

**EXHIBIT NO. \_\_\_(RG-14HC)  
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\_\_\_**

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

**REDACTED  
VERSION**

**JUNE 13, 2011**

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# Wind Development Update

## Energy Management Committee

January 14, 2009



**Chris Bevil**  
*Development Manager*

# Wild Horse Expansion – 44 MW

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- ◆ Permitting
  - ◆ Amended Development Agreement approved by Kittitas County on 11/04/08
  - ◆ EFSEC issued Final Supplemental EIS on 01/13/09
  - ◆ EFSEC expected to approve project on 01/22/09 (30-day appeal period)
- ◆ Transmission & Interconnection
  - ◆ Grant Co. PUD Transfer Agreement executed on 01/05/2009
  - ◆ Large Generator Interconnection Agreement (“LGIA”) expected May 2009
- ◆ Engineering & Construction
  - ◆ Civil and electrical engineering design continues
  - ◆ Finalizing Balance of Plant (“BOP”) agreement with RES
  - ◆ BOP Notice to Proceed (“NTP”) expected in March 2009

## KEY ISSUES

- ◆ Potential appeal of project permit
- ◆ Kittitas County looking at imposing “Royalties” on wind farm revenues



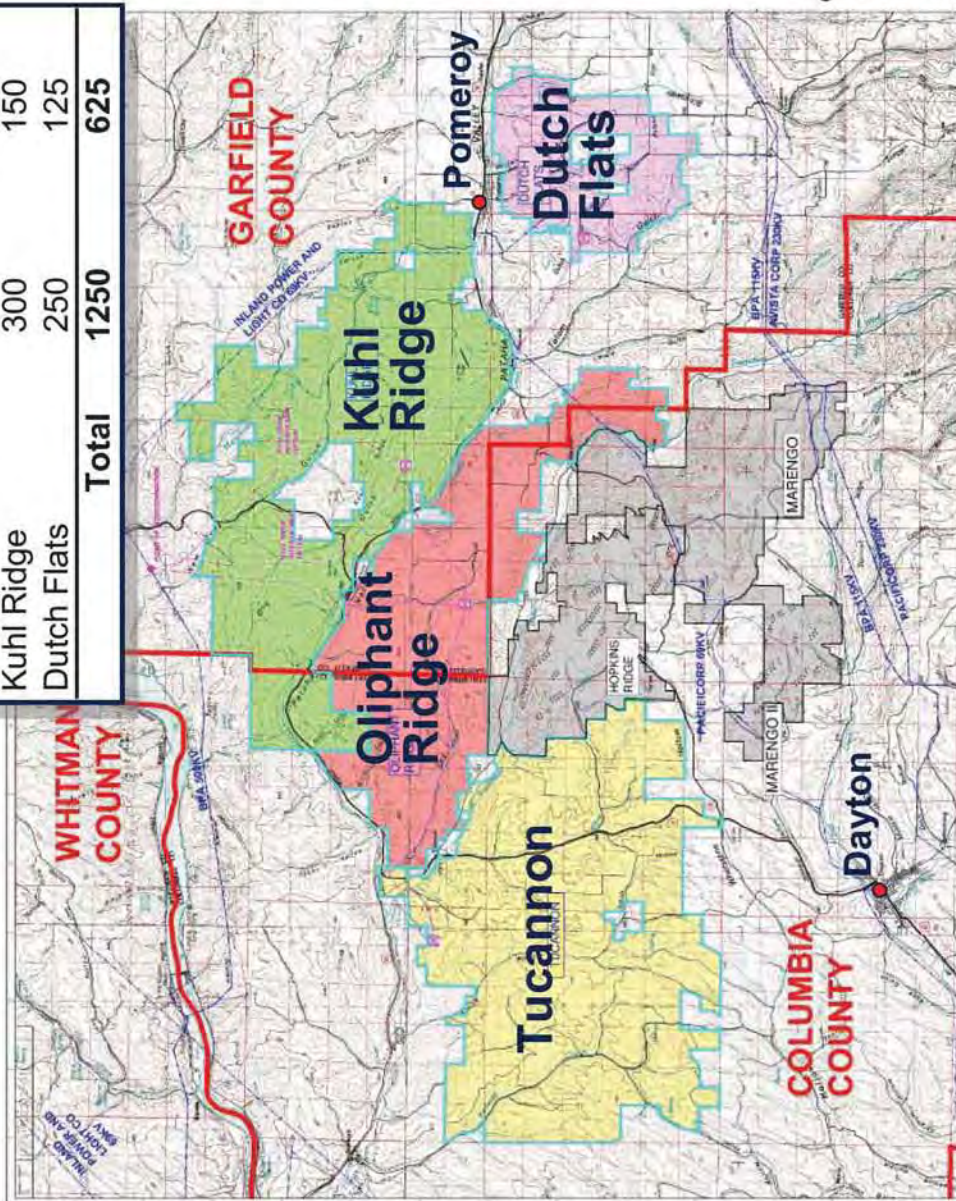
# Lower Snake River Wind Project

## Joint Development Agreement

- PSE owns 50% undivided interest in development rights
- Management Committee oversees development process
- RES to construct projects on [REDACTED]
- PSE has option for PPA from RES 50% interest
- PSE will be Operator for jointly-owned wind projects

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



## Acquisition Status

- JDA executed Dec. 5, 2008
- "Form Agreements" (JOA, BOP, O&M) to be finalized by Jan. 31, 2009



# Lower Snake River – Real Estate

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- ◆ Pomeroy Office Lease
  - ◆ Sign by end of January 2009; 6-8 wks for remodel
- ◆ Land acquisition program
  - ◆ Oliphant Ridge - remaining 2 leases in negotiations
  - ◆ Tucannon - 7 leases to be finalized
  - ◆ Kuhl Ridge - 21 leases signed; 20 anemometer agreements signed/negotiating
- ◆ Klaveano Ranch Lease
  - ◆ Agreement in principle to lease ≈30,000 acres adjacent to Kuhl Ridge
  - ◆ Acquire property for proposed BPA 500 kV substation site

## KEY ISSUES

- ◆ Landowner royalty payments
- ◆ Expansion

# Lower Snake River – Transmission

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- ◆ PSE participated in BPA's 2008 Network Open Season
  - ◆ \$9.4 million security deposit for 600 MW
  - ◆ Identified need for new 40-mile transmission line "Little Goose Area Reinforcement" (estimated cost ≈\$140 million)
  - ◆ PSE received offer for 250 MW of transmission without required upgrades
- ◆ RES/PSE hold 5 BPA interconnection requests (5 x 250 MW)
  - ◆ BPA estimates total cost for new 500 kV substation ≈\$95 million
    - ◆ \$62 million network upgrades, i.e. reimbursement via transmission credits
- ◆ Schedule for BPA interconnection substation – Fall 2011

## KEY ISSUES

- ◆ Payment estimate and payment schedule
- ◆ Securing property rights for BPA substation
- ◆ PSE transmission lines in Columbia / Garfield Counties



# Lower Snake River – Permitting

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- ◆ Garfield County Conditional Use Permit (“CUP”) Schedule (expected)
  - ◆ Submit Permit Application                      January 23, 2009
  - ◆ Prepare and Issue Final EIS                      August 2009
  - ◆ CUP Approved                                      September 2009
  - ◆ 21-day Appeal Period                              October 2009
- ◆ Non-appealable permit required for BPA tiered Record of Decision (“ROD”)
  - ◆ BPA’s schedule allows for construction to commence 2Q 2010
- ◆ Permitting strategy will allow Columbia County to participate in EIS scoping
  
- ◆ Development strategy proposes Kuhl Ridge as first project constructed

## KEY ISSUES

- ◆ Management of EIS and SEPA process for County
- ◆ Columbia County opponents

# Lower Snake River – Other

## Wind Resource Assessment (preliminary)\*

	Oliphant Ridge	Tucannon	Kuhl Ridge	Dutch Flats
Project Size (MW)				
Number of Turbines				
Gross Annual Energy (GWh)				
Gross Capacity Factor				
Losses				
Net Annual Energy (GWh)				
<b>Net Capacity Factor</b>				

REDACTED VERSION

## Turbine Supply Solicitation

- Request for proposals to [REDACTED] and Siemens
- Pricing/delivery dates for the first two (2) phases and option pricing/delivery on the remaining three (3) phases
- Separate Master Turbine Supply Agreements (“MTSA”)
- Project-specific TSA whereby RES and PSE would be joint-and-several

\*DNV-GEC preliminary analysis based on data provided by RES



# Lower Snake River – Project Timeline

31-Jan-09	JDA “Form Agreements” Completion Date (\$ [REDACTED] million)
31-Jan-09	BPA Transformer Payment (\$13.2 million)
1-Mar-09	Master Turbine Supply Agreement (“MTSA”) [REDACTED]
1-Oct-09	Garfield County Non-appealable Permit
1-Oct-09	PPA Notice to PSE
1-Feb-10	BPA LGIA Signed / NEPA ROD
1-Apr-10	Final Project Approval* <ul style="list-style-type: none"><li>• JOA \ PPA \ BOP \ O&amp;M all signed (<i>Price &amp; Budgets Fixed</i>)</li><li>• NTP Given (<i>need min. 12 months before COD</i>)</li><li>• WTG Direct [REDACTED] payment</li><li>• RES closes construction financing</li></ul>
1-Apr-11	WTG Ex-Works
1-Sep-11	BPA Substation Energization
1-Nov-11	COD Project #1 250 MW

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\*If RES secures “development financing”, then date could be pushed to Nov 2010

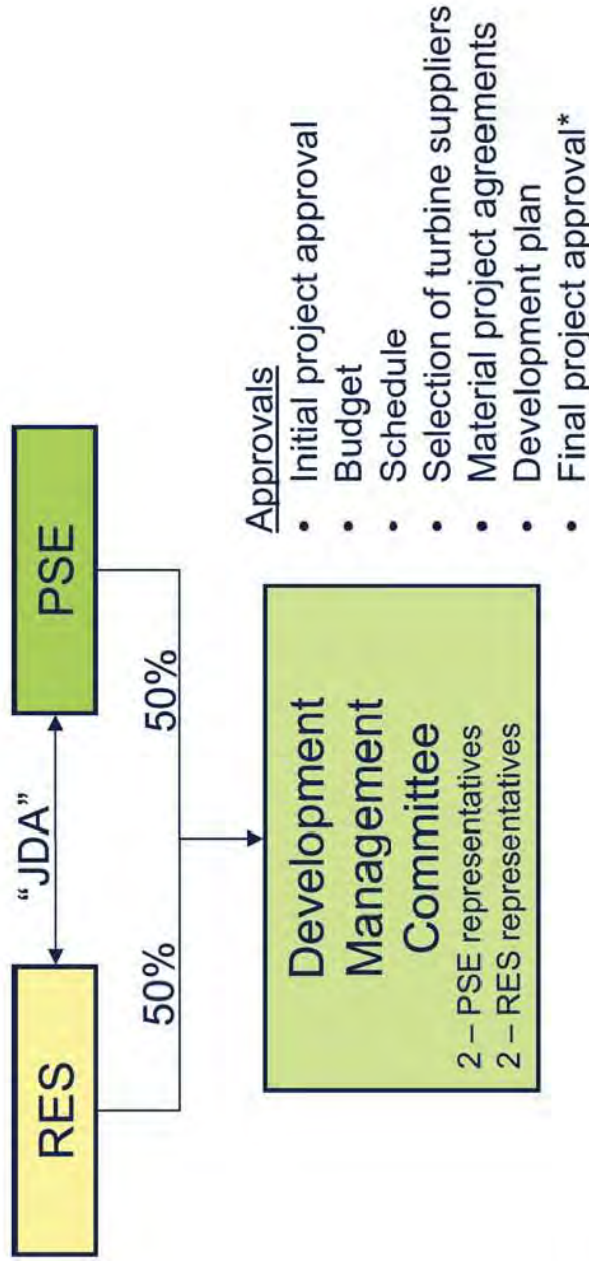
# Lower Snake River Wind Project

## Hip Pocket Slides



# 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

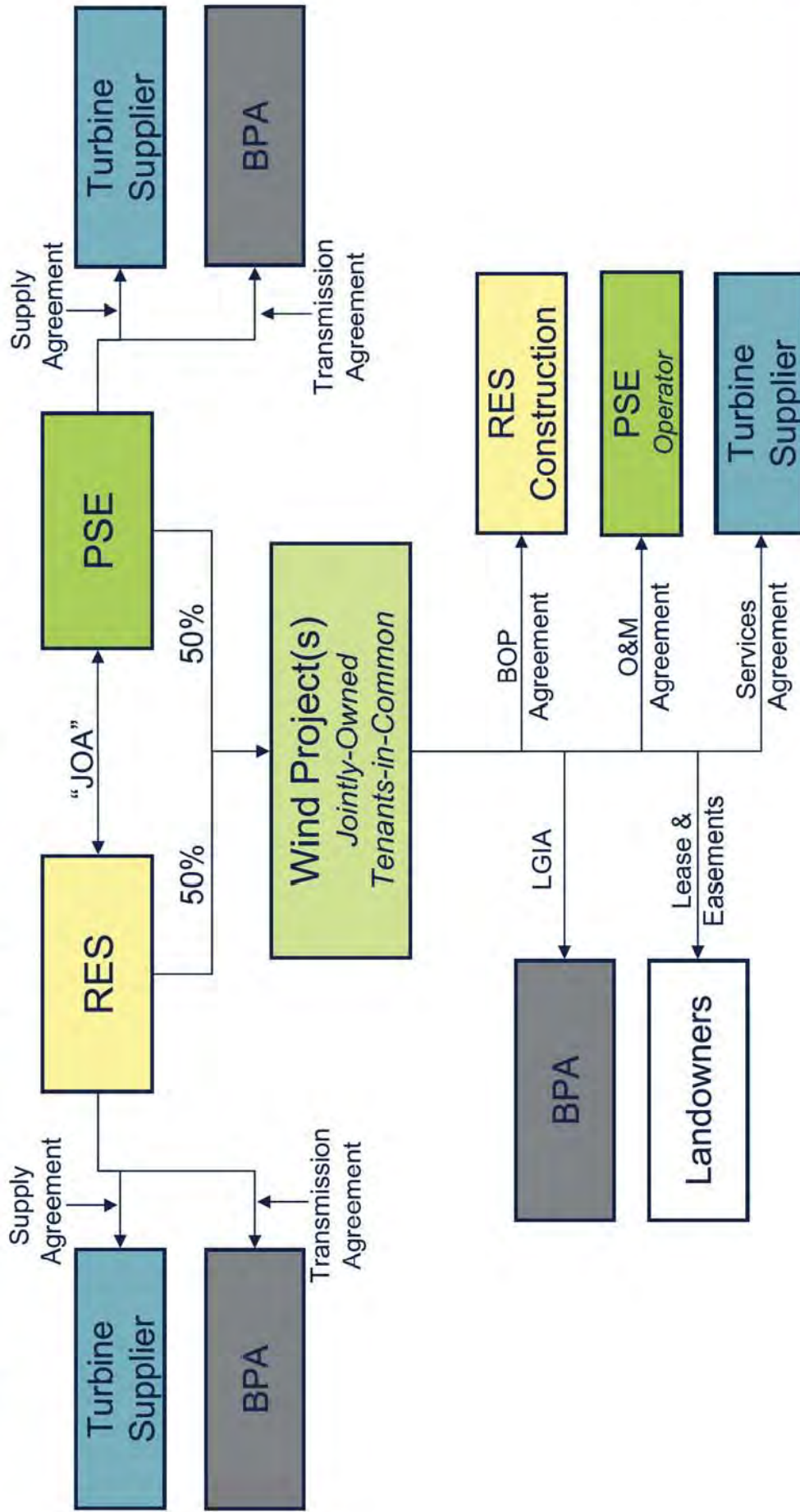
- Substantial role in development work
- Community and government relations
- Negotiating affiliate contracts

\*Moves to Joint Ownership Agreement

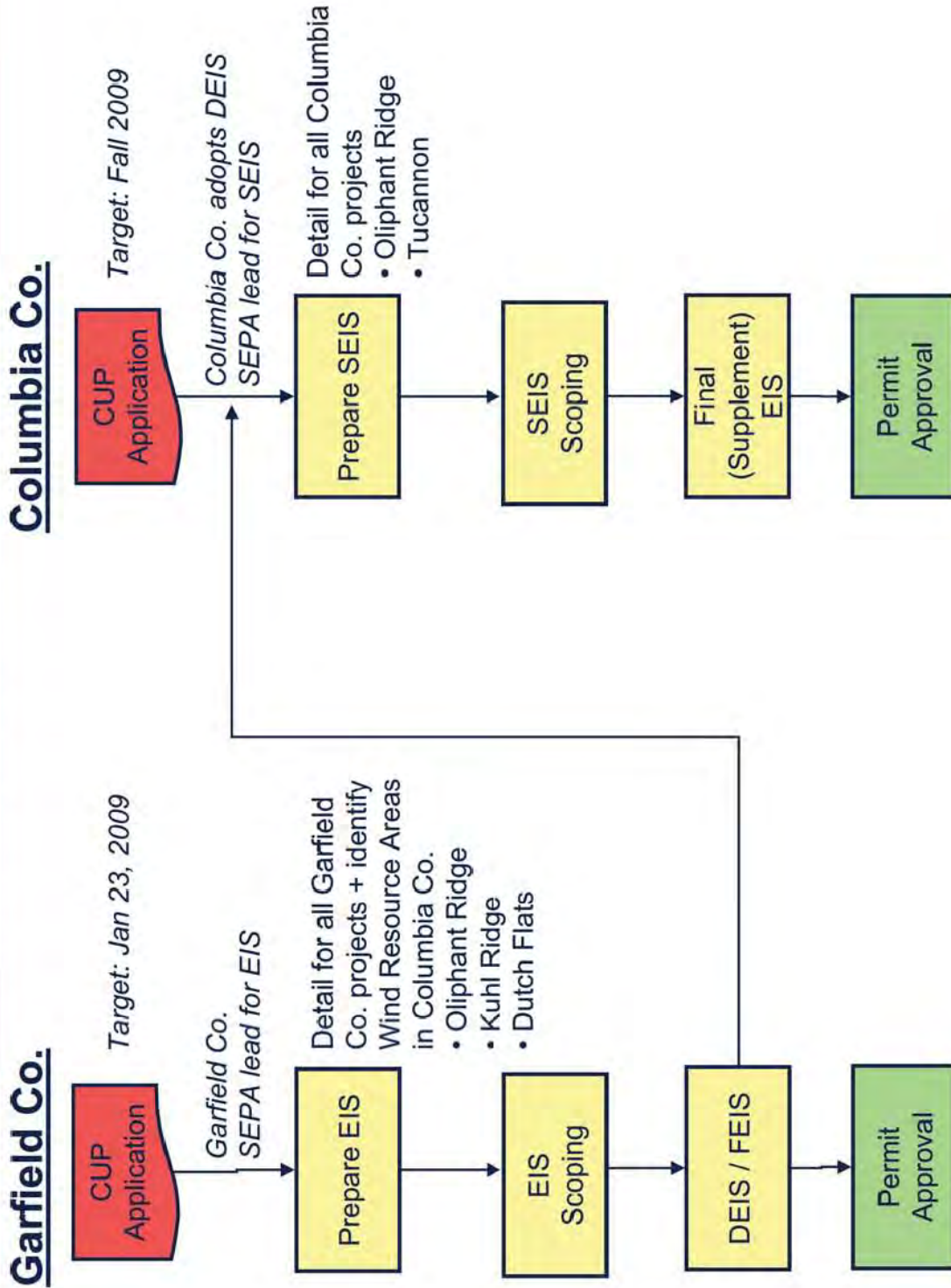


# Joint Ownership Structure

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

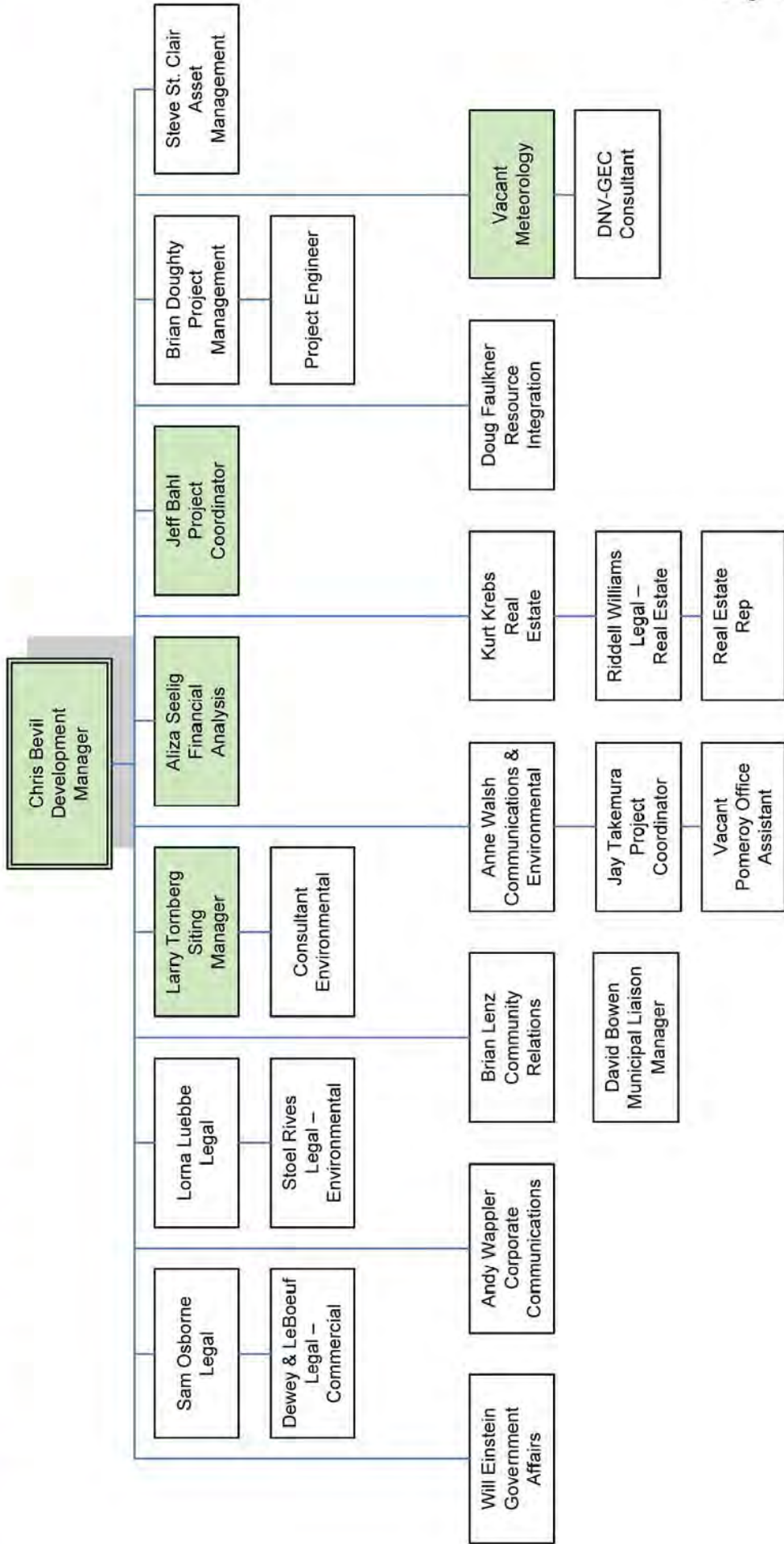


# Lower Snake River - Permitting





# PSE Development Team



# Resource Acquisition Update

Energy Management Committee

March 19, 2009



Roger Garratt  
*Director, Resource Acquisition*

# PSE Wind Projects

## *Existing, Development & Proposed*



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# Wild Horse Expansion

## Project Description:

- Size: 44 MW; 22 – Vestas V80 2.0 MW turbines
- Energy: ████████ MWh per year
- Site: 1,400 acres of PSE fee-owned land
- Interconnection: Wild Horse 230 kV Substation

## Status

- Permitting Complete:
  - Kittitas County Commissioners approved amendment to Development Agreement on Nov 4, 2008
  - Fish & Wildlife Commission accepted the Conservation Easement on Nov 7, 2008
  - EFSEC approval received Jan 22, 2009
- Construction:
  - Executed Turbine Supply Agreement and Services & Maintenance Agreement with Vestas on Nov 6, 2008
  - Civil and electrical design work by David Evans & Associates and RES America Construction, respectively
  - Finalizing Balance of Plant (“BOP”) EPC agreement with RES America Construction
- Expect project in-service by 12/31/09

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Figure 4 - Preliminary Site Layout  
Wild Horse Supplemental EIS





# Lower Snake River Wind Project





# Development Plan Background Information

## JDA Development Concept

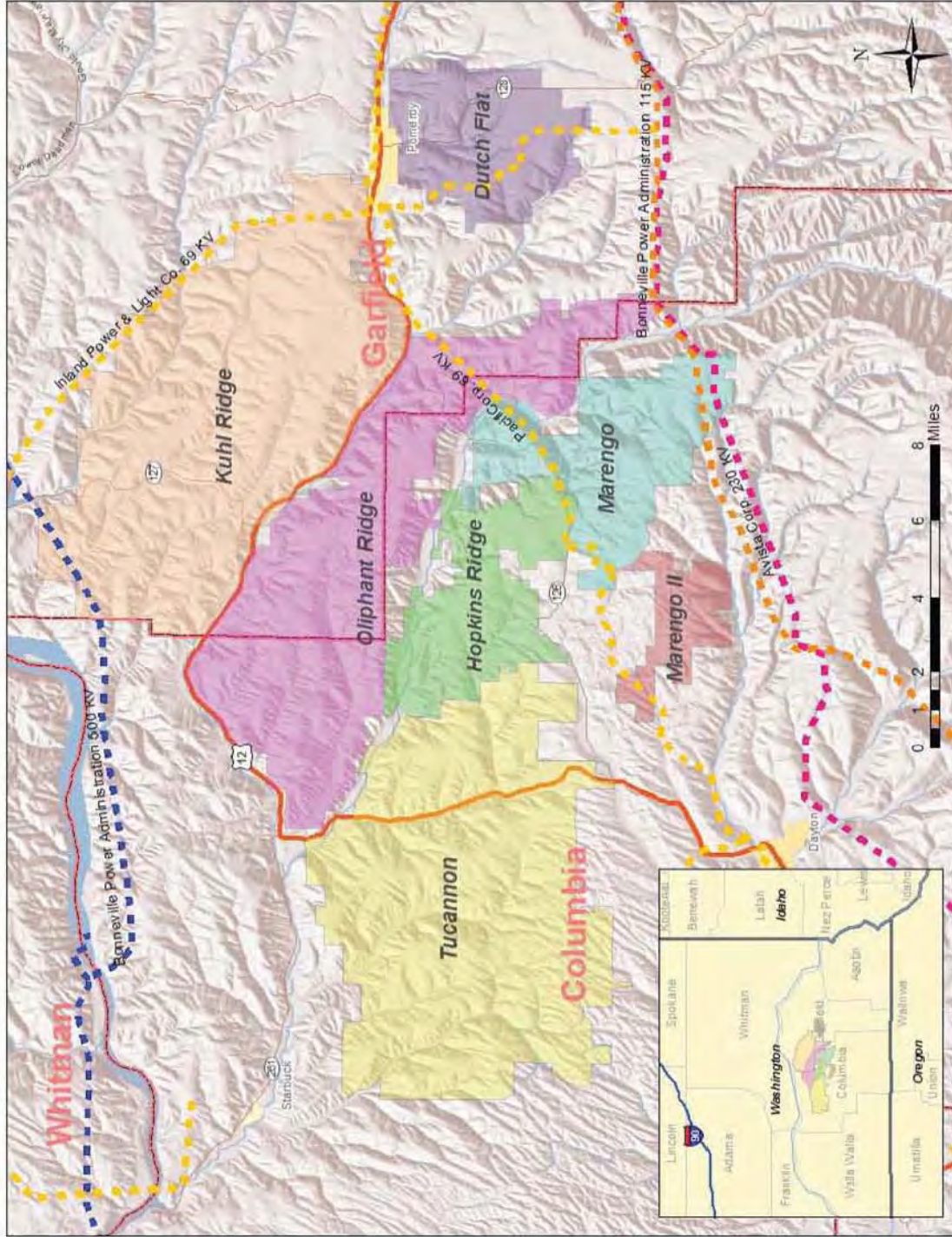
- ◆ “Initial Project Approval” was granted to the 4 “Existing Projects” on the Existing Projects Asset Closing Date
  - ◆ December 5, 2008
- ◆ Existing Projects:
  - ◆ Based on geographically distinct regions
    - ◆ Kuhl Ridge: 300 MW
    - ◆ Oliphant Ridge: 200 MW
    - ◆ Tucannon: 500 MW
    - ◆ Dutch Flat: 250 MW
  - ◆ Management Committee approved expansion of Kuhl Ridge Project
    - ◆ January 15, 2009

## Current Development Plan

- ◆ **Project Phase**
  - ◆ An independently financed generating facility
  - ◆ May incorporate all or part of more than 1 WRA
  - ◆ Associated with a construction period/year
    - ◆ **Phase I:** 2011 Construction
    - ◆ **Phase II:** 2012 Construction
    - ◆ **Phase III:** 2013 Construction
    - ◆ **Phase IV:** 2014 Construction
    - ◆ **Phase V:** 2015 Construction
  - ◆ Each Phase 250 MW

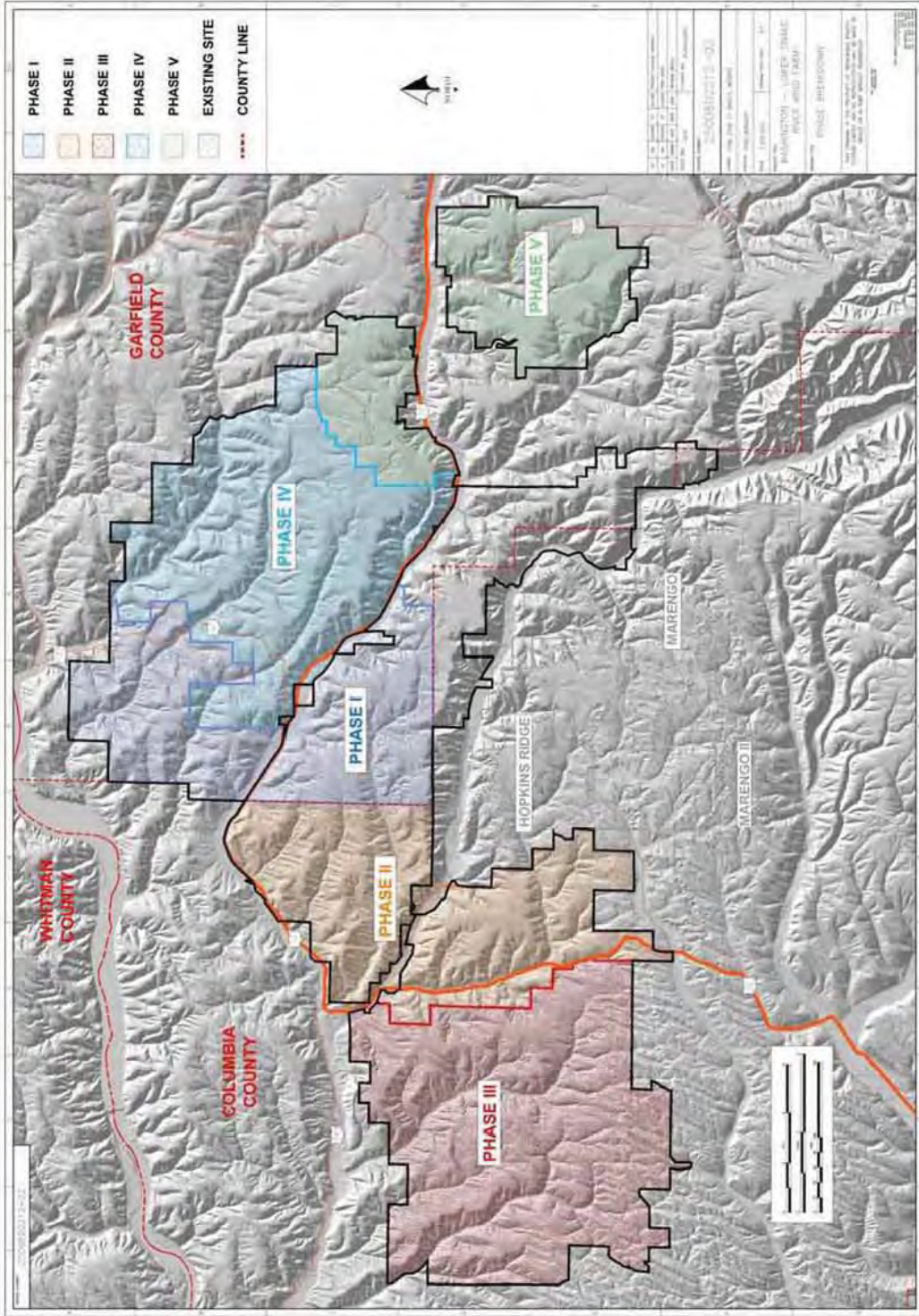


# Existing Projects per the JDA Wind Resource Areas (WRAs)



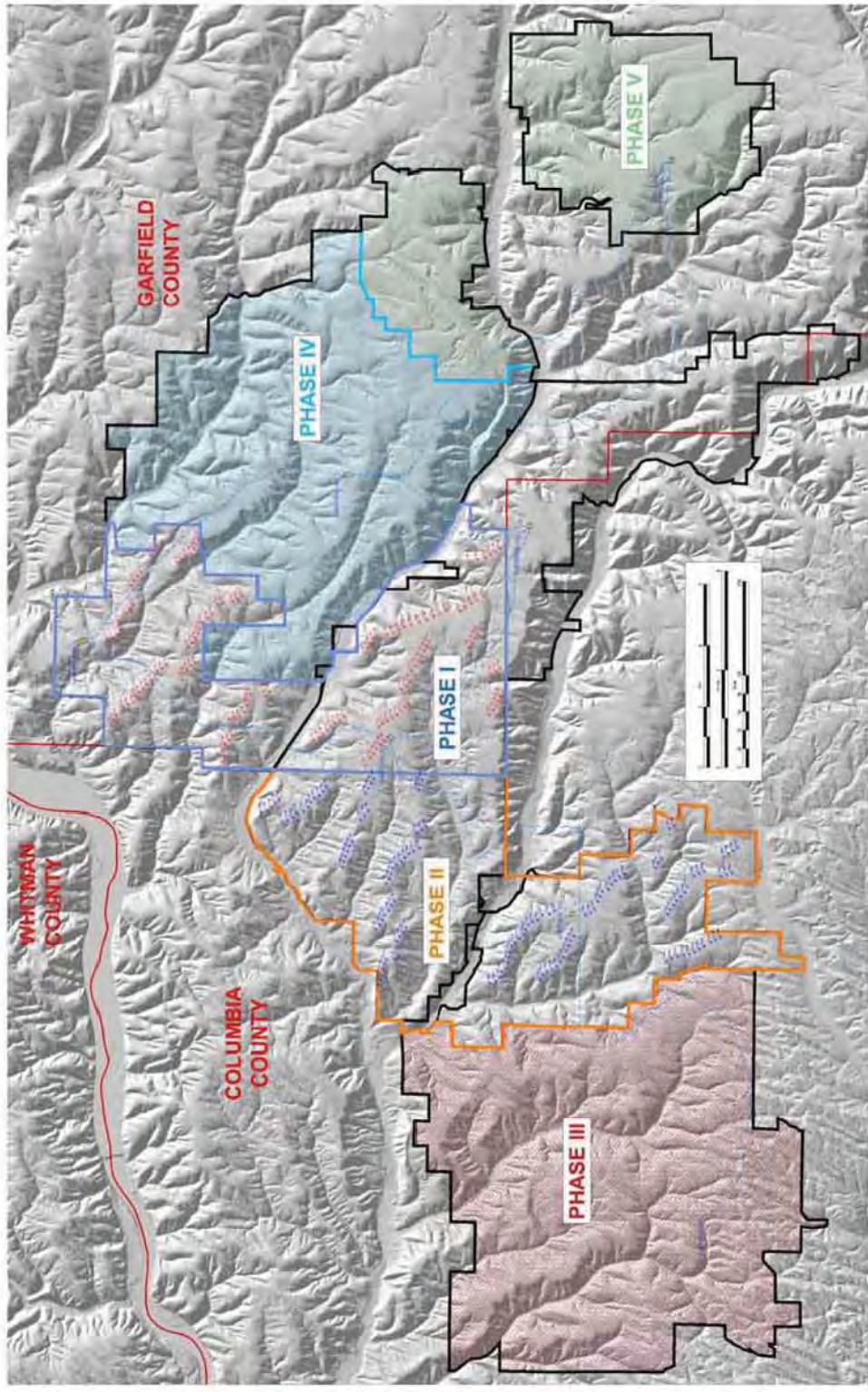


# Existing Projects vs. Proposed Build Out

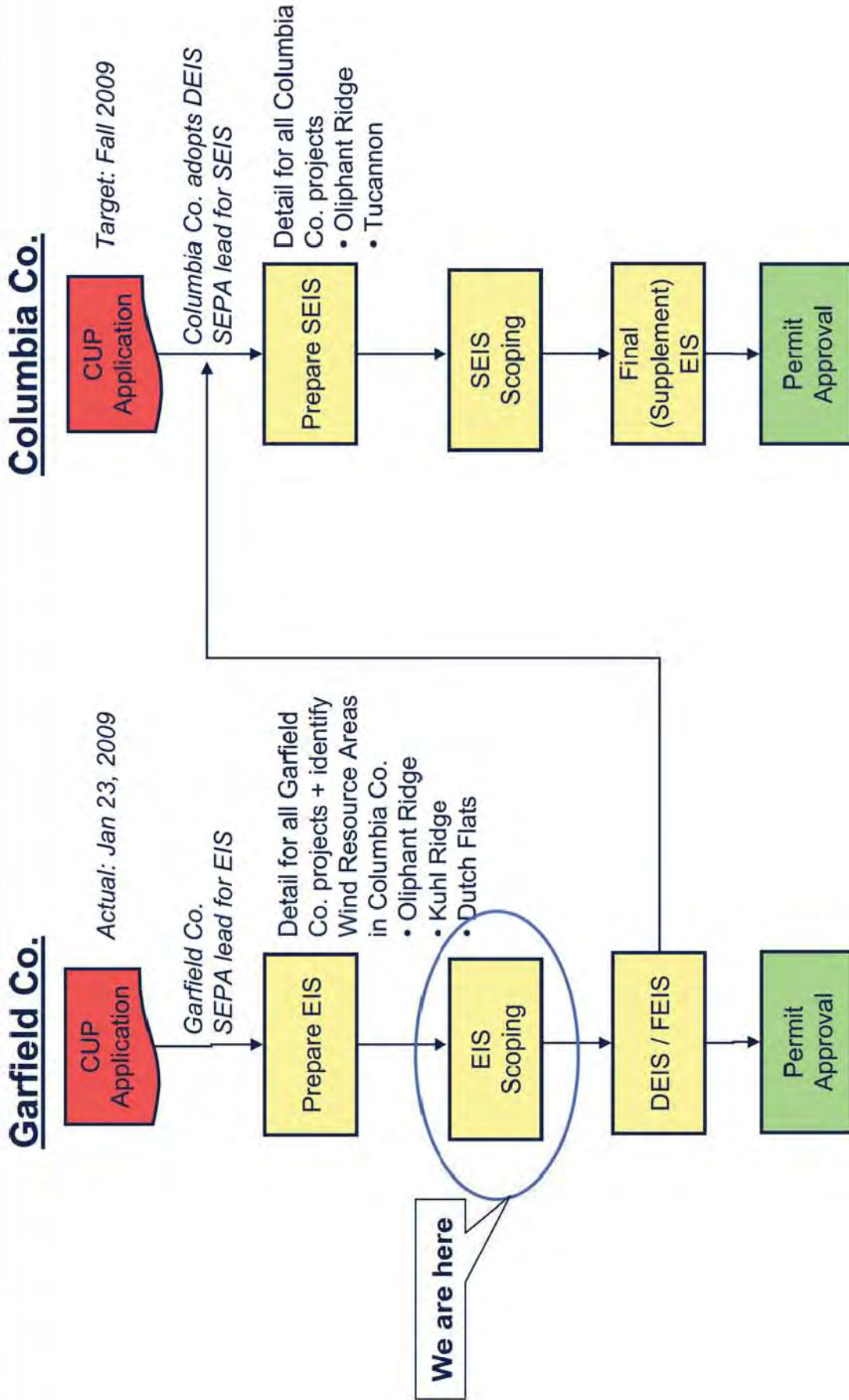




# Potential Project Layout – Phase I and II Vestas V90 1.8 MW Turbine



# Lower Snake River - Permitting





## •Communication Plan Highlights

- Strategy: Leverage the proven benefits of wind energy in an uncertain economy
- Tactics: Build support through information
  - Community open houses
  - News releases, fact sheets
  - Project newsletter
  - Website
  - Event and organization sponsorships
  - Wind benefits advertisements
  - Political leadership briefings
    - Local, state and federal officials

