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# **Review of Utility Resource Plans in the West**

## **Resource Strategies for a “Hybrid” Market**

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**Energy Analysis Department**



# **LBNL Research Project for CREPC: “Review of IRP in West”**

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- **Project Scope: Comparative analysis of recently filed IRP plans**
- **Objectives:**
  - **Review & analyze emerging issues**
    - ◆ Treatment of conventional & emerging resource options
    - ◆ Portfolio management & risk analysis
    - ◆ Regulatory & market conditions
    - ◆ Reserve adequacy criteria
  - **Summarize key drivers underlying resource choices**
  - **Create information tools for CREPC that can facilitate work on related projects (e.g. resource adequacy metrics, transmission and other infrastructure)**

# Today's Presentation

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- **Provide preliminary summary of current and projected utility capacity positions**
  - **Peak demand growth**
  - **Loss of resources**
  - **Standardized definitions employed to enable consistent comparisons**
- **Summarize resource strategies suggested by IRP Action Plans**
- **Highlight the role of Demand Response resources in meeting projected capacity deficiencies**

# Project Status

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- **Plans reviewed to date**

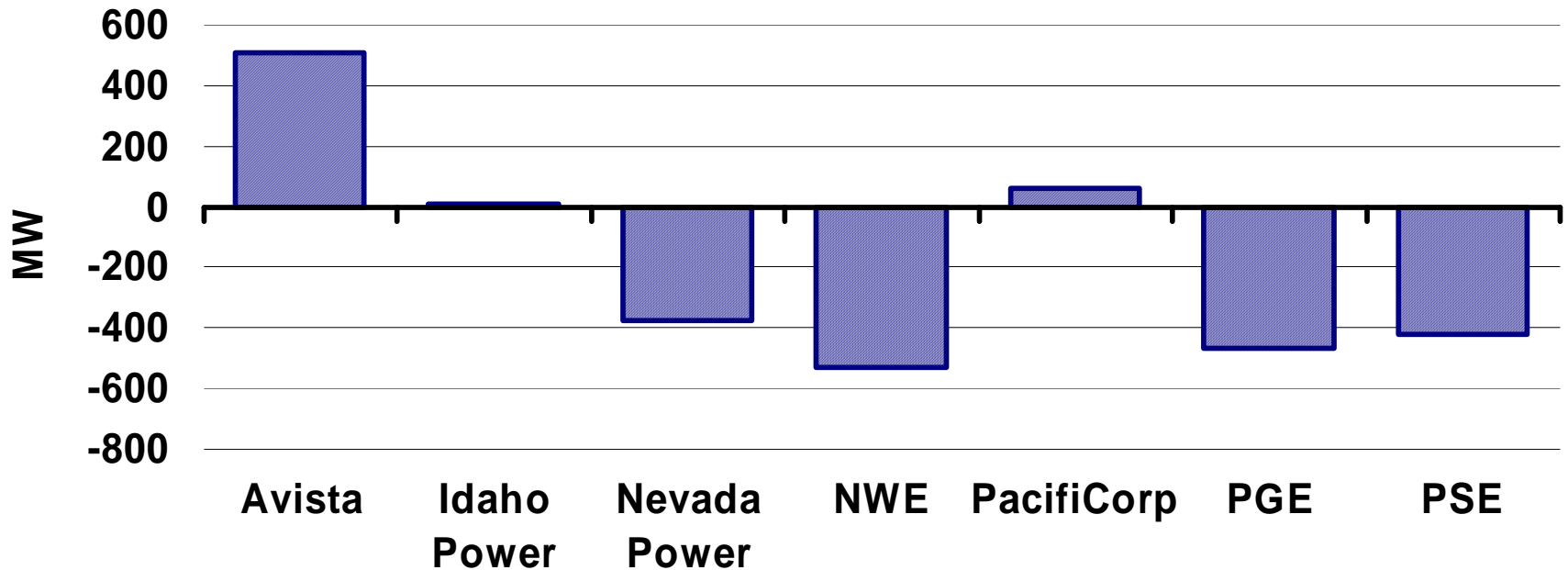
- Avista - 2003 Integrated Resource Plan
- Idaho Power - 2002 Integrated Resource Plan
- Nevada Power - 2003 Integrated Resource Plan
- NorthWestern Energy - 2004 Electric Default Supply Resource Planning and Procurement Plan
- PacifiCorp - 2003 Integrated Resource Plan
- Portland General Electric - 2002 Integrated Resource Plan, 2003 Update, and 2004 Action Plan
- Puget Sound Energy - 2003 Least Cost Plan and August 2003 Update

