received

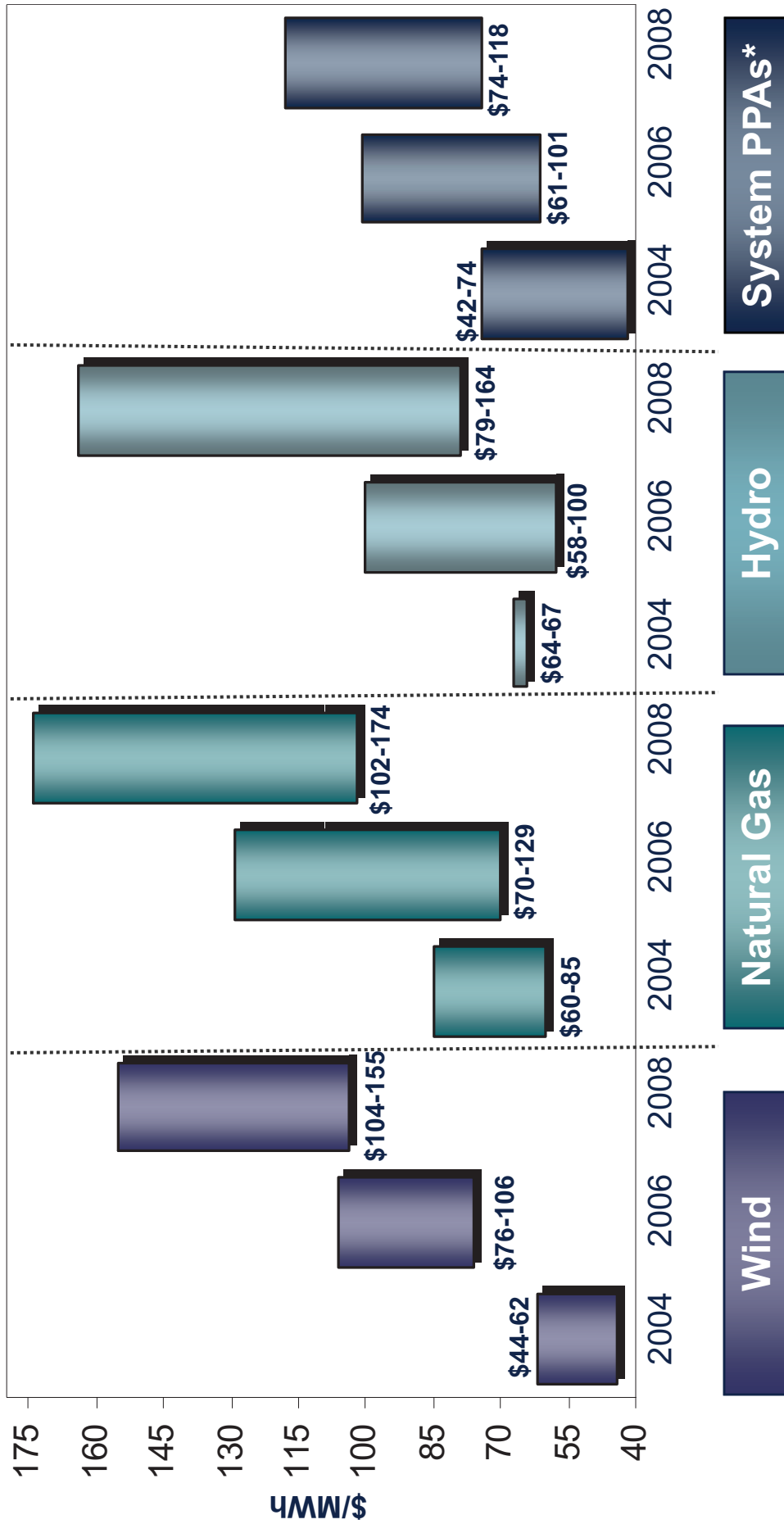


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RFP/Market Observations

- ◆ Fewer proposals with less resource diversity
- ◆ Continued higher capital costs
- ◆ More wind power purchase agreements versus ownership opportunities
- ◆ Offers predicated on extension of PTC
- ◆ Regional transmission solutions gaining momentum
- ◆ Rise in wind component manufacturers in the US

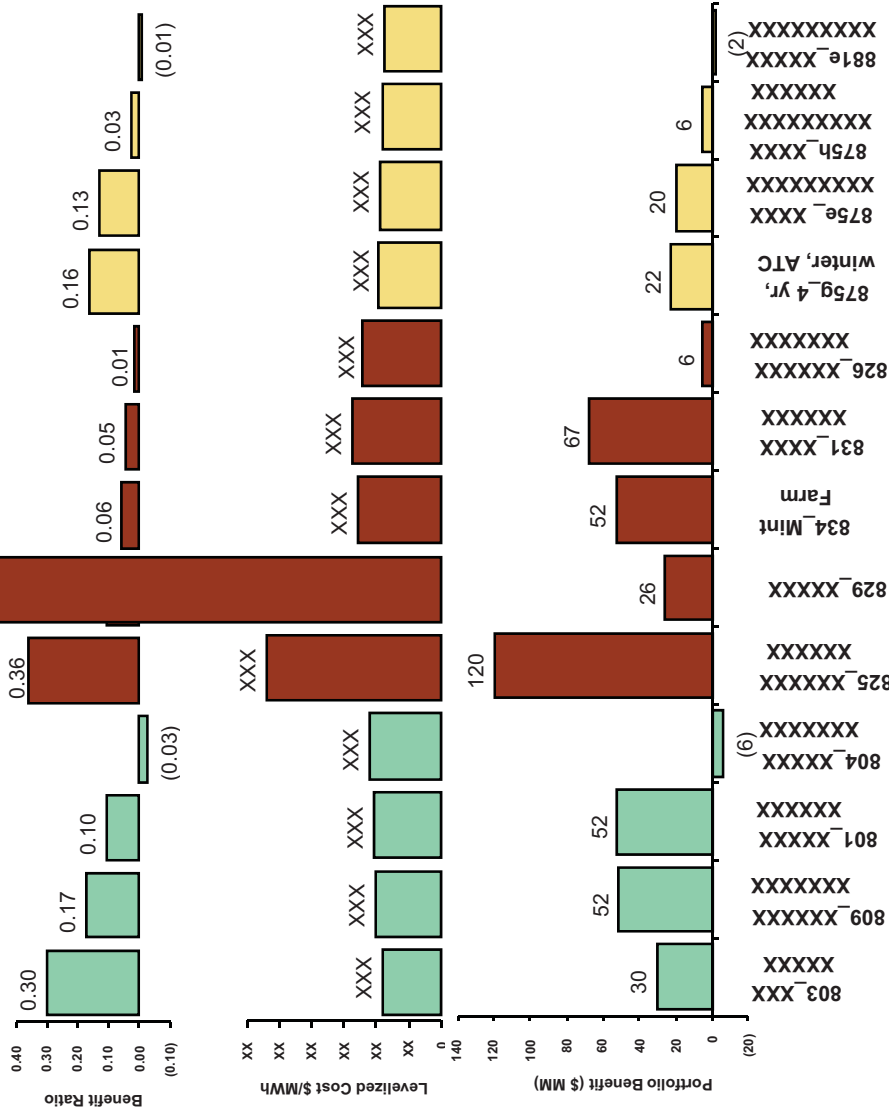
Levelized Resource Cost Comparison



Notes:
 2004 prices represent Mid-C delivery.
 2006 and 2008 prices represent deliveries to PSE's system.

7 *System PPAs are offers that are shorter term in nature and not tied to a specific resource.

Quantitative selection metrics



Levelized cost is the average annual cost per MWh produced during a 20-year period + end effects for each project.

Portfolio benefit is the 20-year present value of all portfolio benefits + end effects derived from each project in comparison to the 2007 IRP generic portfolio.

