EXHIBIT NO. _____ (EMM-12)
DOCKET NO._____
2003 POWER COST ONLY RATE CASE
WITNESS: ERIC M. MARKELL

BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, INC., Respondent.	Docket No. _____

DIRECT TESTIMONY OF ERIC M. MARKELL ON BEHALF OF PUGET SOUND ENERGY, INC.

Least Cost Plan Report

Charlie Black – Least Cost Planning

Presentation Objectives...

- Provide a progress report on the effort
- Address key decision issues
- Solicit Board guidance on moving toward:
  - Definition of the appropriate Portfolio Planning Level
  - Selecting a general portfolio direction

Some Important Considerations…

- This process is highly interactive and collaborative – WUTC and the public
- PSE's strategy for meeting its large and growing need for new resources must also address key risk factors, including:
  - Market prices for power supply
  - Market prices for natural gas supply
  - Hydroelectric generation
- Finding the "best" strategy requires a combination of thorough analysis and documented exercise of judgment

A Brief Recap…

- **Key considerations in PSE's Least Cost Plan**
  - Growing need for new resources
  - Portfolio hedging and optimization
  - Even-handed treatment of a full range of resource alternatives, including conservation and renewable resources

PSE Load-Resource Balance

Pacific Northwest Region

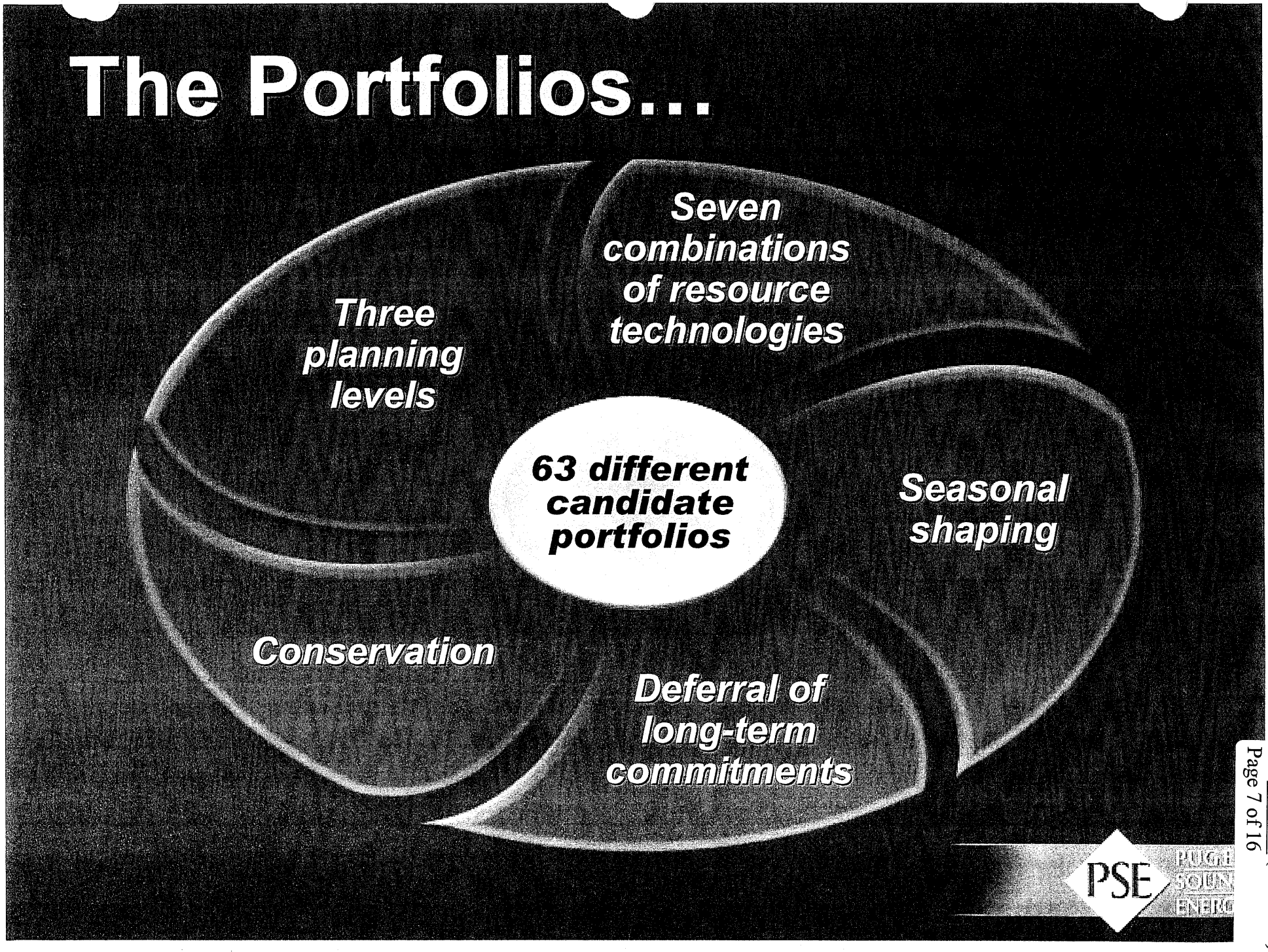
PSE resources:	Regional resources: Less than loads	Regional resources: Equal loads	Regional resources: Exceed loads
Less than loads	BUY $$$	We are here	BUY $
Equal loads	BALANCED (Short market)	PERFECT WORLD	BALANCED (Long market)
Exceed loads	SELL $$$	SELL $$	SELL $