- **Future plans to review**

- BC Hydro - 2004 Integrated Resource Plan
- Idaho Power - 2004 Integrated Resource Plan
- Public Service Company of Colorado - 2004 Least Cost Plan
- Sierra Pacific Power - 2004 Integrated Resource Cost Plan
- California IOU Long Term Procurement Plans

# Current Capacity Position

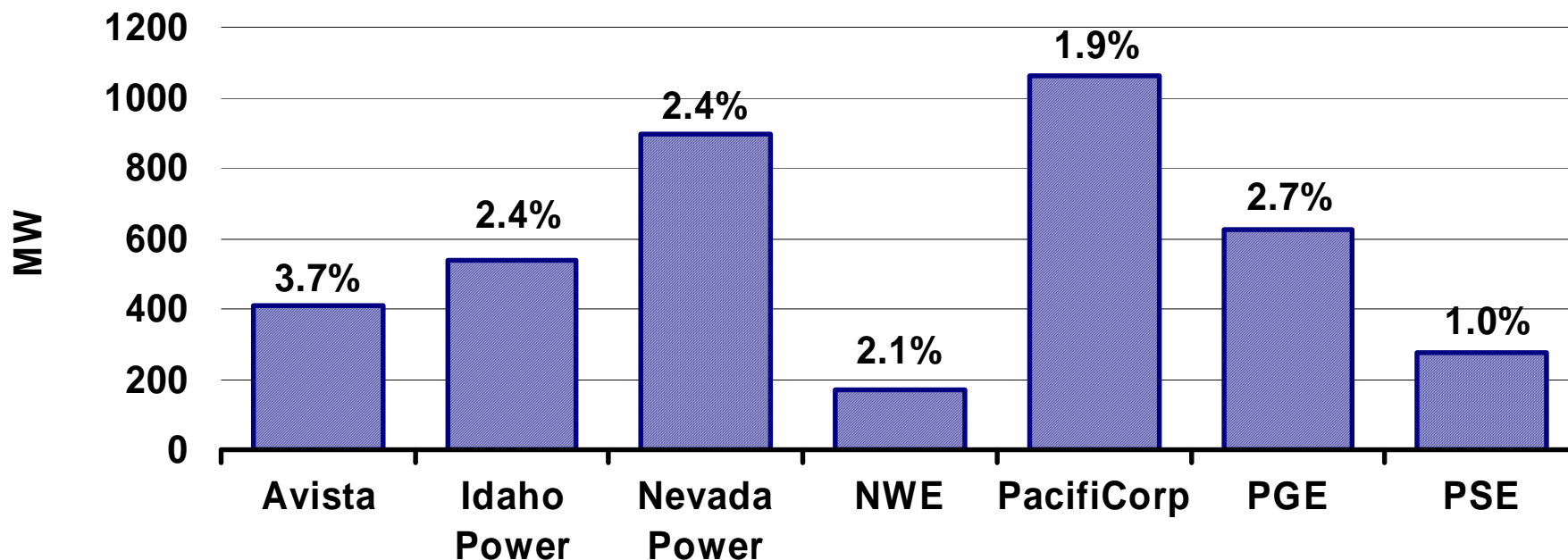
## Long/medium-term resources minus peak load