Portfolio benefit ratio is the present value of portfolio benefits divided by the present value of the project revenue requirements

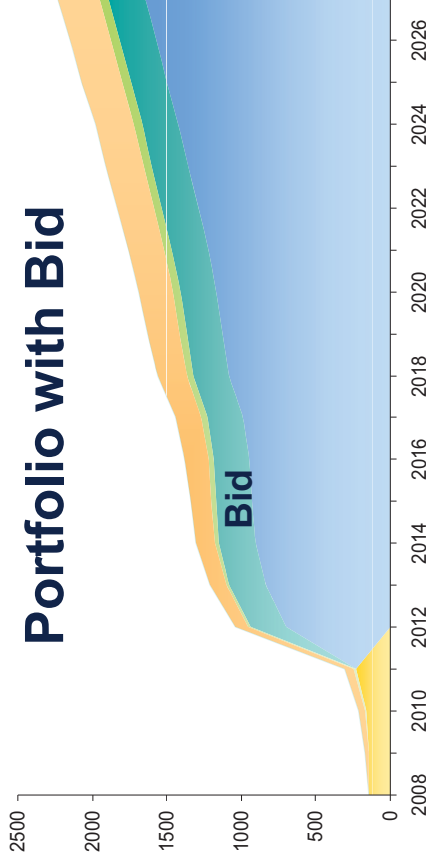
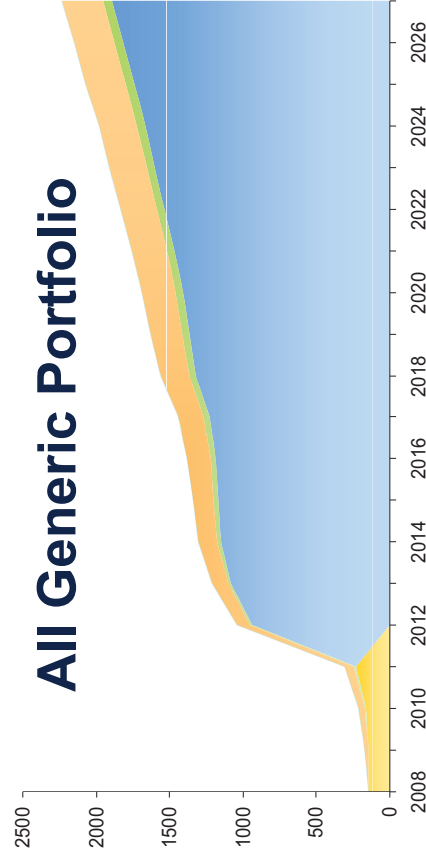
PSE Discount Rate 8.4%

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Bid Evaluation

- ◆ Stand-Alone Analysis
- ◆ Portfolio Analysis

- ◆ RPS bids replace generic wind
- ◆ End-effects



Favorable characteristics:

- ◆ Winter energy matching need and hourly shape matching load
- ◆ Efficient dispatch with low variable cost of fuel and transmission
- ◆ Cost effective in price scenarios

2008 RFP “Candidate” Short List

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PSE development projects. These projects did not come through the 2008 RFP process. Joint development project with RES is scheduled to be presented to the Energy Management Committee for approval May 27, 2008.

