
Review of Utility Resource Plans in the West

Resource Strategies for a “Hybrid” Market

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March 25, 2004

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

- **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)**

The Extent of IRP in the West

Percent of Retail Sales

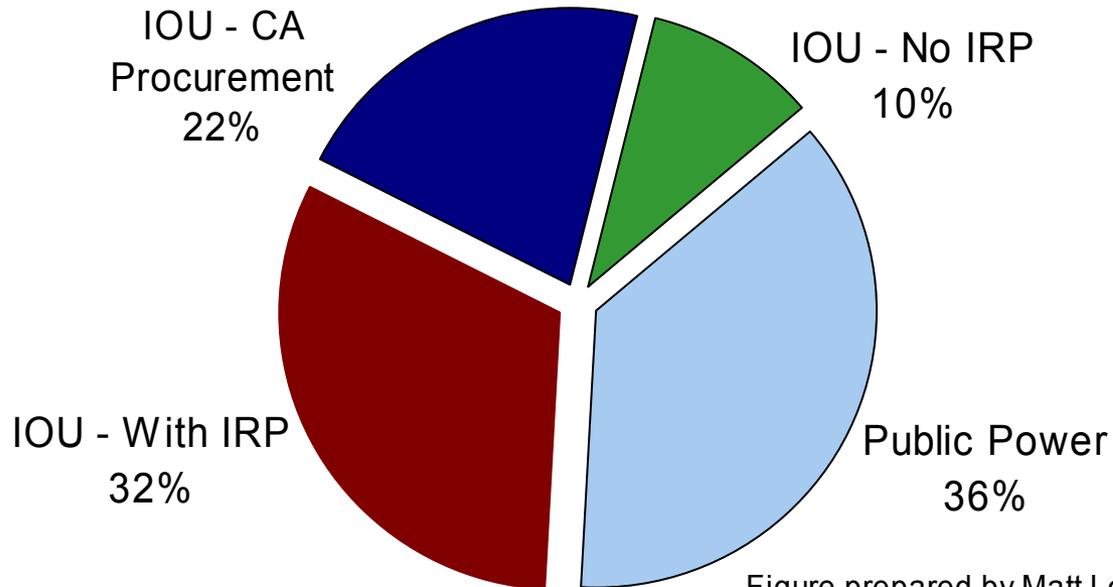


Figure prepared by Matt Lowry (WEIB)
Based on EIA Electric Sales and Revenue, 2002

Today's Presentation

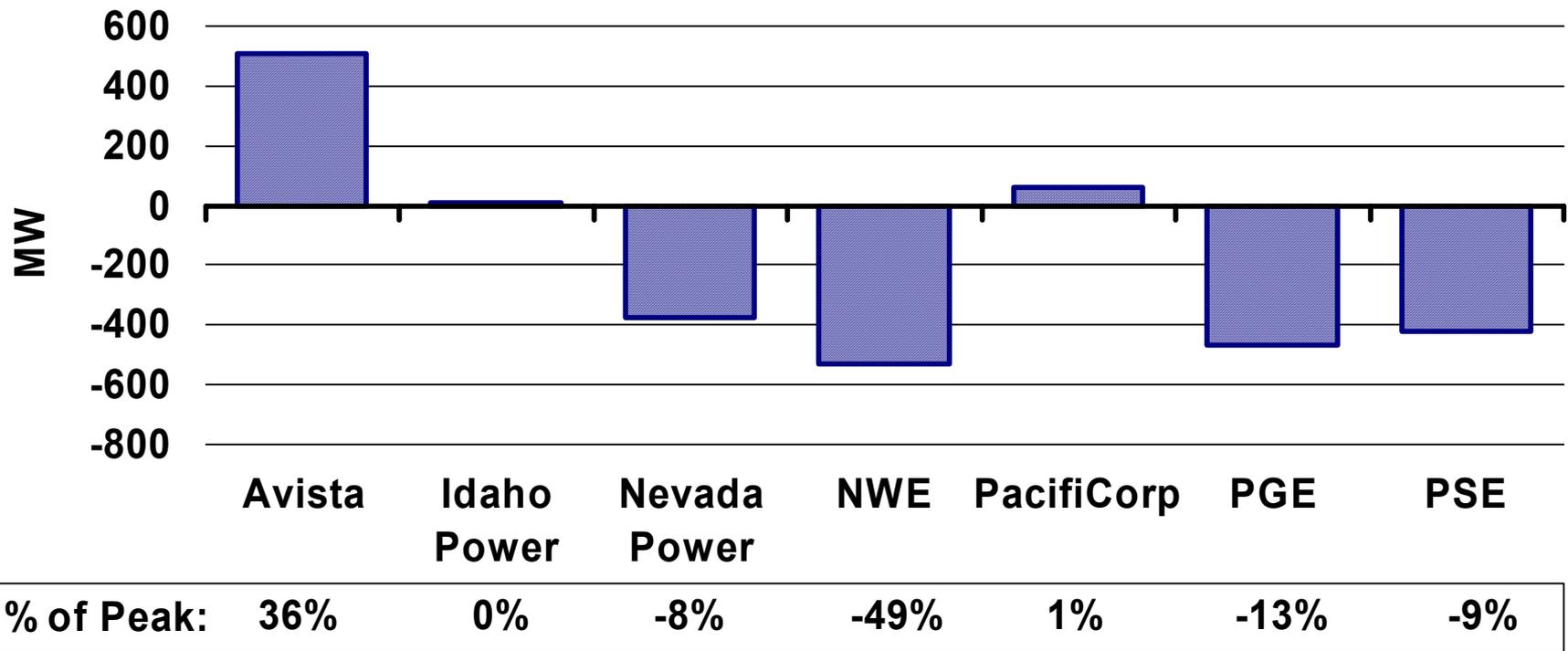
- **Provide preliminary summary of current and projected utility capacity positions for sub-set of IOUs with IRP**
 - Peak demand growth
 - Loss of resources
 - Standardized definitions employed to enable consistent comparisons
- **Summarize resource strategies suggested by IRP Action Plans**
- **Highlight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