% of Peak:	36%	0%	-8%	-49%	1%	-13%	-9%
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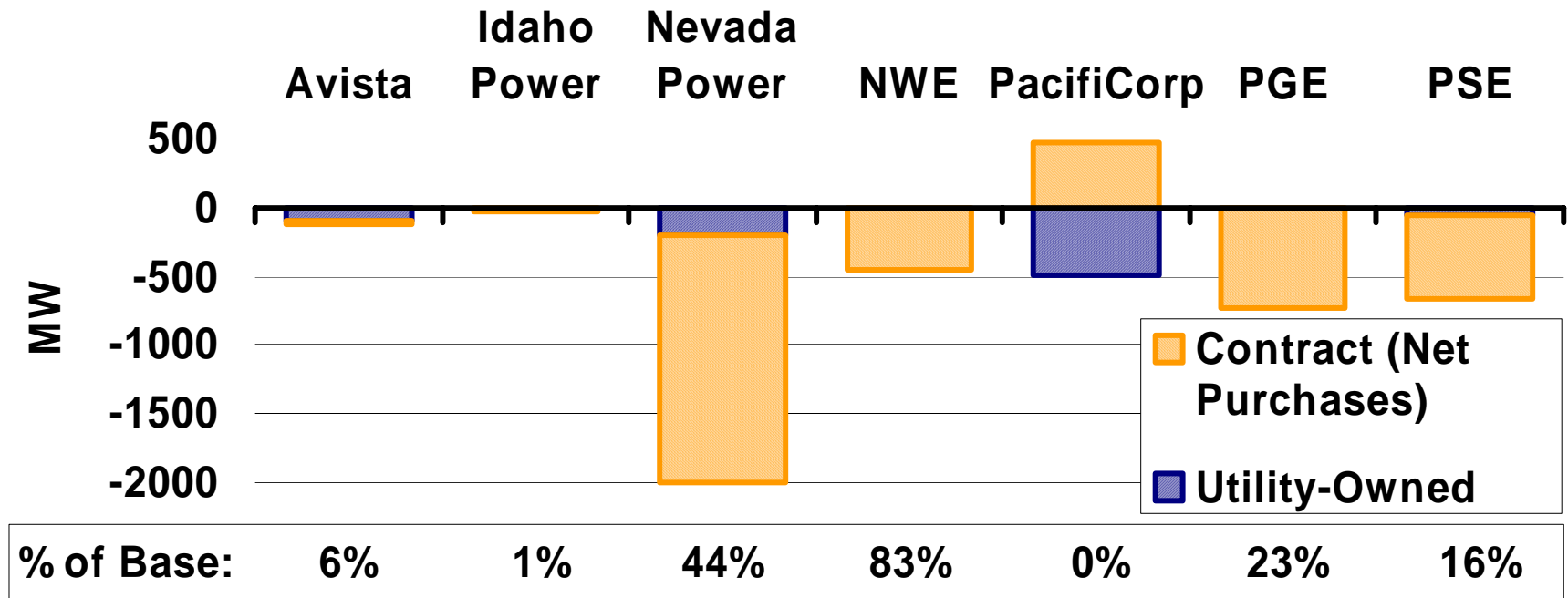
- Average weather conditions
- Operating reserves not included
- Short-term resources not included