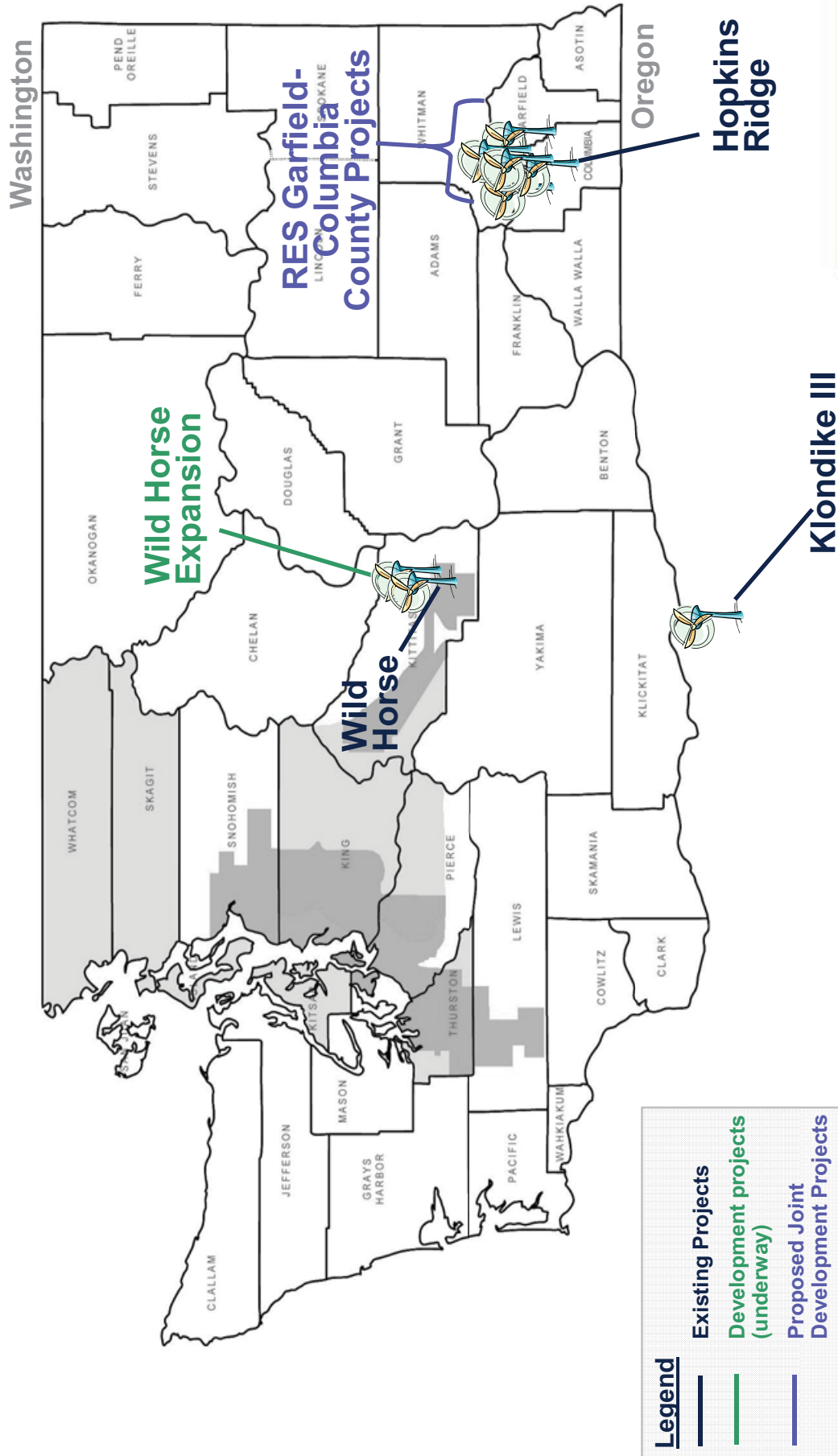
Non-Selected Proposals

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PSE Wind Projects

Existing, Development & Proposed



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Wild Horse Expansion

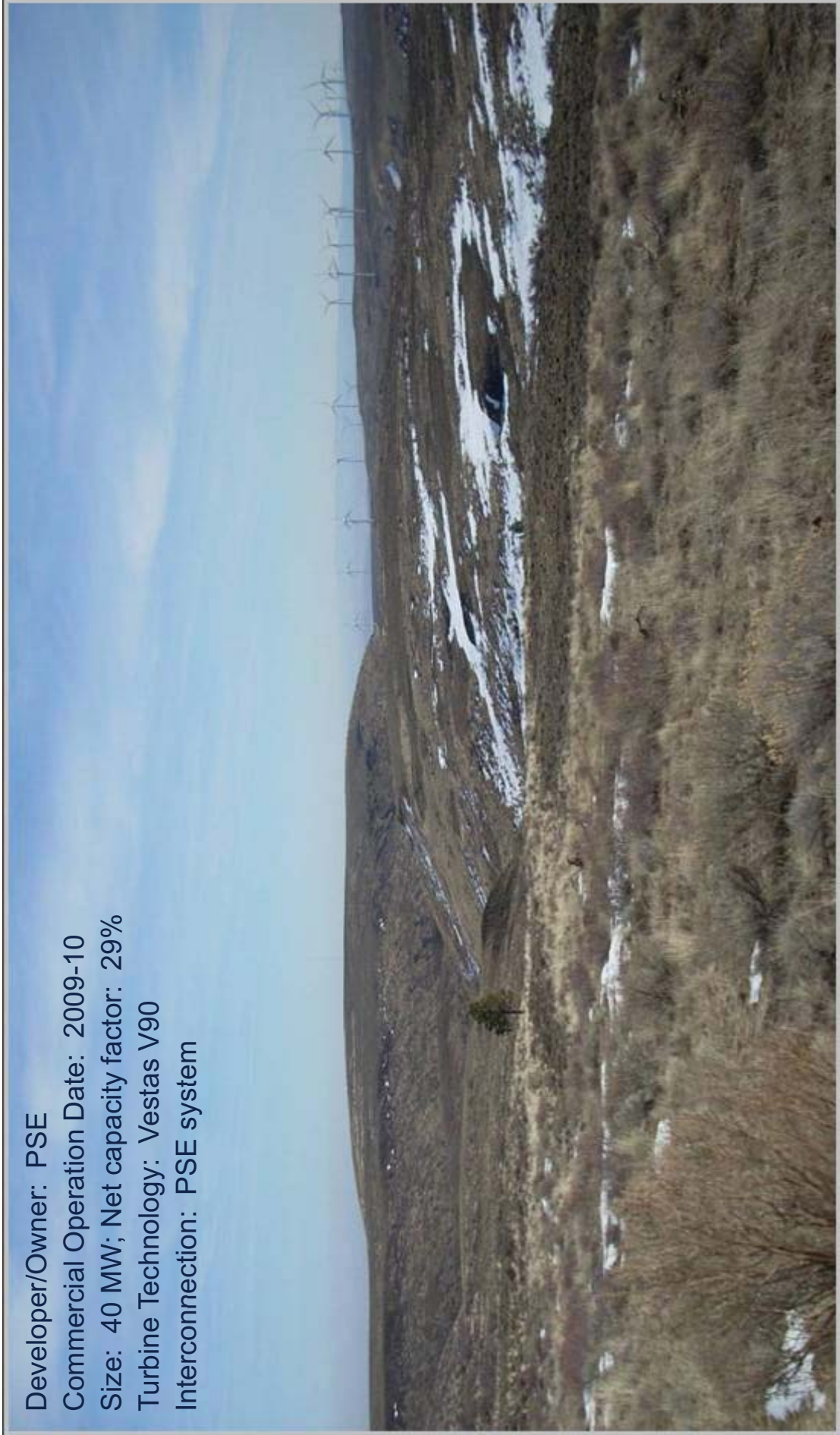
Developer/Owner: PSE

Commercial Operation Date: 2009-10

Size: 40 MW; Net capacity factor: 29%

Turbine Technology: Vestas V90

Interconnection: PSE system



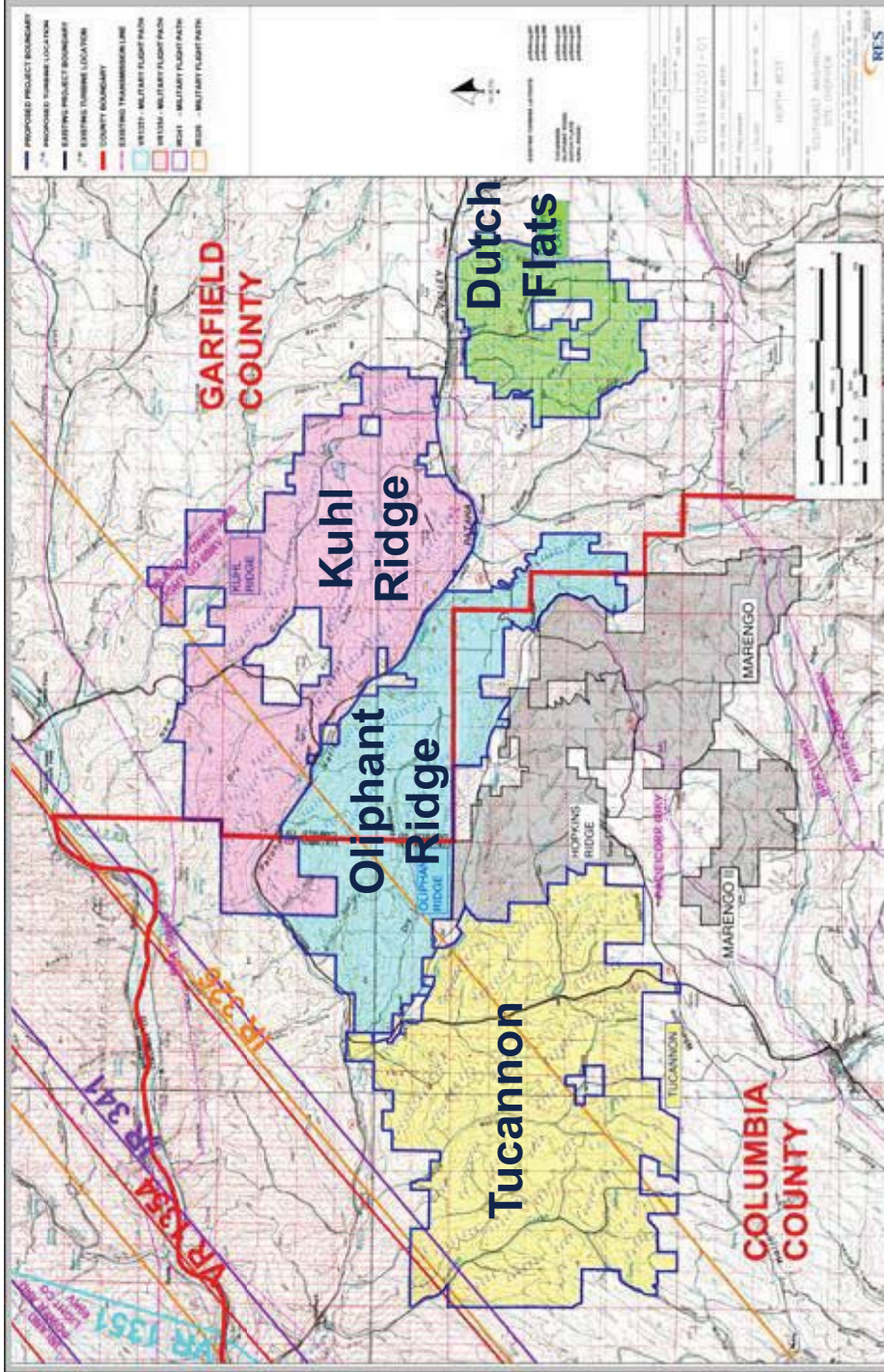
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RES Joint Venture – Columbia & Garfield Counties, WA

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Developer/Owner: RES 50%, PSE 50%
 Commercial Operation Date: 2010-2015
 Size: 1250 MW total (625 MW RES, 625 MW PSE); Net capacity factor: ~XX%
 Turbine Technology: TBD
 Interconnection: BPA system