Milestone	Date
PSE-RES JDA News Release	12/15/08
PSE-RES Garfield CUP filing news release	01/27/09
Political leadership outreach (Local, state and federal agencies and officials)	12/2008 and ongoing
Pomeroy Open House	2/4/09
Lower Snake River Wind Project Newsletter	3/1/2009
Entrix economic study – SEWEDA news release	3/25/09
Wind benefits advertisements – Entrix findings	3/2009 – 9/2009
Lower Snake River Wind Project Website	3/31/2009

# Turbine Procurement Timeline

Date	Milestone
6-Feb-09	Turbine proposals received
6-Feb thru 30-Apr	Evaluation <ul style="list-style-type: none"> <li>◆ Request additional information / clarification of proposals</li> <li>◆ Fully develop turbine pricing and associated BOP costs</li> <li>◆ Perform economic analysis on short-listed turbines</li> </ul>
15-May-09	Select preferred turbine supplier
1-Jul-09	Execute Turbine Supply Agreement <ul style="list-style-type: none"> <li>◆ Reservation Payment x% of contract price</li> </ul>
1-Apr-10	Notice To Proceed <ul style="list-style-type: none"> <li>◆ Down Payment x% of contract price</li> </ul>
1-Jun-11	1 <sup>st</sup> Turbine Delivery



## Potential RES Sale of 50% Interest

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- ◆ RES plans to issue market teaser for sale of 50% interest in Lower Snake River Wind Project week of March 16.
- ◆ RES expects to receive indicative bids by mid-April.
- ◆ RES will consider PSE term sheet to acquire interest and reduce transaction cost.



# Renewable Portfolio Standard



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# Wind Project

- ◆ Proposed MW project
- ◆ Approved Development Agreement with
- ◆ No LGIA in place yet with
  - ◆ Awaiting approved transfer agreement with
- ◆ Current term sheet contemplates:
  - ◆ PSE acquisition of development assets
  - ◆ Assignment of TSA with for MW turbines
- ◆ Scheduling for 2009 construction likely impossible
  - ◆ May have to store turbines and erect in 2010

## Next Steps:

- ◆ Continue term sheet negotiations
- ◆ Conduct fast-track due diligence

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# Wind PPA

- ◆ Proposed [REDACTED] MW wind project in [REDACTED] OR
- ◆ The power purchase agreement was short-listed in PSE's 2008 RFP
- ◆ Project Schedule:
  - ◆ Oregon EFSEC permit expected 3<sup>rd</sup> or 4<sup>th</sup> quarter 2009
  - ◆ Construction expected 2010
  - ◆ LGIA with BPA would follow
  - ◆ [REDACTED] application for transmission in 2009 BPA open season
- ◆ PPA Status:
  - ◆ Term sheet in negotiation
  - ◆ Terms and price are very attractive
  - ◆ [REDACTED] interested in moving rapidly to an agreement

## Next Steps:

- ◆ Complete term sheet and negotiate definitive PPA

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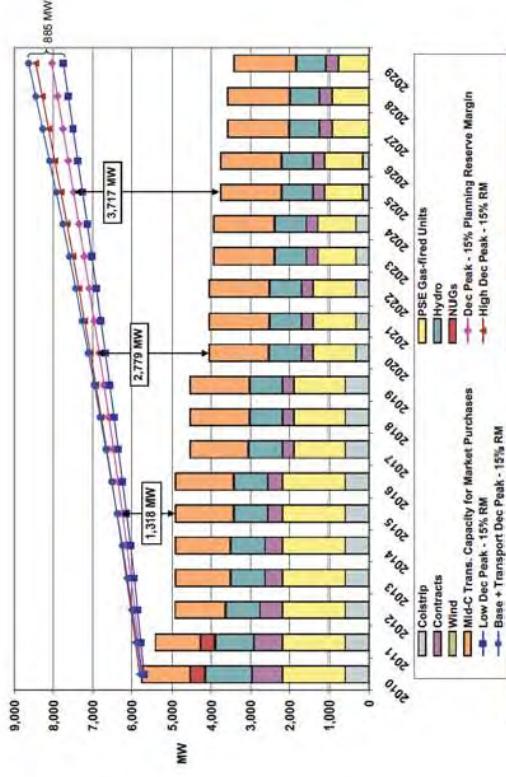
# Natural Gas Plant Opportunities

- ◆ [REDACTED]
- ◆ [REDACTED]
- ◆ Existing PSE sites (Frederickson, Fredonia, and Whitehorn) lend themselves to greenfield development of new ~250 MW CCCT projects or peaker facilities
  - ◆ Peakers could be [REDACTED] reciprocating engines, aero-derivative engines or simple-cycle combustion turbines
  - ◆ Peakers provide needed capacity and support wind integration
- ◆ New development sites exist at [REDACTED] and [REDACTED] WA

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# Conclusions

- ◆ Foreseeable need to add new generation to portfolio
- ◆ Stimulus Bill provides incentives for renewable investments over next two to three years
- ◆ Economic downturn may provide attractive purchase opportunities, especially for wind developments

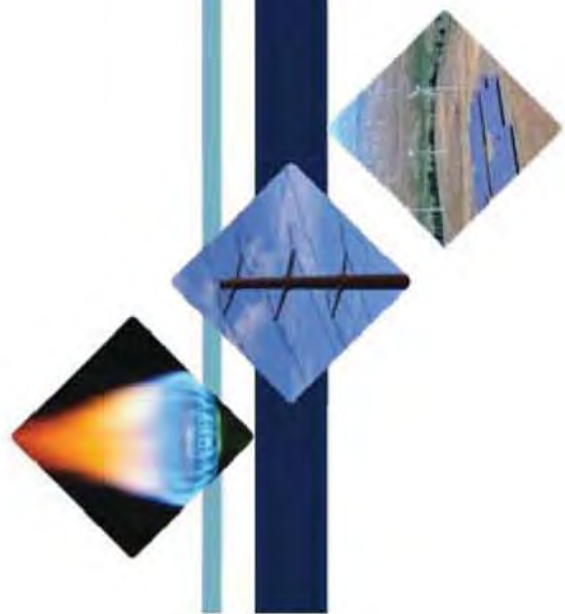




# Purchase of RES 50% Interest in Joint Development Agreement Lower Snake River Wind Project

Energy Management Committee

May 21, 2009



**Paul Wetherbee**  
Manager Resource Development



# Recommendation to the EMC

- Recommendation to seek approval from the Asset Management Committee or Board of Directors to purchase RES 50% undivided interest in Lower Snake River Wind Project Joint Development Agreement for \$ [REDACTED] and for approval of an increase in the total 2009 capital budget up to \$ [REDACTED].
  - Purchase provides the Company with 100% interest in exclusive rights to develop Lower Snake River Wind Project.
  
- Recommendation is only for the purchase of the late-stage development rights and for approval of 2009 development costs, including estimated turbine deposits and pre-LGIA payments to BPA for interconnection costs. The authorization for engineering and construction of plant will be sought under future, separate recommendation

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# EMC Presentation Outline

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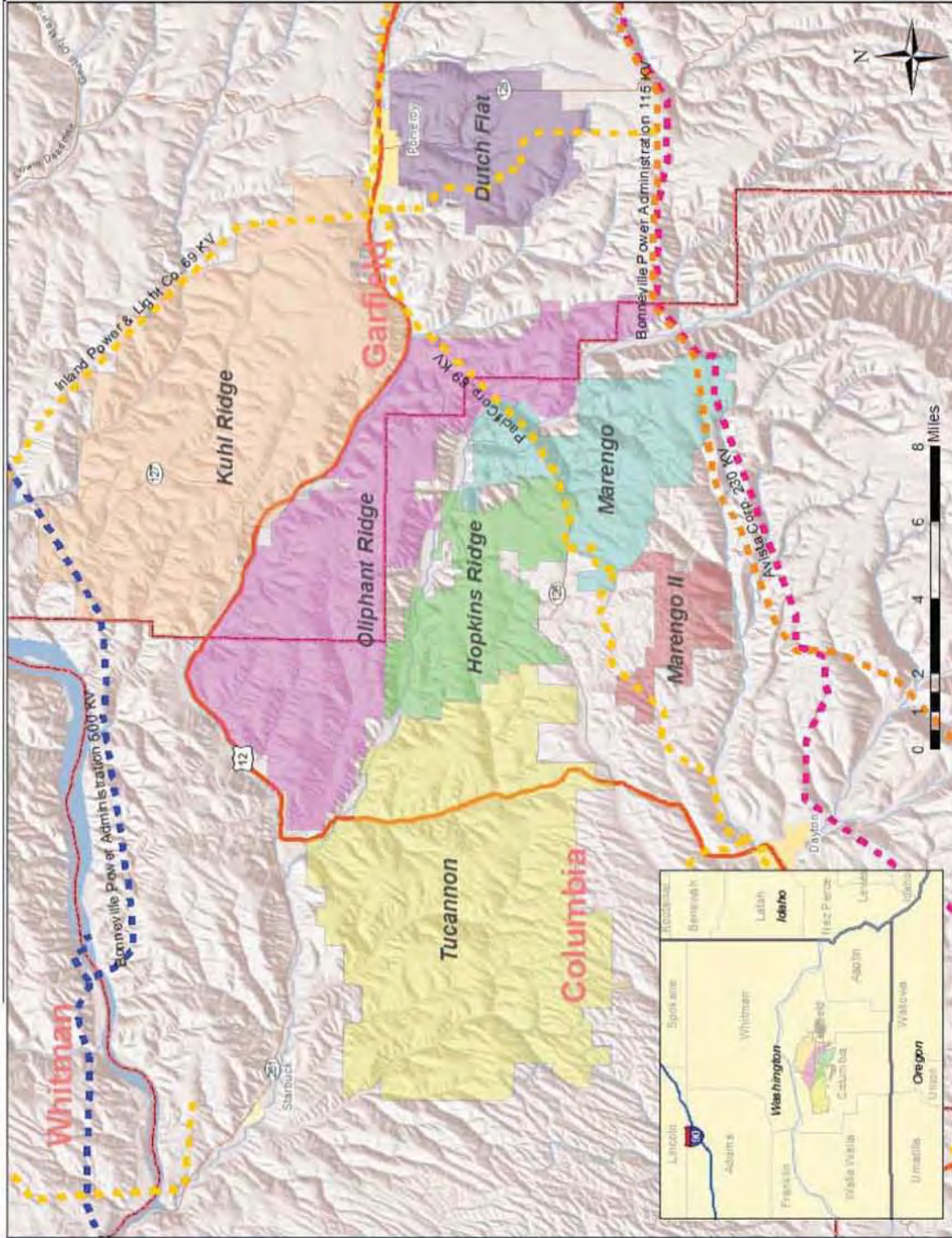
## Outline of Presentation

- Recommended Transaction
- Evaluation of Alternatives
- Risks and Open Issues of Development
- Risk Mitigation
- Recommendation



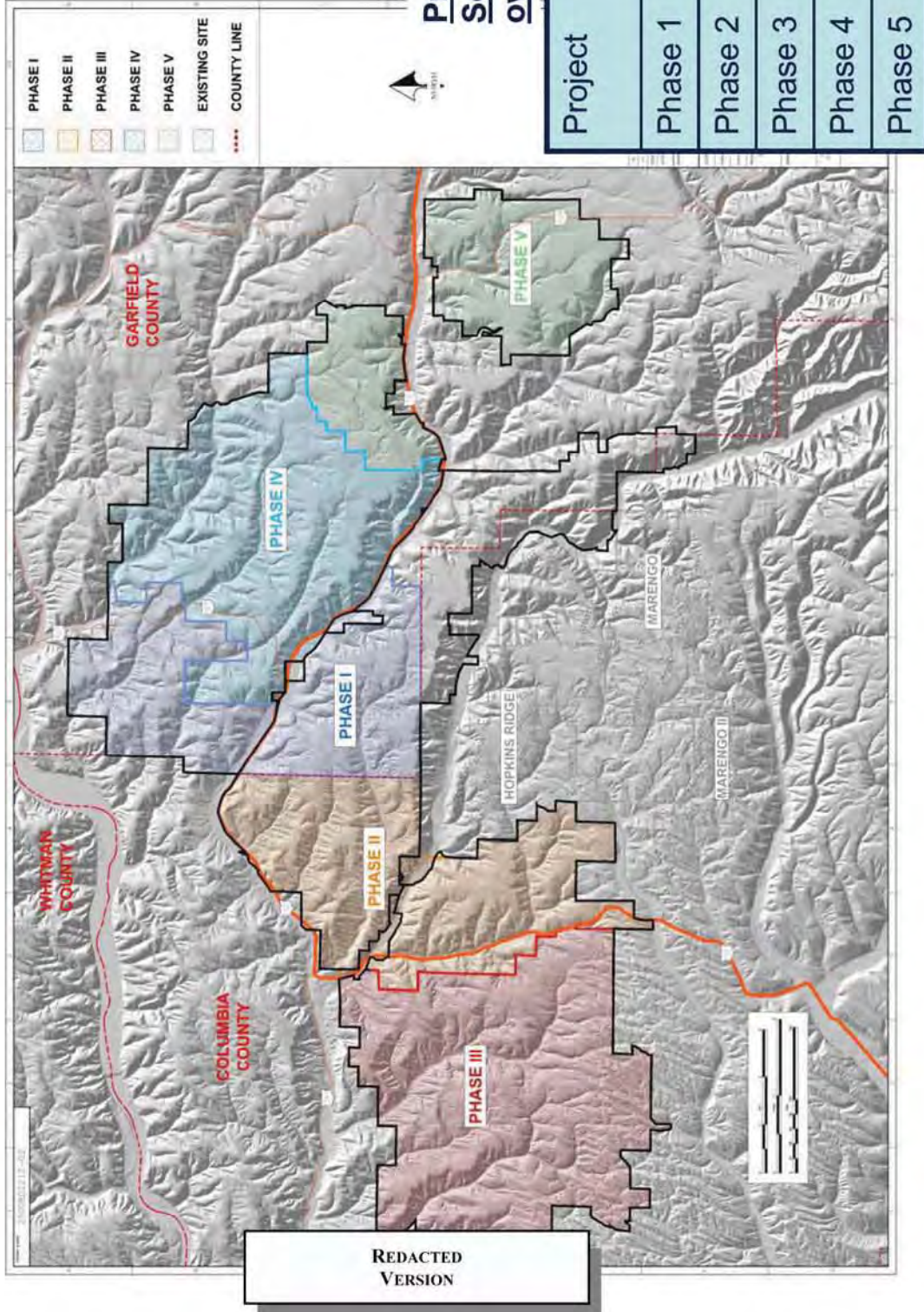


# Existing Projects per the JDA Wind Resource Areas (WRAs)





# Lower Snake River Wind Project Description





# Key Terms & Condition of Purchase

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- Option Letter signed May 15, 2009 grants PSE the right to purchase the RES 50% Interest for \$ [REDACTED] Key Features:

- [REDACTED]
- [REDACTED]
- [REDACTED]

- Key Conditions defined in Option Letter for Definitive Agreements

- Closing Conditions define RES delivered work products [REDACTED]
- [REDACTED]

- JDA BOP forms will be used for RES Construction

- [REDACTED]

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# Changes in Development Valuation



(2007, 2009)

- Declines in Pre-Construction and Under Construction Phase Valuations
- Increase in In-Operation Valuation
- 2009 update reflects pre-Stimulus Bill transactions

- Valuation for RES 50% Interest: \$/kW

Legend:

- 2007
- Draft update, 2009

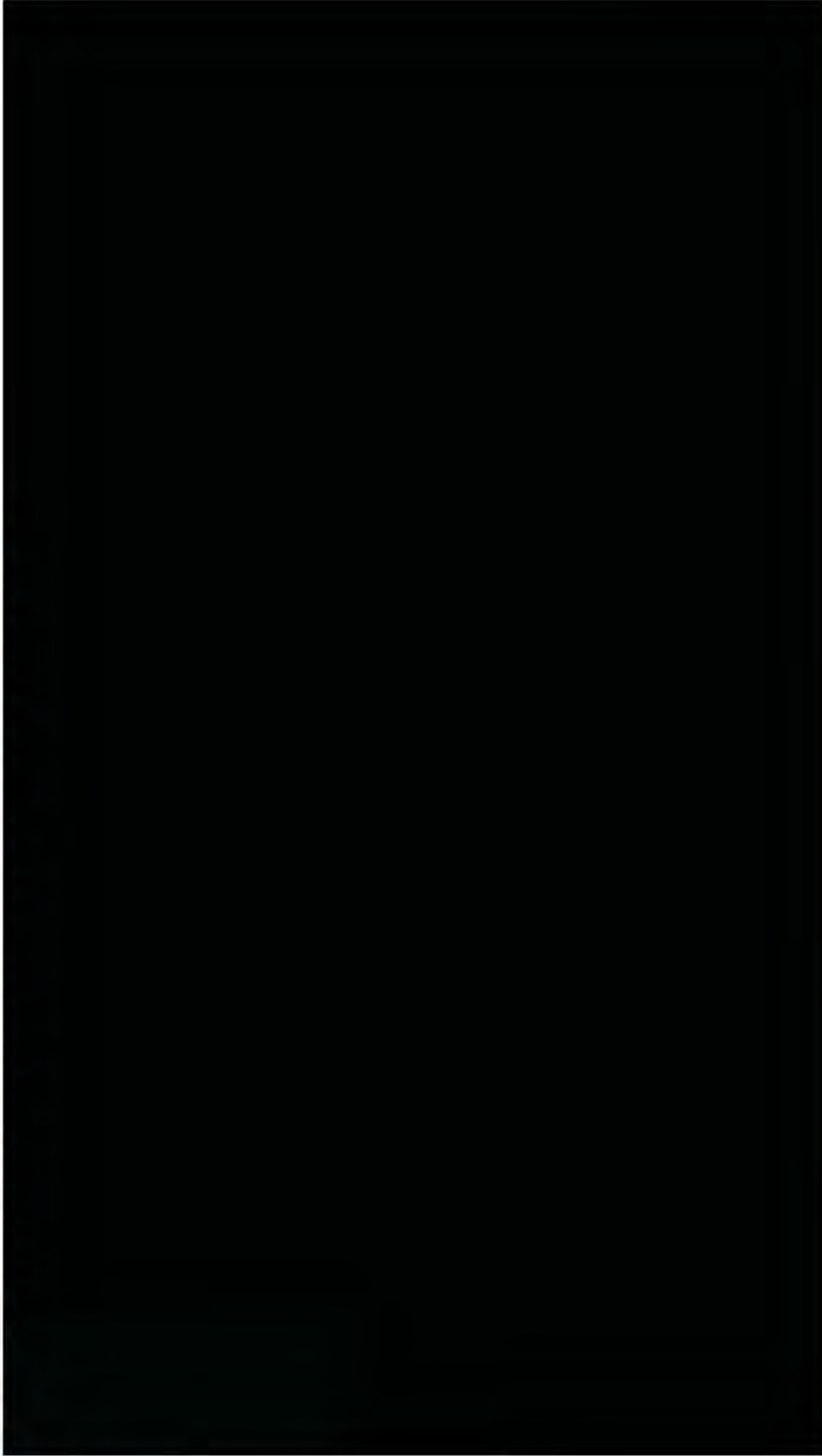
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# RES Delivered Products at Closing

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As Conditions to Close, RES delivers



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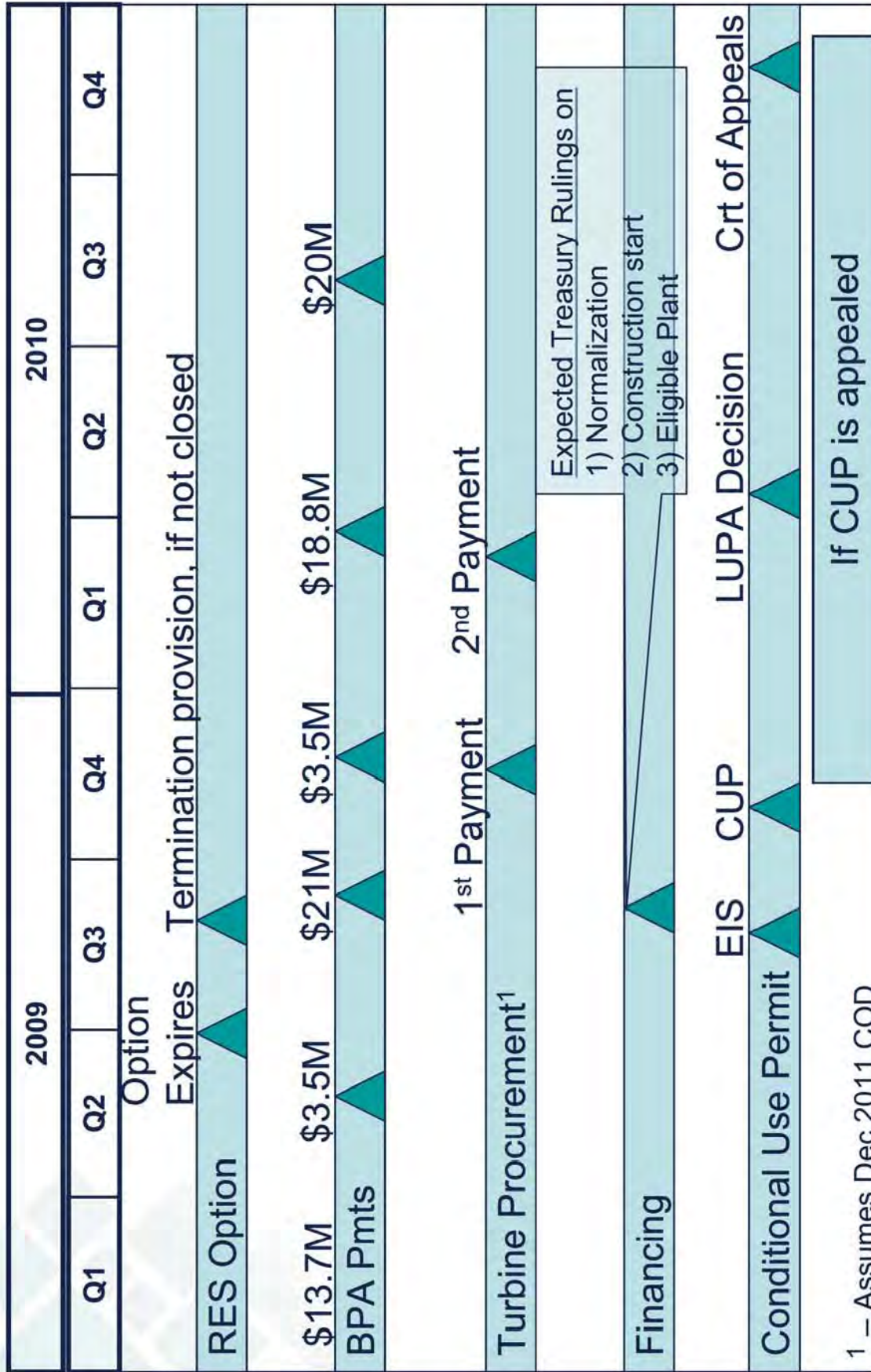
# Key Decisions and Open Issues

Item	Description
Purchase RES 50% Share of JDA	Purchase of exclusive late-stage development rights. Real estate leases will start to require renewal in 2012
BPA E&P Agreement <sup>1</sup>	Engineering and Procurement Agreement for the Construction of Central Ferry Substation.
Turbine Procurement	Majority expense of plant requires 18-24 month lead time
Project Financing	Open issues regarding implementation of February 2009 Federal Stimulus Bill create uncertainty regarding project financing: PTC with Flip v. ITC/Grant
Conditional Use Permit	Delivery date of unappealable permit could be as early as December 2009 or as late as December 2010, if appealed.

<sup>1</sup> – See May 21, 2009 presentation to the EMC regarding BPA Engineering and Procurement Agreement.



# Timeline of Key Information and Decisions



1 – Assumes Dec 2011 COD

# Comparison of Options

Alternative	Pro	Con
100% PSE Ownership	<ol style="list-style-type: none"> <li>1. Provides control of project</li> <li>2. Allows potential sale of development rights at a premium</li> </ol>	<ol style="list-style-type: none"> <li>1. Increased capital expenditures over current plan</li> <li>2. Opens long wind position</li> </ol>
RES Sells Interest to Unknown Partner	Maintains planned wind capacity and budget for PSE	<ol style="list-style-type: none"> <li>1. New partner will bring uncertainty and will slow development</li> <li>2. New partner may not execute development plan</li> </ol>
RES remains as Partner	Remedy provisions of JDA allow PSE to proceed without RES	RES unlikely to meet its near-term development obligations, but may litigate JDA remedies if forced out of early projects



# Regulatory Treatment of the Grant and Resulting Financing Structure

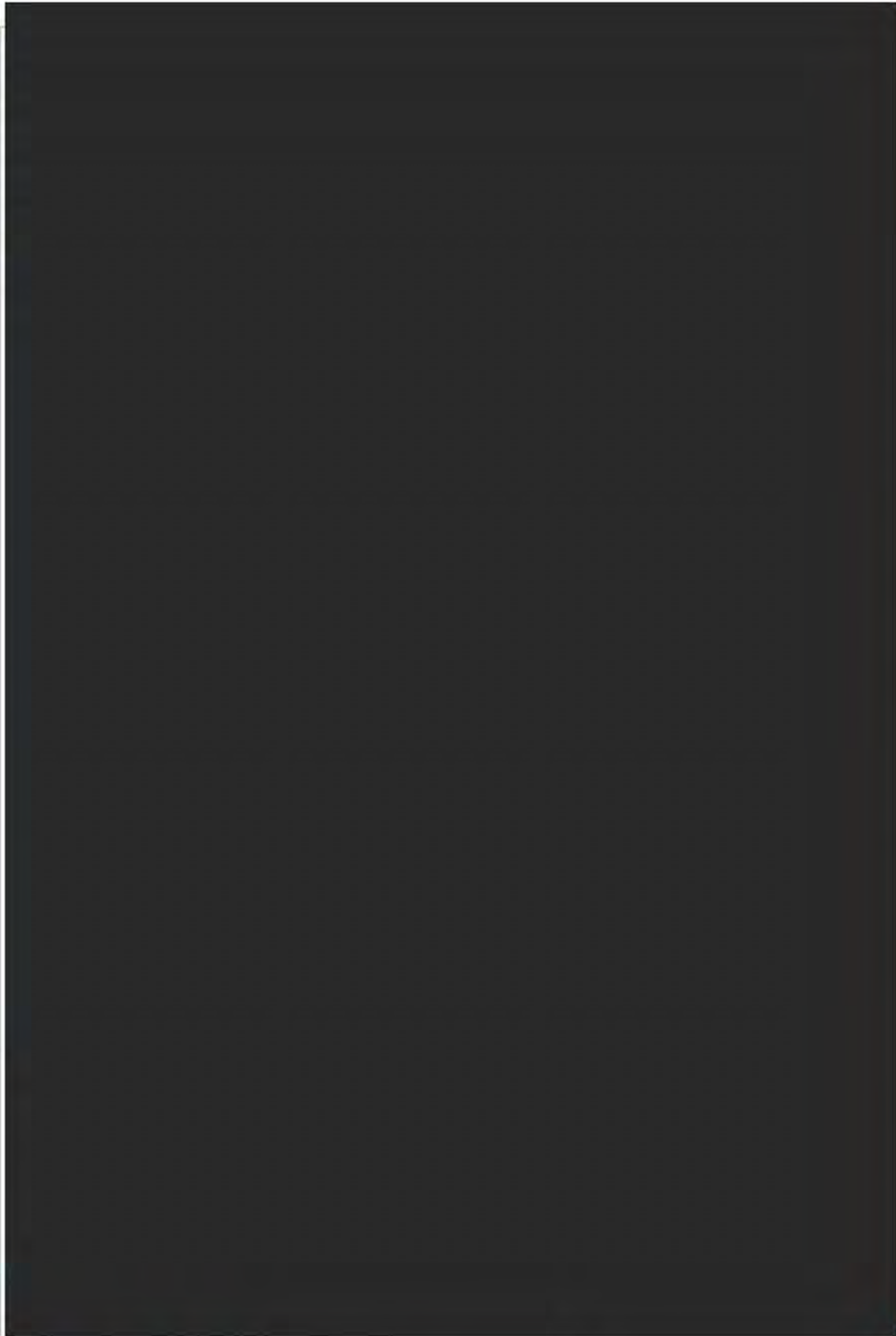
## Current Thinking

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Grant Ratemaking Treatment	Preferred Financing Structure	Required Regulatory Action
Normalized, 25 year amortization	Production Tax Credit with Flip	No Federal Action Required
Normalized, 10 year amortization	Grant in lieu of Investment Tax Credit	Treasury Ruling
Not Normalization, but benefits amortized (assume 10 years)	Grant in lieu of Investment Tax Credit	Treasury Ruling with Congressional Support or new legislation

# Renewable Portfolio Standard and 100% PSE Ownership

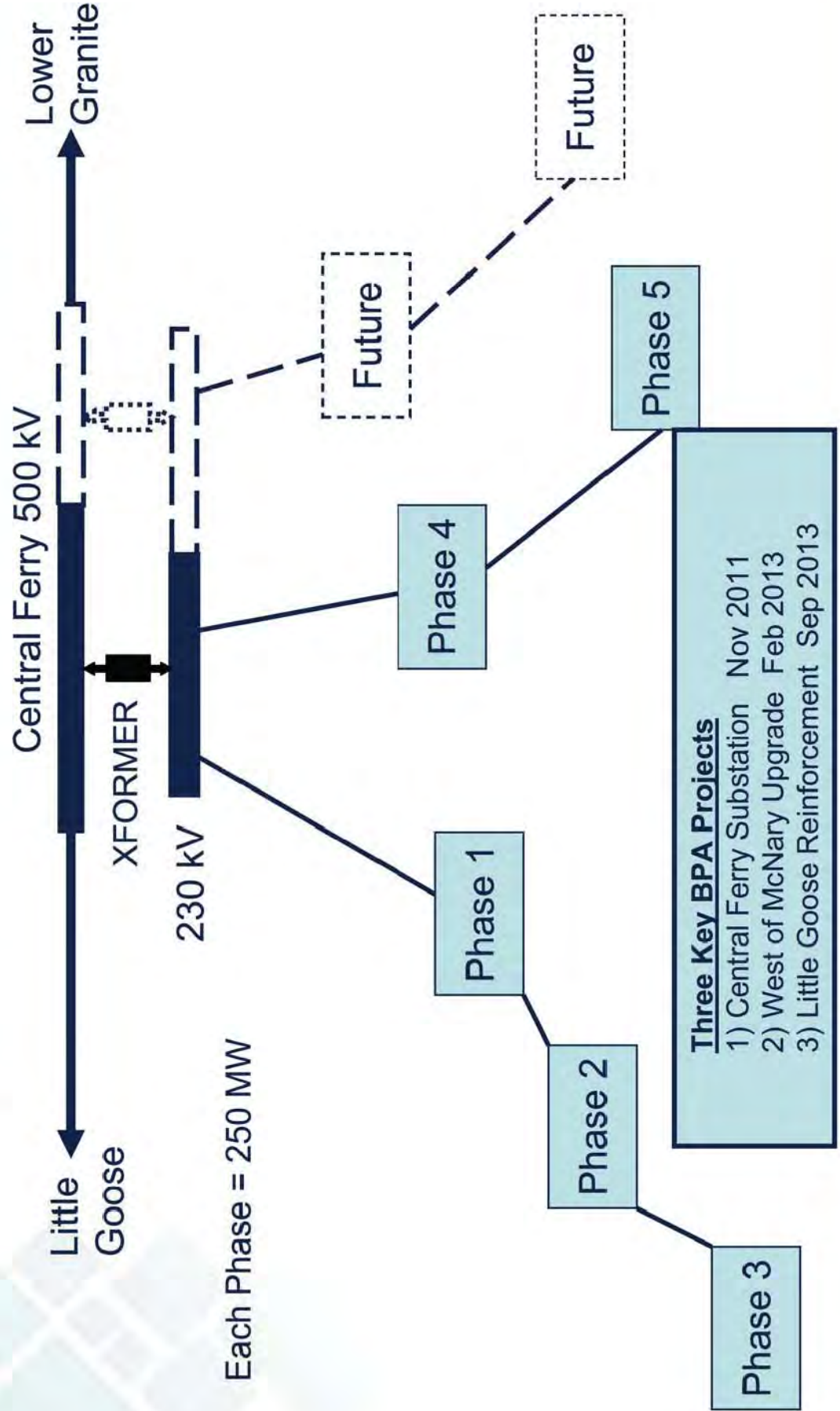
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# Simplified LSR Wind Project Layout



