



PSE

**PUGET
SOUND
ENERGY**

Wind Power Planning and Acquisition at PSE

***Charlie Black
Presentation to UWIG
October 23, 2003***

Topics

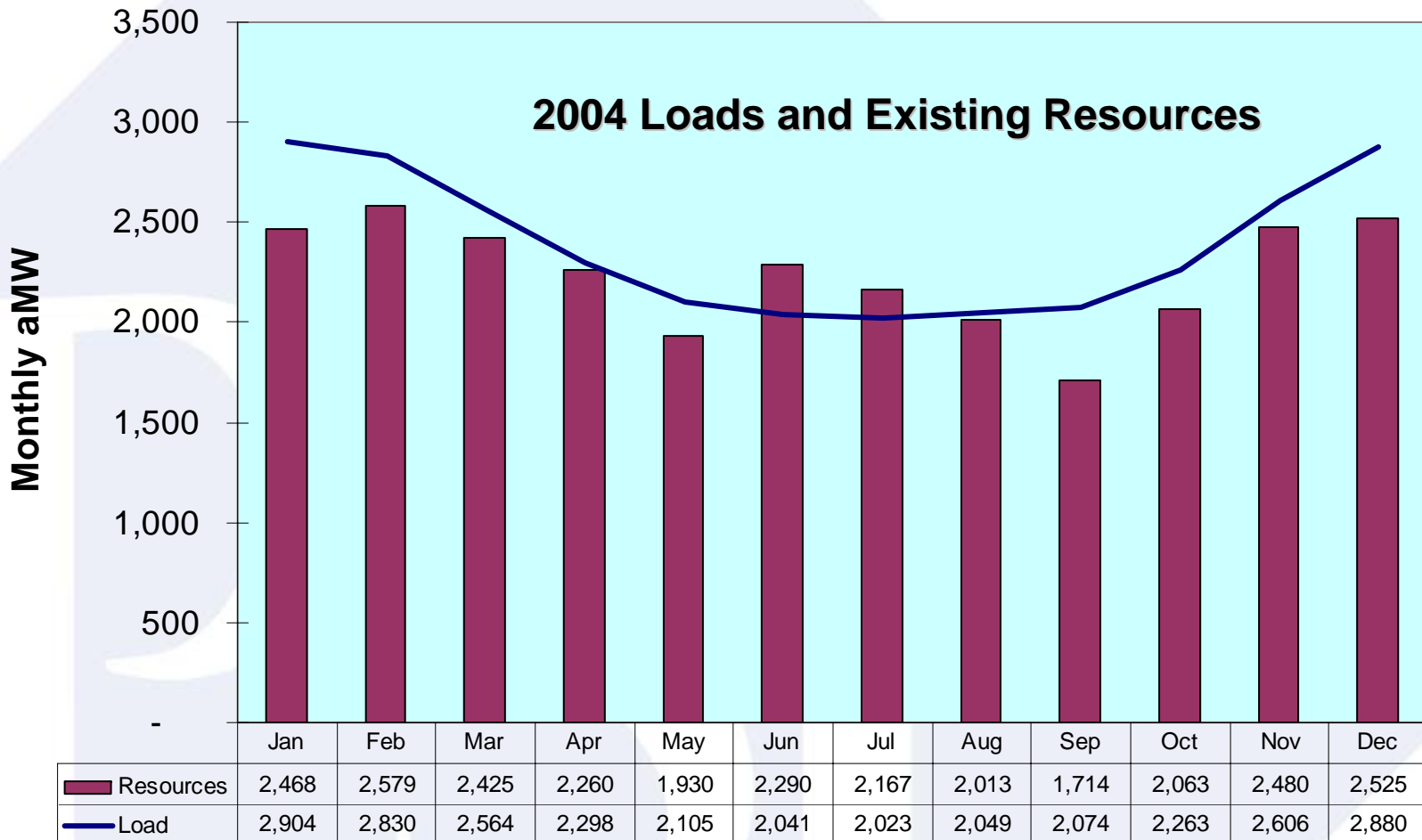
- PSE Least Cost Plan Resource Strategy
- Draft RFP for 150 MW of Wind Power
- Fitting Wind Power Into a Utility Resource Portfolio