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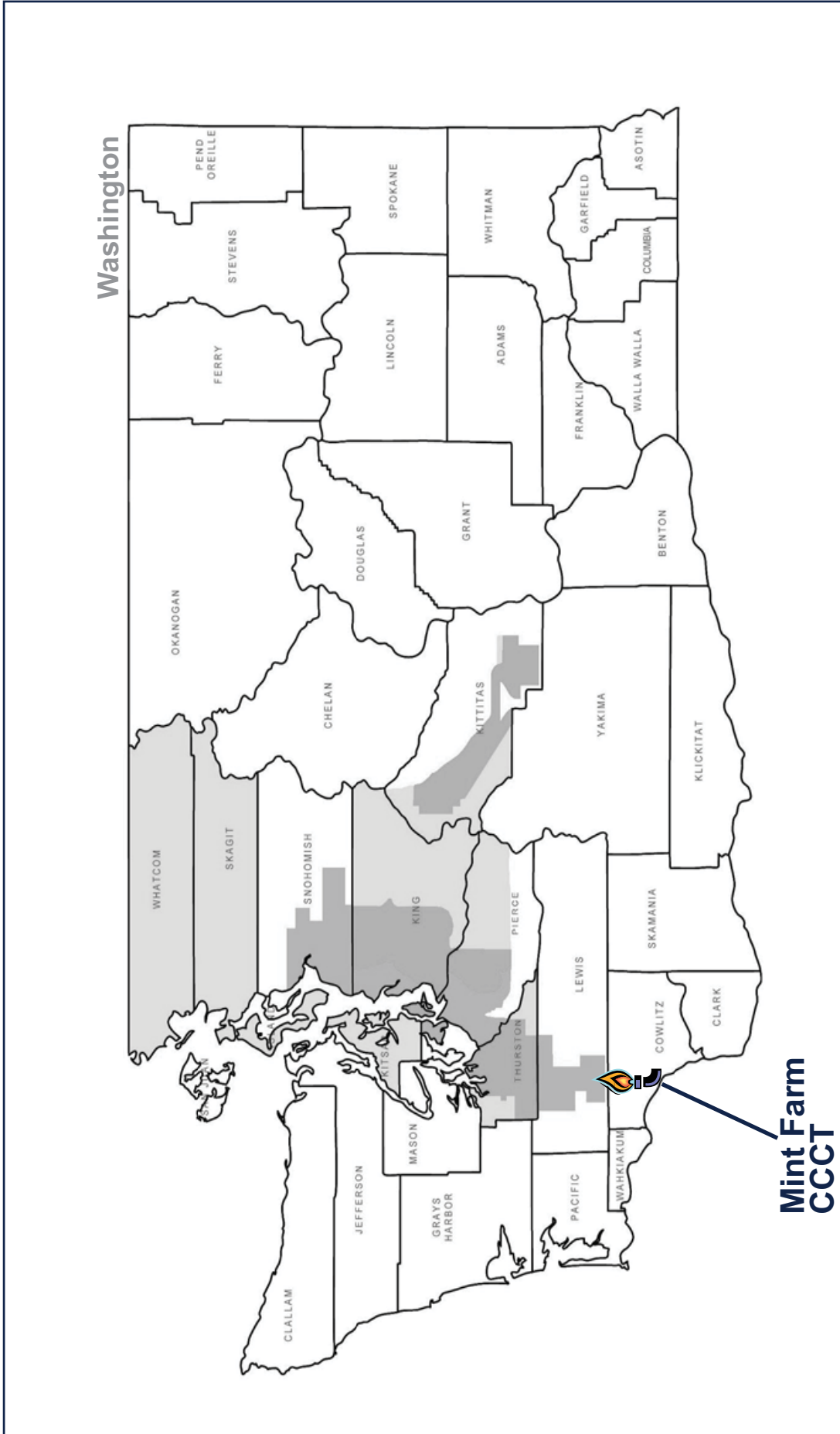
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Natural Gas Plant Opportunities



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Mint Farm Energy Center - Longview, WA



Plant Owner: Wayzata Investment Partners

Commercial Operation Date: January 2008

Size: 310 MW Gas-Fired CCCT plant; 1x1 configuration

Transmission/Interconnection: BPA

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Phase II Preview



Phase II - Next Steps

- ◆ Respondents notified by letter and email today, May 7th
- ◆ Gather data requests for candidate short list proposals
- ◆ Schedule site visits
- ◆ Presentations by respondents
- ◆ Short list selection meeting July 2nd

Phase II - Model Updates

- ◆ Generic resource capital costs
 - ◆ Wind: ~\$2,100/kw (Phase I) to ~\$2,800/ kw (Phase II), based on PSE's market knowledge
 - ◆ CCGT: ~\$1,000/kw (Phase I) to ~\$1,350/kw (Phase II), based on PSE market surveys of Engineering firms, IOUs, and CCGT Developers.
- ◆ Imputed Debt
 - ◆ S&P modified the way it assesses imputed debt to a PPA. The modification will lower imputed debt costs applied to PPAs.
- ◆ Aurora Runs
 - ◆ Updated with most recent forward gas prices forecasts
- ◆ O&M Costs for Wind
- ◆ BPA Wind Integration Transmission Tariffs
- ◆ Emissions logic in PSM

Phase II – PSM Scenarios

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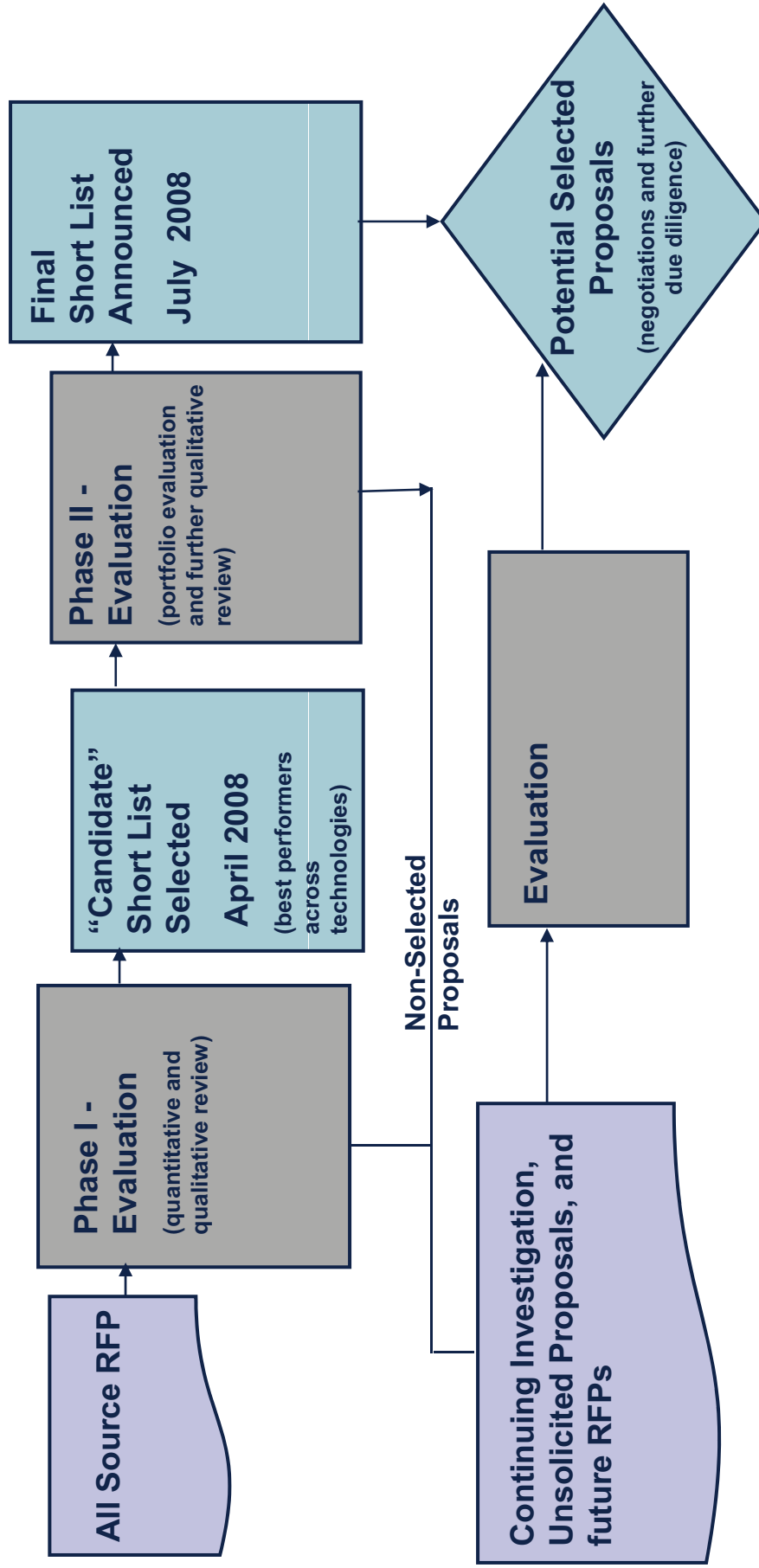
	Current Trends (Reference)	Green World	Low Growth	Low Capital Cost	High Capital Cost
PSE Demand w/ Cons	Base: 1.5%	Low: 1.3%	Low: 1.3%	Reference	Reference
Gas Price	Forward Marks for 2008-2012, and Global Insight's long run fundamental forecast	Forward Marks for 2008- and Global Insight's long run high forecast	Forward marks for and Global Insight's long run low forecast	Reference	Reference
Coal Price	Global Insight	Reference	Reference	Reference	Reference
Power Price	Current Trends (Reference)	Green World	Low Growth	Reference	Reference
Generic Resource Cost \$/KW	PSE market based estimates with constant real costs for 20 years. Wind, CCCT and DF from private study	Reference	Reference	Wind and CCCT capital cost increasing at lower rate	Wind and CCCT capital cost increasing at higher rate
Emissions (Nominal \$/Ton)	CO2	Lieberman-Warner Bill (ICF) Start in 2013 2013: \$10.88 2020: \$19.83 2027: \$37.51	Reference	Reference	Reference
	SO2	"Clear Skies" (Bush) Start in 2010 2010: \$978 2020: \$2105 2027: \$3306	Reference	Reference	Reference
	Nox	"Clear Skies" (Bush) Start in 2010 2010: \$297 2020: \$640 2027: \$1006	"Clean Air Planning Act" (Carper) 2010: \$1481 2020: \$3191 2027: \$5009	Reference	Reference
Production Tax Credits (\$/MWh)	\$20: 2008-2010 \$10: 2011-2013 For all eligible technologies	"Clean Air Planning Act" (Carper) 2010: \$5742 2020: \$1522 2027: \$1809	Reference	Reference	Reference
RPS	Meet Current State RPS through 2027	Reference	Reference	Reference	Reference
REC Value (\$/MWh)	2008: \$X 2009: \$X 2010: 10% 2011-2027: Increase at same rate as wind capital cost	Reference	Reference	Reference	Reference