# Future EMC and Board Approvals

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- The current approval is for the purchase of the late-stage development rights and increased 2009 capital budget only.
- Future EMC approvals will be sought for:
  - Contract Authorizations
    - Turbine Procurement
    - Balance of Plant
    - Transmission Service Agreements
  - Project Authorizations
    - Phase 1 through 5



# Recommendation to the EMC

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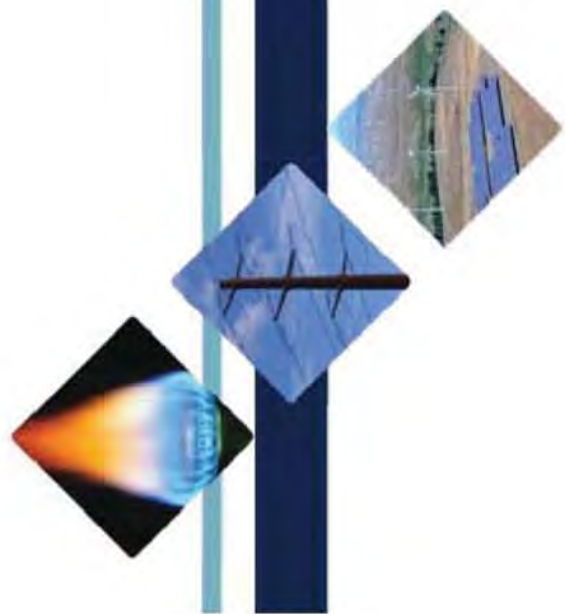
- Recommendation to seek approval from the Asset Management Committee or Board of Directors to purchase RES 50% undivided interest in Lower Snake River Wind Project Joint Development Agreement for \$ [REDACTED] and for approval of an increase in the total 2009 capital budget up to \$ [REDACTED].
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# Purchase of RES 50% Interest in Joint Development Agreement Lower Snake River Wind Project

Executive Committee

Appendix



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

**Roger Garratt**  
Director Resource Acquisition, Development, and Emerging  
Technologies



# Prior EMC Approvals

DATE	EMC Approval
May 27, 2008	<p>EMC approved recommendation to participate in BPA's 2008 Network Open Season.</p> <p>Approved PSE participation included 600 MW capacity for Lower Snake River Wind Project and the Granite-Little Goose Point of Interconnection – now called “Central Ferry Substation”.</p>
May 27, 2008	<p>EMC approved recommendation to enter into Joint Development Agreement with RES America Development Inc, Blue Sky Wind LLC, and RES Construction, Inc. (“RES”) to acquire 50% interest in development stage wind projects in Columbia and Garfield Counties.</p> <p>Proposed wind developments would connect at subject Central Ferry Substation</p>
Pending	<p>EMC approval will be required to enter into BPA Agreement for Engineering and Advanced Material Procurement related to Central Ferry Substation</p>

# Budget Summary

## 100% PSE Ownership Draft 5-year

Year	2009	2010	2011	2012	2013	2014
Development Rights ( \$ )						
Land Purchase ( \$ )						
Development Costs ( \$ )						
Transmission Cost ( \$ )						
Wind Turbine Generators ( \$ )						
Balance Of Plant ( \$ )						
Construction Management ( \$ )						
Other Costs ( \$ )						
Contingency ( \$ )						
<b>Expenditure Totals</b>						
Reg Asset (Interconnect Cost)						
Net Capital						

Development Rights ( \$ )  
Land Purchase ( \$ )  
Development Costs ( \$ )  
Transmission Cost ( \$ )  
Wind Turbine Generators ( \$ )  
Balance Of Plant ( \$ )  
Construction Management ( \$ )  
Other Costs ( \$ )  
Contingency ( \$ )

Expenditure Totals

Reg Asset (Interconnect Cost)

Net Capital

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# 2009 Cash Flows

## PSE Forecast Cash Flows for Lower Snake River Wind Project

### Case I: 50% PSE Interest, 50% RES Interest as TIC

YTD <sup>1</sup>	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	2009
Purchase Price - First Half BPA Payment - Mod 4 Develop Cost - RES JDA <sup>2</sup> WTG deposits <sup>3</sup>										
<b>Tota</b>										

### Case II: 100% PSE owned - Assume RES Closing Jun-09

YTD	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	2009
Purchase Price - First Half Purchase Price - Second Half BPA Reimbursement to RES for BPA Prmts prior to Closing BPA Payments - Mod 4 Develop Cost - RES JDA <sup>2</sup> Forward Develop Cost Incremental WTG deposits <sup>4</sup>										
<b>Total</b>										

**Notes**

- 1) Includes Aug 08 BPA Pmt
- 2) See Development Cost Schedule
- 3) Assume WTG schedule in approved development Plan:
- 4) Assumes 250 MW

[REDACTED]

REDACTED  
VERSION



# Pro Forma Summary

Build Scenario 1	Build Scenario 2
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

## 50% PSE Ownership

NPV Total Revenue Requirement ( \$ )  
NPV Total Project Generation  
Levelized Cost ( \$ / MWh )  
Levelized Cost Components:  
Grossed-up Return on Rate Base ( \$ / MWh )  
Total Expense ( \$ / MWh )  
REC Revenue ( \$ / MWh )  
Grossed-up ITC Grant Amount ( \$ / MWh )  
Book Depreciation Expense ( \$ / MWh )

## 100% PSE Ownership

NPV Total Revenue Requirement ( \$ )  
NPV Total Project Generation  
Levelized Cost ( \$ / MWh )  
Levelized Cost Components:  
Grossed-up Return on Rate Base ( \$ / MWh )  
Total Expense ( \$ / MWh )  
REC Revenue ( \$ / MWh )  
Grossed-up ITC Grant Amount ( \$ / MWh )  
Book Depreciation Expense ( \$ / MWh )

REDACTED  
VERSION



# Construction Timing Factors

## Factors Favoring Later

### Construction

- Delivery of Unappealable Permit
- BPA Central Ferry Substation Construction
- Current RPS Standards
- Current PSE Renewable Goal
- Uncertain Project Financing Rules

## Factors Favoring Earlier

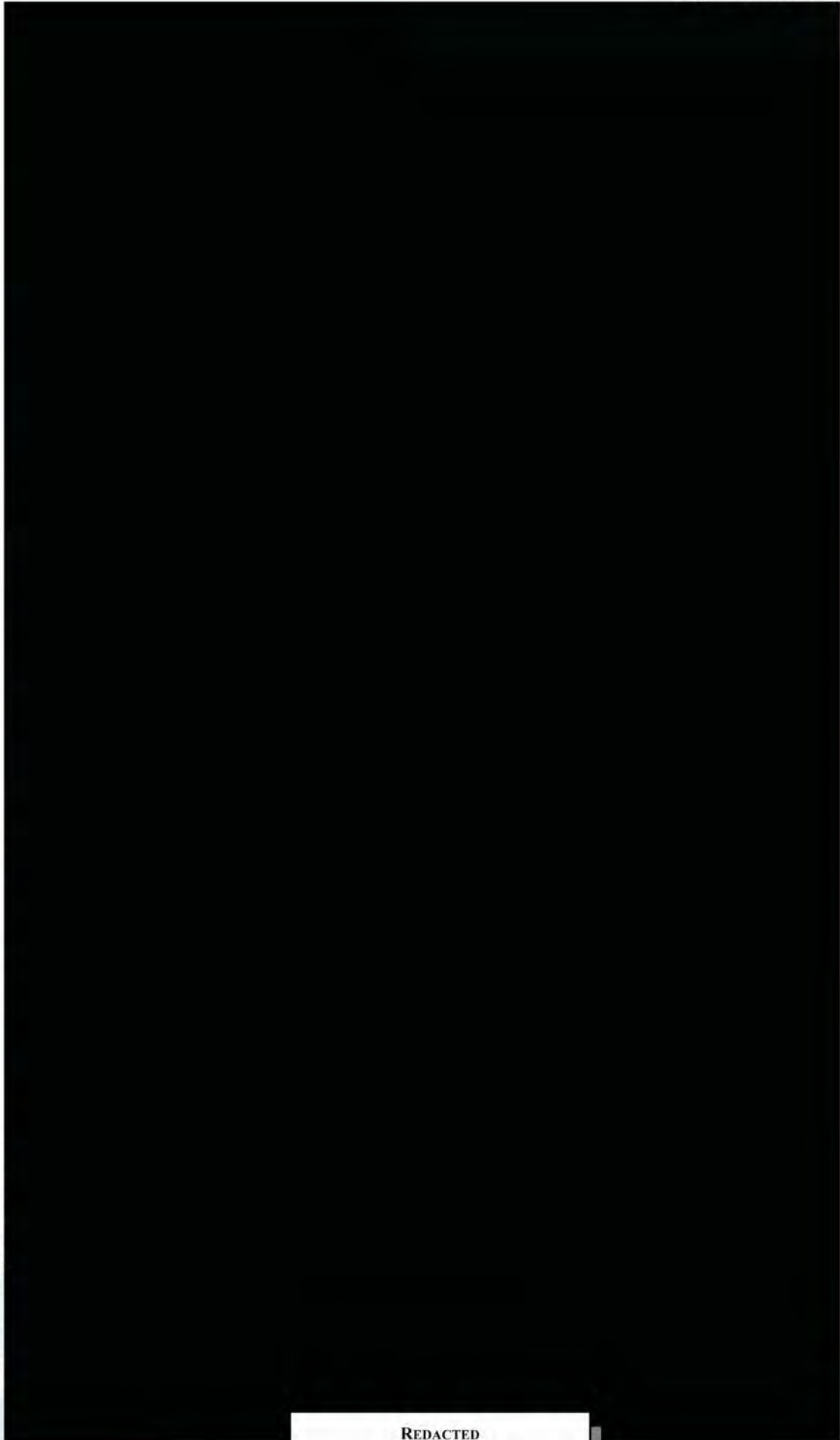
### Construction

- Federal Stimulus provisions require 2012 COD
- Proposed federal RPS and climate change legislation favoring renewables
- Anticipated upward pressure on development premiums
- Current depressed turbine market
- Lease renewals open door to competitors
- Potential sale of RECs
- Community support; development shelf life

Recommended Purchase of the RES 50% interest gives PSE control of the development and construction schedule so that the Company can adjust to changing conditions and new information

# 100% PSE Build - Resource vs. Transmission

Central Ferry Substation      West of McNary Upgrade      Little Goose Reinforcement



REDACTED  
VERSION



# Development Schedule and Financing

## Lower Snake River Wind Project Develop Schedules and Financing Assumption

Year	Levelized		Installed MW		Financing
	IRP	IRP	100% PSE Ownership	50% PSE Ownership	
2011	100	100	100		Grant*
2012	100	100	100		Grant*
2013	100				Balance Sheet
2014	100				Balance Sheet
2015	100				Balance Sheet
2016	100	200			
2017	100				
2018	100				
2019	100				Balance Sheet
2020	100	600			
2021					Balance Sheet
<b>Total MW</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	

\* assumes normalization and 10-year amortization

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# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Financing</i></p> <p>1. Timing and form of financing related to Federal Stimulus provisions</p> <p>2. Limited availability of tax equity partners and regulatory accounting challenges may create uncertainties structuring utility rate-based “flip”</p>	<p>1. Increased project cost</p> <p>2. Stranded development cost</p>	<p>1. PSE financial models use conservation assumptions to factor in potential downside costs.</p> <p>2. PSE Federal Relations Team engaged with Treasury to clarify potential implementation policies.</p>
<p><i>Permitting and Community Acceptance</i></p> <p>Permit restrictions may limited installed capacity</p>	<p>Increased project cost (\$/mWh)</p>	<p>1. Current plant layout and design efforts follow all setback and other relevant planning provisions.</p> <p>2. Conservation permitting strategy limited avenues for appeal.</p> <p>3. Conservative permitting schedule assumes Conditional Use Permit is appealed</p>



# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Technology</i></p> <p>Improvements in WTG technology likely to yield improved capacity factors</p>	<p>Higher project cost relative to later wind plants</p>	<p>Turbine supply agreements will include warranty and service provisions. Technology factors to be considered in turbine supply award.</p>
<p><i>Reduced need for renewables</i></p>		
<p>Future efforts in state legislature may result in reduced RPS standard</p>	<p>PSE portfolio may contain more wind resource than required by state law</p>	<ol style="list-style-type: none"> <li>1. Likely Federal RPS standard.</li> <li>2. Recent move to regulate GHG suggests continued increased pressure on renewable generation.</li> </ol>
<p><i>Construction</i></p>		
<p>Construction delays, faulty equipment, or unexpected material issues</p>	<p>Cost over-runs</p>	<ol style="list-style-type: none"> <li>1. RES Construction in place for construction phase using 'open-book' accounting.</li> <li>2. Ensure contractor follows best-practices re insurable risks.</li> </ol>

# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Real estate risk for late-stage development</i></p> <p>Development of late-stage projects (Phases 4 and 5) may exceed the life of existing leases and anemometer agreements</p>	<p>Late-stage projects will require renewal of lease agreements resulting in higher project costs</p>	<ol style="list-style-type: none"> <li>1. Update lease agreements as necessary.</li> <li>2. Maintain positive presence in community.</li> </ol>



# BPA Engineering & Procurement Lower Snake River Wind Project

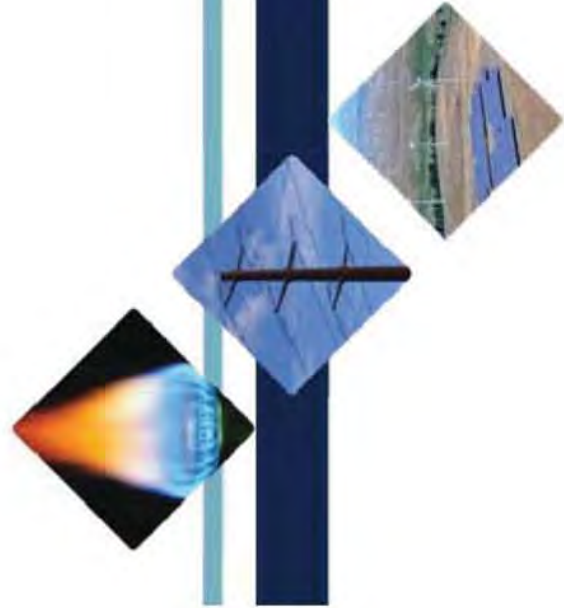
Energy Management Committee

May 21, 2009



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

**Paul Wetherbee**  
Manager, Resource Development



# Recommendation to EMC

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- Approve execution of Engineering and Procurement Agreement with Bonneville Power Administration for 50% of \$41,700,000 (estimated 80% recoverable via transmission credits) for new 500/230 kV substation (“Central Ferry Substation”) to service the Lower Snake River Wind Project.
  - 50% shared with Renewable Energy Systems Americas (“RES”) via the Lower Snake River Wind Project Joint Development Agreement.



# Prior EMC Approvals

DATE	EMC Approval
May 27, 2008	<p>EMC approved recommendation to participate in BPA’s 2008 Network Open Season.</p> <p>Approved PSE participation included 600 MW capacity for Lower Snake River Wind Project and the Lower Granite-Little Goose Point of Interconnection – now called “Central Ferry Substation”.</p>
May 27, 2008	<p>EMC approved recommendation to enter into Joint Development Agreement with RES America Development Inc, Blue Sky Wind LLC, and RES Construction, Inc. (“RES”) to acquire 50% interest in development stage wind projects in Columbia and Garfield Counties.</p> <p>Proposed wind developments would connect at subject Central Ferry Substation</p>

# BPA E&P Contract History

---

- RES and BPA original signed E&P was effective on August 14, 2008
  - Required payment of \$500,000 by August 15, 2008
  - Required payment of \$13,200,000 by September 30, 2008
- Modification #1 and Modification #2 slipped the due date on the second payment to December 1, 2008 and January 30, 2009 respectively.
- Modification #3 recognized the assignment of RES rights to Blue Sky Wind and PSE.



# BPA E&P Contract History

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- Modification #4 adds three payments
  - Requires payment of \$3,500,000 by June 1, 2009
  - Requires payment of \$21,000,000 by August 17, 2009
  - Requires payment of \$3,500,000 by October 15, 2009
- Payments are consistent with the current 2009 capital budget and reflected in the 4/16/09 forecast update.

# E&P Costs - Mod #4 Schedule of Payments

## Lower Snake River Interconnection Cost

\$000's

	Total BPA Payments	PSE Share <sup>1</sup>	RES Share	2009 Total
Current request is for approval of this schedule	Q1 09 <sup>2</sup>	6,850	6,850	
	Q2 09	3,500	1,750	
	Q3 09	21,000	10,500	
	Q4 09	3,500	1,750	41,700
2010	38,800	Anticipated future requests for approval		
2011 - 15	14,600			
<b>Total</b>	<b>95,100</b>			

**Notes**

- 1) These amounts are consistent with the current 2009 Capital Budget
- 2) Q1 09 payments have been paid by PSE and RES to BPA



# Recommendation to EMC

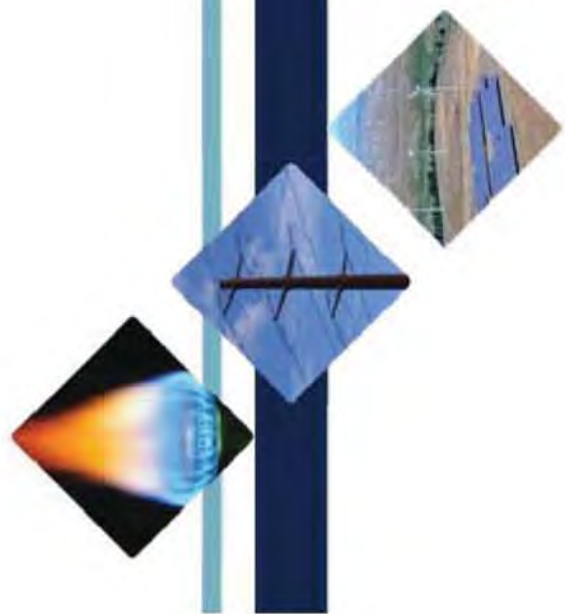
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- Approve execution of Engineering and Procurement Agreement with Bonneville Power Administration.
  - Agreement funds Engineering and Major Material Ordering for the Proposed New 500/230 kV substation for five generator interconnection projects in Columbia and Garfield Counties.
  - Agreement commits \$41,700,000 for Lower Snake River Wind Project Interconnection to be equally divided between PSE and RES.
  - PSE estimates 80% of cost will be recoverable as network upgrades through future transmission credits. BPA to determine final percentage of recoverable cost.

# Purchase of RES 50% Interest in Joint Development Agreement Lower Snake River Wind Project

Energy Management Committee

May 28, 2009



Roger Garratt  
Director, Resource Acquisition, Development, and Emerging  
Technology



# Recommendation to the EMC

- Recommendation to continue execution of original development strategy and seek approval from the Asset Management Committee or Board of Directors to purchase RES 50% undivided interest in Lower Snake River Wind Project Joint Development Agreement for \$[REDACTED] and for approval of an increase in the total 2009 capital budget up to \$[REDACTED]
  - Purchase provides the Company with 100% interest in exclusive rights to develop Lower Snake River Wind Project
  
- Recommendation is only for the purchase of the late-stage development rights and for approval of 2009 development costs, including estimated turbine deposits and pre-LGIA payments to BPA for interconnection costs. The authorization for engineering and construction of plant will be sought under future, separate recommendation

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# EMC Presentation Outline

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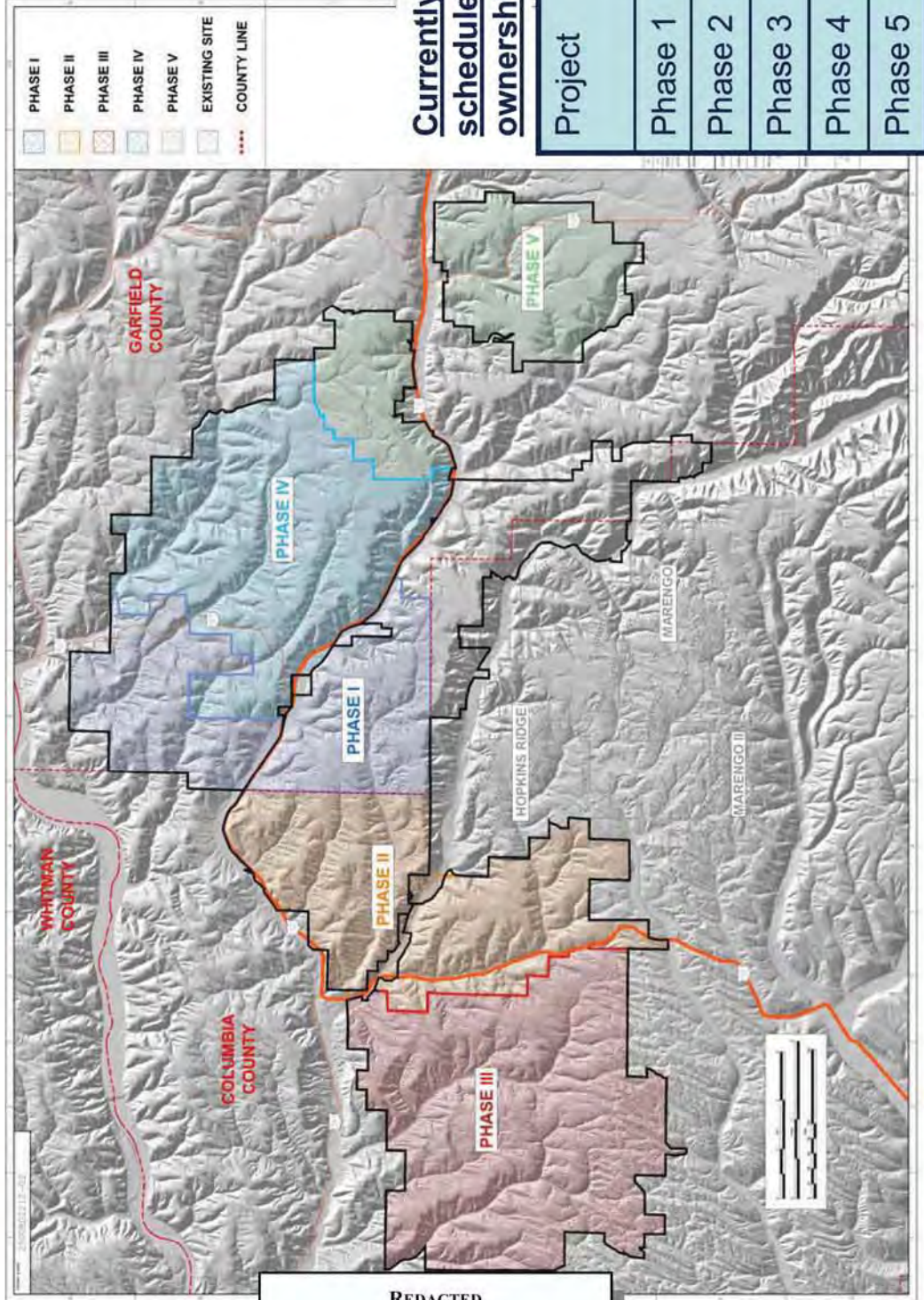
## Outline of Presentation

- Project History
- Recommended Transaction
- Market Conditions
- Evaluation of Alternatives
- Recommendation





# Lower Snake River Wind Project Description



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## Currently forecast development schedule assuming 100% PSE ownership

Project	Capacity (MW)	COD
Phase 1		
Phase 2		
Phase 3		
Phase 4		
Phase 5		



# Project History

Date	Event
May 1, 2008	PSE offers \$ [REDACTED] kW plus royalty for second half of Lower Snake River development rights; RES asks for \$ [REDACTED] kW and no deal is reached. PSE and RES verbally agree to \$ [REDACTED] kW for first half of development rights
May 27, 2008	EMC approves purchase of 50% interest in Lower Snake River Project development rights. (DJIA at 12,538)
Sep 15, 2008	<i>Lehman Brothers files for bankruptcy protection</i>
Nov 26, 2008	PSE & RES sign Joint Development Agreement. (DJIA at 8,726)
Mar 23, 2009	RES issues marketing material for sale of their 50% interest. (DJIA at 7,775)
May 15, 2009	PSE signs Option Letter for the purchase of the RES 50% undivided interest for \$ [REDACTED] (about \$ [REDACTED] kW).

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# Key Terms & Condition of Purchase

---

- Option Letter signed May 15, 2009 grants PSE the right to purchase the RES 50% Interest for \$ [REDACTED] Key Features:

- [REDACTED]
- [REDACTED]
- [REDACTED]

- Key Conditions defined in Option Letter for Definitive Agreements

- Closing Conditions define RES delivered work products [REDACTED]

- PSE still obligated to use RES Construction under JDA BOP forms

- [REDACTED]

REDACTED  
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# Recent PSE Activities

Developer and Location	Capacity (MW)	Est. COD	Date of PSE offer	PSE offer	Result
[REDACTED]	[REDACTED]	2010	Mar 5, 2009	\$ [REDACTED] kW plus turbine obligation	Counterparty countered at [REDACTED] kW
[REDACTED]	[REDACTED]	2010	Apr 7, 2009	\$ [REDACTED] kW plus turbine obligation	Rejected by Counterparty
[REDACTED]	[REDACTED]	2010	Feb 17, 2009	\$ [REDACTED] kW plus turbine obligation	Rejected by Counterparty

REDACTED VERSION

REDACTED VERSION

Note: Project valuations ultimately must reflect stage of development, location, timing, market conditions, and energy resource characteristics.



# Comparison on Purchase Price

## Purchase of First 50%: \$ [REDACTED]

- Development Work Products
  - Preliminary Wind Resource Analysis
  - Anemometer agreements
  - Incomplete real estate package

## Purchase of Second 50%: \$ [REDACTED]

- Development Work Products
  - CUP permit application filed Jan, 2009
  - EIS scoping meetings held in Pomeroy and Dayton
  - Draft EIS scheduled to be issued July 6, 2009
  - Environmental, cultural, socioeconomic, avian studies well underway
  - Turbine Layout, OH collection system, O&M facilities through preliminary design
  - 22 additional leases executed

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# RES Delivered Products at Closing

## As Conditions to Close, RES delivers

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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# Comparison of Options

Alternative	Pro	Con
1) 100% PSE Ownership	<ol style="list-style-type: none"> <li>Provides control of project and better opportunity to obtain tax incentives</li> <li>Allows potential sale of development rights unencumbered by RES's interest</li> </ol>	<ol style="list-style-type: none"> <li>Increased capital expenditures over current plan</li> <li>Opens long wind position</li> </ol>
2) RES Sells Interest to Unknown Partner	Maintains planned wind capacity and budget for PSE	<ol style="list-style-type: none"> <li>New partner will bring uncertainty and will slow development</li> <li>New partner may not execute development plan</li> </ol>
3) RES remains as Partner	Development schedule approval and remedy provisions of JDA allow PSE to proceed without RES	RES unlikely to meet its near-term development obligations, but may litigate JDA remedies if forced out of early projects

# PSE Development Strategy Review

---

- Move up development chain to control options
- Minimize acquisition cost, as compared to more fully developed projects
- Be in a position, with respect to development partner, to utilize leverage to step up to a larger position if and when our partner was unable to move forward
- Strategy playing out as we had hoped (although earlier than expected due to market events)



## Alternative: RES Remains as Partner Possible Development Schedule Slippage

- RES seems to prefer delaying expenditures until absolutely necessary
  - Next significant payments under current schedule
    - \$3.5M to BPA around June 1
    - \$21M to BPA due in August
    - Turbine deposits anticipated late in Q4
  - Good possibility RES will want to delay BPA August payment and signing up for turbines unless credit markets improve significantly (turbine loans and PTC providers still constrained)

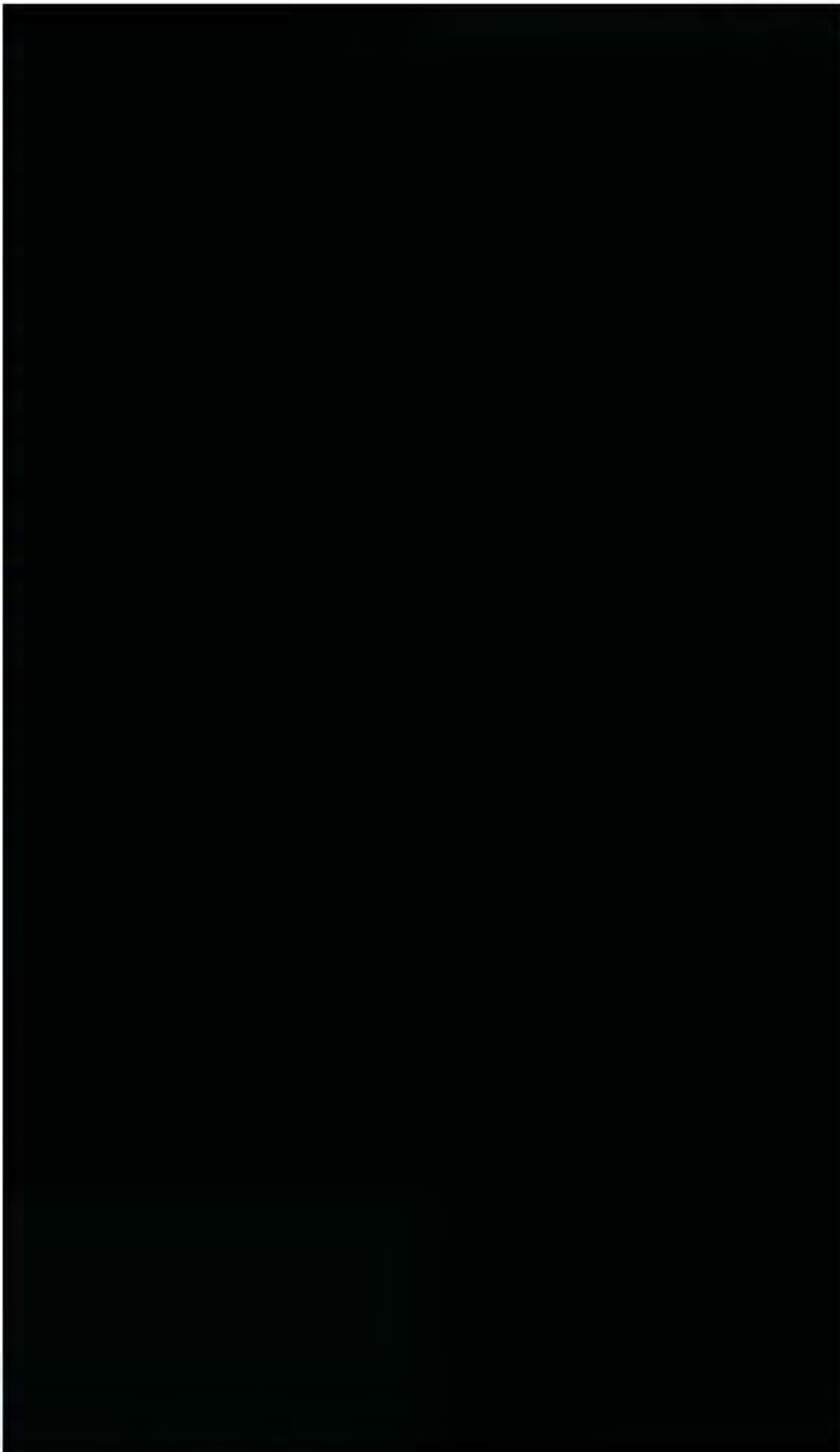
## Alternative: RES Remains as Partner Possible Development Schedule Slippage

- Open development issues may provide RES with excuses to try to put off approval of material expenditures
- If RES is too slow in approving development matters or expenses, PSE may seek to enforce remedies under the JDA
  - However, likely will be difficult to establish that RES is not acting in good faith or is in default
  - Remedies will take time and will likely cause delays sufficient to cause ITC or Grant incentives to be lost
  - Disputes under the JDA are generally subject to arbitration
    - RES likely to be able to show some basis for delays and it may be difficult to get arbitrators to render decisions requiring action or the payment of expenses



# Alternative: RES Remains as Partner JDA Rights and Remedies

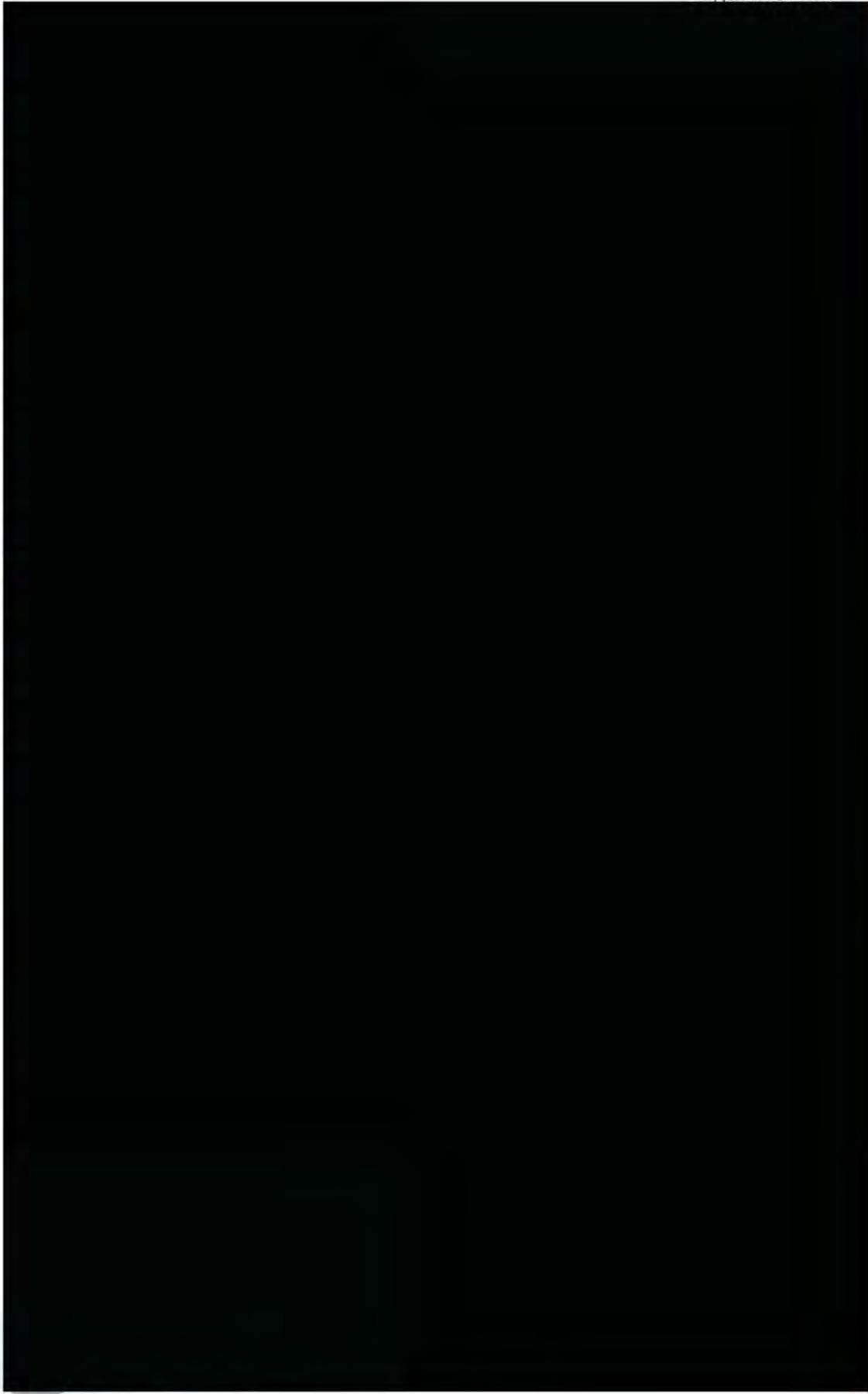
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# Alternative: RES Remains as Partner JDA Rights and Remedies