Project Status

- **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 Plan
 - California IOU Long Term Procurement Plans

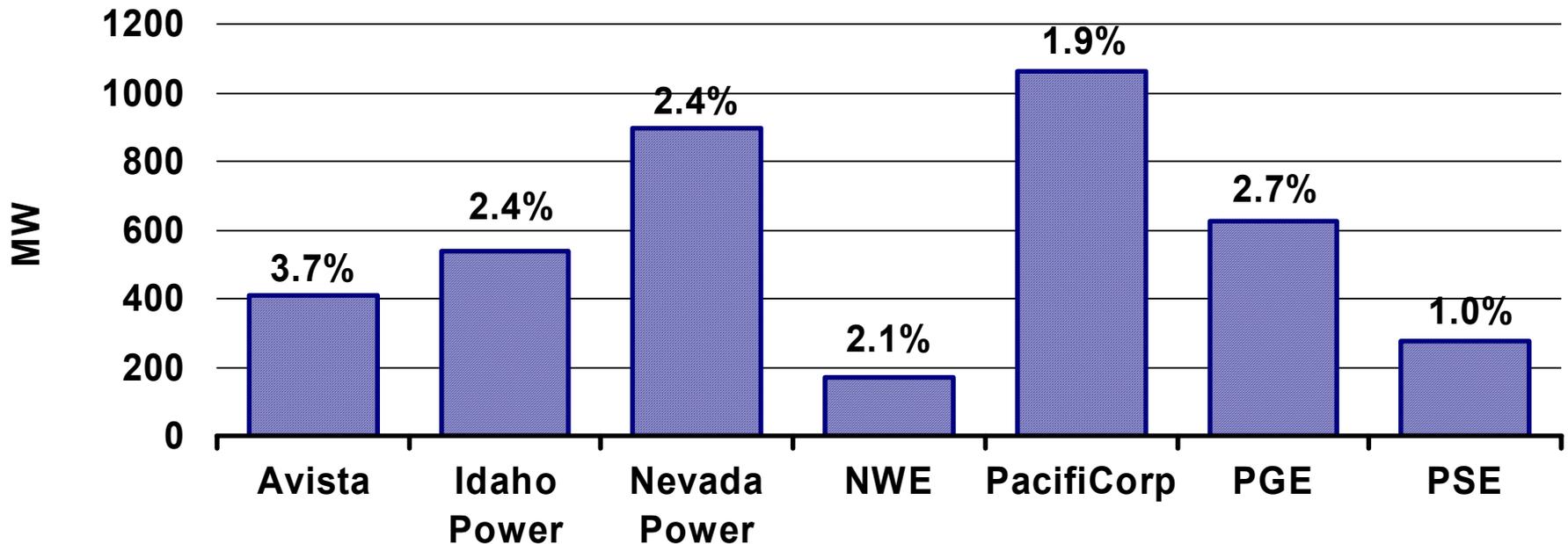
Current Capacity Position

Long/medium-term resources minus peak load



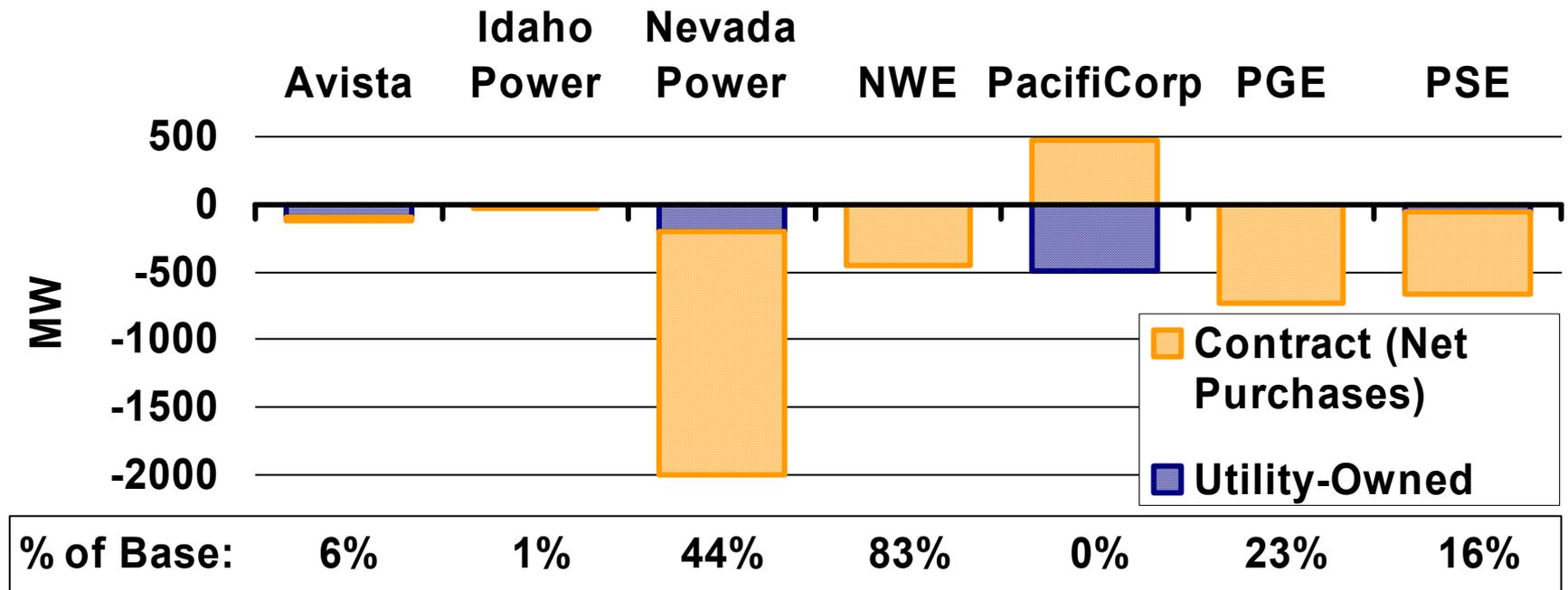
- Average weather conditions
- Operating reserves not included