Updated for Phase 2 of RFP

Appendix



2008 RFP Evaluation Process



RFP Evaluation Criteria

Compatibility with Need	Cost Minimization	Risk Management	Public Benefits	Strategic & Financial
<ul style="list-style-type: none"> • Meet short and long term energy and capacity requirements • Balance capacity and energy needs without risk of excess capacity • Provide shaped resource to balance seasonality of load 	<ul style="list-style-type: none"> • Provide lowest cost alternative to meet energy and capacity needs • Includes costs of <ul style="list-style-type: none"> - transmission - upgrades - firming 	<ul style="list-style-type: none"> • Balance potential future exposure to power purchase risk • Balance potential future exposure to power sales risk • Reasonable exposure to counterparty risk • Managerial control of key elements value chain 	<ul style="list-style-type: none"> • Lower portfolio emission levels • Contribute to regional energy adequacy • Support renewable energy development objectives • Promote energy efficiency (conservation and demand response) 	<ul style="list-style-type: none"> • Reasonable exposure to future environmental regulations • Reasonable exposure to future state wholesale market restructuring trends • Contributes to regional energy needs • Limits balance sheet impacts

Qualitative Review

Phase I Fatal Flaw Analysis
<ul style="list-style-type: none"> • All proposals screened for feasibility <ul style="list-style-type: none"> • Transmission • Permitting • Real Estate • Technical / Operations • Economic viability • Etc. • Proposals rated High, Med or Low risk by review teams • Best performers across technologies identified

“Candidate” Short List April 2008
Best performers from each technology

Phase II In-Depth Evaluation
<ul style="list-style-type: none"> • More in-depth review of best performers from each technology • Data requests • Respondent presentations • Site visits • Proposals rated High, Med or Low risk by review teams • Most attractive options identified

Final Short List July 2008
Selections proceed to final negotiations

Quantitative Review

Phase 1

Phase 2

All Bids Evaluated--
Initial Bid Screen

Candidate Short List
Identified

Portfolios Tested
Against Different Risk
Scenarios

Monte Carlo Simulation
Evaluates Cost and Risk of
Each Candidate and
Several Combinations

Short Listed
Respondents
Will Be Thoroughly
Evaluated

Portfolio Benefit

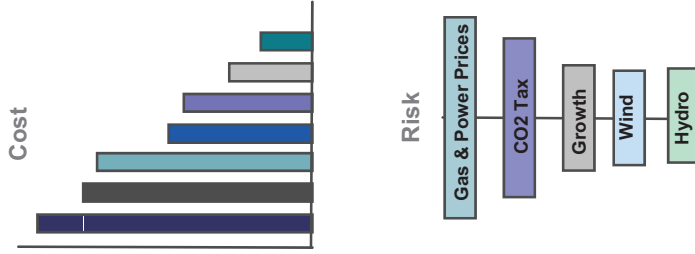
Benefit Ratio

Levelized Cost

Best performers
across technologies

Candidate Short List
•Projects
•Contracts
•Emergent Opportunities

portfolios, Existing Plant
plus
•All Generic
•Individual Resource
•Combination of candidates



Candidates by Scenario
•Portfolio Benefit
•Benefit Ratio
•Levelized Cost

PSM - Inputs and Outputs

Key Inputs

- Capital Costs
- Fixed & Variable O&M
- Fuel Cost & transportation
- Transmission & integration
- Plant heat rate
- Plant availability
- PPA price & terms
- Asset book & tax life
- Global Insight gas price forecast
- Aurora power prices
- Imputed debt risk
- RPS targets

Portfolio Screening Model

20-year hourly dispatch PSE portfolio end effects

Key Outputs

- Levelized Cost of Acquisition or PPA
- 20-Year NPV Portfolio Revenue Requirement
- Portfolio market purchases and sales