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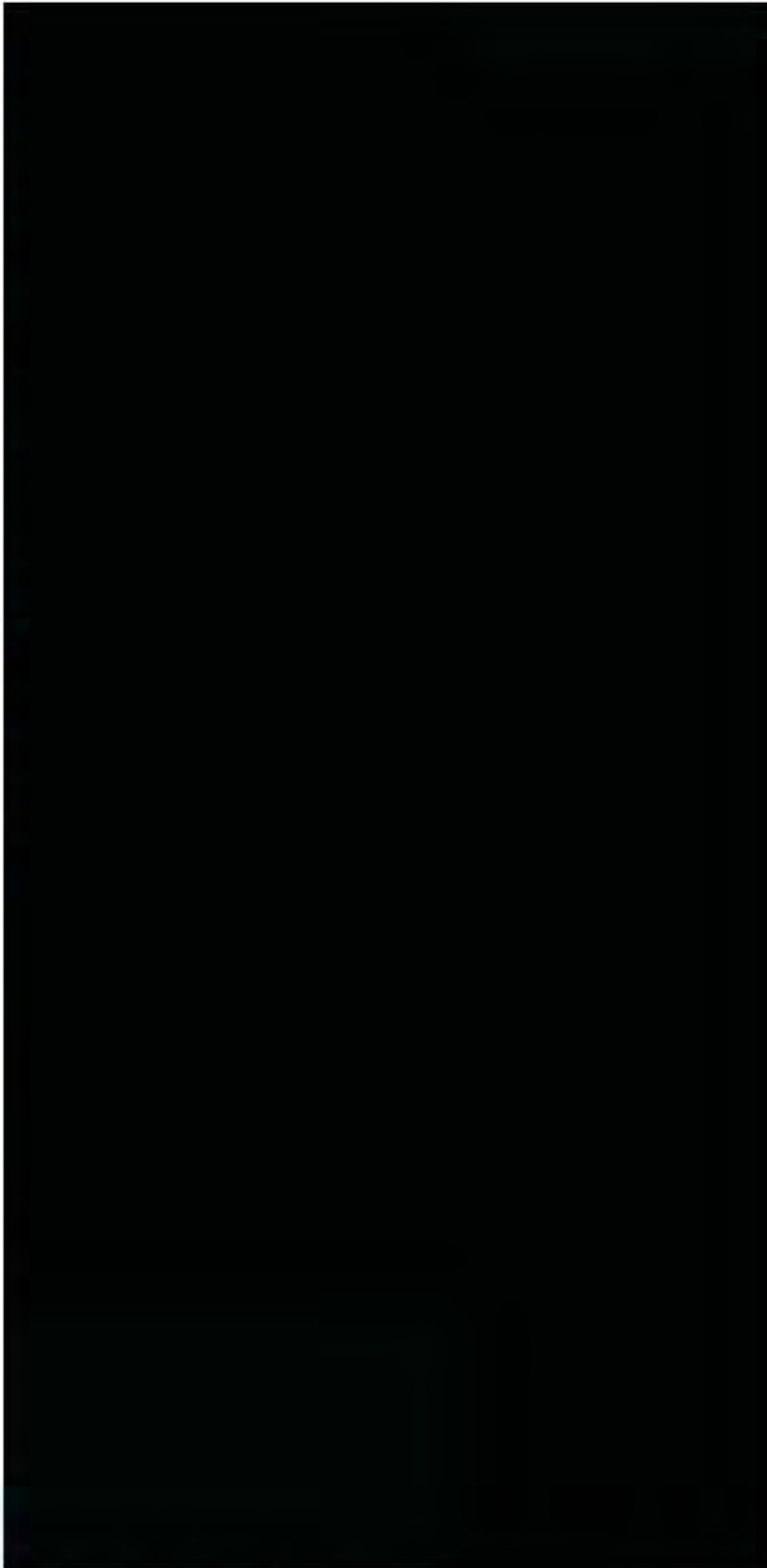


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# Alternative: RES Remains as Partner JDA Rights and Remedies

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## Alternative: RES Remains as Partner Certain Risks of Continuing with RES

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- Slippage of development schedules
- Slippage possibly could jeopardize PSE's anticipated tax incentives, thereby significantly increasing effective cost of projects
- In the event RES suffered serious financial setbacks and were to file for bankruptcy, it could take many months (possibly more than 6 and even longer) for status of projects to be known



# Renewable Portfolio Standard and 100% PSE Ownership

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# Factors Supporting Renewables

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- Federal Stimulus provisions require 2012 COD
- Pending Federal RPS legislation and ‘cap & trade’ system would require increased renewables development
- Potential sale of Renewable Energy Credits (RECs) under favorable market conditions
- Expected upward price pressure in development fees, wind turbine pricing, and construction costs
  - Hedge against rising renewable cost
- Reduces risk by controlling development schedule
- Community support; development shelf life



# Tax Incentives - Timing Considerations

---

- Production Tax Credit extended through 2012
  - PSE ability to utilize uncertain due to limited tax appetite
  - Third party tax equity in regulated utility context poses significant regulatory and accounting challenges
- 30% Investment Tax Credit/Treasury Grant
  - To qualify for Grant “construction” of project must begin before end of 2010 and project must be placed in service before end of 2012
  - Currently unclear how IRS will determine when “construction” actually begins (e.g., material construction activities, or is signing of construction contract enough?)

# Project Timing

---

- Projected in service date for first LSR project is not until late 2011 due to need for new BPA facilities
  - Need to determine whether construction can begin on any project to qualify for ITCs or Grant
  - Key issue: delays caused by, or due to, RES (e.g., delays or inability to obtain financing), potentially may jeopardize PSE's ability to meet tax deadlines



# Future EMC and Board Approvals

---

- The current approval is for the purchase of the late-stage development rights and increased 2009 capital budget only.
- Future EMC approvals will be sought for:
  - Contract Authorizations
    - Turbine Procurement
    - Balance of Plant Agreement
    - BPA engineering and procurement agreements and LGIA
  - Project Authorizations
    - Phase 1 through 5

# Recommendation to the EMC

- Recommendation to continue execution of original development strategy and seek approval from the Asset Management Committee or Board of Directors to purchase RES 50% undivided interest in Lower Snake River Wind Project Joint Development Agreement for \$[REDACTED] and for approval of an increase in the total 2009 capital budget up to \$[REDACTED]
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- Recommendation is only for the purchase of the late-stage development rights and for approval of 2009 development costs, including estimated turbine deposits and pre-LGIA payments to BPA for interconnection costs. The authorization for engineering and construction of plant will be sought under future, separate recommendation

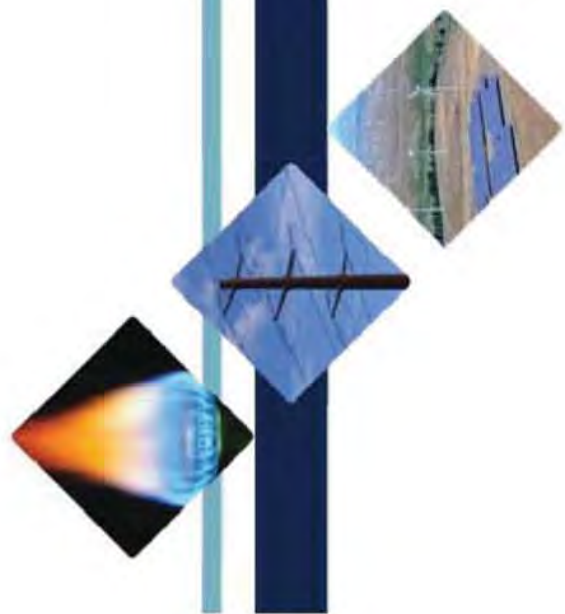
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# Purchase of RES 50% Interest in Joint Development Agreement Lower Snake River Wind Project

Energy Management Committee

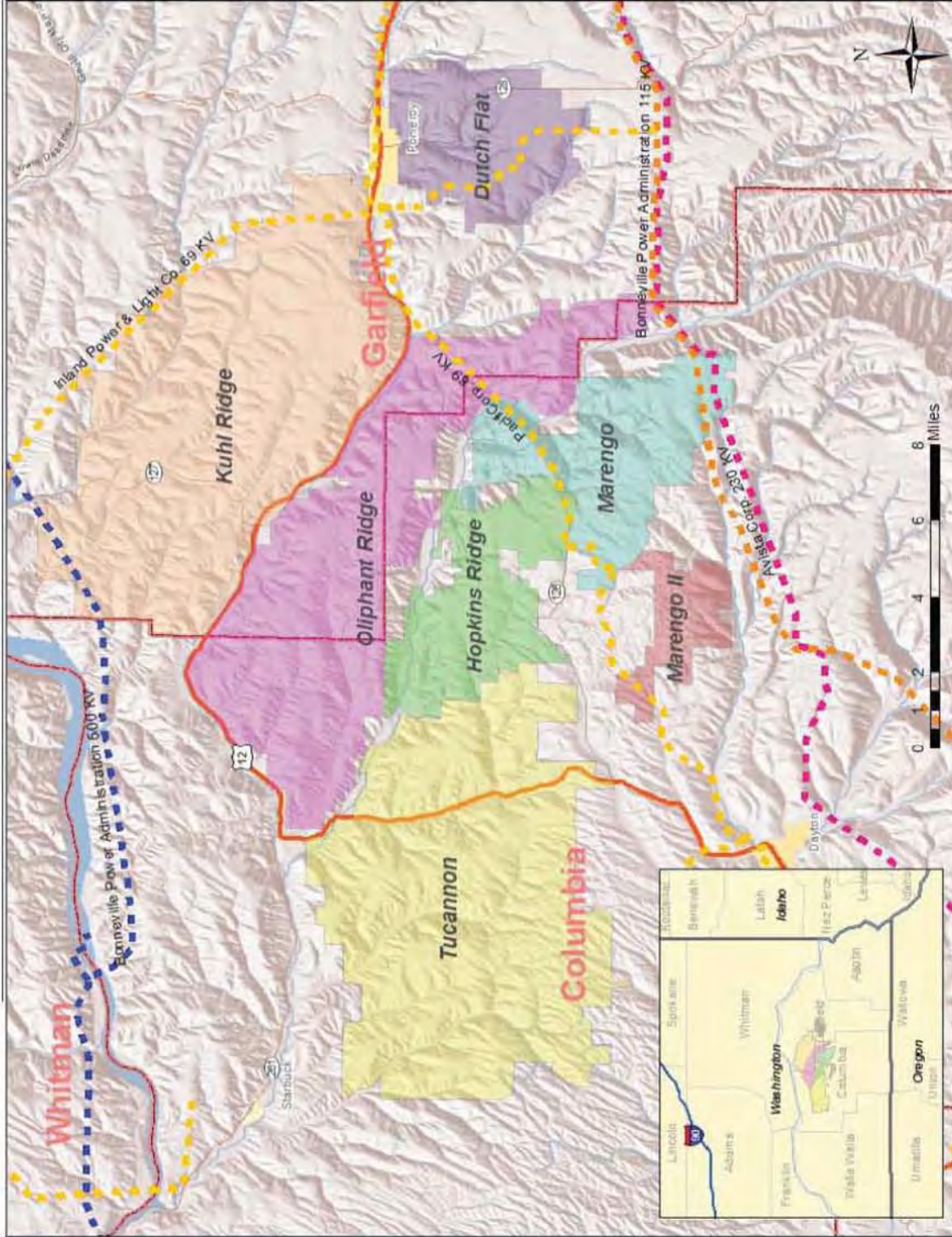
Appendix



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

**Roger Garratt**  
Director Resource Acquisition, Development, and Emerging  
Technologies

# Existing Projects per the JDA Wind Resource Areas (WRAs)



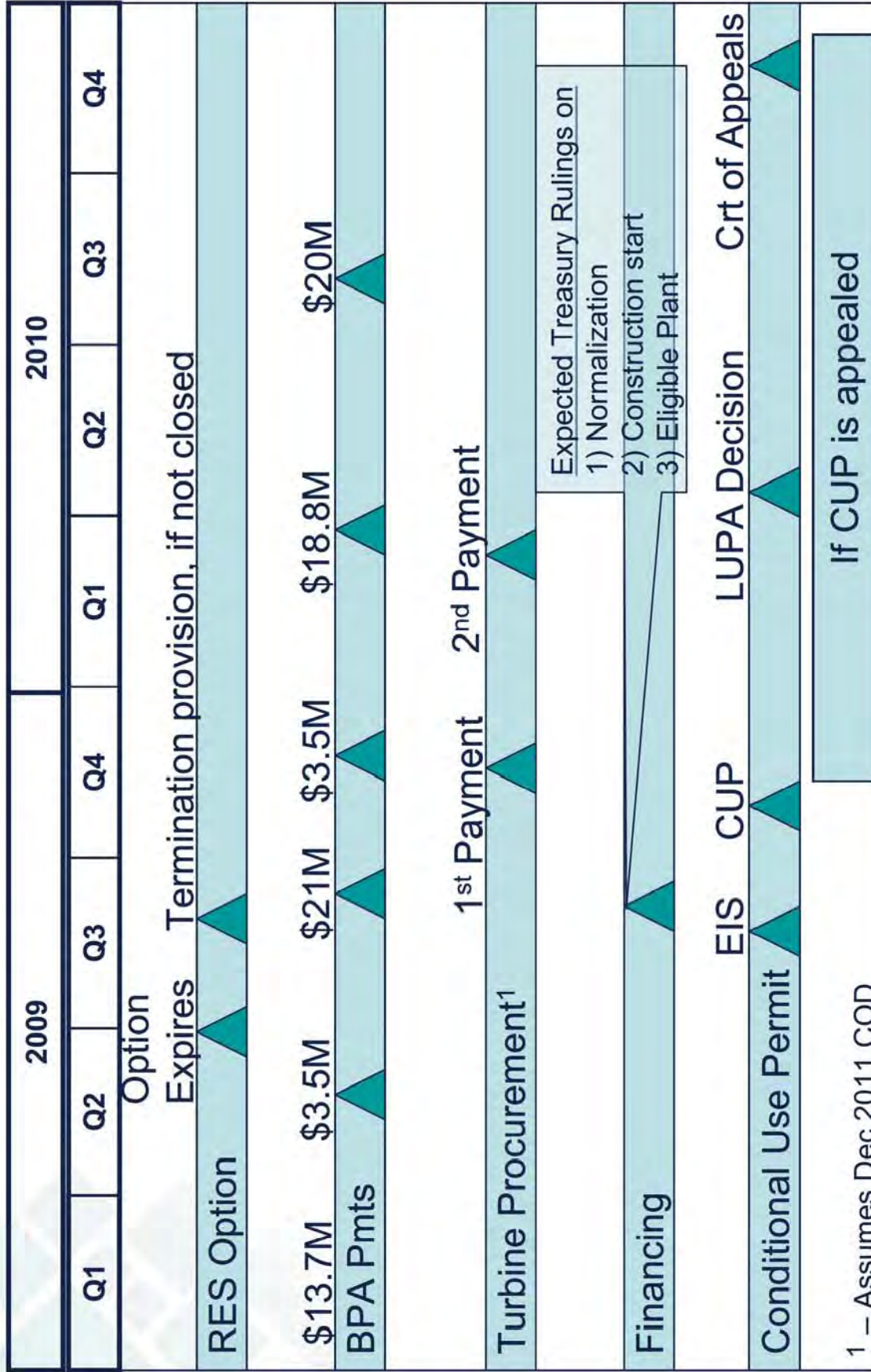


# Key Decisions and Open Issues

Item	Description
Purchase RES 50% Share of JDA	Purchase of exclusive late-stage development rights. Real estate leases will start to require renewal in 2012
BPA E&P Agreement <sup>1</sup>	Engineering and Procurement Agreement for the Construction of Central Ferry Substation.
Turbine Procurement	Majority expense of plant requires 18-24 month lead time
Project Financing	Open issues regarding implementation of February 2009 Federal Stimulus Bill create uncertainty regarding project financing: PTC with Flip v. ITC/Grant
Conditional Use Permit	Delivery date of unappealable permit could be as early as December 2009 or as late as December 2010, if appealed.

<sup>1</sup> – See May 21, 2009 presentation to the EMC regarding BPA Engineering and Procurement Agreement.

# Timeline of Key Information and Decisions



<sup>1</sup> – Assumes Dec 2011 COD



# Regulatory Treatment of the Grant and Resulting Financing Structure

## Current Thinking

---

Grant Ratemaking Treatment	Preferred Financing Structure	Required Regulatory Action
Normalized, 25 year amortization	Production Tax Credit with Flip	No Federal Action Required
Normalized, 10 year amortization	Grant in lieu of Investment Tax Credit	Treasury Ruling
Not Normalization, but benefits amortized (assume 10 years)	Grant in lieu of Investment Tax Credit	Treasury Ruling with Congressional Support or new legislation

# Construction Timing Factors

## Factors Favoring Later

### Construction

- Delivery of Unappealable Permit
- BPA Central Ferry Substation Construction
- Current RPS Standards
- Current PSE Renewable Goal
- Uncertain Project Financing Rules

## Factors Favoring Earlier

### Construction

- Federal Stimulus provisions require 2012 COD
- Proposed federal RPS and climate change legislation favoring renewables
- Anticipated upward pressure on development premiums
- Current depressed turbine market
- Lease renewals open door to competitors
- Potential sale of RECs
- Community support; development shelf life

Recommended Purchase of the RES 50% interest gives PSE control of the development and construction schedule so that the Company can adjust to changing conditions and new information



# Changes in Development Valuation

(2007, 2009)

- Analysis based on sparse transaction data
- Value curves provide market indication and trends, but cannot be relied upon for precise valuations
- Project valuations ultimately reflect stage of development, location, timing, market conditions, and energy resource characteristics
- Market trends:
  - Declines in Pre-Construction and Under Construction Phase Valuations
  - Increase in In-Operation Valuation
- 2009 update reflects pre-Stimulus Bill transactions and limited number of transactions
- Valuation for RES 50% Interest:
  - \$ KW



● 2007  
○ Draft update, 2009

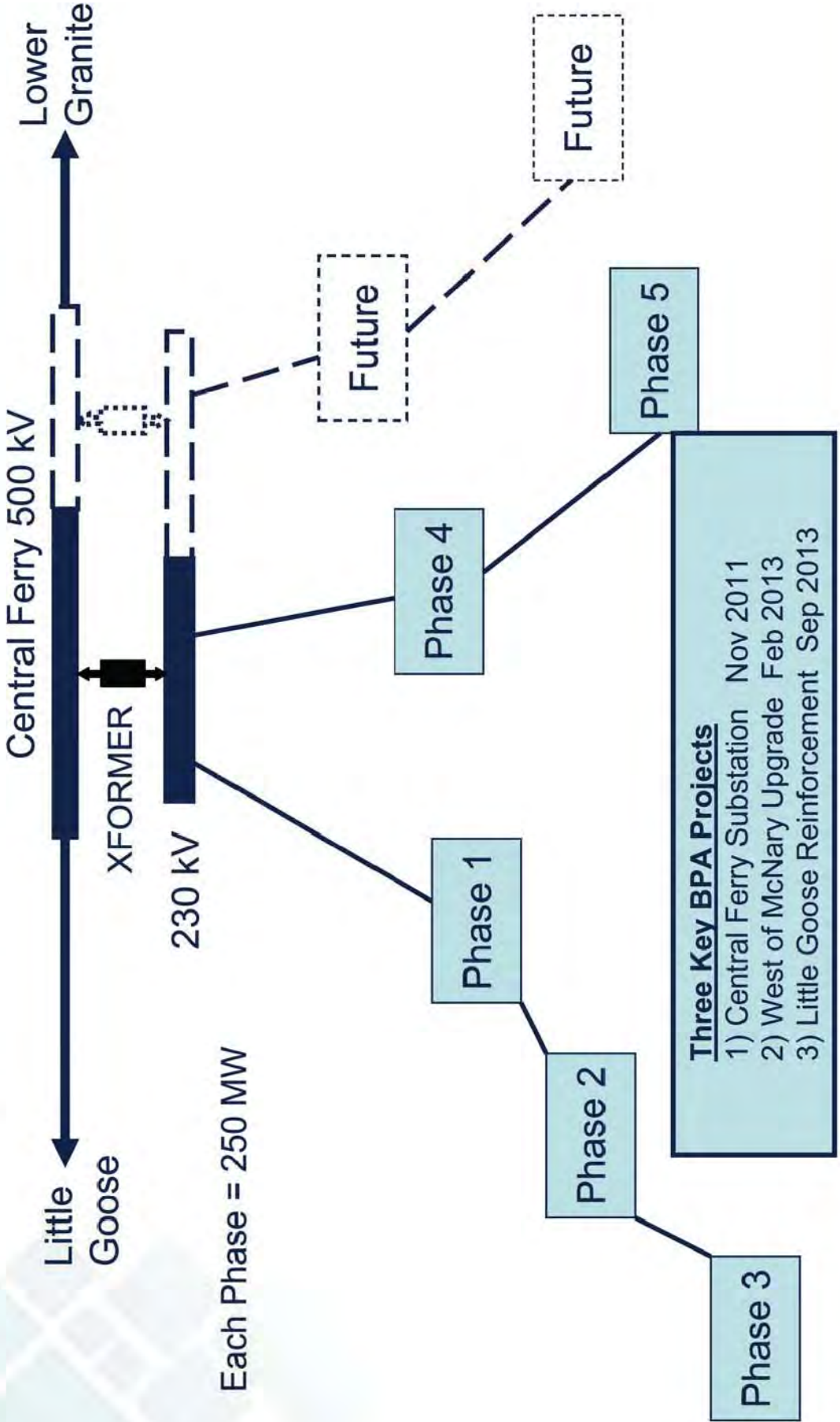
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# Prior EMC Approvals

DATE	EMC Approval
May 27, 2008	<p>EMC approved recommendation to participate in BPA's 2008 Network Open Season.</p> <p>Approved PSE participation included 600 MW capacity for Lower Snake River Wind Project and the Granite-Little Goose Point of Interconnection – now called “Central Ferry Substation”.</p>
May 27, 2008	<p>EMC approved recommendation to enter into Joint Development Agreement with RES America Development Inc, Blue Sky Wind LLC, and RES Construction, Inc. (“RES”) to acquire 50% interest in development stage wind projects in Columbia and Garfield Counties.</p> <p>Proposed wind developments would connect at subject Central Ferry Substation</p>
May 21, 2009	<p>EMC approved execution of Agreement with BPA for Engineering and Advanced Material Procurement related to Central Ferry Substation</p>



# Simplified LSR Wind Project Layout



# Budget Summary

100% PSE Ownership Draft 5-year						
Year	2009	2010	2011	2012	2013	2014
Development Rights ( \$ )						
Land Purchase ( \$ )						
Development Costs ( \$ )						
Transmission Cost ( \$ )						
Wind Turbine Generators ( \$ )						
Balance Of Plant ( \$ )						
Construction Management ( \$ )						
Other Costs ( \$ )						
Contingency ( \$ )						
<b>Expenditure Totals</b>						
Reg Asset (Interconnect Cost)						
Net Capital						

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# 2009 Cash Flows

**PSE Forecast Cash Flows for Lower Snake River Wind Project**

	YTD <sup>1</sup>	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	2009
<b>Case I: 50% PSE Interest, 50% RES Interest as TIC</b>											
Purchase Price - First Half											
BPA Payment - Mod 4											
Develop Cost - RES JDA <sup>2</sup>											
WTG deposits <sup>3</sup>											
<b>Total</b>											

**Case II: 100% PSE owned - Assume RES Closing Jun-09**

	YTD	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	2009
Purchase Price - First Half											
Purchase Price - Second Half											
BPA Reimbursement to RES for BPA Pmts prior to Closing											
BPA Payments - Mod 4											
Develop Cost - RES JDA <sup>2</sup>											
Forward Develop Cost											
Incremental WTG deposits <sup>4</sup>											
<b>Total</b>											

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Notes

- 1) Includes Aug 08 BPA Pmt
- 2) See Development Cost Schedule
- 3) Assume WTG schedule in approved development Plan: [REDACTED]
- 4) Assumes 250 MW

# Pro Forma Summary

Build Scenario 1	Build Scenario 2
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

## 50% PSE Ownership

NPV Total Revenue Requirement ( \$ )  
NPV Total Project Generation  
Levelized Cost ( \$ / MWh )

### Levelized Cost Components:

Grossed-up Return on Rate Base ( \$ / MWh )  
Total Expense ( \$ / MWh )  
REC Revenue ( \$ / MWh )  
Grossed-up ITC Grant Amount ( \$ / MWh )  
Book Depreciation Expense ( \$ / MWh )

## 100% PSE Ownership

NPV Total Revenue Requirement ( \$ )  
NPV Total Project Generation  
Levelized Cost ( \$ / MWh )

### Levelized Cost Components:

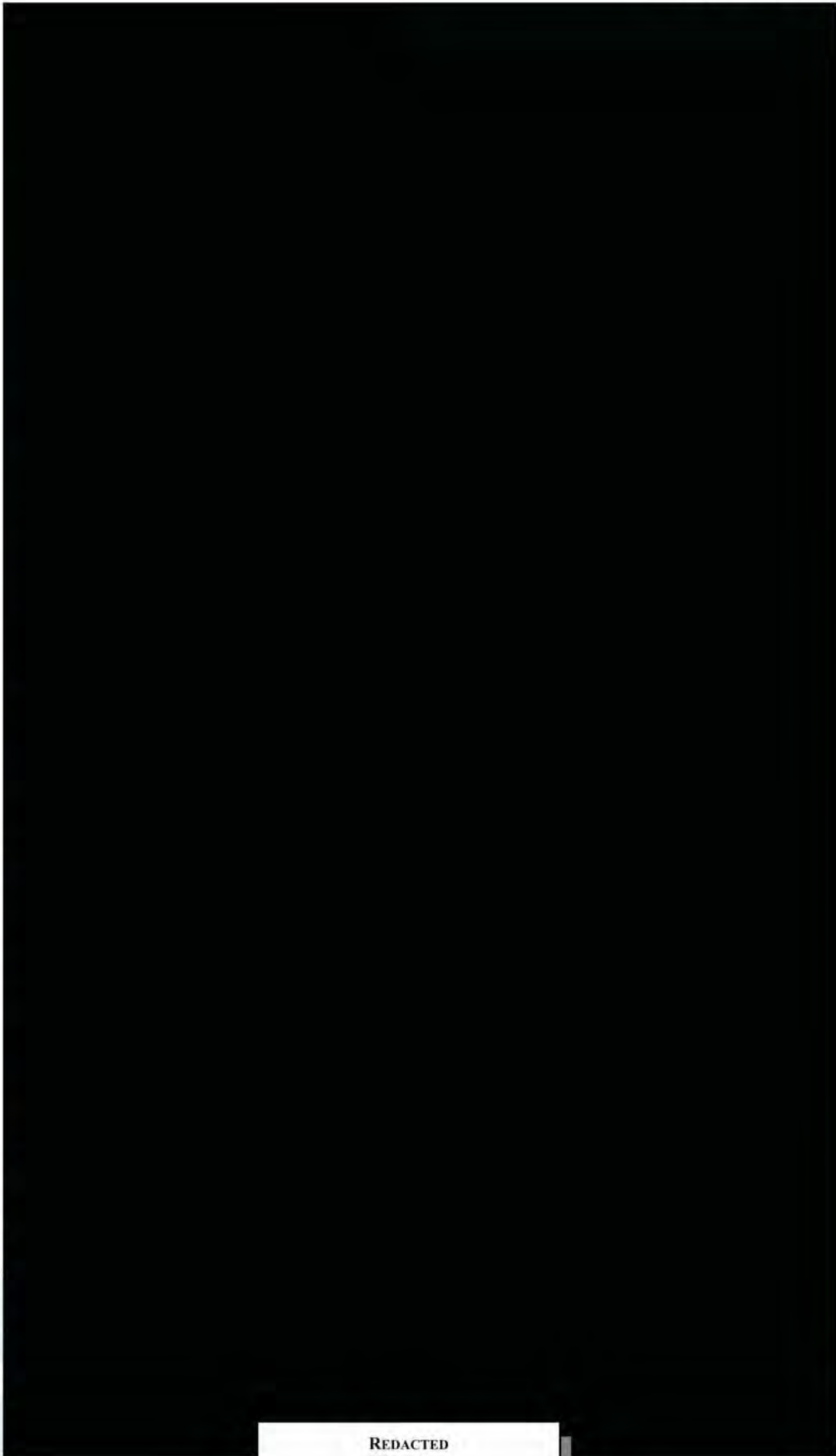
Grossed-up Return on Rate Base ( \$ / MWh )  
Total Expense ( \$ / MWh )  
REC Revenue ( \$ / MWh )  
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Book Depreciation Expense ( \$ / MWh )

REDACTED  
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# 100% PSE Build - Resource vs. Transmission

Central Ferry Substation      West of McNary Upgrade      Little Goose Reinforcement



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# RES and the Financial Crisis

- In 2008, RES wrote off \$[REDACTED] in turbine deposits related to stalled or cancelled projects
- Craig Mataczynski, CEO RES Americas: “Things are slowing down. It’s very obvious what the drivers are: With the economy turning down and people are expecting negative growth in 2009, demand for energy in general has slowed. And that’s caused companies like Xcel and others we do business with to re-evaluate their expansion plans and move things back to next year.” –Denver Business Journal, October 2008
- “RES Americas (RES) has scaled back its ambitions to transition into a full-fledged wind IPP in the US, falling back on its traditional strategy of developing wind projects for turnkey sale leveraging its construction expertise.” –Emerging Energy Research, May 2009

REDACTED  
VERSION



# Development Schedule and Financing

## Lower Snake River Wind Project Develop Schedules and Financing Assumption

Year	Levelized		Installed MW		Financing
	IRP	IRP	100% PSE Ownership	50% PSE Ownership	
2011	100	100	100		Grant*
2012	100	100	100		Grant*
2013	100				Balance Sheet
2014	100				Balance Sheet
2015	100				Balance Sheet
2016	100	200			
2017	100				
2018	100				
2019	100				Balance Sheet
2020	100	600			
2021					Balance Sheet
<b>Total MW</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	

\* assumes normalization and 10-year amortization

REDACTED  
VERSION

# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Financing</i></p> <p>1. Timing and form of financing related to Federal Stimulus provisions</p> <p>2. Limited availability of tax equity partners and regulatory accounting challenges may create uncertainties structuring utility rate-based “flip”</p>	<p>1. Increased project cost</p> <p>2. Stranded development cost</p>	<p>1. PSE financial models use conservation assumptions to factor in potential downside costs.</p> <p>2. PSE Federal Relations Team engaged with Treasury to clarify potential implementation policies.</p>
<p><i>Permitting and Community Acceptance</i></p>		
<p>Permit restrictions may limited installed capacity</p>	<p>Increased project cost (\$/mWh)</p>	<p>1. Current plant layout and design efforts follow all setback and other relevant planning provisions.</p> <p>2. Conservation permitting strategy limited avenues for appeal.</p> <p>3. Conservative permitting schedule assumes Conditional Use Permit is appealed</p>



# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Technology</i></p> <p>Improvements in WTG technology likely to yield improved capacity factors</p>	<p>Higher project cost relative to later wind plants</p>	<p>Turbine supply agreements will include warranty and service provisions. Technology factors to be considered in turbine supply award.</p>
<p><i>Reduced need for renewables</i></p> <p>Future efforts in state legislature may result in reduced RPS standard</p>	<p>PSE portfolio may contain more wind resource than required by state law</p>	<ol style="list-style-type: none"> <li>Likely Federal RPS standard.</li> <li>Recent move to regulate GHG suggests continued increased pressure on renewable generation.</li> </ol>
<p><i>Construction</i></p> <p>Construction delays, faulty equipment, or unexpected material issues</p>	<p>Cost over-runs</p>	<ol style="list-style-type: none"> <li>RES Construction in place for construction phase [REDACTED]</li> <li>Ensure contractor follows best-practices re insurable risks.</li> </ol>

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VERSION

# Risk Analysis

Description	Consequence	Mitigation Plan
<p><i>Real estate risk for late-stage development</i></p> <p>Development of late-stage projects (Phases 4 and 5) may exceed the life of existing leases and anemometer agreements</p>	<p>Late-stage projects will require renewal of lease agreements resulting in higher project costs</p>	<ol style="list-style-type: none"> <li>1. Update lease agreements as necessary.</li> <li>2. Maintain positive presence in community.</li> </ol>