PSE

Major Steps in the Analysis Process

- Construct a broad range of candidate resource portfolios
- Perform cost and risk analysis for each portfolio
- Compare analytical results on a consistent basis
- Narrow the field for further analysis

The Portfolios...



Portfolio Planning Levels

For this Least Cost Plan, we are assessing the costs and risks implied by different levels of resource adequacy:

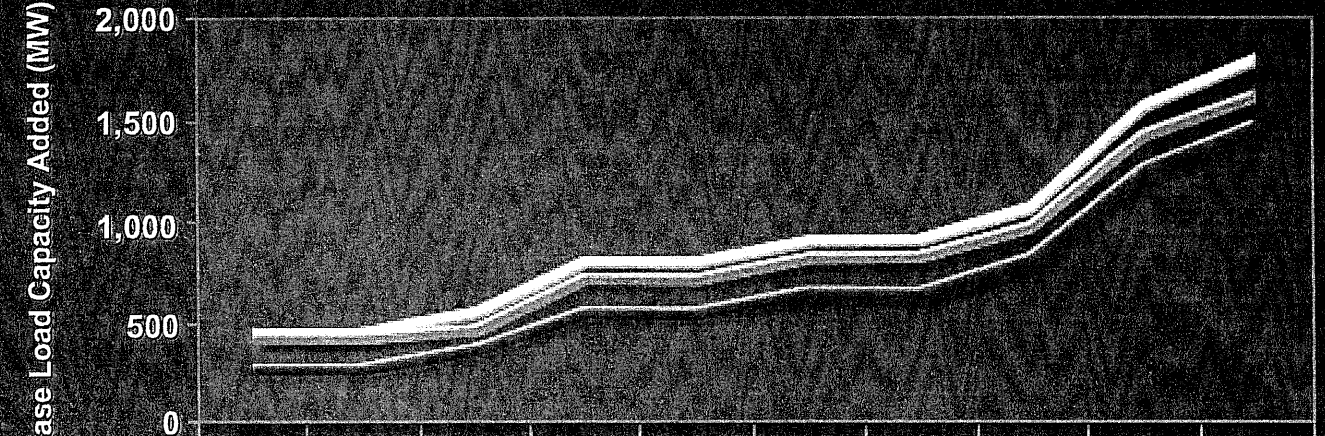
Too few resources	• Lower fixed costs • Risk of possible supply shortfalls • Risk of high market prices
Too many resources	• Higher fixed costs • Risk of possible excess supply • Risk of low market prices
Just right resources	• Balanced cost and risk

Possible Portfolio Planning Levels

	Energy		***Capacity*** Firm resources sufficient to:
	Resource sufficiency	Timeframe	
Planning Level A	100% of customer needs	Averaged across Nov-Feb	Maintain capacity deficit at same level as winter '02-'03
Planning Level B	100% of customer needs	Based on highest month	Serve expected (1 in 2) peak winter hour customer needs, plus generation reserves
Planning Level C	110% of resource deficiency	Based on highest month	Serve extreme (1 in 20) peak winter hour customer needs, plus generation reserves