Appendix



RES/PSE Joint Development

Columbia County and Garfield County

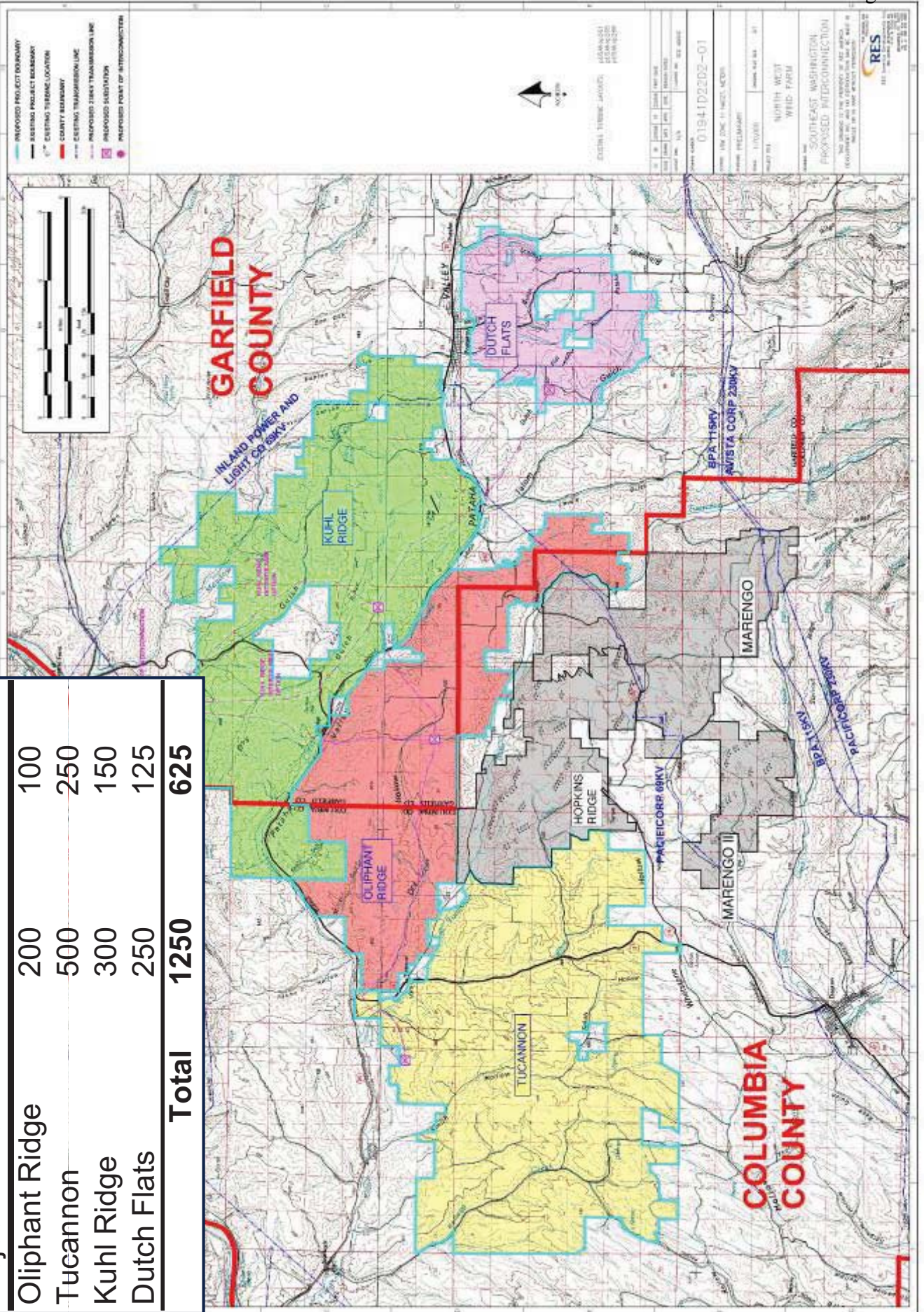
Wind Development

APPENDIX



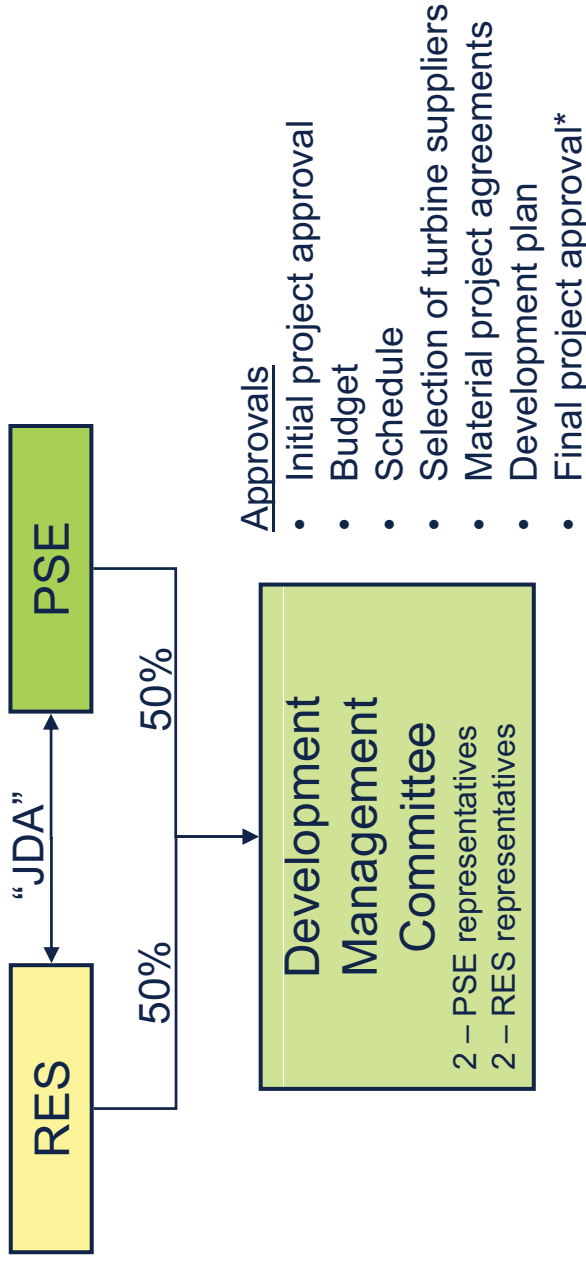
Development Pipeline

Project Name	Total MW	PSE Share MW
Oliphant Ridge	200	100
Tucannon	500	250
Kuhl Ridge	300	150
Dutch Flats	250	125
Total	1250	625



Joint Development Structure

Governs development-stage work for all projects, creates management committee, and establishes forms of other agreements, i.e. JOA, BOP, O&M



RES Duties

- Lead role in development work
- Obtaining permits
- Securing real estate rights
- Monthly reporting
- Managing funding account

PSE Duties

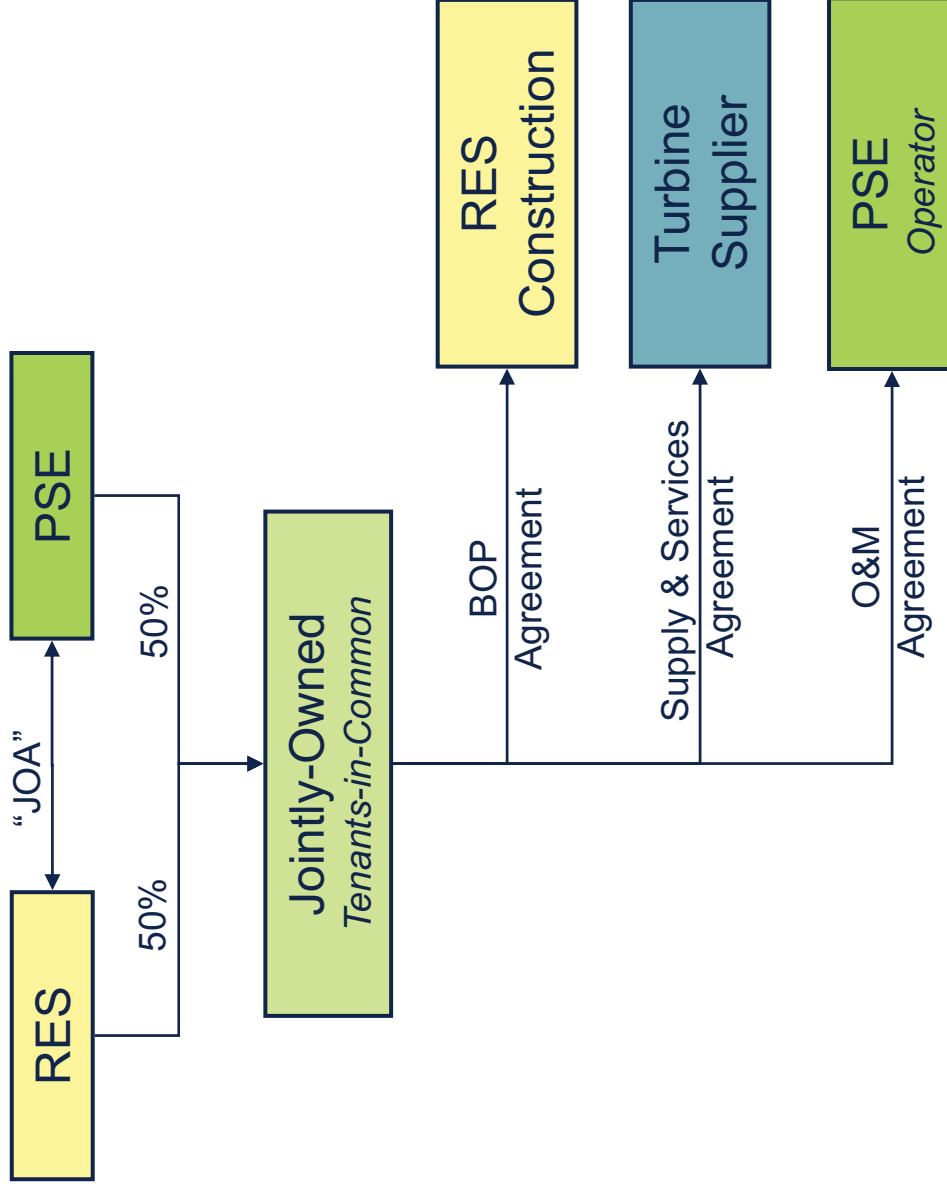
- Substantial role in development work
- Community and government relations
- Negotiating affiliate contracts