# Lower Snake River Wind Project

## EMC Update

September 24, 2009



**Paul Wetherbee**  
*Manager, Resource  
Development*

# Agenda

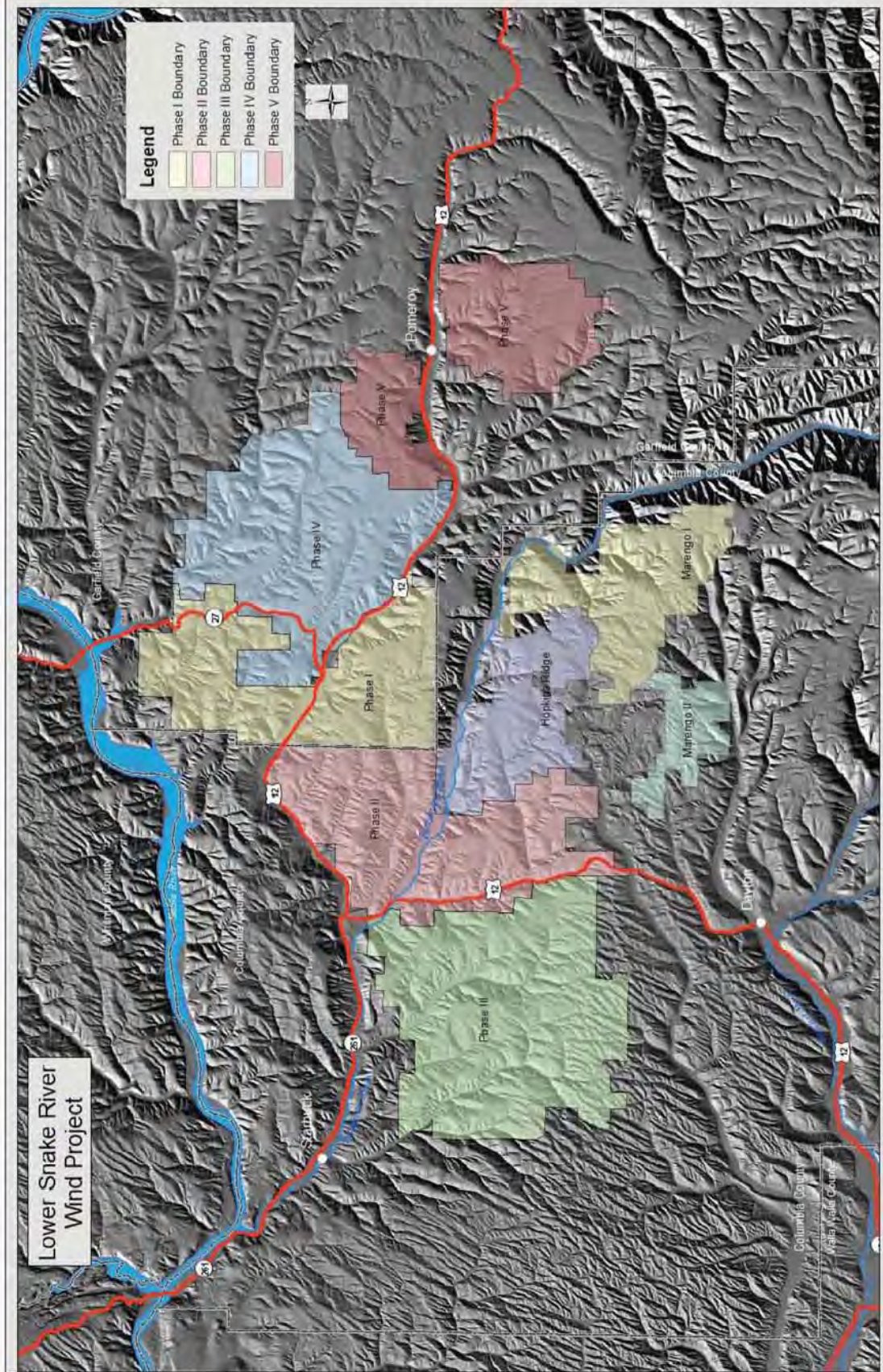
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- ◆ Project Overview
- ◆ Development Update
  - ◆ Permitting
  - ◆ Renewable Incentives
  - ◆ Development Schedule
  - ◆ Turbine Procurement
  - ◆ Interconnection & Transmission
- ◆ Program Schedule



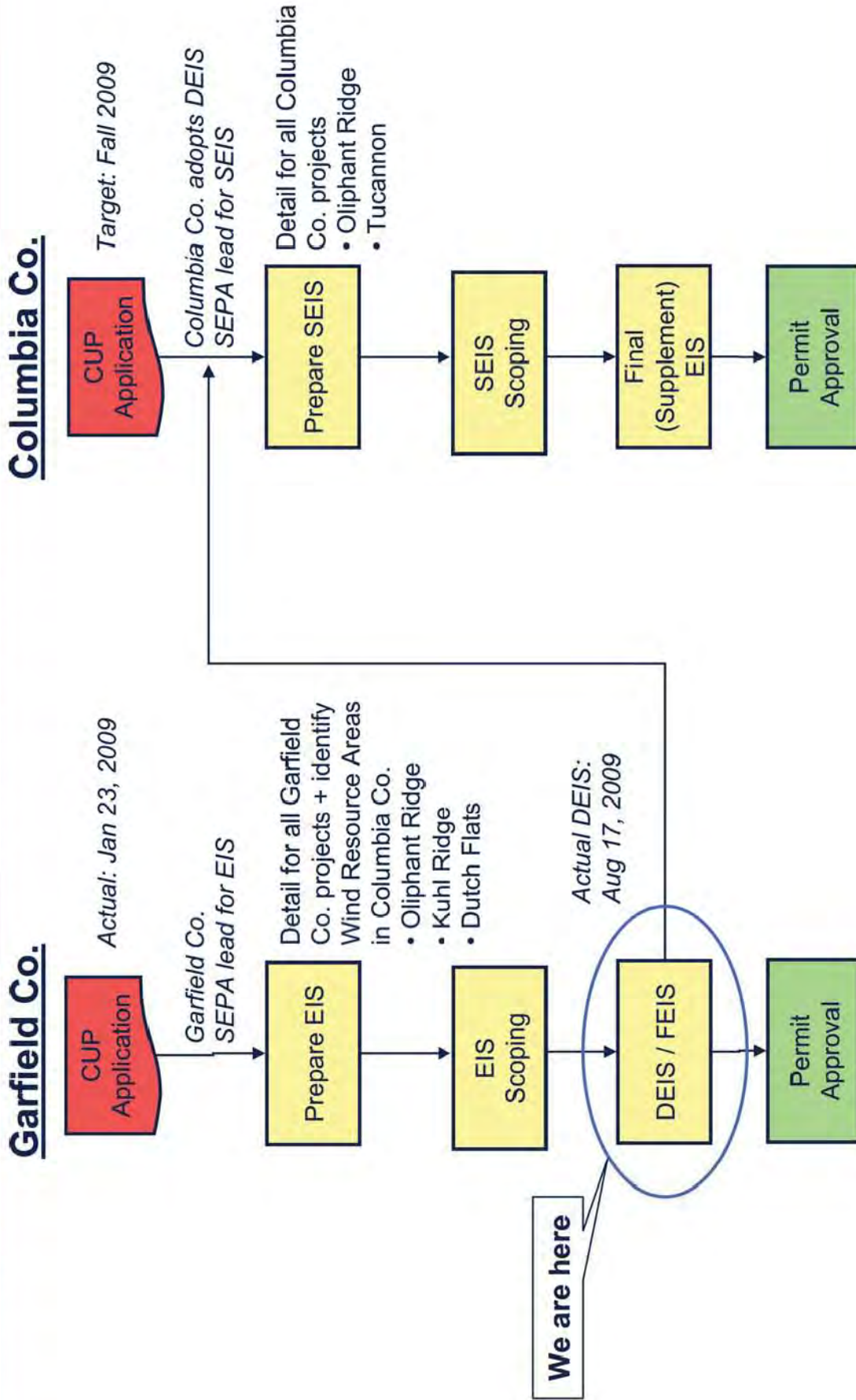


# Lower Snake River Wind Project





# Lower Snake River - Permitting





# Permitting - EIS Schedule

Date, 2009	Item
August 17	Draft Environmental Impact Statement ("DEIS") Available for Public Review
September 9	Pomeroy Open House Public Meeting
September 10	Open House Public Meeting in Dayton
September 16	Close of DEIS Comment Period
October 2	Release of the Final Environmental Impact Statement ("FEIS") by Garfield County
October 16	14 day State Environmental Policy Act ("SEPA") appeal period expires.

# Permitting - Garfield County CUP

<b>Date</b>	<b>Item</b>
Early November 2009	Garfield County SEPA Appeal and Conditional Use Permit ("CUP") Public Hearing before Hearing Examiner
Early November 2009	Garfield County CUP Decision
Late Nov/Early December 2009	30 day appeal of CUP expires
Late- April 2010	Any appeals addressed by Superior Court
February 2011	Any appeals addressed by Court of Appeals



# Renewable Incentives

- ◆ Cross-department PSE team considered multiple scenarios with respect to benefit to utility customers and transactional risk
- ◆ The Treasury Grant amortized over 10 years provides an attractive benefit to utility customers at an acceptable level of legal and regulatory risk.
- ◆ Dewey & LeBoeuf memorandum finds proposed treatment "...reasonable and appropriate position for accounting for the Grant for ratemaking purposes..."
- ◆ WUTC Accounting Petition currently being drafted
- ◆ Grant Application for Wild Horse Expansion will state PSE intention to amortize the Treasury Grant benefits to utility customers over 10 years
- ◆ Production Tax Credit (with Tax Equity Partner)
- ◆ Investment Tax Credit (with Tax Equity Partner)
- ◆ Treasury Grant in lieu of Investment Tax Credit

# Development Schedule

- Multiple build out scenarios are currently being evaluated to determine the optimum development schedule for the LSRWP

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Phase 1												
Phase 2												
Phase 3												
Phase 4												
Phase 5												

*How Many MWs and When?*

Preliminary analysis indicates installed capacity that meets requirements of ARRA (COD by 2012) is beneficial to utility customers. Final recommendation by October EMC meeting.



# Turbine Procurement Update

---

- ◆ Three Wind Turbine Generator (WTG) suppliers shortlisted
  - ◆ Siemens – SWT101
  - ◆ [REDACTED]
  - ◆ [REDACTED]
- ◆ LSR Turbine Selection Team completing final technical review and review of final bids
- ◆ Final recommendation anticipated before September 30

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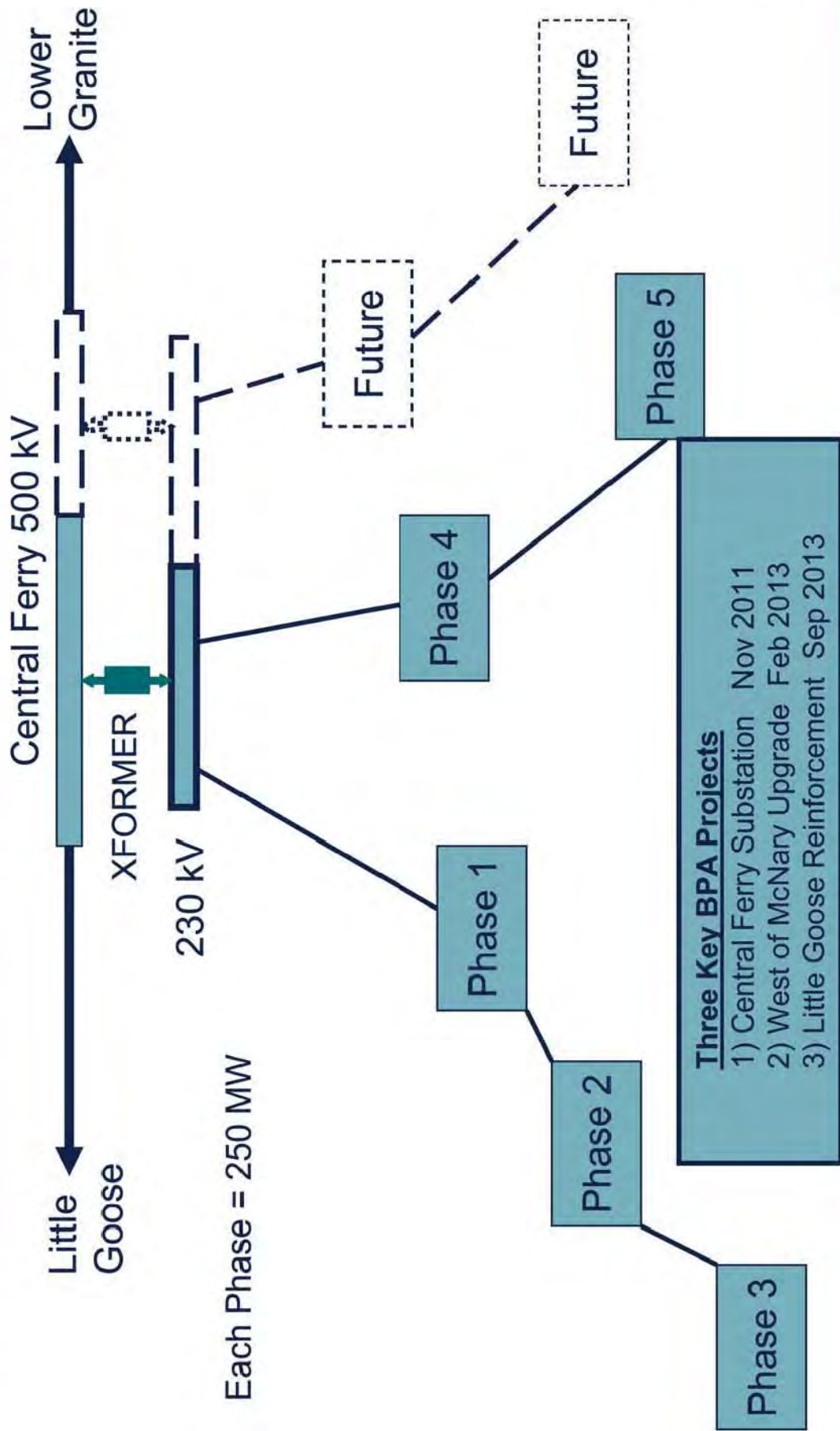
# Interconnection and Transmission

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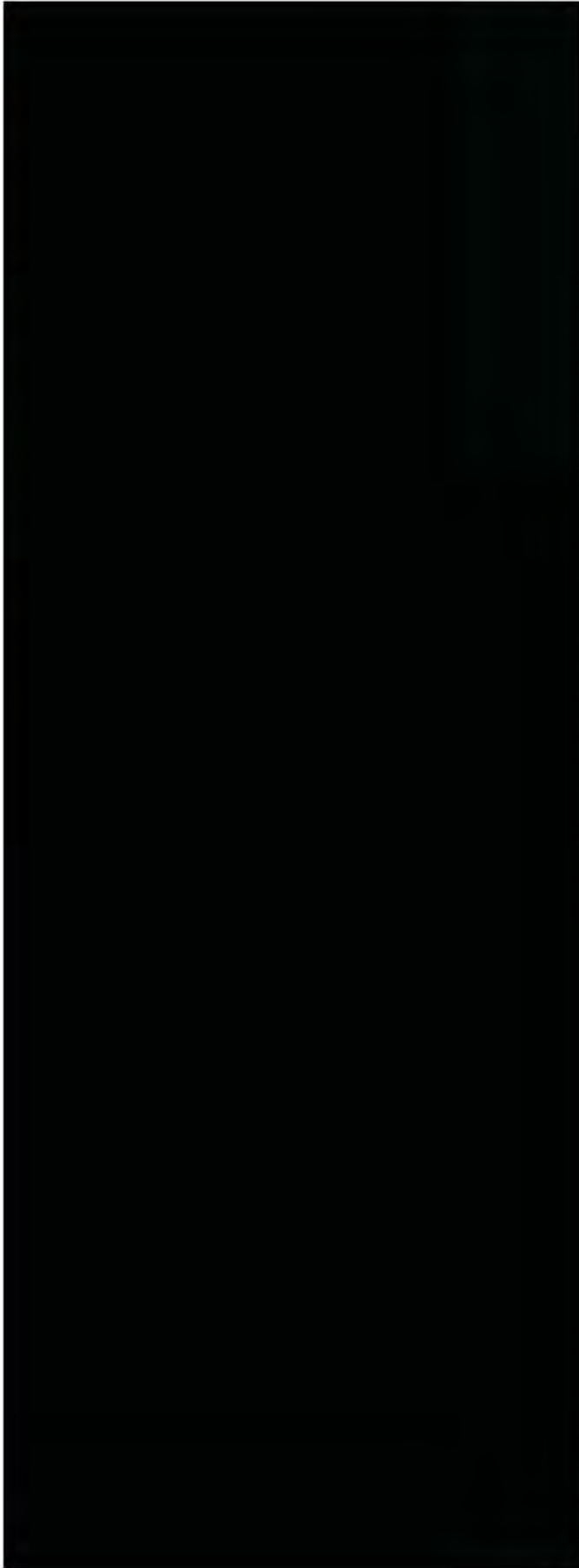
- ◆ Construction of Central Ferry Substation
  - ◆ NEPA process will rely on SEPA Environmental Impact Statement (“EIS”) completed for Garfield County County CUP.
  - ◆ BPA will issue Record of Decision (“ROD”) prior to entering into Large Generator Interconnection Agreement (“LGIA”) with PSE for LSR generation
  - ◆ Current BPA position is to issue ROD after unappealable CUP is attained, creating risk of delay such that American Recovery and Reinvestment Act (“ARRA”) benefits may not be realized.
- ◆ Executive discussion with BPA scheduled for late September.



# Simplified LSR Wind Project Interconnection



# Transmission Strategy

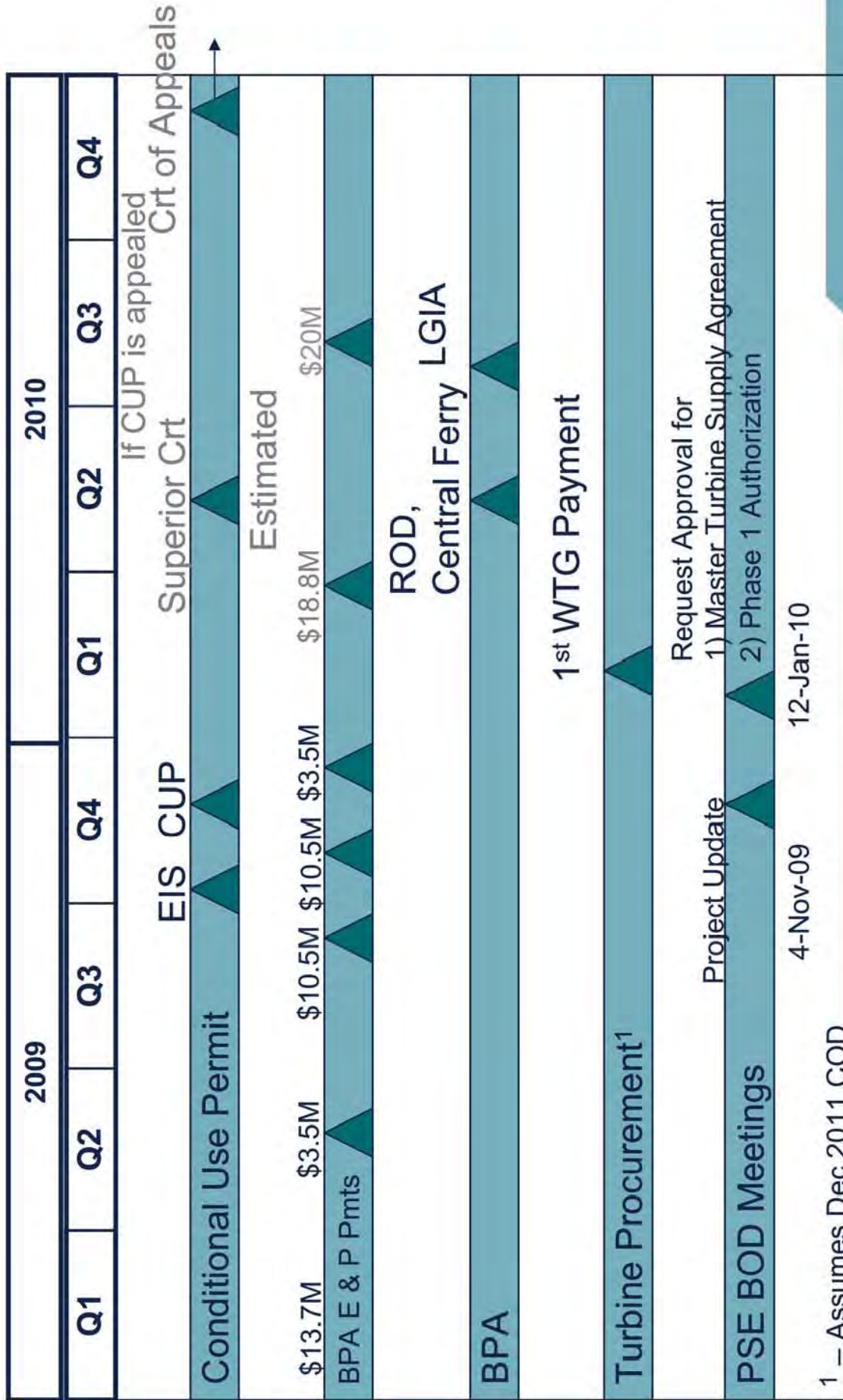


- 800 MW transmission obtained through the 2008 BPA Network Open Season
  - 600 MW by PSE; 200 MW by RES
  - 550 of 800 MW contingent upon the completion of the following projects:
    - West of McNary Reinforcement (Feb. 2013 schedule)
    - Little Goose Reinforcement (Nov. 2013 schedule)
- 2019 & 2021 build-outs will be transported using future BPA Network Open Season requests
- Short-term transmission will be requested where need exists
- Excess transmission will be deferred at estimated cost of ~\$130K/100 MW/year

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# Timeline of Key Decisions



1 – Assumes Dec 2011 COD



# Anticipated Future Updates and Decisions

Date	Presentation to	Item
October 2009	Energy Management Committee	LSR Project Update
November 2009	Board of Directors	LSR Project Update
December 2009	Energy Management Committee	Request for recommendation to authorize Master Turbine Supply Agreement and Phase 1 authorization
January 2010	Board of Directors	Request for authorization for Master Turbine Supply Agreement and Phase 1 authorization



# Lower Snake River Wind Project EMC Update

## Appendix



# Project History

Date	Event
Nov 26, 2008	PSE & RES sign Joint Development Agreement.
Dec 5, 2008	PSE & RES close Joint Development Agreement transaction.
Mar 23, 2009	RES issues marketing material for sale of their 50% interest.
May 15, 2009	PSE signs Option Letter for the purchase of the RES 50% undivided interest for \$ [REDACTED] (about \$ [REDACTED] kW).
July 27, 2009	PSE Board of Directors approves recommendation to purchase RES interest
August 5, 2009	PSE & RES close Development Rights transaction.

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# Current Development Activities

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- ◆ Wind Resources Met Mast Program
  - ◆ Operations for 21 towers
- ◆ Real Estate
  - ◆ 78 landowners, about 140,000 acres, plus unallocated leases
- ◆ Permitting
  - ◆ Draft Environmental Impact Statement issued Aug 17, 2009
- ◆ Engineering and Design
  - ◆ Burns & McDonnell selected
- ◆ Community Relations
  - ◆ Advance notice to key Community leaders
  - ◆ Press release on purchase of RES interest
  - ◆ Pomeroy office open house planned for September
  - ◆ Letter to all lease holders
- ◆ BPA Transmission discussions ongoing

# PSE Response to Public Counsel 20

A 250 MW Wind Project with a total cost of \$625,000,000

85%	Assumed percentage of qualifying property
30%	Grant percentage of qualifying property
\$ 159,375,000	Grant \$ = 25.5% of total investment cost
\$	Each \$1 of cash grant is equivalent to \$1.54 reduction in customer rates
\$ 229,787,329	Potential Net Rate Reduction

## Benefit to utility customers under various assumptions (1)

Grant Normalized over 25 years	\$ 95,015,924	41% of Potential
Grant Normalized over 10 years	\$ 160,171,094	70% of Potential
Grant Normalized 10 years w/ RB reduction (2)	\$ 229,787,329	100% of Potential

## PTC (assuming immediate use) (3)

\$ 174,249,811

- (1) All benefits reflect reduction in accelerated depreciation benefit due to basis reduction
- (2) Assumes reduction in ratebase and benefit passed to customers over 10 years
- (3) Assumes all PTC can be used when generated, ignores limitations caused by taxable income that could result in carrying costs or additional financing costs to bring in financing partners who do have taxable income to shelter



# LSR WTG Technical Review Process

---

- ◆ Turbine technical overview completed
- ◆ Identify remaining PSE open questions
- ◆ Vendor presentations held to address open questions
  - ◆ Turbine capabilities
  - ◆ SCADA review
  - ◆ Connectivity
  - ◆ O&M services
  - ◆ Corporate culture
- ◆ Team completed WTG ranking (individually)
- ◆ Team established criteria weighting factors (collectively)

## LSR WTG Commercial Review Process

---

- ◆ Vendors sent letter confirming commercial terms and requesting response in uniform terms
- ◆ Burns and McDonnell validation of RES BOP schedule
- ◆ Update to Phase 1 and Phase 2 project costs based on new commercial terms
- ◆ Update project pro-formas for each WTG

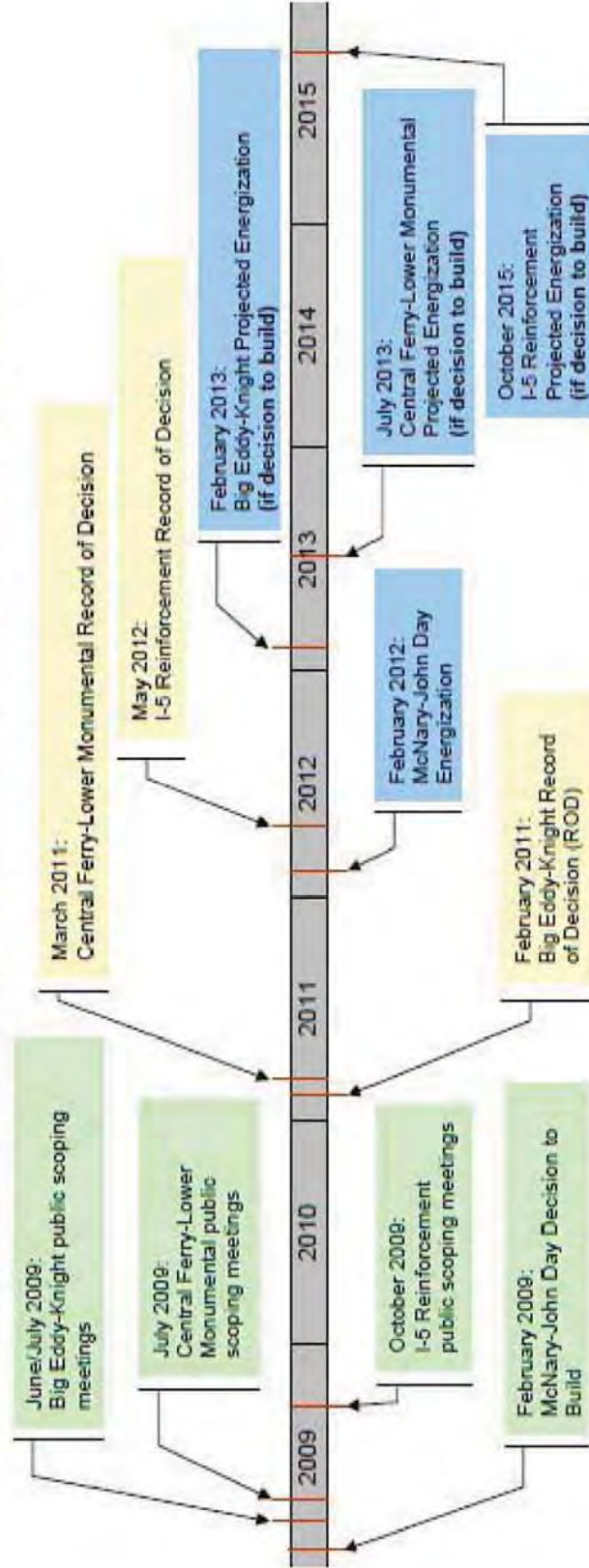


# Transmission Deficit Resolutions

PSE

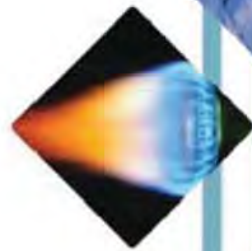
B O N N E V I L L E P O W E R A D M I N I S T R A T I O N

## 2008 Network Open Season Project Timeline For Projects Under Construction or in NEPA



- Utilize Short-term Firm, Non-firm, and if available Conditional-firm products
- Work with BPA to shorten the transmission deficit period
  - Note that the projected energization date of the Central Ferry-Lower Monumental Reinforcement just recently got moved up by 4 months!

# Lower Snake River Wind Project Wind Turbine Generator Recommendation Recommendation to the EMC



Paul Wetherbee  
*Manager, Resource Development*

October 12, 2009



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*



# Recommendation to EMC

---

- Approve selection of Siemens SWT101 Wind Turbine Generator (WTG) for Phase 1 of the Lower Snake River Wind Project and authorize the start of negotiations for procurement of 250 MW for 2011 delivery.
  - Recommendation for approval of the final procurement documents anticipated at December EMC meeting.

# Turbine Selection Team & WTGs

Area	Representatives
Resource Acquisition	Michael Mullally, Roger Garratt, Paul Wetherbee
Asset Management	Ed Odom, Steve St. Clair
Asset Services	Chris Walford
PSE Project Management	Brian Doughty
Operations	Paul Smith
Resource Development	Heather Dohan
Outside Expertise	GEC-DNV, RES Construction, Burns & McDonnell

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Three WTG suppliers shortlisted:  
  
 Siemens   
 SWT101 



# Technical Review Survey Results

- Overall, Siemens ranks best
- Siemens is leading or tied in four of six categories
- ██████████ ranks well in service, but technology trailed competitors
- ██████████ not in commercial operation

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Criteria	Weight	██████████	██████████	SWT101	██████████
Reliability Risk	25%	1.04	0.71	1.11	0.93
Performance Risk	20%	0.80	0.57	0.89	0.80
O&M Capabilities	15%	0.64	0.62	0.56	0.45
SCADA system	20%	0.57	0.57	0.86	0.60
Maintainability	10%	0.37	0.37	0.37	0.31
Partnering	10%	0.37	0.37	0.36	0.26
<b>Totals</b>	<b>100%</b>	<b>3.79</b>	<b>3.22</b>	<b>4.14</b>	<b>3.35</b>

# Pro Forma Model Results

Supplier	WTG Model	Levelized Cost <sup>1</sup> (\$/MWh)	Rank	Comment
Siemens	SWT101	[REDACTED]	1	Preferred WTG based on technical evaluation
[REDACTED]	[REDACTED]	[REDACTED]	2	\$804,876 more than SWT101
[REDACTED]	[REDACTED]	[REDACTED]	3	\$10.1M more than SWT101

REDACTED VERSION

<sup>1</sup>- All-in levelized cost for 250 MW installed in 2011 for 25 year asset life



# WTG Recommendation

---

- Based on technical review, commercial considerations, and financial pro formas, the LSR Turbine Selection Team recommends the Siemens SWT101 for the first phase of the LSR Wind Project.

# Anticipated Future Updates and Decisions

Date	Presentation to	Item
November 2009	Board of Directors	LSR Project Update
December 2009	Energy Management Committee	Request for recommendation to authorize Master Turbine Supply Agreement and Phase 1 authorization
January 2010	Board of Directors	Request for authorization for Master Turbine Supply Agreement and Phase 1 authorization

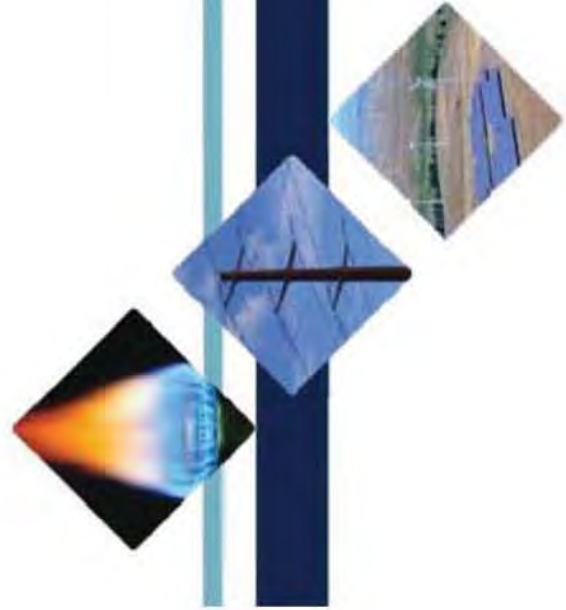


# Recommendation to EMC

---

- Approve selection of Siemens SWT101 Wind Turbine Generator (WTG) for Phase 1 of the Lower Snake River Wind Project and authorize the start of negotiations for procurement of 250 MW for 2011 delivery.
  - Recommendation for approval of the final procurement documents anticipated at December EMC meeting.

# Lower Snake River Wind Project Update Wind Turbine Generator Recommendation



Appendix





# Technical Evaluation

IEC Class	Siemens SWT-2.3-101
Average design wind speed (m/s)	IIB
Rated windspeed (m/s)	8.5
Rated power (kW)	12
Rotor diameter (m)	2300
Specific rating (kW/m <sup>2</sup> )	101
Tower Height (m)	0.29
Temp range running	80
Generator type	-10 to +35
Power regulation	Induction
Drive train	Full converter
Transformer location	Three-point
Nacelle access	pedmount not included
Hub access	Climb assist option
Noise level (dBA)	Through nacelle
Grid integration	107
Fleet	ZVRT, Voltage control
Risks	3 proto/2 installed
Advantages	New blade design
	Reputation for robust product, plant control

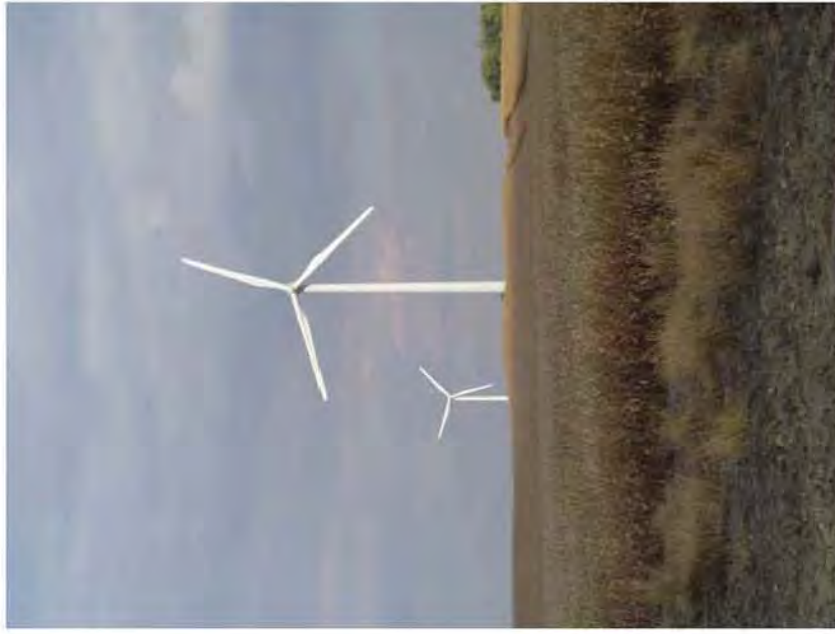
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# Technical Review Survey

Criteria	Issue	Observations	Score
<b>Reliability Risk</b>	Track record for turbine system Field-proven components Component testing in laboratory Prototype experience, loads testing Certification status Other		
<b>Performance Risk</b>	Availability guarantee and track record Power curve validation Demonstrated performance in similar wind regimes and terrain Ability to meet interconnection requirements Other		
<b>O&amp;M Capabilities</b>	Comprehensive service offering for extended periods Quality and comprehensive technician training programs 24/7 monitoring On-site tooling and fixtures Safety record Manufacturer control over major parts production Major parts storage depots Off-hour response plan Other		
<b>SCADA system</b>	Park power output and ramp-rate control Park voltage/VAR support capability Operator interface security Operator interface 'useability' and 'friendliness' Downtime allocation reconciliation Comprehensive measurement point list Time resolution and depth of OPC server Condition monitoring integration Other		
<b>Maintainability</b>	Crane requirements for major replacements (gearbox, generator) On-board capability for parts replacement (yaw drives, cylinders, pumps) Direct access to hub from nacelle for technician and parts Ability to sustain extended power outage without intervention Lift or climb assist Emergency egress Parts replacement intervals (e.g. pitch batteries, slip rings) Other		
<b>Partnering</b>	System for communicating technical issues to customer System for customer feedback System for tracking spares usage and component failures Commitment to working with customer to resolve technical problems 'Continuous improvement' efforts Comprehensive monthly reporting - spares usage, major contributors to downtime Commitment to community relations Training and education opportunities for customer Other		







# Lower Snake River Wind Project Development Plan

## EMC Update

October 12, 2009



**Paul Wetherbee**  
*Manager, Resource  
Development*



# LSRP Development

	<p>Indicative Wind Capacity on-line at beginning of years 2011-2013</p>
<ul style="list-style-type: none"> <li>▪ <b>2009 IRP:</b></li> </ul>	<p>300 MW</p>
<ul style="list-style-type: none"> <li>▪ <b>Fine Tuning the 2009 IRP:</b> Refine IRP broad strategy using IRP assumptions and IRP model (PSM-II)</li> </ul>	<p>400 MW</p>
<ul style="list-style-type: none"> <li>▪ <b>Quantitative Evaluation Changes since the IRP:</b> <ul style="list-style-type: none"> <li>▪ Lower turbine cost</li> <li>▪ Treasury Grant</li> <li>▪ Extension of WA State sales tax exemption</li> </ul> </li> </ul>	<p>800 MW</p>
<ul style="list-style-type: none"> <li>▪ <b>Qualitative risk factors moderate schedule:</b> transmission and interconnection availability, seasonal construction capability, possibility of future tax credits, etc.</li> </ul>	<p>500 MW Recommended</p>

**Related Question: Does substituting gas for wind lower levelized cost? No.**

- 2009 IRP gas and wind data vs. LSRP Levelized cost

# Fine Tuning the 2009 IRP Wind Plan

## Alternative Timing of Wind using PSM II from 2009 IRP

	\$000	\$ Diff	% Diff	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1 LSR 7-28-09 Development Plan	\$20,037,481	-\$16,177	-0.08%	0	0	250	250	0	0	250	0	0	0	250
2 Accelerated 500 MW, then IRP	\$20,056,098	\$2,440	0.01%	0	0	500	0	0	0	100	0	200	0	200
3 IRP Development Plan	\$20,053,659	\$0	0.00%	0	100	200	0	100	0	200	0	200	0	200
4 Phase 400 MW - then IRP	\$20,000,947	-\$52,712	-0.26%	0	0	200	200	0	0	200	0	200	0	200
5 Phase 500 MW - then IRP	\$20,018,464	-\$35,195	-0.18%	0	0	250	250	0	0	100	0	200	0	200
6 Phase 600 MW - then IRP	\$20,035,972	-\$17,687	-0.09%	0	0	300	300	0	0	0	0	200	0	200

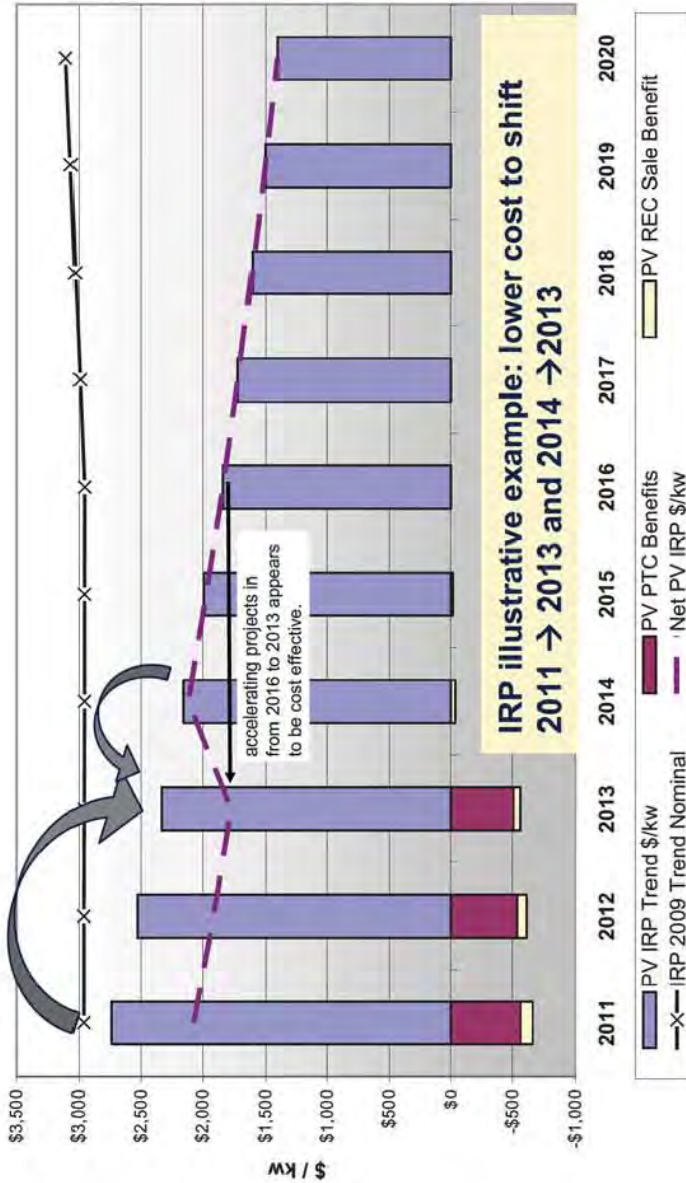
Capacity of wind available at BEGINNING of year

- 2009 IRP Plan shown above as Alternative #3
- IRP method results in broad strategy to accelerate wind to take advantage of PTC
- Use the same PSM-II Model as used by PSE Planning Group. No change in assumptions of cost.
- Test relatively small changes in the timing of wind. Significant changes would require re-run of full IRP optimization model.
- Conclusion: Alternative #4, 400 MW phased in by shifting 200 MW into 2013 (COD in late 2012 for PTC eligibility) results in a lower cost by taking better advantage of the Production Tax Credits and Renewable Energy Credit benefits of wind.