# Projected Peak Demand Growth by 2010



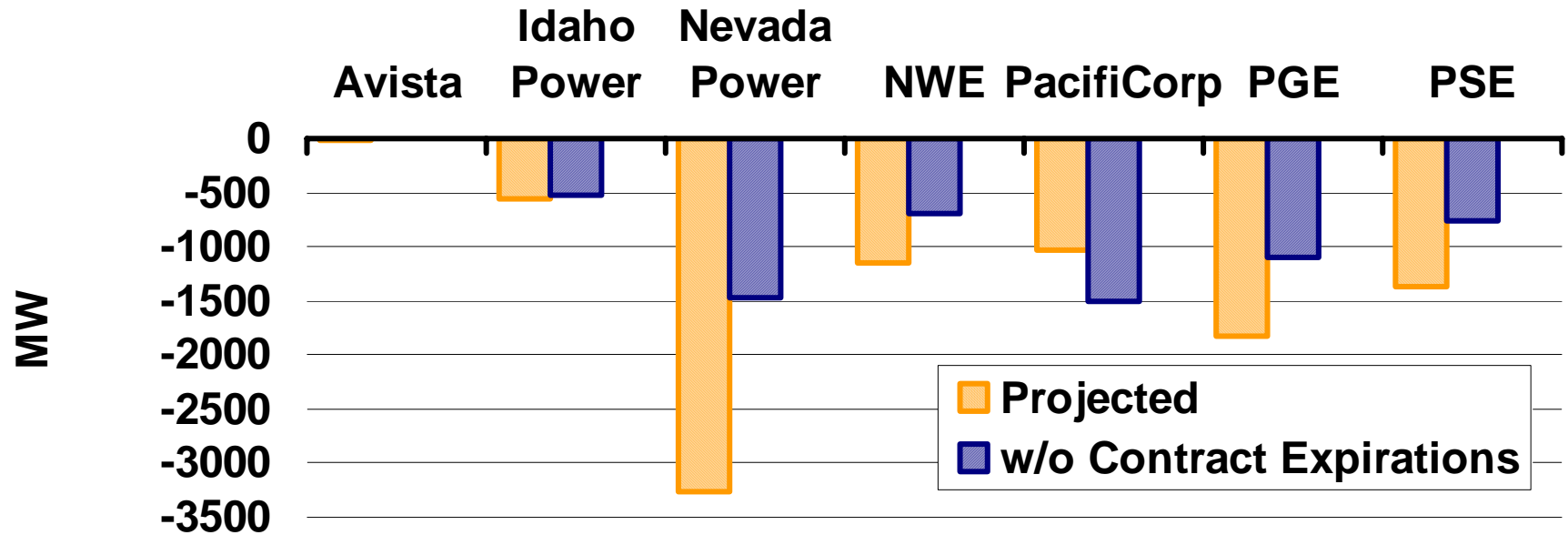
- Major issues/uncertainties:
  - Population growth (Idaho, Nevada)
  - National and regional economic trends/recovery
  - Load serving obligations and retail market development (Oregon, Montana, Nevada)

# Loss of Resources by 2010



- Majority of resource losses associated with contract expirations
  - PPAs, exchange contracts, BPA subscription benefits
- Several plant retirements
- Minimal loss of hydro capacity due to relicensing