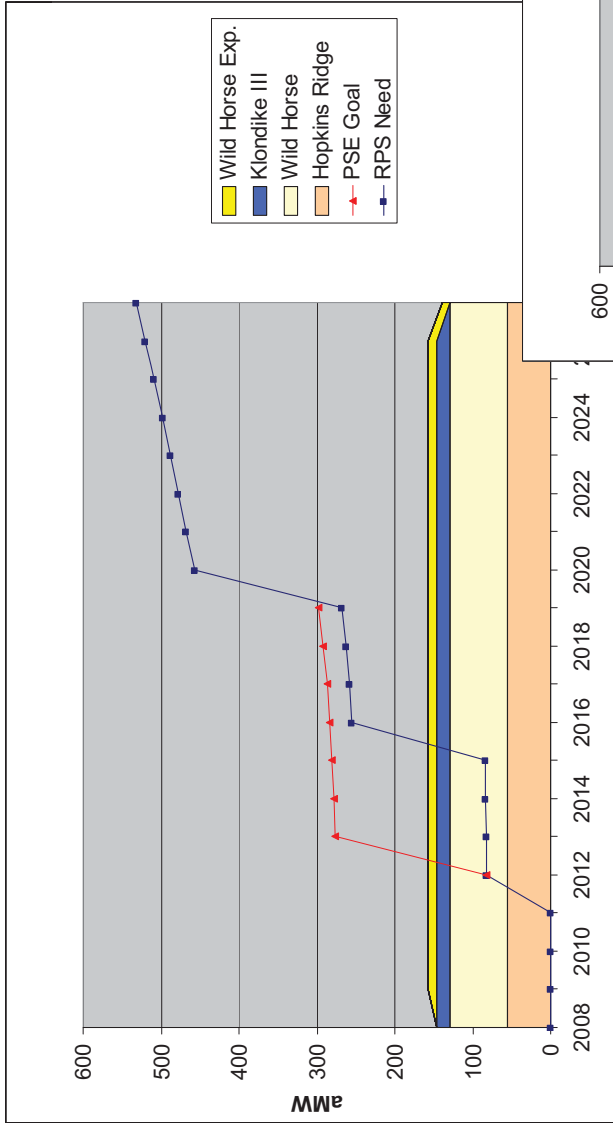
*Moves to Joint Ownership Agreement

Joint Ownership Structure

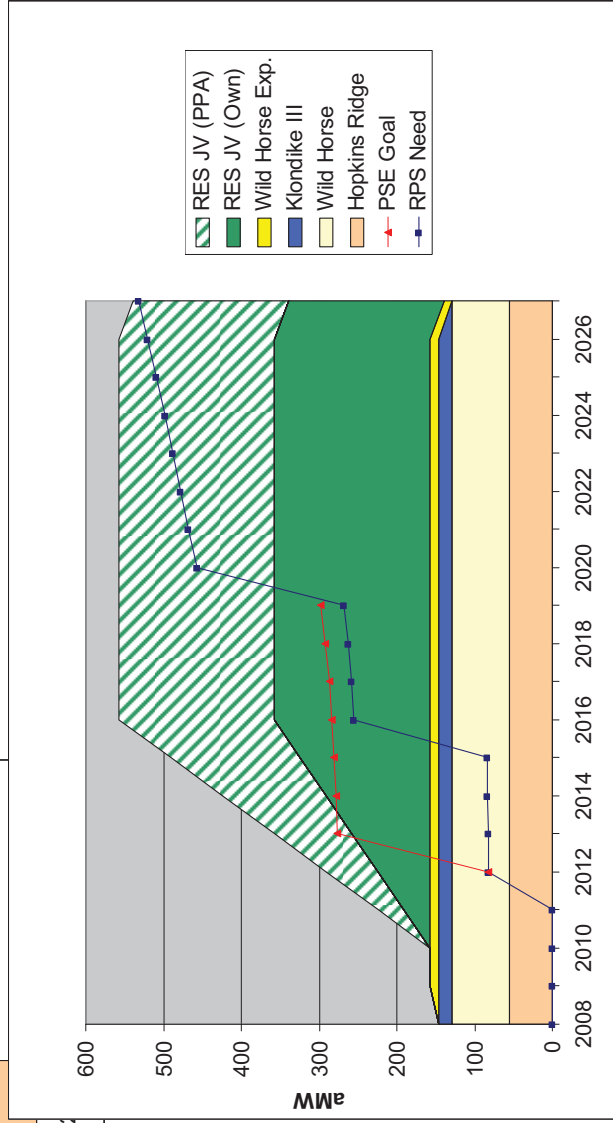
Upon RES/PSE Management Committee “Final Project Approval”, then governance by Joint Ownership Agreement and other specific contracts



RPS Targets and PSE Goals



↓ PSE Renewables without RES JV

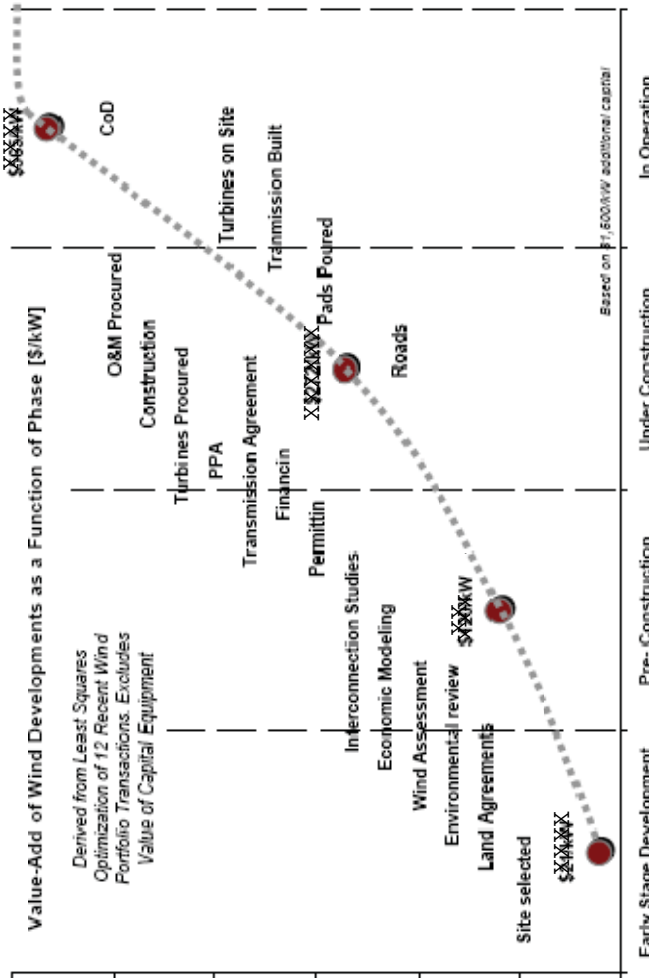


PSE Renewables with RES JV ↑

Note: RPS need from FY07 load forecast

Development Stage Valuation

RES valuation as compared to Thorndike analysis from July 2007.



Source: Thorndike Landing analysis

RES Valuation (Credit Suisse)							
Project Name	Real Estate	Wind	Interconnect	Permit	Transmission	PPA	
Oliphant Ridge							
Tucannon							
Kuhl Ridge							
Dutch Flats							
						Weighted Valuation =	\$XX

Key = 1 = Uncertainty
 2 = Confidence
 3 = Highly confident

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Key Findings / Benefits

- ◆ Lower project costs by avoiding high developer fees associated with acquiring fully developed projects
- ◆ Project ownership opportunity in increasing PPA driven market
- ◆ PSE/RES jointly control development with an exclusive arrangement for Columbia and Garfield Counties
- ◆ RES/PSE project development team & experience
- ◆ Phased development and construction opportunity
- ◆ Opportunity to achieve rights to a significant portion of RPS requirement in one transaction
- ◆ RES Construction – experienced and strong PSE relationship – as project constructor

<p><u>Development Value:</u></p> <ul style="list-style-type: none">◆ Full Developer Fee*◆ Recent Market Offer◆ RES Fee (Credit Suisse)◆ Estimated Value*

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*Source: Thorndike Landing, July 2007