# 400 MW Lower Cost than 2009 IRP Plan

IRP 2009 Trend Wind \$/kw  
Capital Cost, PTC and REC Sales



**IRP Assumptions**

IRP 2009 Plan	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
400 MW Phased In	100	200	0	100	0	200	0	200	0	200	1000

Fine tuning of IRP to achieve lower costs

- ### Key drivers of IRP
- PTC available for project COD 2012
  - Low capital cost escalation
  - REC sales
- ### Simple model
- Uses only key drivers
  - Discount at 8.25% per year.
  - Shifting 100 MW out of 2011 is lower cost
  - Shifting 100 MW from 2014 into 2013 to capture PTC is lower cost

Rank	IRP
1	LSR 7-28-09 Plan
2	Accelerated 500, then IRP
3	IRP Development Plan
4	Phase 400 MW - then IRP
5	Phase 500 MW - then IRP
6	Phase 600 MW - then IRP
7	Phase 800 MW - then IRP
8	Phase 1000 MW - then IRP
9	Phase 1200 MW - then IRP



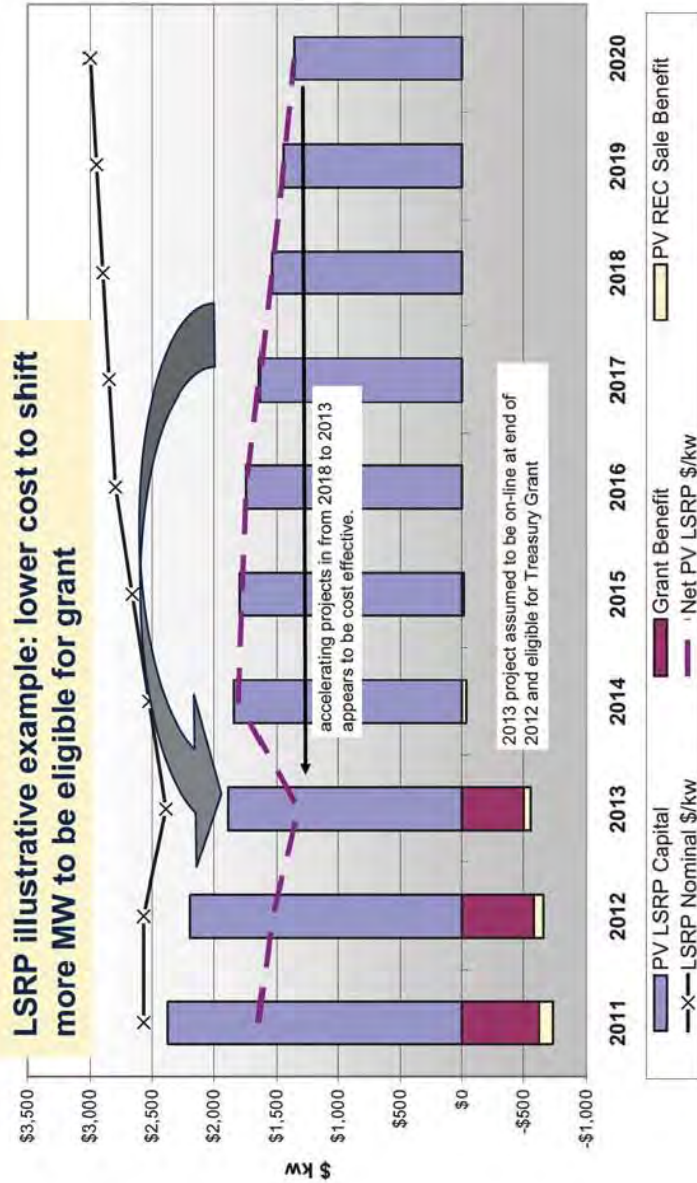
# Changes since IRP → More wind early

- ◆ Recession has resulted in lower prices and better availability of wind turbines
  - ◆ Future escalation of costs more likely from this “low”
- ◆ **Extension of WA State sales tax exemption – May 2009**
  - ◆ In May 2009, Washington passed SB 6170, effective July 1, 2009. The sales and use tax exemption (i.e. 100% exemption) was extended to June 30, 2011 for systems generating electricity using wind and other renewable technologies. The tax exemption also applies to labor and services related to the installation of the equipment.
  - ◆ From July 1, 2011 to June 30, 2013, the exemption for the systems described above will be reduced from 100% of the sales and use tax to 75% of the sales and use tax.
  - ◆ Future price increase of over 5% is expected post 2013. Assume that 70% of cost qualifies for exemption at 7.7% sales tax rate in LSRP counties.
- ◆ **Treasury Grant Guidance – July 2009**
  - ◆ American Recovery and Reinvestment Act (“ARRA”) extended Production Tax Credit (“PTC”) through 2012 – this assumption was included in the 2009 Integrated Resource Plan
  - ◆ PSE’s requesting WUTC approval for 10-yr amortization that results in slightly better benefits than PTC for customers – this assumption was not included in 2009 IRP
  - ◆ Better grant benefits favors early acquisition of wind



# LSRP assumptions → More MW early

LSRP Wind \$/kW  
Capital Cost, PTC and REC Sales



LSRP Assumptions	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
IRP 2009 Plan	100	200	0	100	0	200	0	200	0	200	1000
800 MW Phased In	100	400	400	0	0	0	0	0	0	0	1000

## Key drivers of LSRP

- Current low cost of turbines
- Sales tax driving some cost escalation
- Grant usually > PTC for COD 2012 or earlier
- Allocation of development and BPA costs to early projects.
- REC sales

## Results based only on REC, PTC / Grant and Capital cost

Rank	Rank IRP	Rank LSRP
1	4	5
2	5	7
3	6	9
4	1	6
5	2	4
6	3	2
7	7	1
8	8	3
9	9	8



# Qualitative risk evaluation

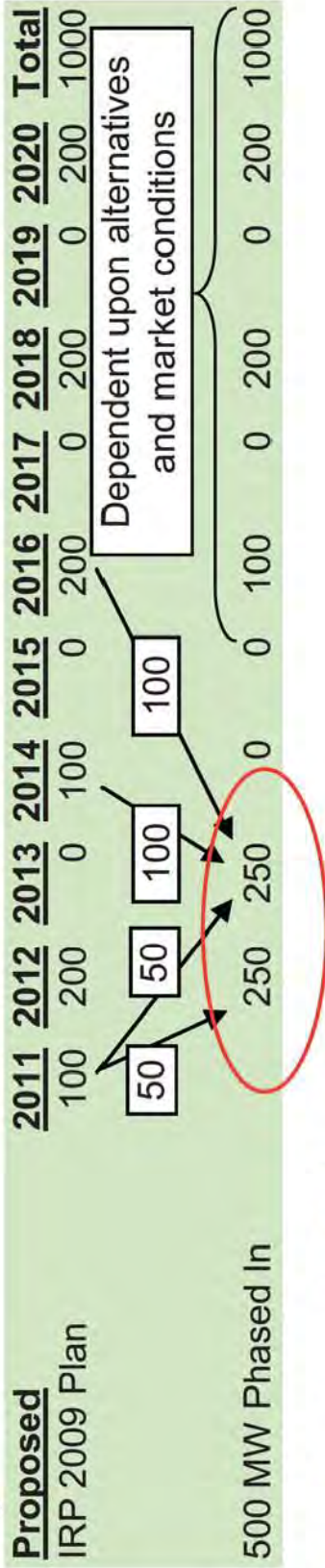
## Development Alternatives (for 2012 & 2013)

	#3 IRP	#4 PHASE 400	#5 PHASE 500	#6 PHASE 600	#2 ACCEL. 500
<b>PROS</b>	<ul style="list-style-type: none"> <li>Known to IRPAG</li> <li>Almost identical with IRP (no turbines planned for COD 2010)</li> <li>Good alignment with firm transmission requests</li> <li>Low rate impact in short term</li> </ul>	<ul style="list-style-type: none"> <li>Lowest cost in 2009 IRP models testing</li> <li>200 MW per year can easily be constructed</li> <li>Phase I always has firm transmission</li> <li>Good alignment with firm transmission requests</li> </ul>	<ul style="list-style-type: none"> <li>Captures significant amount of Federal stimulus and WA sales tax exemption</li> <li>Plan previously presented to Board, PSE Management, Garfield and Columbia Co.</li> <li>All turbine vendor and BOP estimates contemplate this build schedule</li> </ul>	<ul style="list-style-type: none"> <li>Less vulnerable to losing real estate rights post-2013</li> <li>Captures most Federal stimulus and WA sales tax exemption</li> <li>Most favorable scenario for WTG negotiations</li> </ul>	<ul style="list-style-type: none"> <li>Highest certainty of capturing full Treasury Grant</li> <li>Provides the most negotiating leverage when turbine demand is soft</li> </ul>
<b>CONS</b>	<ul style="list-style-type: none"> <li>More vulnerable to losing real estate rights post-2013</li> <li>Least benefits from stimulus and WA sales tax exemption benefits</li> <li>300 MW in one-year escalates constructability risks</li> <li>Least favorable scenario for TSA negotiations</li> </ul>	<ul style="list-style-type: none"> <li>More vulnerable to losing real estate rights post-2013</li> <li>Low benefits from stimulus and WA sales tax exemption benefits</li> </ul>	<ul style="list-style-type: none"> <li>Does not maximize ITC potential</li> <li>Phase II relies on some non-firm transmission</li> </ul>	<ul style="list-style-type: none"> <li>Higher CAPEX commitments prior to CUP in Garfield and Columbia Cos</li> <li>Heavily reliant on non-firm transmission</li> <li>300 MW per year escalates constructability risks</li> </ul>	<ul style="list-style-type: none"> <li>Greatest exposure to timely Central Ferry completion</li> <li>Highest rate impact</li> <li>Potential logistical nightmare                             <ul style="list-style-type: none"> <li>- 2 work crews</li> <li>- &gt;200 turbines</li> </ul> </li> <li>Exposure to permitting risk in 2 counties</li> <li>Heavily reliant on non-firm transmission</li> </ul>



# Proposed Schedule – Phase in 500 MW

## Proposal:



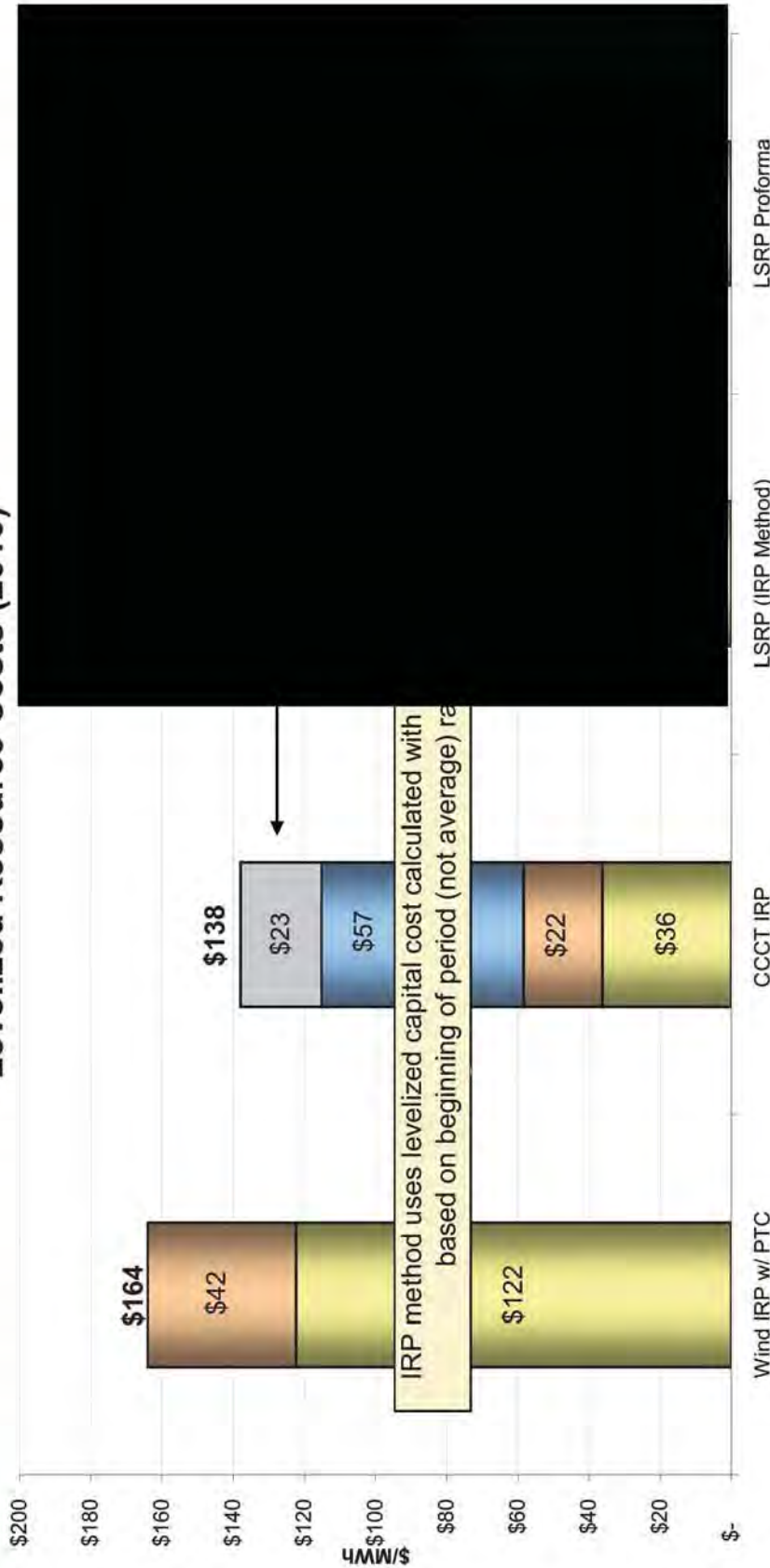
## Key Factors in Schedule:

- ◆ Accelerating wind more than the 2009 IRP takes advantage of:
  - ◆ U.S. Treasury grant
  - ◆ Sales tax exemption
  - ◆ Low turbine costs
- ◆ Maximum acceleration schedule tempered by:
  - ◆ Physical construction capabilities
  - ◆ Transmission and interconnection availability
  - ◆ Potential for future PTC post 2013
  - ◆ On-line dates overlay timing of Chelan PPA renewal (rate impact not yet evaluated)

## Recommend 250 MW per year for COD in late 2011 and late 2012

# Substituting gas for wind does not lower cost

Levelized Resource Costs (2010)



Assumptions		
<b>IRP Wind</b>	<b>IRP CCCT</b>	<b>LSRP Wind Proforma</b>
Capital: \$2764	Capital: \$1330	Capital: \$2564
PTC: \$21/MWh 2010	Fuel: \$7.55 / MMBtu	(includes BPA)
CF: 30%	CF: 47%	Treasury Grant
		CF: 30%

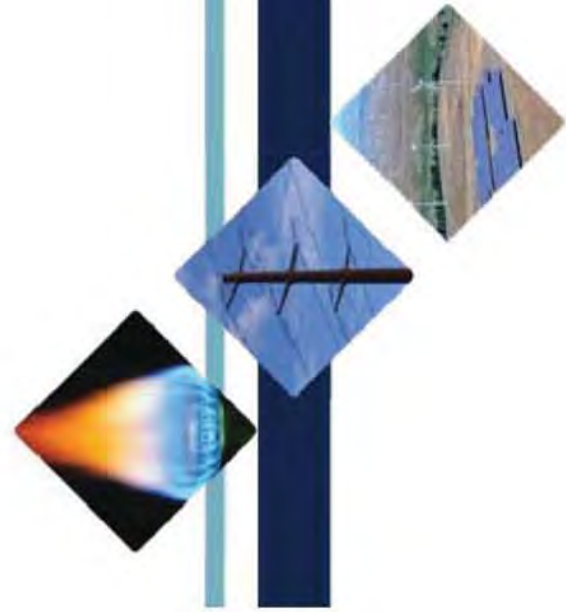




# 2010 Request for Proposals “All Source RFP” Update

Aliza Seelig  
*Senior Energy Resource Planning/Acquisition Analyst*

EMC Meeting  
October 12, 2009



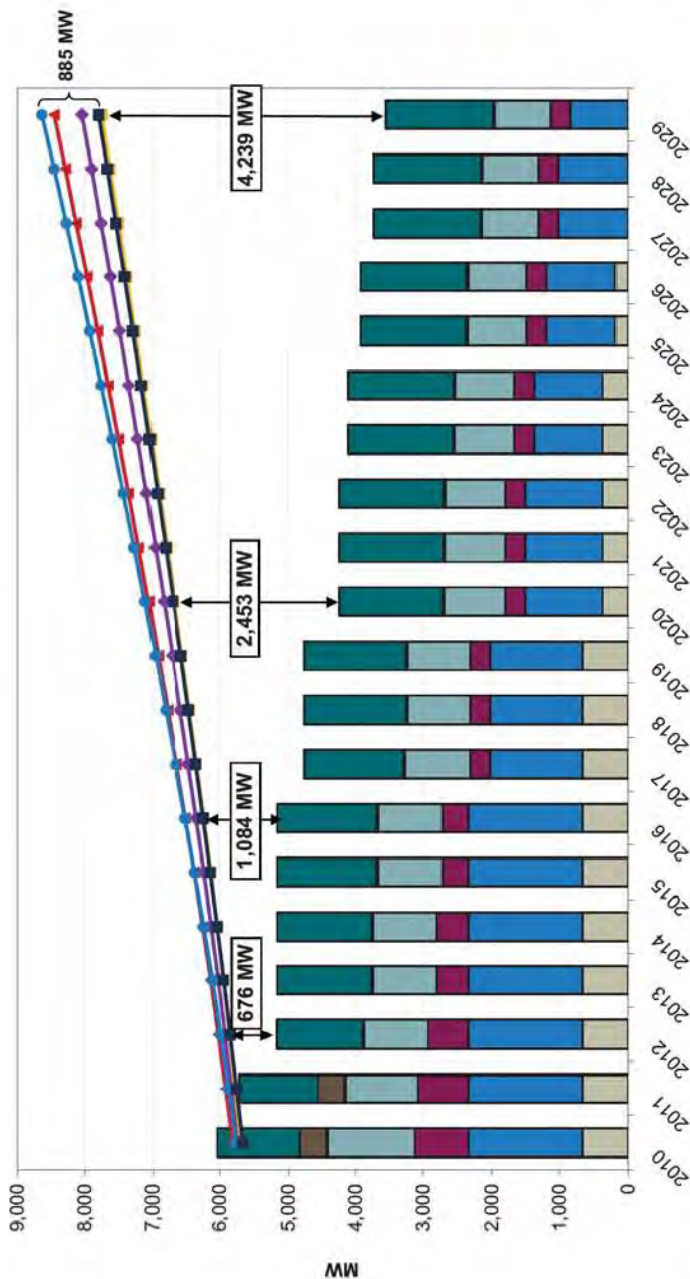
# RFP Schedule

October 12, 2009	Draft RFP Filed with WUTC
October 29, 2009	PSE Public Meeting on Draft RFP
December 11, 2009	Public Comments Due
January 11, 2010	WUTC Comments Expected
January 12, 2010	PSE Releases Final RFP Solicitation
January 28, 2010	PSE Hosts Proposal Conference
February 15, 2010	Mutual Confidentiality Agreements due to PSE
March 2, 2010	Offers Due to PSE
May 2010	“Candidate” Short List Selected
July 2010	Final Short List Selected, Respondents Notified
Summer 2010	PSE Hosts Live Solicitation for Market PPAs
	Post-proposal Negotiations



# RFP Overview

- Existing and yet-to-be constructed generation resources with commercial operation dates through 2015



\* January capacity need as defined in the 2009 Integrated Resource Plan (conservation not included).

# What's New for the 2010 RFP?

- **Electric Resource Need**
  - Capacity Planning Standard
- **REC-only product**
  - RECs produced beginning in year 2011 or later; must meet Energy Independence Act requirements
- **Transmission-only product**
  - Reassignment of firm transmission from BPA's system to PSE's system;
- **Market PPA Solicitation Process**
  - Streamlined process

Resource Strategy	2012	2016
Demand-Side Resources	205	597
Wind	300	600
Biomass	0	0
CCCT w/ Duct Firing	275	275
Peakers	160	160

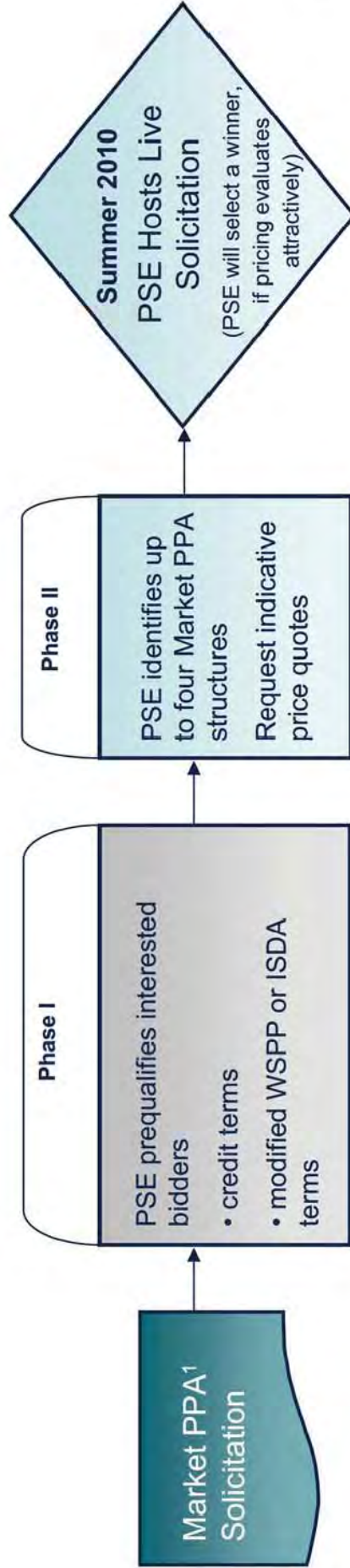




# 2010 Market PPA Process

Respondent indicates interest by submitting the following:

- Exhibit F. Confidentiality Agreement (due February 15, 2010)
- Exhibit C. Summary Data Form (online form due March 2, 2010)



<sup>1</sup>Non-unit contingent power purchase agreement

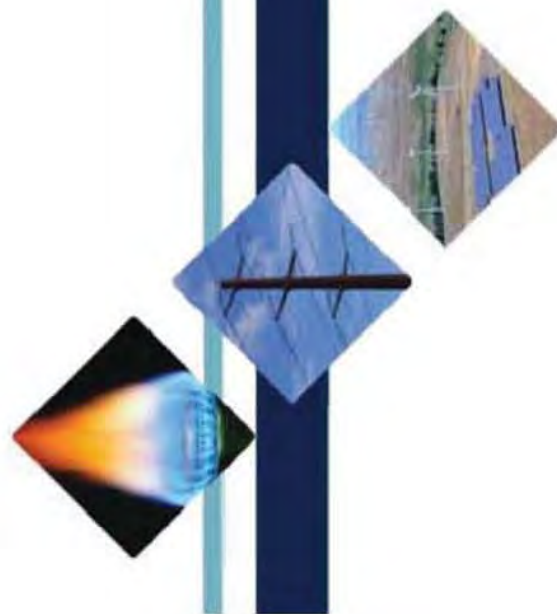
# Near-term Key Dates

---

October 12, 2009	Draft RFP Filed with WUTC
October 29, 2009	PSE Public Meeting on Draft RFP

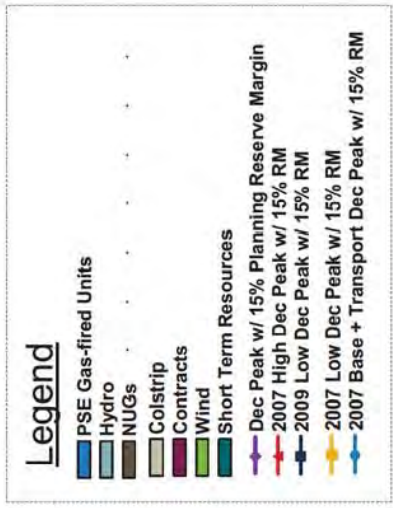
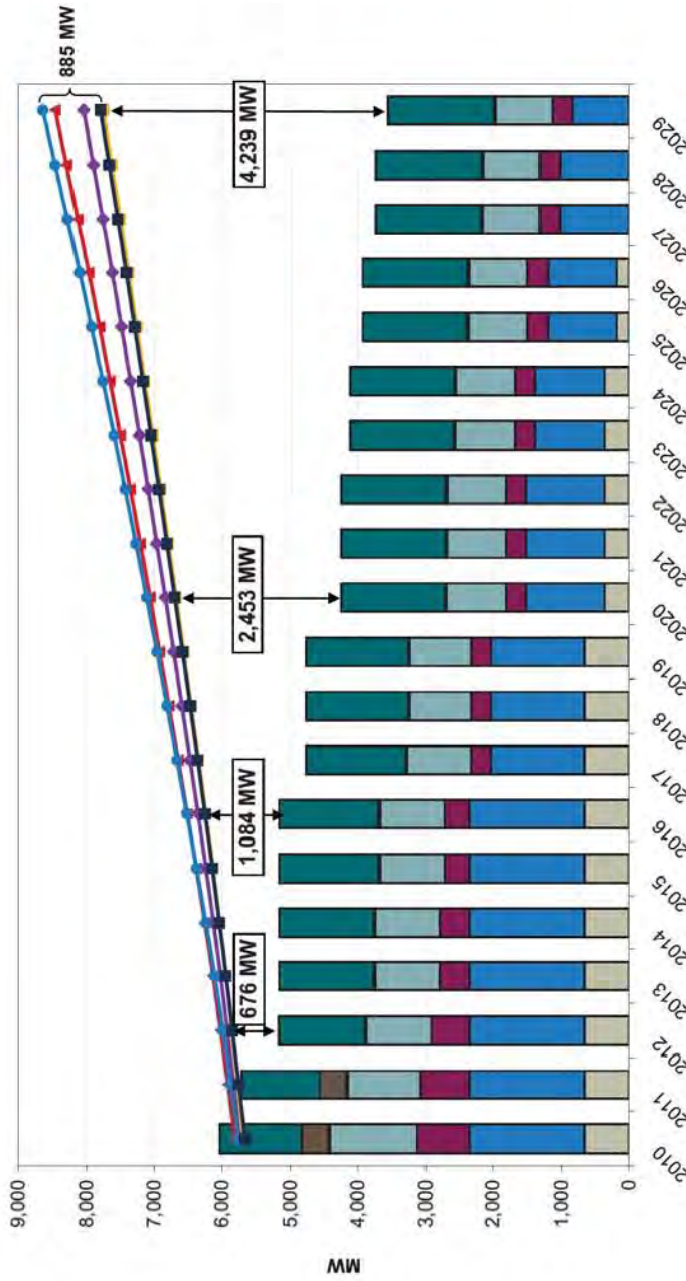


# Appendix



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

# Capacity Need\*

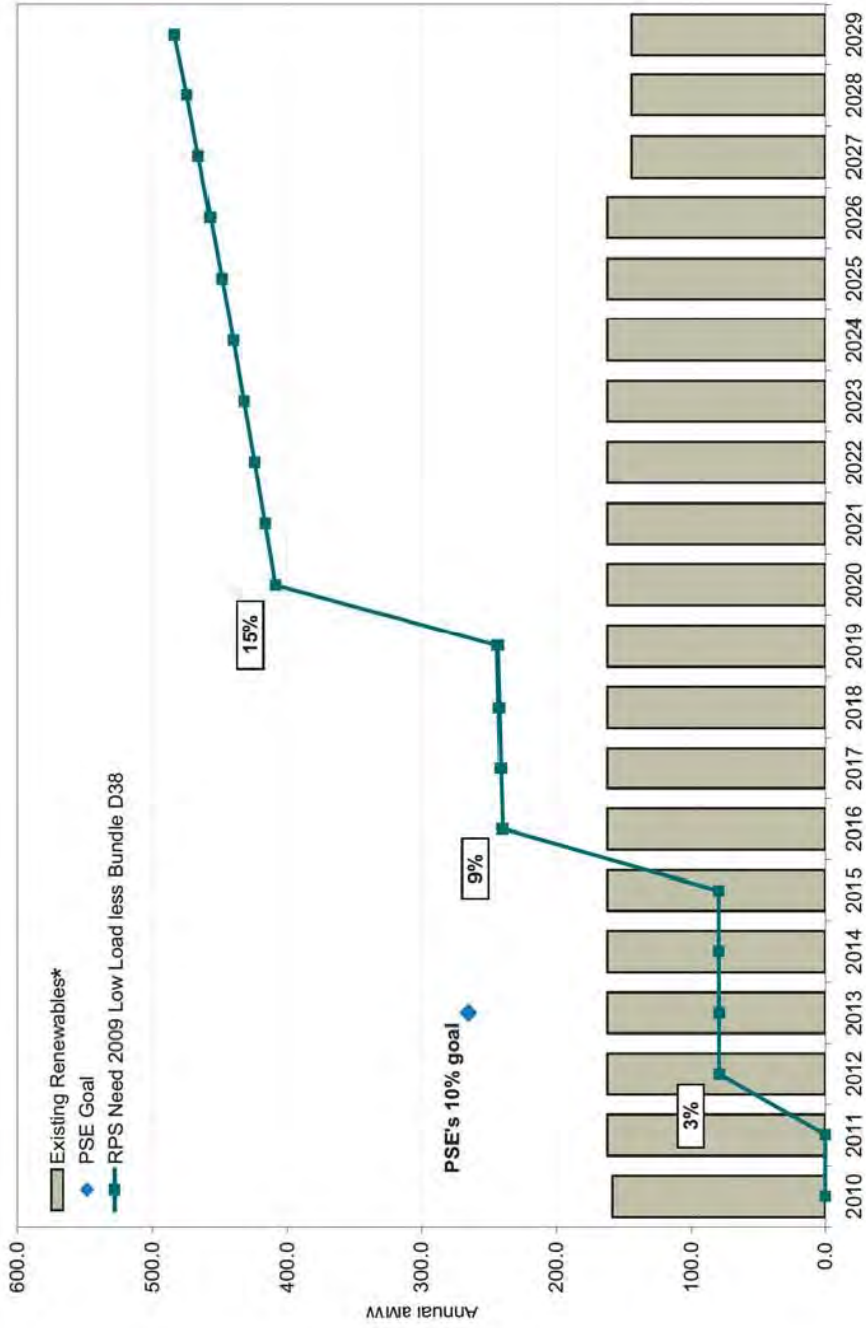


2010	2011	2012	2013	2014	2015	2016
0	42	676	776	874	976	1084

\* January capacity need as defined in the 2009 Integrated Resource Plan (conservation not included).