Portfolio Planning Levels Affect New Energy Resource Needs

Average Cumulative Base Load (Energy) Additions 2004-2013



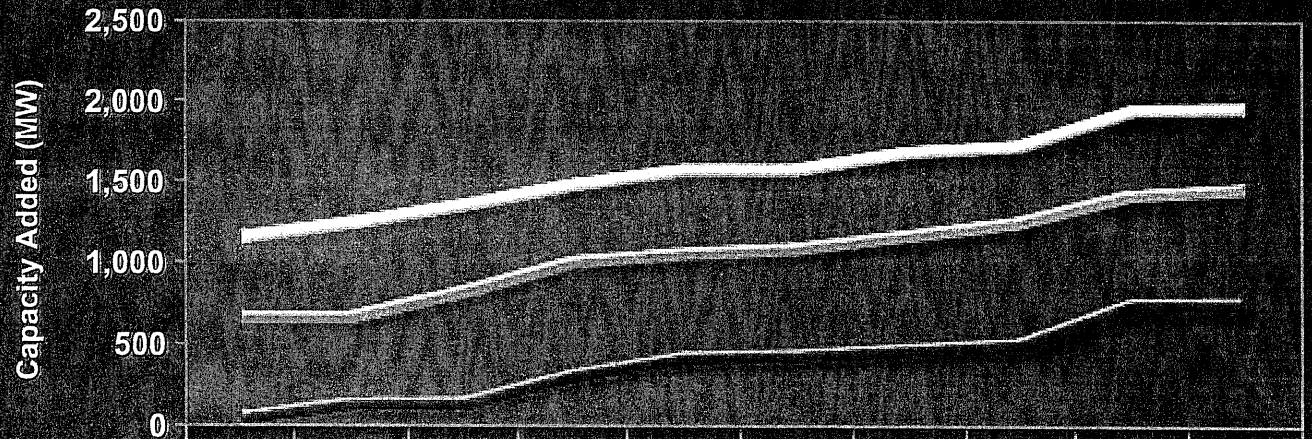
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Level C	450	450	550	800	800	900	900	1,075	1,575	1,800
Level B	425	425	475	725	725	825	825	975	1,425	1,625
Level A	275	275	375	550	550	650	650	825	1,275	1,475

Year

PSE

Portfolio Planning Levels Affect New Capacity Resource Needs

Average Cumulative Capacity Additions (2004-2013)



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Level C	1,161	1,261	1,361	1,481	1,581	1,581	1,681	1,745	1,953	1,967
Level B	661	661	811	995	1,070	1,086	1,161	1,257	1,417	1,444
Level A	37	137	151	324	424	438	488	511	747	774

Year

PSE

Analyzing the Candidate Portfolios

An economic dispatch model used to evaluate the overall performance of each candidate portfolio in terms of its:

- Expected ***cost*** to customers
  - 10-year and 20-year net present value
  - Excluding fixed costs of existing resources
- Variability in cost due to ***risk*** factors:
  - Market prices for natural gas
  - Market prices for power supply
  - Hydroelectric generation
- ***Sensitivity*** to scenarios for:
  - Retail load
  - Carbon tax
  - Production tax credit for wind resources

Preliminary Findings

- Acquiring more resources to meet portfolio planning levels B and C increases expected cost without significantly reducing risk
- Adding seasonal transactions to "shape" the resource portfolios significantly reduces exposure to market risks
- Portfolios that defer long-term resource commitments have lower costs but higher risks
- Uncertainty about future market and regulatory outcomes for specific resource technologies points toward a diversified, flexible resource strategy

Market Exposure
Expected Cost
Stress Test

Table
Shaped

Data

Greenhouse Gas
Wind
Gas Prices

PSE

Five Primary Decision Criteria Have Guided Our Evaluation of Alternative Portfolios

Compatibility with Need

- Meet short and long term energy and capacity requirements
- Balance capacity and energy needs without risk of excess capacity
- Provide shaped resource to balance seasonality of load

Cost Minimization

- Provide lowest cost alternative to meet energy and capacity needs
- Balance potential future exposure to power sales risk

Risk Management

- Balance potential future exposure to power purchase risk
- Balance potential future exposure to power sales risk
- Reasonable exposure to counter party risk

Public Benefits

- Lower portfolio emission levels
- Contribute to regional energy adequacy
- Support renewable energy development objectives
- Promote energy efficiency (conservation and demand response)

Strategic and Financial

- Reasonable exposure to future environmental regulations
- Reasonable exposure to future state wholesale market restructuring trends
- Contribute to regional energy need
- Limits balance sheet impact of imputed debt from PPA contract

PSE

Applying Five Decision Criteria to Preliminary Results Is Leading Us in Some Early Directions

Criteria	*Early direction*
Cost minimization Risk management	• Portfolio levels B and C may not be warranted • A number of different portfolio mixes may have comparable costs
Compatibility with need Risk management	• Resource strategy will employ seasonal shaping component • Deferral strategy may lower forecasted costs but with greater volatility of outcomes
Compatibility with need Cost minimization Risk management Public benefits	• Portfolio diversity provides benefits outweighing any single technology portfolios

PSE

PUGET SOUND ENERGY

Thank you