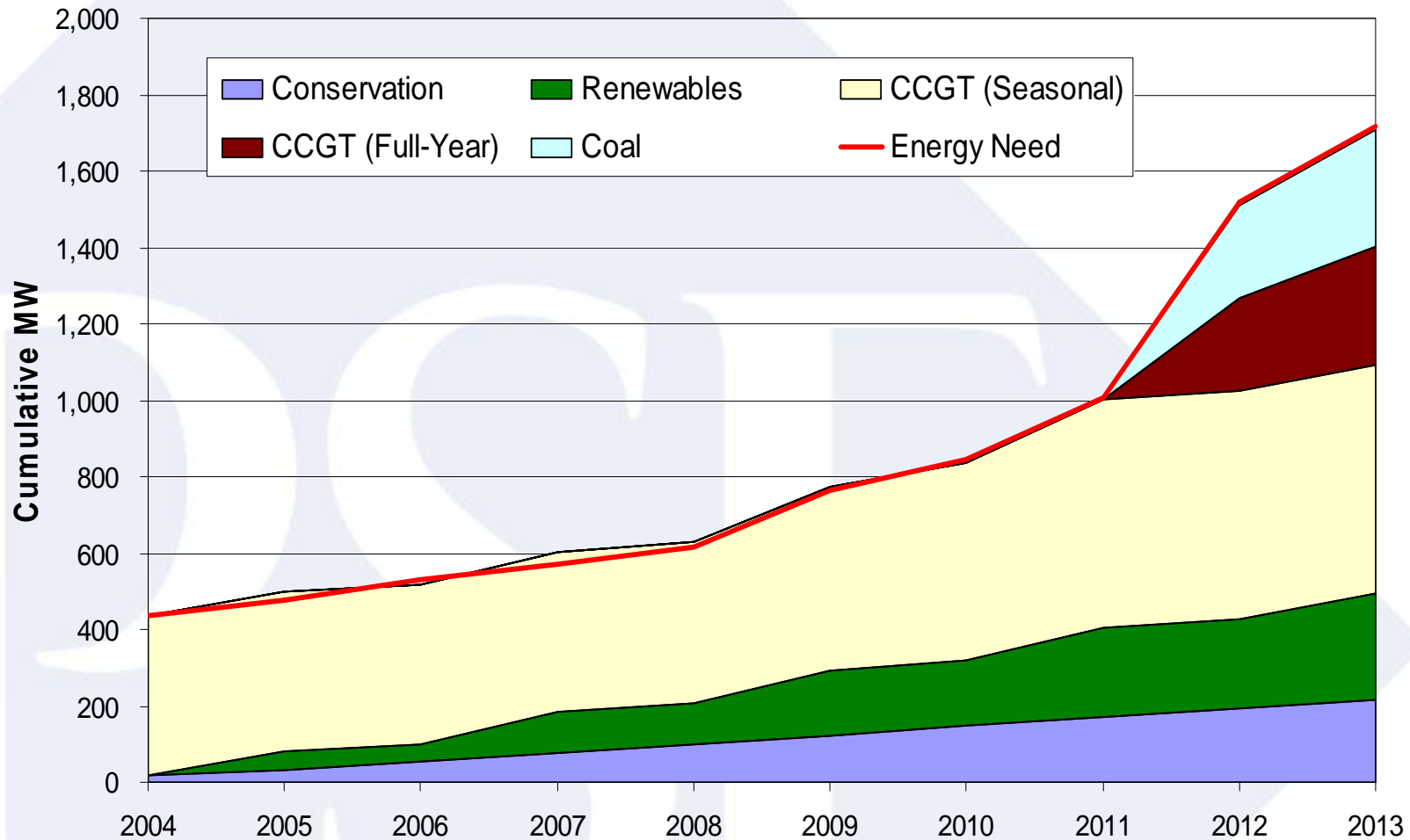
PSE Least Cost Plan Resource Strategy



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PSE Least Cost Plan Resource Strategy

- **Balanced resource strategy**
 - 203 aMW conservation 2004-2013
 - renewable resources to meet 10 percent of customer energy load (279 aMW) by 2013
 - mix of thermal resources
 - seasonal shaping arrangements
- **Advantages of PSE's balanced resource strategy**
 - portfolio cost
 - portfolio risk
 - diversity of resource technologies and fuels
 - environmental

Draft RFP for 150 MW of Wind Power

- Draft RFP Issued for Public Comment (August 25)
- Public Meeting on Draft RFP (September 15)
- End of 60-Day Public Comment Period (October 24)
- WUTC Approval of Draft RFP (November 24)
- PSE Issues Final RFP (December 3)
- Pre-Proposal Conference (December 10)
- Responses to RFP Due (January 9)
- Select Short-Listed Proposals, Notify Respondents (February 2)
- Execute Letter(s) of Intent (March 19)

Products Requested

- ~ 150 MW nameplate capacity
 - Minimum 25 MW
- Contracting alternatives
 - Power Purchase Agreements
 - PSE Ownership
 - Hybrid
- Energy Delivery
 - As produced
 - Integrated/shaped
 - Delayed delivery w/ minimal shaping
 - Seasonal shaping

Evaluation of Proposals

- First Stage Screening
 - Resource price ranking compared to avoided cost “yardsticks”
 - Project size and monthly production
 - New or recently completed project
 - Transmission/interconnection
 - Development status/schedule
 - Proposed COD
 - Type of proposal – PPA or PSE ownership
 - Developer’s track record
 - Project location

Evaluation of Proposals

- Second Stage Evaluation
 - Portfolio Analysis
 - Cost
 - Risk
 - Ability to Deliver as Proposed
 - Experience of Project Team
 - Guarantees Security and Credit Worthiness
 - Environmental and Public Purpose
- Post-Proposal Negotiations

Evaluation of Proposals

- Five primary criteria:
 - Compatibility with Need
 - Cost Minimization
 - Risk Management
 - Public Benefits
 - Strategic and Financial

Fitting Wind Power into a Utility Resource Portfolio

- “Famous” operating/integration issues
 - transmission availability/firmness and cost (3x)
 - short-term impacts (e.g., regulation, intra-hour, day-ahead)
- Seasonal profile of wind output relative to seasonal shape of resource needs
 - PSE needs resources during winter months
 - Some Northwest wind sites would produce most output during summer months
- Winter peak capacity?
 - correlation of wind output with cold winter temperature events (contrast with “random” thermal unit outages)
 - correlation of output among wind sites during cold winter temperature events

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