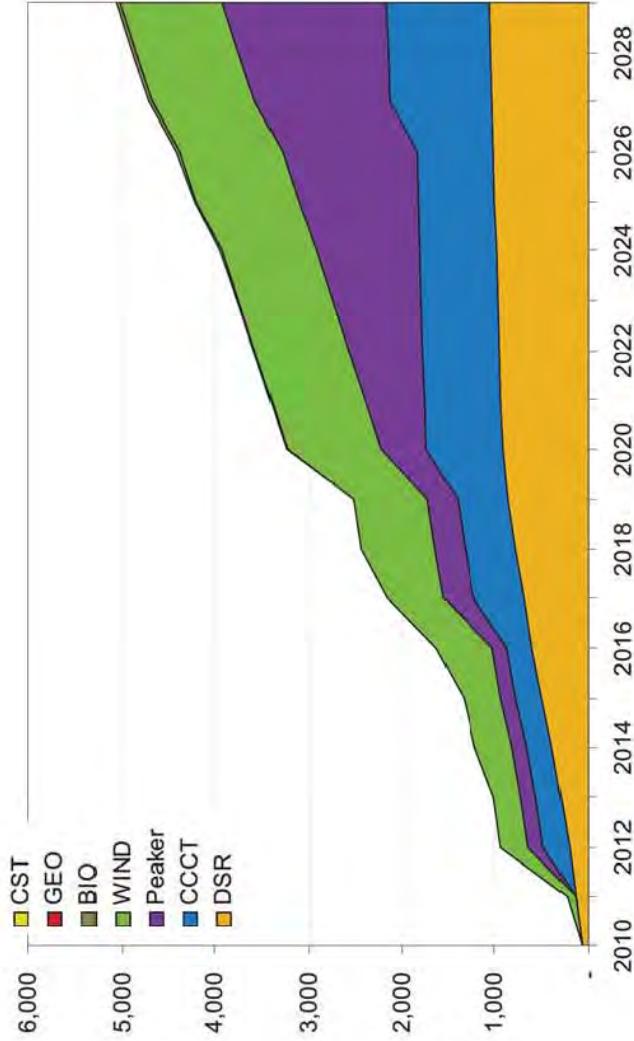
# Renewable Energy Need



\*Includes all PSE-owned or contracted renewable resources including facilities from which RECs have been sold.

# Resource Strategy\*

Capacity MW  
(Cumulative Additions)



	2012	2016	2020	2029
<b>Demand-Side Resources</b>	205	597	917	1064
<b>Wind</b>	300	600	1000	1100
<b>Biomass</b>	0	0	20	40
<b>CCCT w/ Duct Firing</b>	275	275	825	1100
<b>Peakers</b>	160	160	480	1760

\*Lowest Reasonable Cost Resource Portfolio, from July 2009 Integrated Resource Plan

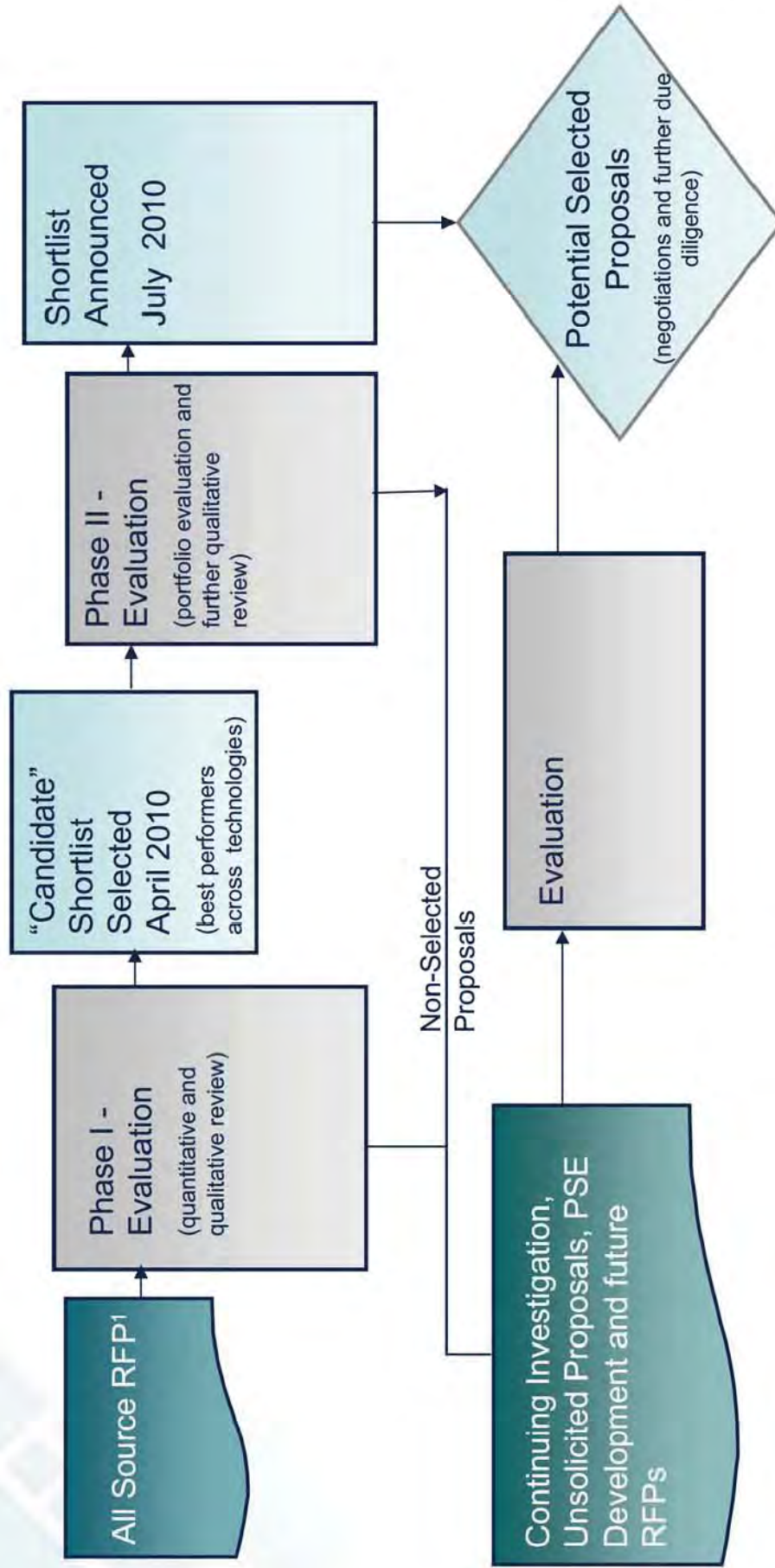


# Requested Products

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- **Energy products**
  - Preference for products shaped to seasonality of PSE's load
- **Capacity products**
  - Dispatchable resources, Heavy Load Hour product (6x16; Mon-Sat; HE 0700-2200); Operating Reserves (regulating or contingency)
- **Exchanges**
  - Seasonal, or super peak for shoulder peak power; temporal exchange with delivery to PSE on west side of Cascades
- **REC-only product**
  - RECs produced beginning in year 2011 or later; minimum quantity considered is 25,000 RECs per year (volume can be fixed or tied to eligible resource output); must meet Energy Independence Act requirements
- **Transmission-only product**
  - Reassignment of firm transmission from BPA's system to PSE's system; full calendar year or Nov-Feb

# 2010 RFP Evaluation Process



<sup>1</sup>Non-unit contingent power purchase agreement ("Market PPA") solicitation process depicted on next slide.



# RFP Evaluation Criteria

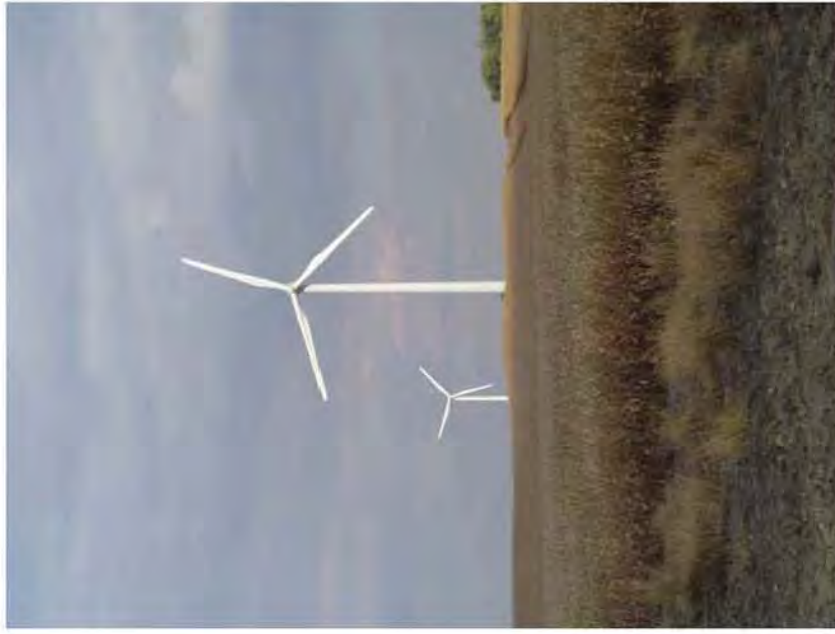
Compatibility with Need	Cost Minimization	Risk Management	Public Benefits	Strategic & Financial
<ul style="list-style-type: none"> <li>• Meet short- and long-term energy and capacity requirements</li> <li>• Balance capacity and energy needs without risk of excess capacity</li> <li>• Provide shaped resource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

# Key Elements of the RFP

---

- **Proposal Requirements**
  - reorganized by resource type
- **Summary Data Form**
  - final will be an online form; draft version is a PDF copy
  - due March 2, 2010 with proposal
- **Confidentiality Agreement**
  - PSE may retain all proposals and related materials for four years or until the Company concludes its next General Rate Case, whichever is later
  - due February 15, 2010, prior to proposal due date
- **New prototype term sheets**





# Lower Snake River Wind Project Development Plan

## EMC Update

November 16, 2009



**Jim Elsea**  
**Paul Wetherbee**  
Resource Acquisition & Development

# Updates since October EMC

---

- ◆ Calculations corrected to include the increased cost resulting from the “flow-through” tax on the book depreciation associated with the basis reduction.
- ◆ Corrected quantitative analysis now indicates 600 MW, not 800 MW is cost effective build prior to the end of 2012 to capture the Treasury Grant
- ◆ Resource Planning & Analysis was requested to revise the Integrated Resource Plan models for updated wind assumptions:
  - ◆ Updates to turbine costs, turbine cost escalation, BPA integration cost, and Treasury Grant
  - ◆ Assume the same CCCT and CT builds from the IRP
  - ◆ Revised inputs used in two IRP scenarios: 1) 2009 Trends ('09 Trends) and 2) Business as Usual (2009 BAU)
  - ◆ Revised build schedule indicates 600 MW by the end of 2012 is cost effective in both price scenarios.



# LSRP Development

	Indicative Wind Capacity on-line at beginning of years 2011-2013
<ul style="list-style-type: none"> <li>▪ <b>2009 IRP:</b></li> </ul>	300 MW
<ul style="list-style-type: none"> <li>▪ <b>Fine Tuning the 2009 IRP:</b> Refine IRP broad strategy using IRP assumptions and IRP model (PSM-II)</li> </ul>	400 MW
<ul style="list-style-type: none"> <li>▪ <b>Simple spreadsheet calculation:</b> <ul style="list-style-type: none"> <li>▪ Lower turbine cost</li> <li>▪ Treasury Grant corrected for flow through book depreciation</li> <li>▪ Extension of WA State sales tax exemption</li> </ul> </li> </ul>	600 MW
<ul style="list-style-type: none"> <li>▪ <b>Revised IRP Modeling:</b> Updates to turbine costs, turbine cost escalation, BPA integration cost, and Treasury Grant</li> </ul>	600 MW
<ul style="list-style-type: none"> <li>▪ <b>Qualitative risk factors moderate schedule:</b> transmission and interconnection availability, seasonal construction capability, possibility of future tax credits, etc.</li> </ul>	500 MW Recommended

# Fine Tuning the 2009 IRP Wind Plan

## Alternative Timing of Wind using PSM II from 2009 IRP

	\$000	\$ Diff	% Diff	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1 LSR 7-28-09 Development Plan	\$20,037,481	-\$16,177	-0.08%	0	0	250	250	0	0	250	0	0	0	250
2 Accelerated 500 MW, then IRP	\$20,056,098	\$2,440	0.01%	0	0	500	0	0	0	100	0	200	0	200
3 IRP Development Plan	\$20,053,659	\$0	0.00%	0	100	200	0	100	0	200	0	200	0	200
4 Phase 400 MW - then IRP	\$20,000,947	-\$52,712	-0.26%	0	0	200	200	0	0	200	0	200	0	200
5 Phase 500 MW - then IRP	\$20,018,464	-\$35,195	-0.18%	0	0	250	250	0	0	100	0	200	0	200
6 Phase 600 MW - then IRP	\$20,035,972	-\$17,687	-0.09%	0	0	300	300	0	0	0	0	200	0	200

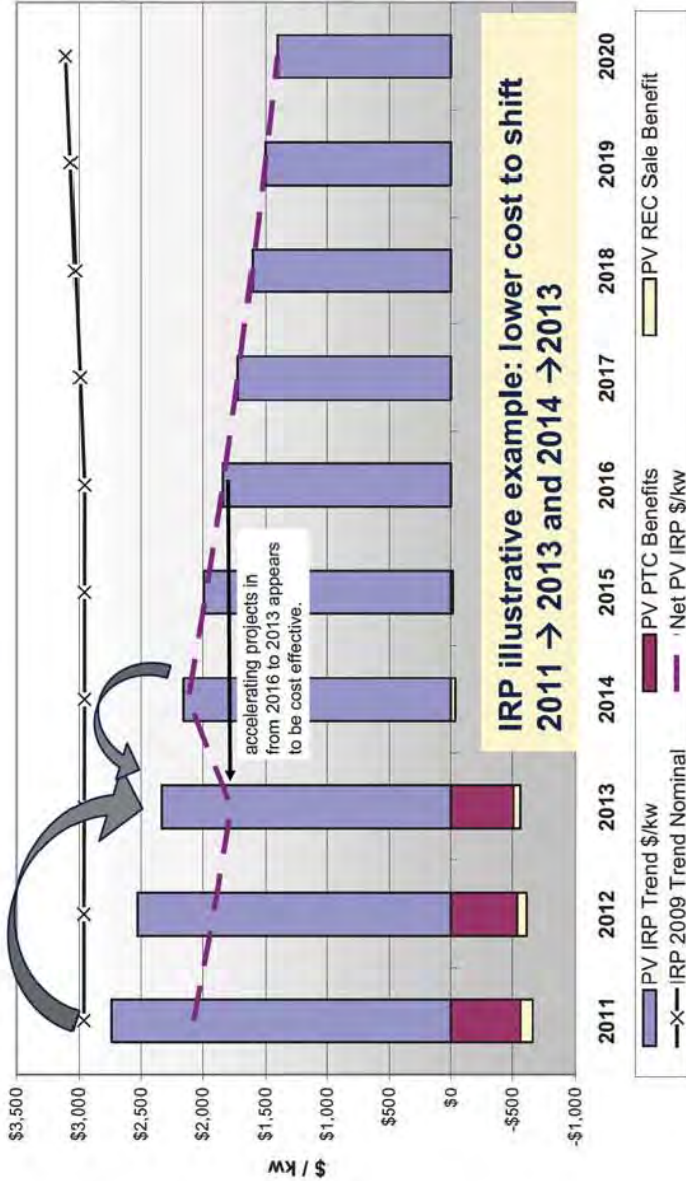
Capacity of wind available at BEGINNING of year, with COD before the end of the prior year.

- 2009 IRP Plan shown above as Alternative #3
- IRP method results in broad strategy to accelerate wind to take advantage of PTC
- Use the same PSM-II Model as used by PSE Planning Group. No change in assumptions of cost.
- Test relatively small changes in the timing of wind. Significant changes would require re-run of full IRP optimization model.
- Conclusion: Alternative #4, 400 MW phased in by shifting 200 MW into 2013 (COD in late 2012 for PTC eligibility) results in a lower cost by taking better advantage of the Production Tax Credits and Renewable Energy Credit benefits of wind.



# 400 MW Lower Cost than 2009 IRP Plan

IRP 2009 Trend Wind \$/kW  
Capital Cost, PTC and REC Sales



**IRP Assumptions**

IRP 2009 Plan	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
400 MW Phased In	100	200	0	100	0	200	0	200	0	200	1000

Fine tuning of IRP to achieve lower costs

400 MW Phased In	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
	100	200	0	0	0	200	0	200	0	200	1000

- ### Key drivers of IRP
- PTC available for project COD 2012
  - Low capital cost escalation
  - REC sales
- ### Simple model
- Uses only key drivers
  - Discount at 8.25% per year.
  - Shifting 100 MW out of 2011 is lower cost
  - Shifting 100 MW from 2014 into 2013 to capture PTC is lower cost

Rank	IRP
1	LSR 7-28-09 Plan
2	Accelerated 500, then IRP
3	IRP Development Plan
4	Phase 400 MW - then IRP
5	Phase 500 MW - then IRP
6	Phase 600 MW - then IRP
7	Phase 800 MW - then IRP
8	Phase 1000 MW - then IRP
9	Phase 1200 MW - then IRP

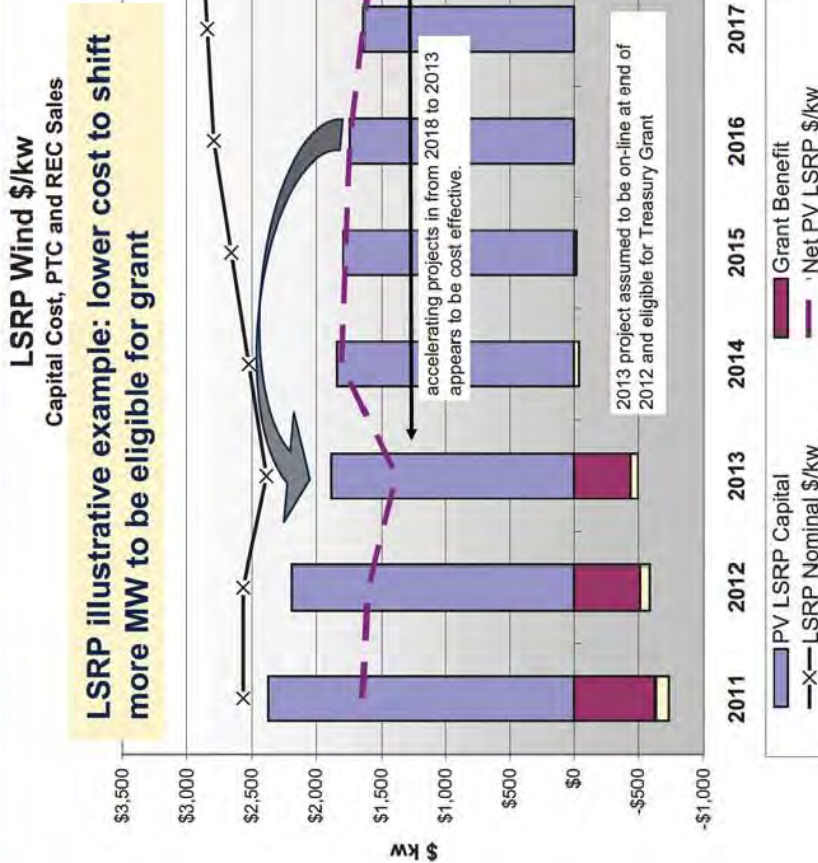


# Changes since IRP → More wind early

- Recession has resulted in lower prices and better availability of wind turbines
  - Future escalation of costs more likely from this “low”
- **Extension of WA State sales tax exemption – May 2009**
  - In May 2009, Washington passed SB 6170, effective July 1, 2009. The sales and use tax exemption (i.e. 100% exemption) was extended to June 30, 2011 for systems generating electricity using wind and other renewable technologies. The tax exemption also applies to labor and services related to the installation of the equipment.
  - From July 1, 2011 to June 30, 2013, the exemption for the systems described above will be reduced from 100% of the sales and use tax to 75% of the sales and use tax.
  - Future price increase of over 5% is expected post 2013. Assume that 70% of cost qualifies for exemption at 7.7% sales tax rate in LSRP counties.
- **Treasury Grant Guidance – July 2009**
  - American Recovery and Reinvestment Act (“ARRA”) extended Production Tax Credit (“PTC”) through 2012 – this assumption was included in the 2009 Integrated Resource Plan
  - In July 2009, Treasury Department issues guidance on use of Grant in lieu of PTC or ITC. Grants will be available for projects placed-in-service in 2009 or 2010 and projects which commence construction by December 31, 2010 and are placed in service by December 31, 2012 for wind projects.
  - PSE’s requesting WUTC approval for 10-yr amortization of the Treasury Grant for the Wild Horse Expansion project.
  - Grant less complex to use than PTC and will likely result in more benefits than PTC depending upon the investment amount and the capacity factor of the project. The Grant assumption was not included in 2009 IRP



# Simple model with LSRP assumptions → More MW early



## Key drivers of LSRP

- Current low cost of turbines
- Sales tax driving some cost escalation
- Grant usually > PTC for COD 2012 or earlier
- Allocation of development and BPA costs to early projects.
- REC sales

## Results based only on REC, PTC / Grant and Capital cost

Rank	Rank	Rank
IRP	IRP	LSRP
1	4	5
2	5	7
3	6	8
4	1	4
5	2	3
6	3	1
7	7	2
8	8	6
9	9	9

**LSRP Assumptions**

IRP 2009 Plan	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
600 MW Phased In	100	200	0	100	0	200	0	200	0	200	1000
	100	200	300	0	0	0	0	200	0	200	1000





# Revised IRP Analysis → 600 MW

20-yr NPV (\$000)	Expected Cost			Wind Builds (MW)										
	2009 Trends	% diff	2009 BAU	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sensitivity														
1 LSR 7-29-09 Development Plan	\$19,454,371	-0.41%	\$13,053,444	0	0	250	250	0	0	250	0	0	0	250
2 Accelerated 500 MW - then IRP	\$19,453,221	-0.41%	\$13,050,692	0	0	500	0	0	0	100	0	200	0	200
3 2009 IRP Resource Plan	\$19,533,805	0.00%	\$13,143,441	0	100	200	0	100	0	200	0	200	0	200
4 Phase 400 MW - then IRP	\$19,478,149	-0.28%	\$13,090,288	0	0	200	200	0	0	200	0	200	0	200
5 Phase 500 MW - then IRP	\$19,445,152	-0.45%	\$13,048,828	0	0	250	250	0	0	100	0	200	0	200
6 Phase 600 MW - then IRP	\$19,412,157	-0.62%	\$13,007,367	0	0	300	300	0	0	0	0	200	0	200
10 2009 Trends	\$19,479,380	-0.28%	\$13,119,821	0	100	200	0	0	0	100	0	0	0	600
11 No Early Wind	\$19,565,828	0.16%	\$13,237,954	0	0	0	0	0	0	400	0	0	0	600

	Rank	Diff from Best	Rank BAU	Diff from Best
09 Trends	4	\$42,214	4	\$46,077
1 LSR 7-29-09 Development Plan	3	\$41,063	3	\$43,324
2 Accelerated 500 MW - then IRP	7	\$121,648	7	\$136,074
3 2009 IRP Resource Plan	5	\$65,991	5	\$82,921
4 Phase 400 MW - then IRP	2	\$32,995	2	\$41,461
5 Phase 500 MW - then IRP	1	\$0	1	\$0
6 Phase 600 MW - then IRP	6	\$67,222	6	\$112,453
10 2009 Trends	8	\$153,670	8	\$230,587
11 No Early Wind				

- Both '09 Trends and 2009 BAU indicate that 600 MW on line by the beginning of 2013 is low cost
- Second and third lowest cost build plans call for 500 MW
- No early wind builds is the most costly build plan



# Qualitative risk evaluation

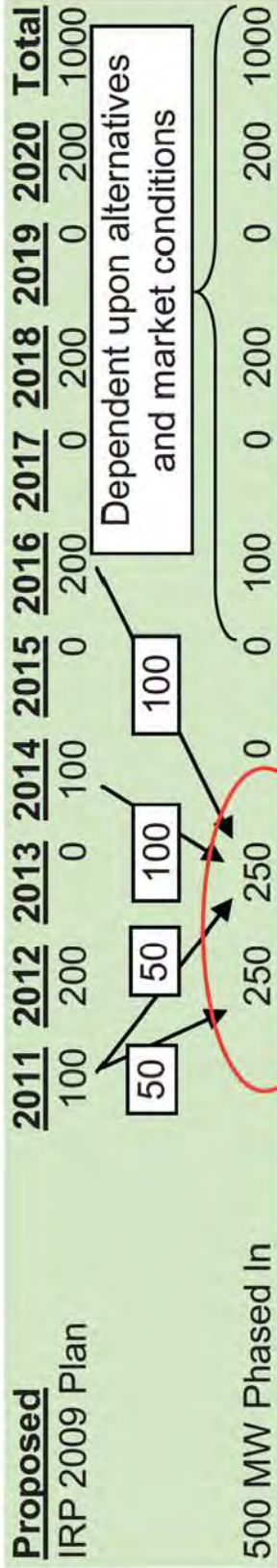
## Development Alternatives (for 2012 & 2013)

	#3 IRP	#4 PHASE 400	#5 PHASE 500	#6 PHASE 600	#2 ACCEL. 500
<b>PROS</b>	<ul style="list-style-type: none"> <li>Known to IRPAG</li> <li>Almost identical with IRP (no turbines planned for COD 2010)</li> <li>Good alignment with firm transmission requests</li> <li>Low rate impact in short term</li> </ul>	<ul style="list-style-type: none"> <li>Lowest cost in 2009 IRP models testing</li> <li>200 MW per year can easily be constructed</li> <li>Phase I always has firm transmission</li> <li>Good alignment with firm transmission requests</li> </ul>	<ul style="list-style-type: none"> <li>Captures significant amount of Federal stimulus and WA sales tax exemption</li> <li>Plan previously presented to Board, PSE Management, Garfield and Columbia Co.</li> <li>All turbine vendor and BOP estimates contemplate this build schedule</li> </ul>	<ul style="list-style-type: none"> <li>Less vulnerable to losing real estate rights post-2013</li> <li>Captures most Federal stimulus and WA sales tax exemption</li> <li>Most favorable scenario for WTG negotiations</li> </ul>	<ul style="list-style-type: none"> <li>Highest certainty of capturing full Treasury Grant</li> <li>Provides the most negotiating leverage when turbine demand is soft</li> </ul>
<b>CONS</b>	<ul style="list-style-type: none"> <li>More vulnerable to losing real estate rights post-2013</li> <li>Least benefits from stimulus and WA sales tax exemption benefits</li> <li>300 MW in one year escalates constructability risks</li> <li>Least favorable scenario for TSA negotiations</li> </ul>	<ul style="list-style-type: none"> <li>More vulnerable to losing real estate rights post-2013</li> <li>Low benefits from stimulus and WA sales tax exemption benefits</li> </ul>	<ul style="list-style-type: none"> <li>Does not maximize ITC potential</li> <li>Phase II relies on some non-firm transmission</li> </ul>	<ul style="list-style-type: none"> <li>Higher CAPEX commitments prior to CUP in Garfield and Columbia Cos</li> <li>Heavily reliant on non-firm transmission</li> <li>300 MW per year escalates constructability risks</li> </ul>	<ul style="list-style-type: none"> <li>Greatest exposure to timely Central Ferry completion</li> <li>Highest rate impact</li> <li>Potential logistical nightmare                             <ul style="list-style-type: none"> <li>- 2 work crews</li> <li>- &gt;200 turbines</li> </ul> </li> <li>Exposure to permitting risk in 2 counties</li> <li>Heavily reliant on non-firm transmission</li> </ul>



# Proposed Schedule – Phase in 500 MW

## Proposal:



## Key Factors in Schedule:

- Accelerating wind more than the 2009 IRP takes advantage of:
  - U.S. Treasury grant
  - Sales tax exemption
  - Low turbine costs
- Maximum acceleration schedule tempered by:
  - Physical construction capabilities
  - Transmission and interconnection availability
  - Potential for future PTC post 2013
  - Possible impacts of a National Renewable Energy Standard
  - On-line dates overlay timing of Chelan PPA renewal (rate impact not yet evaluated)

At the December 2009 EMC, the Resource Development team expects to recommend that:

- LSRP Phase 1 of 250 MW be a decision item at the January 2010 Board of Directors meeting,
- A total of 500 MW be completed prior to year end in 2012, assuming Phase 2 compares favorably with other alternatives.

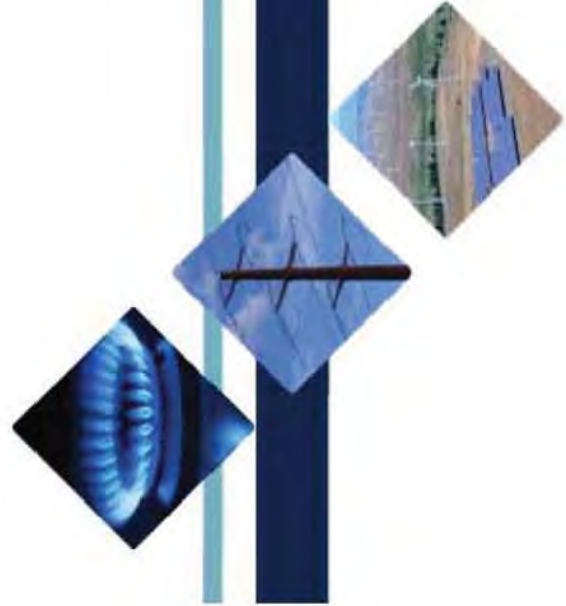


# Lower Snake River Wind Project Update

Energy Management Committee

Paul Wetherbee  
Manager, Resource Development

January 14, 2010



**PSE** PUGET SOUND ENERGY  
*The Energy To Do Great Things*

# Agenda

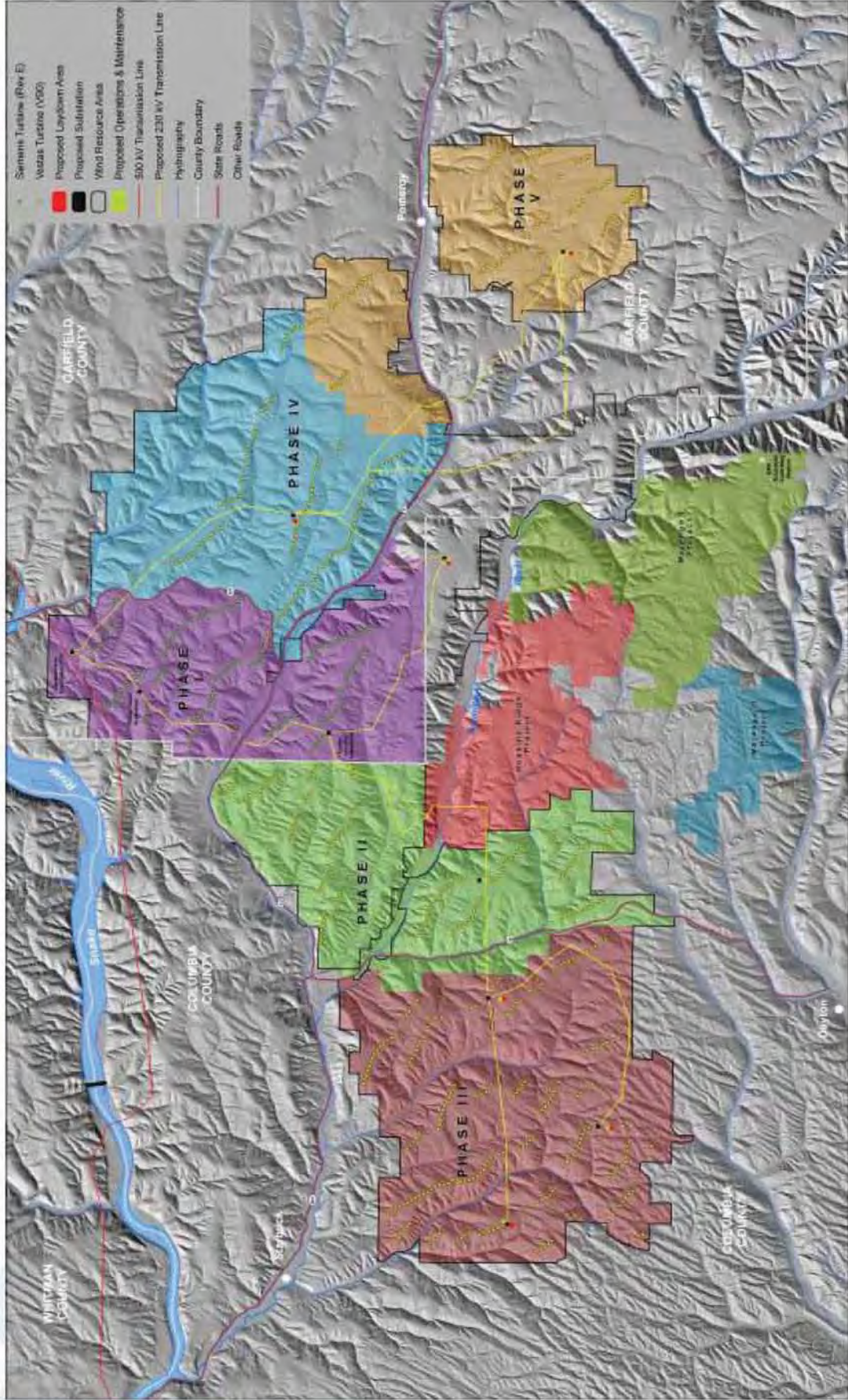
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- Permitting Update
- Open Issues
  - Grant v. PTC
  - BPA Schedule
  - RFP Coordination
  - Development Schedule
- Schedule
- Next Steps
- Appendix



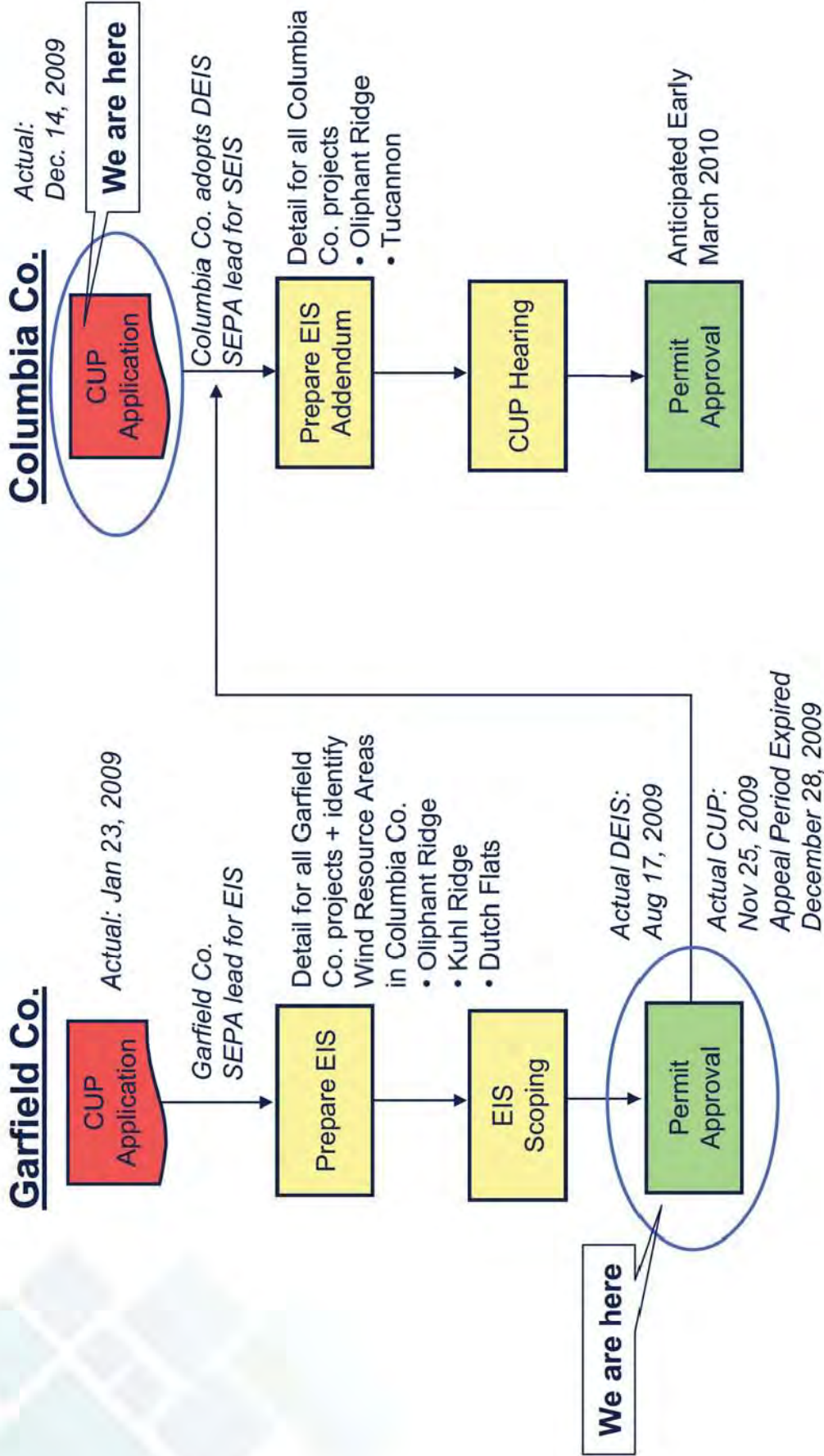


# Lower Snake River Wind Project





# Lower Snake River - Permitting





# Current Open Issues

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- Renewable Incentives: Treasury Grant v. PTC
- BPA Schedule
- RFP Coordination
- Development Schedule