# Capacity Deficit Projected in 2010

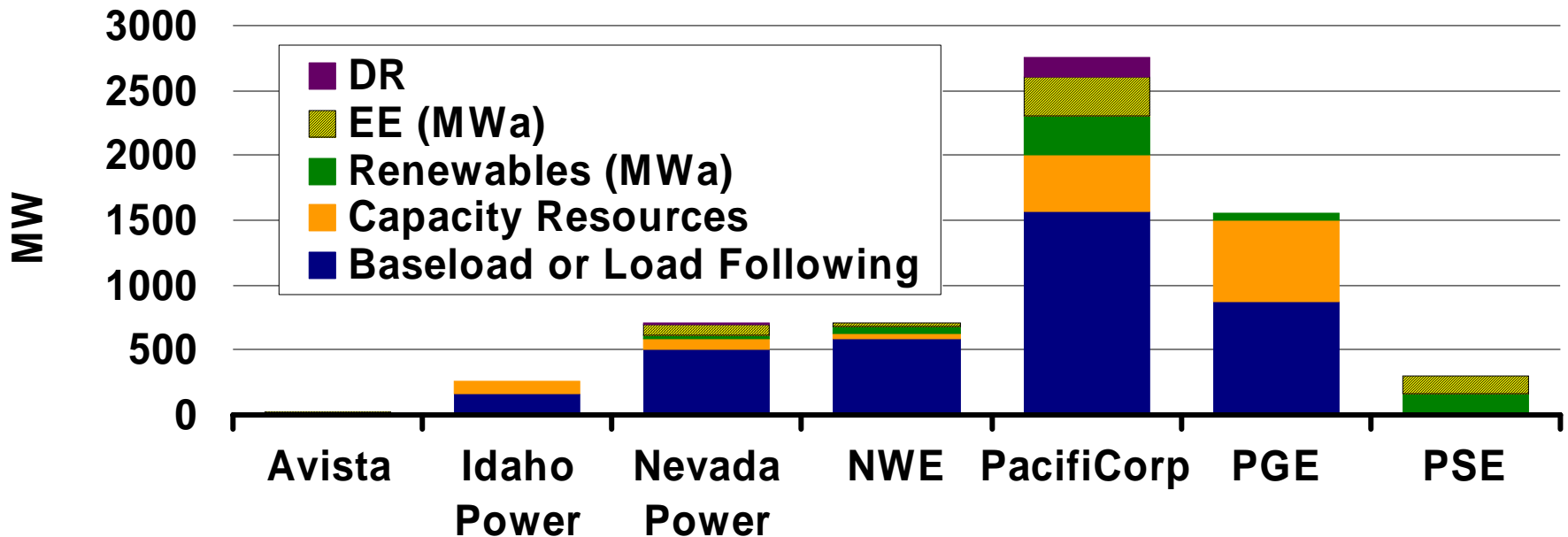


Capacity Deficit  
(% of Peak)

-1%   -16%   -57%   -93%   -10%   -43%   -29%

- Combination of current capacity position, load growth, retirements (few), and contract expirations
- Application of operating and/or planning reserves adds to these deficits

# New Resources Proposed by 2010



- Includes specific resource acquisitions proposed in IRP Action Plans, where quantities were explicitly identified (& not redacted)
- Driving factors
  - Load growth and contract expirations (and some retirements)
  - New planning margins
  - RPS and renewables policy goals

# Energy Efficiency Resource Acquisitions Through 2010

Utility	EE Activities	2010 Target (aMW)	% of Load Growth
Avista	New DSM resource acquisitions are based on a continuation of current funding levels.	29	10%
Idaho Power	No targets were established in 2002 Plan, but following approval of new conservation rider, efforts by EE Advisory Group have initiated several new programs.	-	-
Nevada Power	Continue existing programs, and evaluate additional programs proposed for study. IRP requests extension of current funding levels.	-	-
NorthWestern	IRP establishes a 10-yr DSM plan with targets for annual EE acquisitions and expenditures, including existing USB programs. Specific program activities will be determined through DSM planning efforts.	33	34%
PacifiCorp	Design and implement specific "base level" EE programs, and identify new programs for additional cost-effective acquisitions.	~300	~35%
PGE	None. (Energy Trust of Oregon administers programs).	-	-
PSE	EE acquisition targets based on the results of achievable potential study. Specific program activities will be determined through DSM planning efforts.	137	78%

# Demand Response Resource Acquisitions Through 2010

Utility	DR Activities	2010 Target (MW)	% of Peak Growth
Avista	Residential TOU discussed, but determined to be not economically viable at present.	-	-
Idaho Power	No DR programs identified in 2002 IRP, but a residential A/C direct load control program has subsequently been initiated.	-	-
Nevada Power	Continued expansion of A/C direct load control program. Additional projects proposed for study.	9	1%
NorthWestern	No DR resources in current plan, but intention to include DSM activities that encourage load shifting within future plans.	-	-
PacifiCorp	Introduce a new A/C direct load control program and an irrigation load control pilot, and potentially new interruptible/curtailment tariffs, pending results of further study.	154	14%
PGE	Existing residential TOU pilot will be expanded, and large customer RTP pilot will be offered, but capacity not explicitly valued. Dispatchable and fixed-term DR from large customers may be pursued. Residential DLC programs considered, but determined to be uneconomic.	-	-
PSE	A preliminary study of DR potential was conducted, examining a variety of program types; but no specific targets were established in the IRP.	-	-

# Next Steps

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- **Review remaining utility resource plans and associated filings**
- **Create information tools**
  - **spreadsheets and databases for comparative analysis, key technical inputs**
  - **integrate with other related CREPC projects**
- **Complete comparative analysis on identified emerging issues and topics**