Potential Acquisition of Mint Farm

Presentation to WUTC

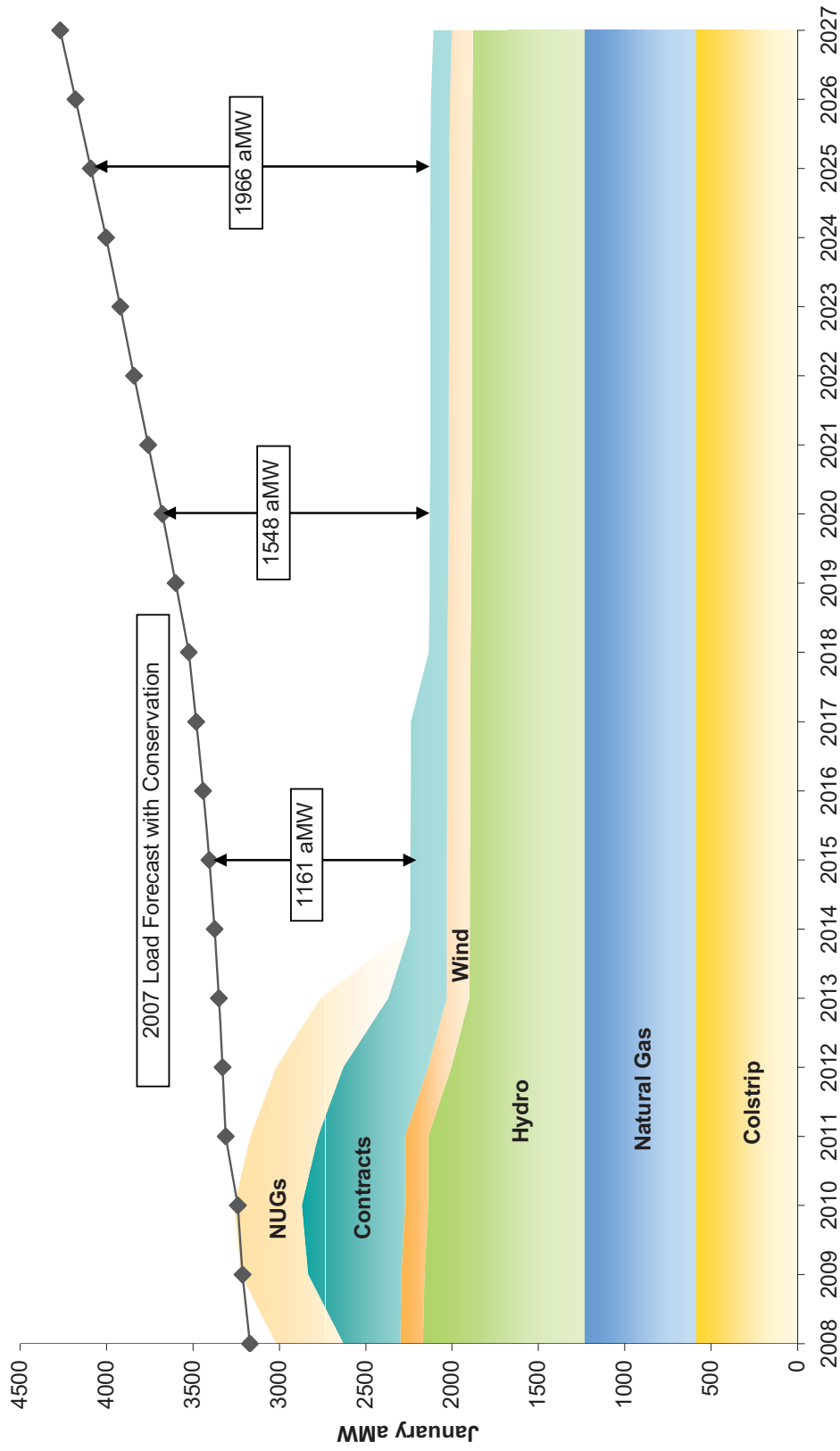
May 22, 2008



Agenda

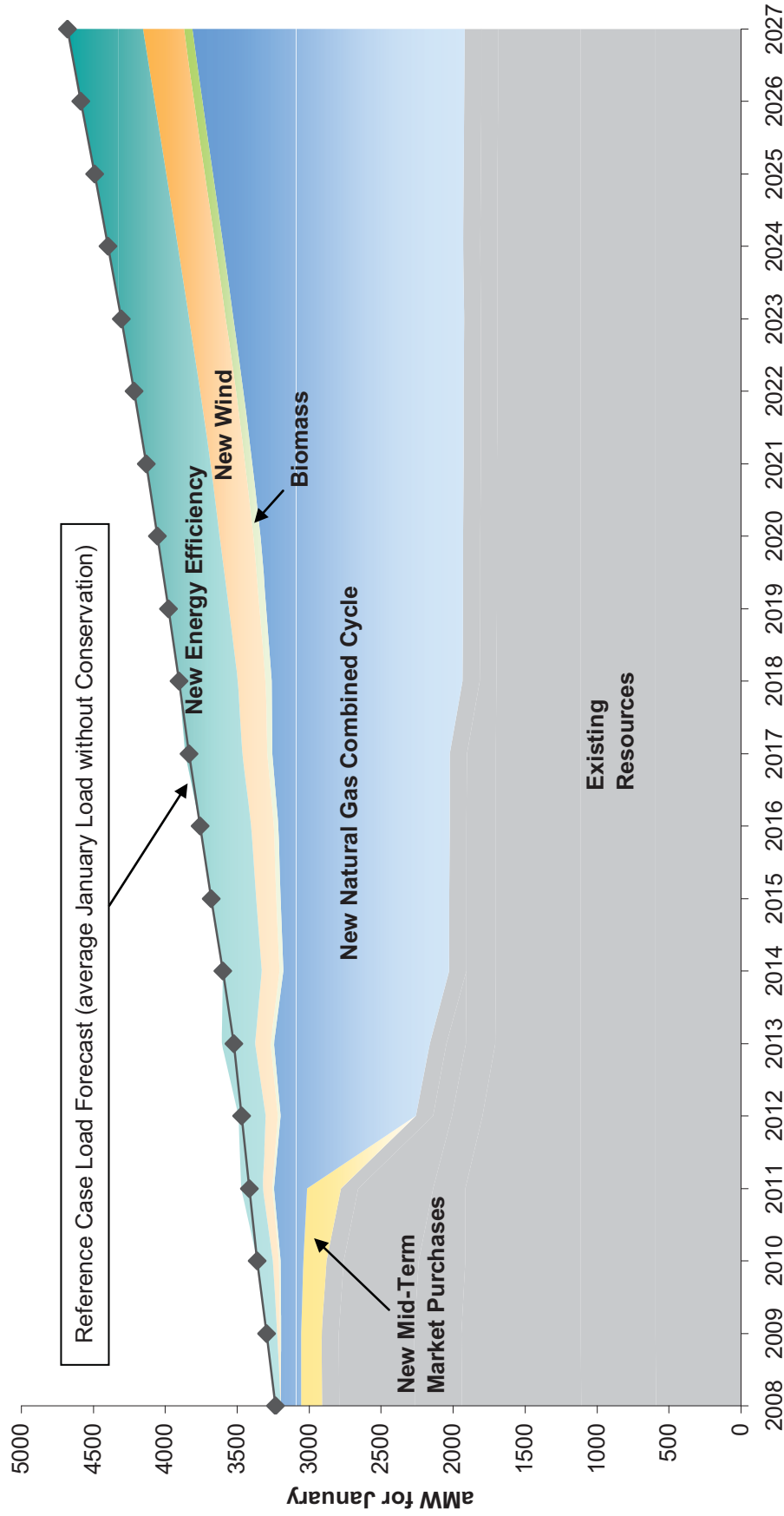
- ◆ PSE's Resource Need
- ◆ Resource Strategy
- ◆ Market Observations
- ◆ Remaining Gas Ownership Opportunities
- ◆ Mint Farm Offer

PSE Energy Need



*Energy need before conservation, includes new contracts, new wind and hydro shapes, and Sumas

PSE Resource Strategy



*Lowest Reasonable Cost Resource Portfolio, from May 2007 Integrated Resource Plan

Market Observations

- ◆ 2008 RFP produced fewer proposals with less resource diversity than past deals
- ◆ New build capital costs continue to rise
 - ◆ CCCT: \$1,000/kW in 2004 → \$1,350/kW in 2008
- ◆ It's a sellers market
 - ◆ RFP offers begin expiring in May 2008
 - ◆ Narrow window of opportunity to acquire two remaining merchant plants – Mint Farm, Grays Harbor
 - ◆ Chehalis sold in April 2008
- ◆ Capacity market is tightening

Mint Farm Energy Center - Longview, WA



Plant Owner: Wayzata Investment Partners

Commercial Operation Date: January 2008

Size: 310 MW Gas-Fired CCCT plant; 1x1 configuration

Transmission/Interconnection: BPA

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Mint Farm Energy Center, LLC

Offer

- ◆ Received in PSE's 2008 RFP
- ◆ Purchase price offer of \$240,690,000 or approximately \$774/kW; attractive capital cost given construction risk and capital cost of new build
- ◆ Offer expires May 2008

Counterparty

- ◆ Project acquired by Wayzata Investment Partners from Mirant in December 2005 through bankruptcy auction process
- ◆ Counterparty is a \$6 billion private equity hedge fund located in Wayzata, MN. Company seeks opportunities to acquire distressed or undervalued assets for investment
- ◆ Fund investments have limited investment horizons requiring assets to be monetized opportunistically within the funds life

Phase I: 2008 RFP Analysis Results

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Phase I: PSM 11-0	
	834 Mint Farm Energy Center
Levelized Cost \$/MWh	\$XXXX
Portfolio Benefit	\$52,427
Benefit Ratio	0.06
MW	296
Heat Rate	XXXX
CF 1st year	27%
Start Date	2009
Capital Cost	\$240,690
\$/kW	\$774
Gas Index	Sumas
Run Date	4/22/08

Commercial Status

- ◆ LOI currently being negotiated
- ◆ Counterparty has indicated other interested parties
- ◆ Counterparty insistent on fast-tracking negotiation and closing
- ◆ If negotiations are successful:
 - ◆ LOI signing could be the end of May
 - ◆ Execution of definitive documents end of July
- ◆ Estimated closing could be as early as October