# Central Ferry Construction Schedule

**Issue:**

- Energization of Central Ferry Substation is necessary for commercial operation of LSR Phase I
- Central Ferry and LSR Phase I both start construction in 2010
  - Central Ferry tentative completion date: December 1, 2011
  - 250 MW LSR Phase I estimated Commercial Operation Date: December 31, 2011

**Solution:**

- Work cooperatively with BPA to ensure timely execution Central Ferry Substation construction schedule
- If BPA schedule slips
  - Use portable generators for partial turbine commissioning
  - Complete final commissioning once Central Ferry energized
  - Delay cost

REDACTED VERSION

Months Delay	Additional Cost (\$M)*
1	
2	
3	
4	
5	

\* AFUDC plus incremental commissioning cost

- Commercial Operation Date for 250 MW Phase I anticipated four weeks after Central Ferry is energized



# RFP Coordination

October 12, 2009	Draft RFP filed with WUTC
October 29, 2009	PSE hosts public meeting on draft RFP
December 11, 2009	Public comments due
December 23, 2009	WUTC approval of RFP
January 12, 2010*	PSE releases final RFP solicitation
January 28, 2010	PSE hosts proposal conference
February 15, 2010	Mutual Confidentiality Agreements due to PSE
March 2, 2010	Offers due to PSE
May 2010	“Candidate” short list selected
July 2010	Final short list selected, respondents notified
Summer 2010	PSE hosts live solicitation for market PPAs
	Negotiations

\*estimated date

# Lower Snake Wind Project Development

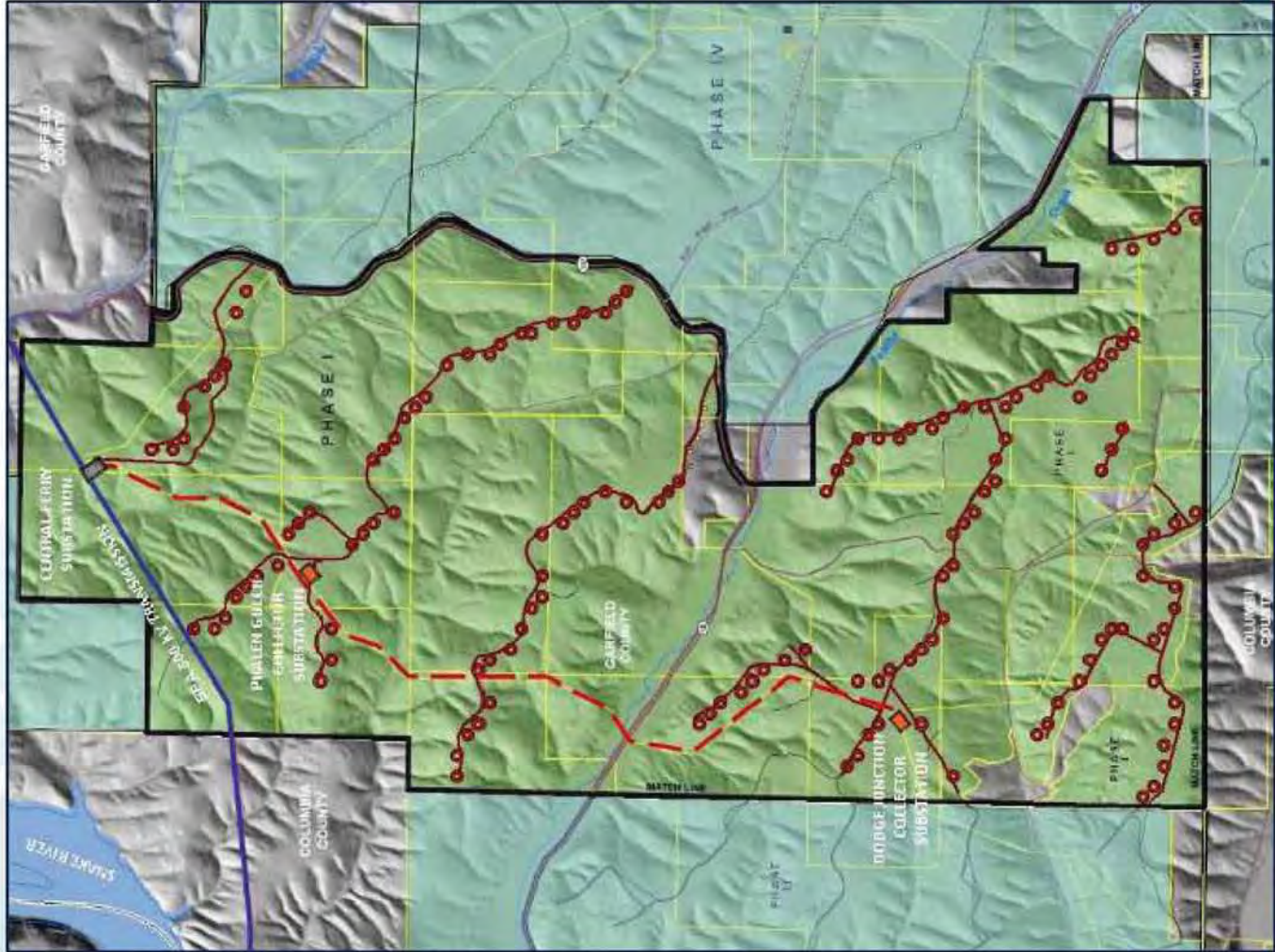
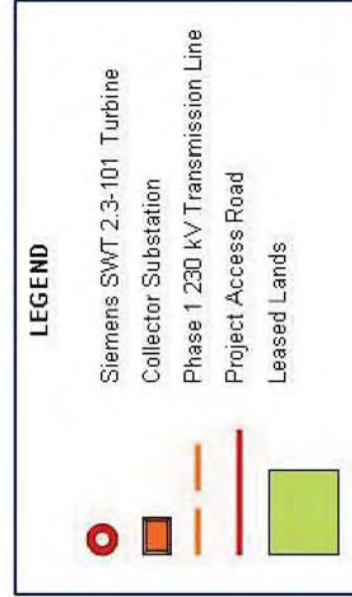
	Indicative Wind Capacity on-line at beginning of years 2011-2013
<ul style="list-style-type: none"> <li>▪ <b>2009 IRP:</b></li> </ul>	300 MW
<ul style="list-style-type: none"> <li>▪ <b>Fine Tuning the 2009 IRP:</b> Refine IRP broad strategy using IRP assumptions and IRP model (PSM-II)</li> </ul>	400 MW
<ul style="list-style-type: none"> <li>▪ <b>Quantitative Evaluation Changes since the IRP:</b> <ul style="list-style-type: none"> <li>▪ Lower turbine cost</li> <li>▪ Treasury Grant</li> <li>▪ Extension of WA State sales tax exemption</li> </ul> </li> </ul>	600 MW
<ul style="list-style-type: none"> <li>▪ <b>Qualitative risk factors moderate schedule:</b> transmission and interconnection availability, seasonal construction capability, possibility of future tax credits, etc.</li> </ul>	500 MW Recommended

Delay of Phase I approval provides opportunity to revisit development/build-out strategy



# Proposed LSR Phase 1 Build-Out

- 342 MW Phase 1 Project
  - Replaces 250 MW Phase I & 250 MW Phase II Project
- 149 Siemens SWT 101-2.3 MW Turbines
- 2 Collector Substations
- 6 Miles 230kV Transmission
- BPA Central Ferry Substation 230kV to 500kV Interconnection
- Entirely in Garfield County





# 340 MW Phase I Advantages

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- Mitigate BPA delay risk
  - Added schedule float between Central Ferry energization and full phase COD
- Manage construction risk
  - Completion of construction prior to 12/31/12
  - Conservatively meet U.S. Treasury 'start of construction' rules
- Eliminate Columbia County appeal risk
- Reduce wind resource risk
  - Build entirely in Phase I area with most wind data
- Reduce regulatory risk
  - May 2010 projected start date allows comparison to RFP projects
  - 340 MW build-out generally consistent with IRP results



# Lower Snake River Phase I Milestone Schedule\*

Milestone	Date
Balance of Plant Engineering, Procurement, Construction (BOP EPC), Partial Notice to Proceed for BPA Access Road	March 15, 2010
Order Transformers (long lead item)	April 15, 2010
Execute Turbine Supply Agreement	May 15, 2010
Execute BOP Part 1 EPC Full Notice to Proceed (Roads & Foundations) – Final Design & Competitive Open Book Bid and Construction	May 15, 2010
Execute BOP Part 2 EPC Full Notice to Proceed (Electrical) Final Design & Competitive Open Book Bid and Construction	December 31, 2010
Wind Turbine Generator (WTG) Substantial Completion – Phase I North COD	December 31, 2011
Wind Turbine Generator (WTG) Substantial Completion – Phase I South COD	June 30, 2012
Project Final Completion – Phase I (North & South)	July 31, 2012

\* Assumes May 2010 authorization

# Next Steps

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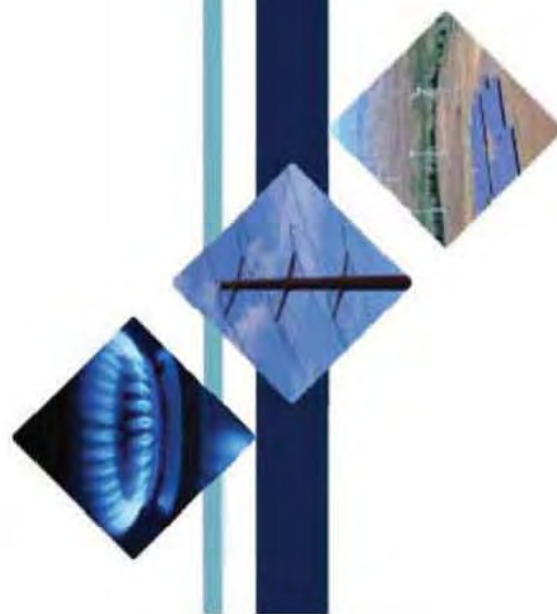
- Refine Construction Schedule
- Complete Commercial Negotiations
  - Turbine Supply Agreement
  - Service and Maintenance Agreement
  - Balance of Plant
  - Large Generator Interconnection Agreement
- Revise 2010, 5-year Capital Plan
- Initiate Central Ferry Access Road
- Procure 34/230kV step-up transformers (with future EMC approval)



## Anticipated Future Updates and Decisions

Date	Presentation to	Item
February 2010	Energy Management Committee	Update of 2010, 5-year Lower Snake Capital Plan
March 2010	Energy Management Committee	Decision to approve procurement of Phase I Transformers
April 2010	Energy Management Committee	Decision to recommend authorization of Commercial Agreements and Phase I authorization
May 2010	Board of Directors	Request for authorization to execute Commercial Agreements and Phase I authorization

# APPENDIX



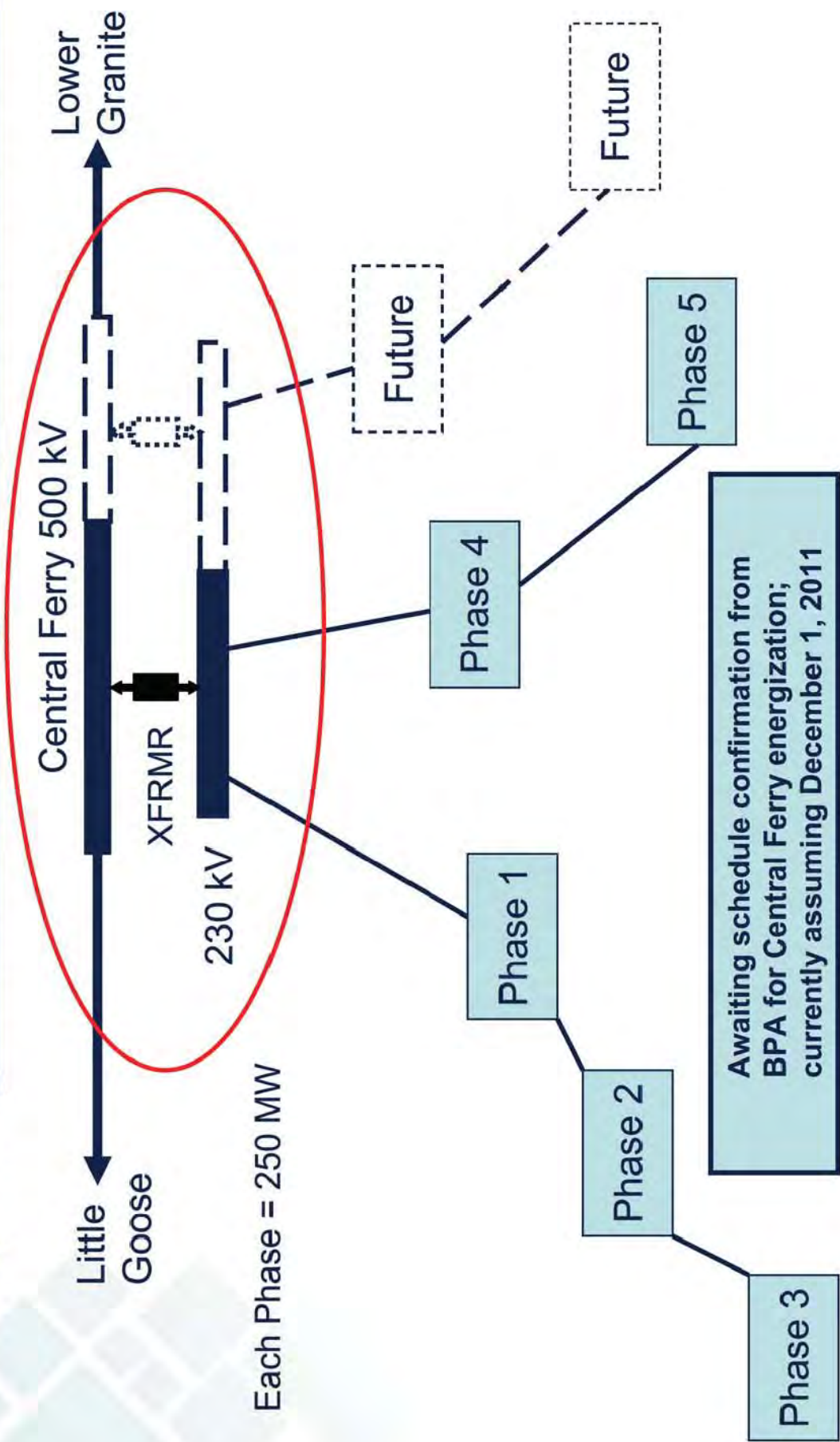
**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*



# Renewable Incentives: Grant v. PTC

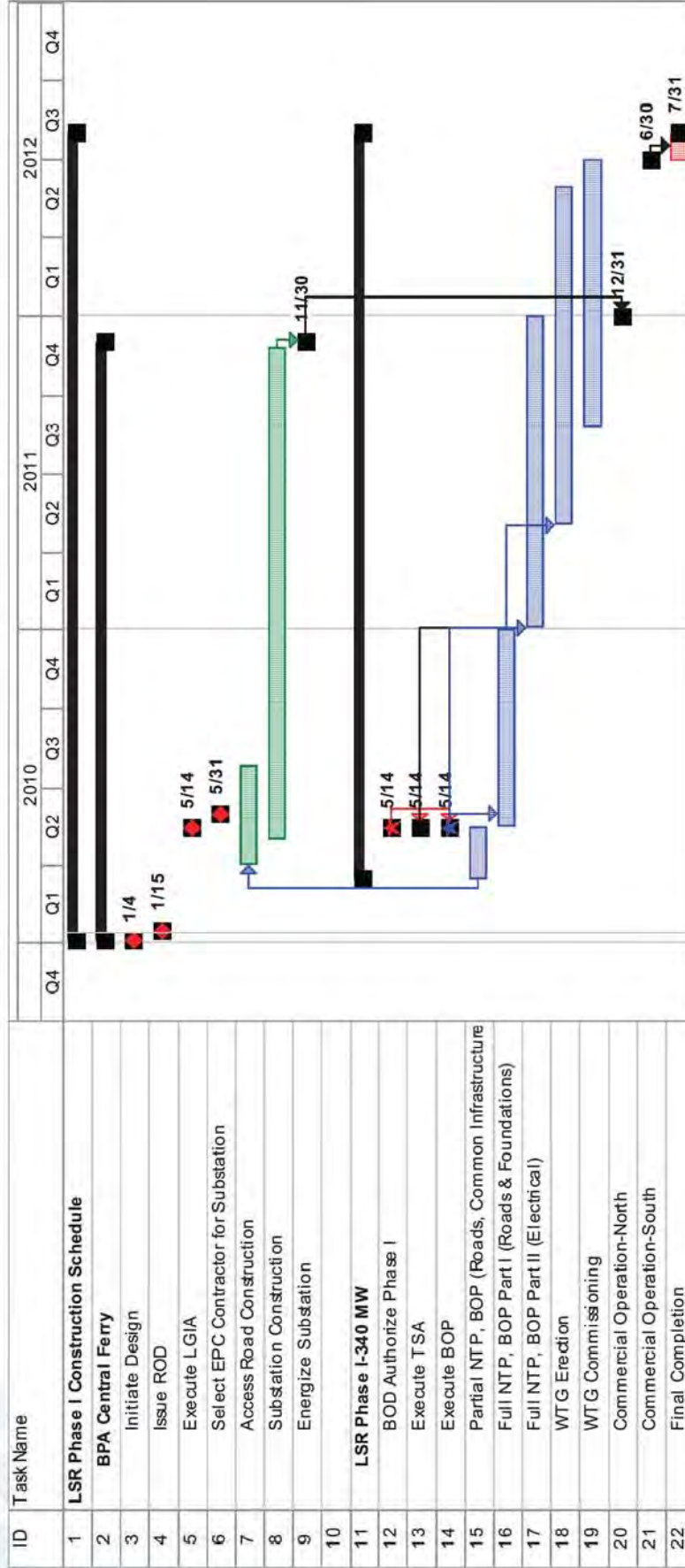
Screening Analysis (hypothetical used in response to GRC data request) Assume \$625 million, 85% qualifying, 30% CF			
	Benefit to Utility Customers (\$M)	Comparative Benefit of PTC (\$M)	Likely Low Cost
<b>As Filed</b>			
Grant Normalized over 10 years	\$160.2	\$14.0	Grant*
PTC (100% use as generated)	\$174.2		
<b>Update for Flow Through Tax on Book</b>			
Grant Normalized over 10 years	\$140.8	\$33.4	
PTC (100% use as generated)	\$174.2		
less PTC Deferral at \$27 million tax appetite	-\$52.1		
PTC Net	\$122.1	(\$18.7)	Grant*
* Assumes that tax equity cost or carry cost of deferral exceeds the difference.			
<b>Recent Changes:</b>			
Estimate qualifying property. Current 90% up from 85%			
Current Capital Cost = \$590 down from \$625 (before removal of BPA transmission)			
Financial Png. estimated tax appetite ~\$33 million (up from ~\$25 to 27 in multi year plan )			
Capacity Factor down from 30% to 29.9%			
Current Analysis project starts in 2012 (higher PTC); screening analysis project starts in 2010 (lower PTC)			
Discount benefits to 2011 to match financial proforma			
<b>250 MW Phase I Analysis</b>			
Capacity Factor of 29.90%			
A 250.7 MW Wind Project with cost net of BPA \$590,406,000			
90% Assumed qualifying property percent of capital net of BPA			
Grant Normalized Over 10 years	\$128.9	\$40.5	
PTC (100% use as Generated)	\$169.4		
less PTC Deferral at \$33 million tax appetite	-\$34.9		
PTC Net	\$134.5	\$5.6	PTC

# Simplified LSR Wind Project Interconnection





# LSR and Central Ferry Timelines



Stimulus Bill renewable incentives require COD by Dec 31, 2012

# BPA LGIA Agreement

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- Discussions are on-going, should be concluded in January 2010
- LGIA contract largely non-negotiable
- Anticipated Key Terms
  - \$104,400,000 pre-payment to BPA in 2010/2011, reimbursable network upgrades repaid to PSE as transmission credits
    - PSE has already advanced \$38,200,000 to BPA under the Engineering and Procurement Agreement.
    - Engineering has been slow to start.
  - PSE does not have option to self-construct BPA network upgrades
  - PSE has limited contractual remedies in the case of BPA non-performance or ability to pursue other alternatives



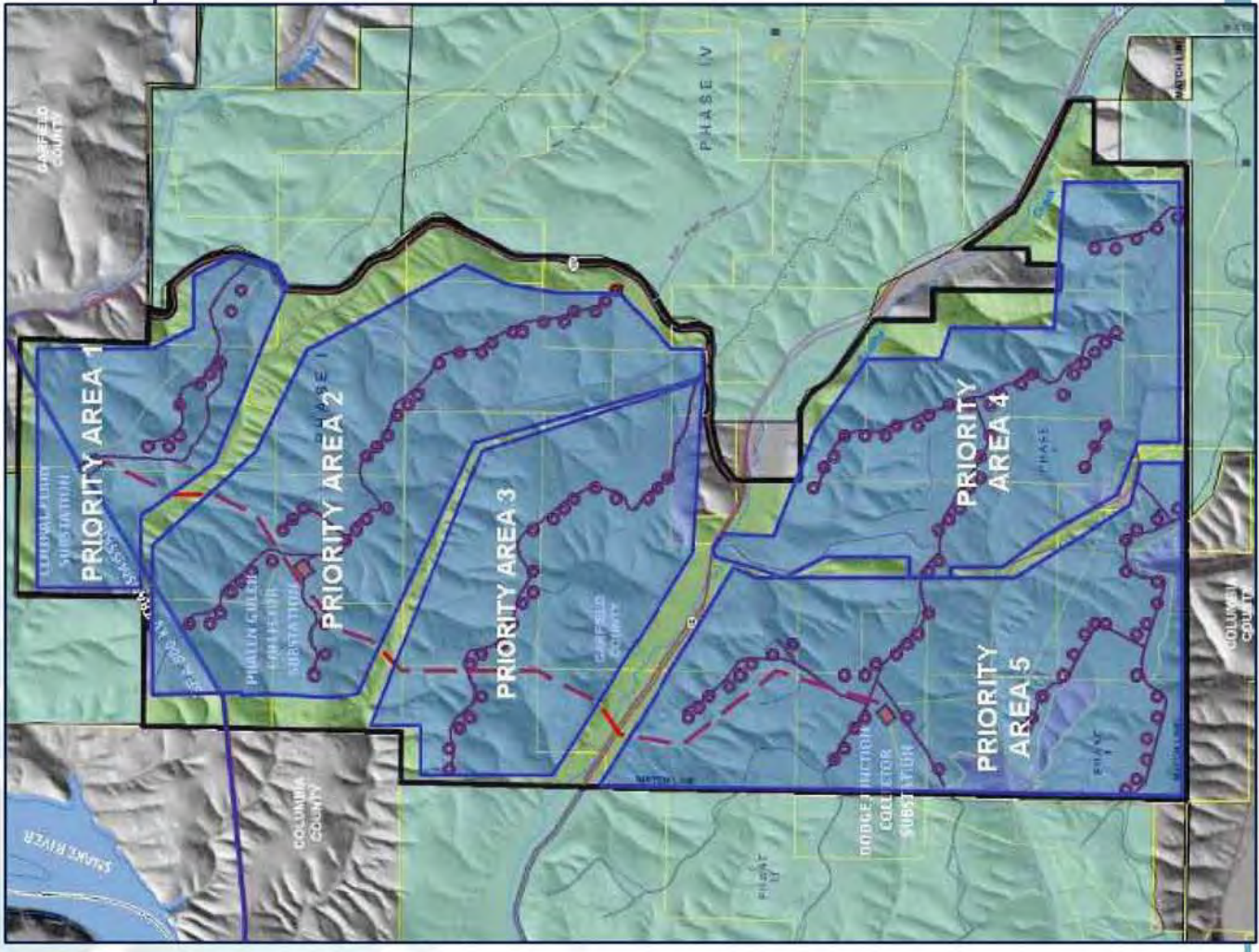
# LSR Phase 1 Layout

## Construction Priority Areas

- 5 Construction Priority Areas
- Coordination between BOP Contractor and Turbine Supplier

**LEGEND**

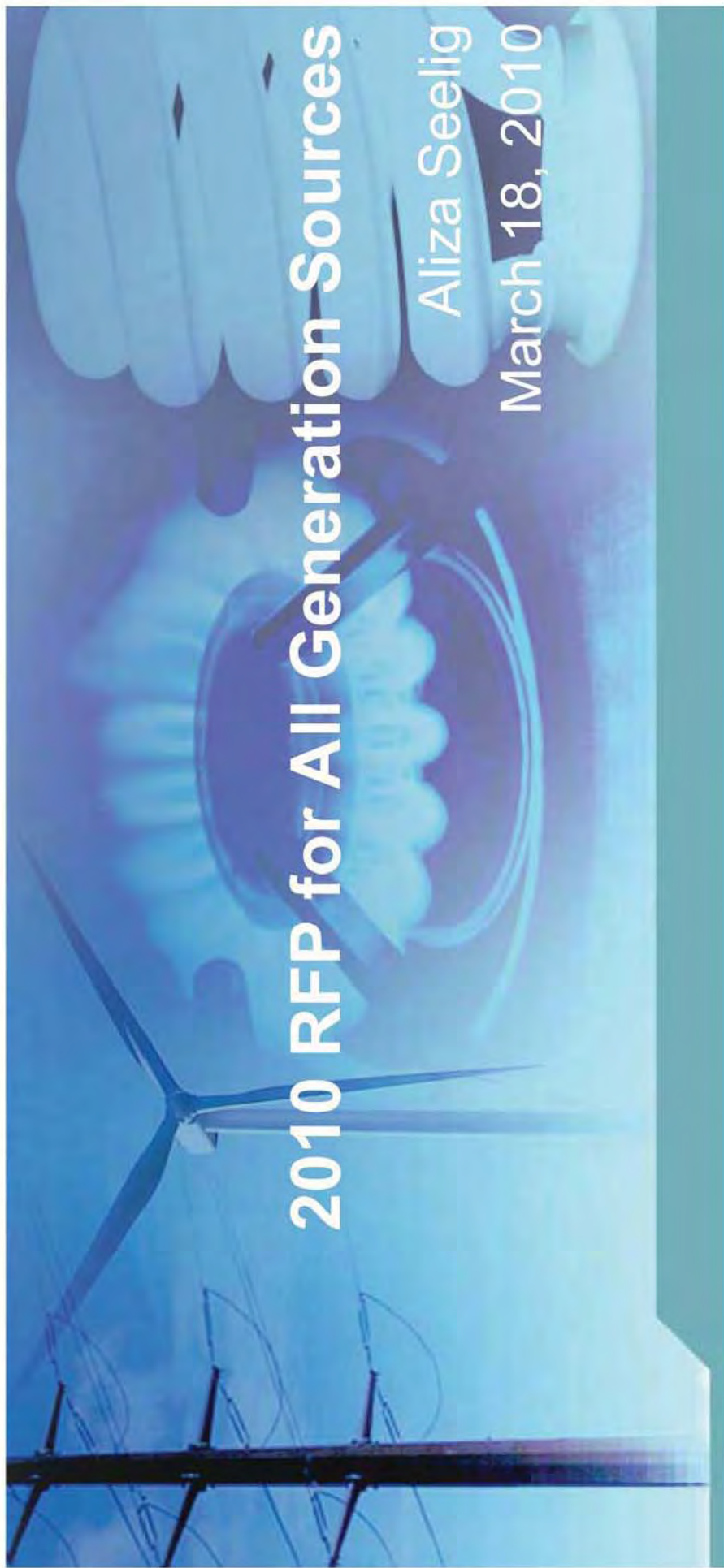
- Siemens SWT 2.3-101 Turbine
- Collector Substation
- Phase 1 230 kV Transmission Line
- Project Access Road
- Leased Lands



# 2010 RFP for All Generation Sources

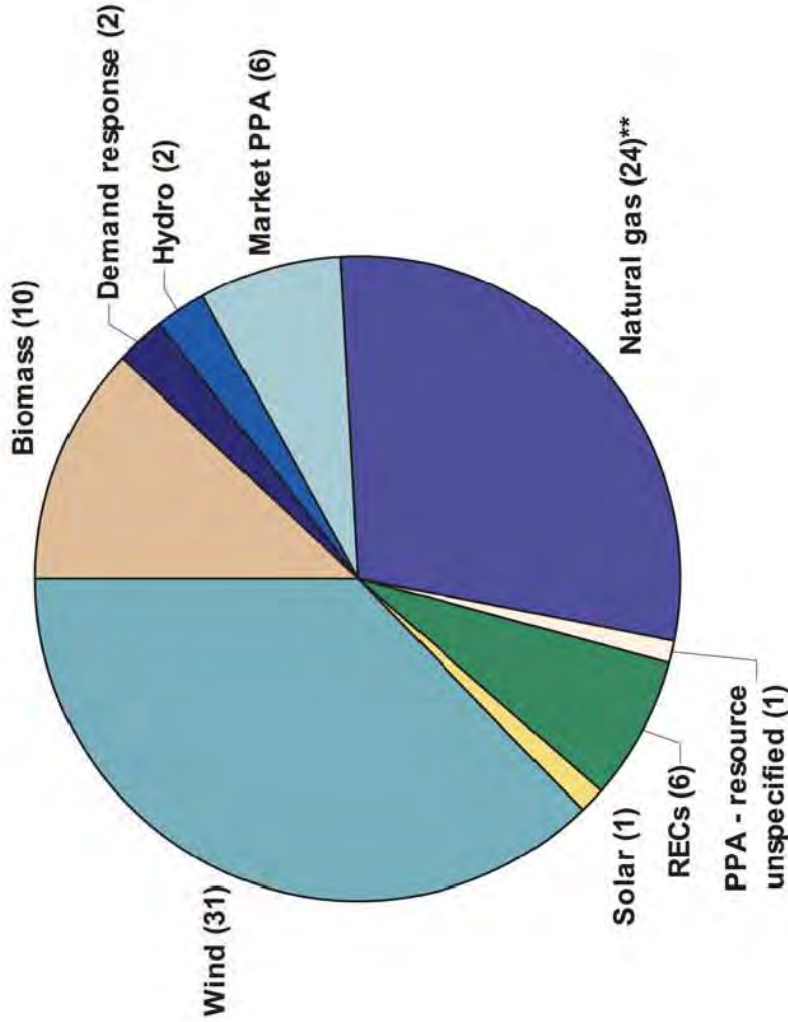
Aliza Seelig

March 18, 2010





# 61 proposals received\* – 83 offers and 9.95 GW



	Proposals	Offers	MW
Biomass	9	10	590
Demand response	1	2	80
Hydro	2	2	55
Market PPA	6	6	TBD
Natural gas - CCCT	12	15	4498
Natural gas - SCCT	6	9	844
PPA - resource unspecified	1	1	100
RECs	2	6	n/a
Solar	1	1	10
Wind	21	31	3776
<b>Total<sup>1</sup></b>	<b>61</b>	<b>83</b>	<b>9953</b>

<sup>1</sup> Table MW total does not include RECs or Market PPAs.

<sup>2</sup> PSE received six REC-only offers from two counterparties, totaling 2,224,350 RECs offered over the next 20 years. The maximum amount of RECs offered in any one year is 148,825.

<sup>3</sup> PSE received six Market PPA responses. PSE will identify up to four offer structures during Phase 2 of the RFP.

\* PSE received 31 discrete proposals in response to the 2008 RFP.

\*\* The 24 natural gas offers represent 15 CCCT offers and 9 SCCT offers.

# Proposed resources by location

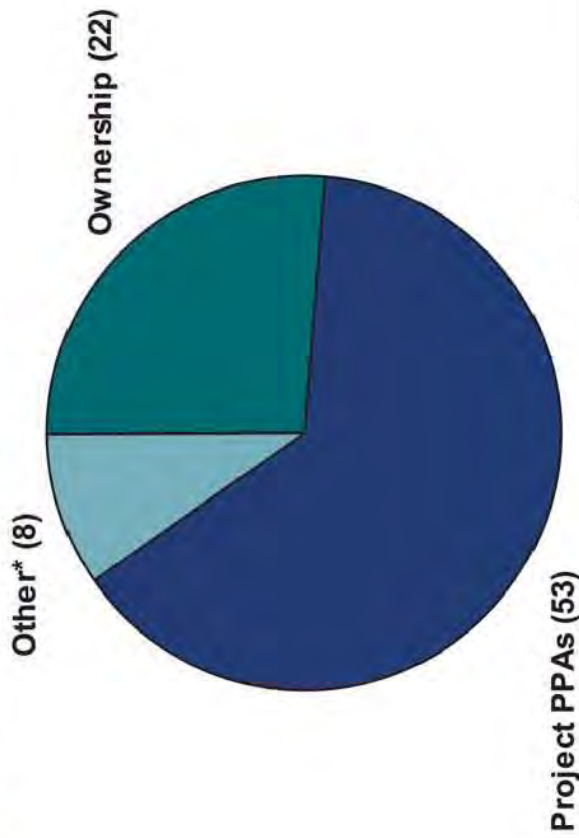


REDACTED  
VERSION

*EMC Update // March 18, 2010*



# Offer structures – Ownership vs. PPAs



	Ownership	PPA	Other	Total offers by type
Biomass	1	9	0	10
Demand response	0	0	2	2
Hydro	0	2	0	2
Market PPA	0	6	0	6
Natural gas (CCCT)	6	9	0	15
Natural gas (SCCT)	1	8	0	9
PPA - unspecified	0	1	0	1
RECs	0	0	6	6
Solar	0	1	0	1
Wind	14	17	0	31
<b>Total offers by structure</b>	<b>22</b>	<b>53</b>	<b>8</b>	<b>83</b>

EMC Update // March 18, 2010

## RFP early observations



- Significant increase in proposal submissions compared to 2008 RFP
- Biomass development is on the rise
- Few REC-only proposals offered
- No transmission products offered
- Montana wind projects outside BPA's watershed will require PSE to put projects in PSE's balancing authority to qualify for the RPS
- New entrants into Northwest development market with early stage projects – projects may need more time to mature



# RFP schedule



March 2, 2010	Offers due to PSE
March 8, 2010	PSE sends design guidelines to bidders with ownership proposals
March 12, 2010 <sup>1</sup>	PSE sends ISDA and WSP preferred language to Market PPA participants
Early March to Mid April	Renewable evaluation (Phase 1 & Phase 2 level analysis) to inform the LSR decision
May 2010 <sup>2</sup>	“Candidate” short list selected
July 2010 <sup>2</sup>	Final short list selected, respondents notified
Summer 2010	PSE hosts live solicitation for market PPAs
Summer 2010	Negotiations with short-listed parties

<sup>1</sup> Estimated date

<sup>2</sup> Due to large number of proposals received the schedule may change

*EMC Update // March 18, 2010*