- Short-term resources not included

Retail Peak Demand Growth by 2010



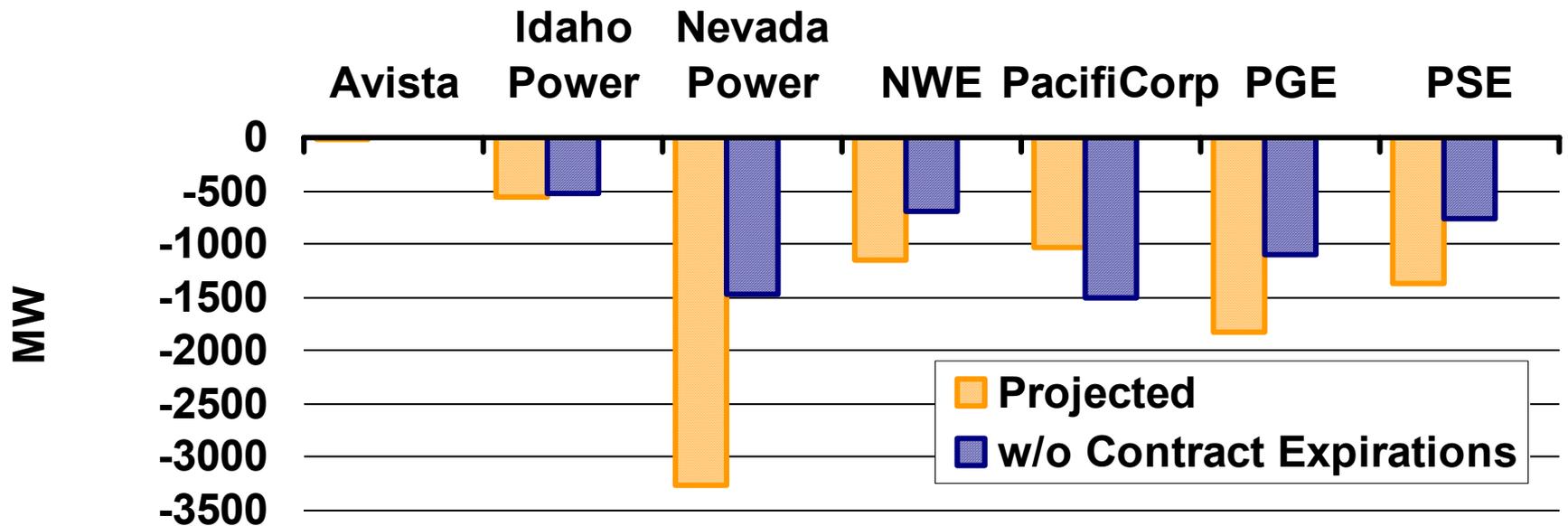
- Major issues/uncertainties:
 - Population growth (Idaho, Nevada)
 - National and regional economic trends/recovery
 - Load serving obligations and retail market development (Oregon, Montana, Nevada)

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



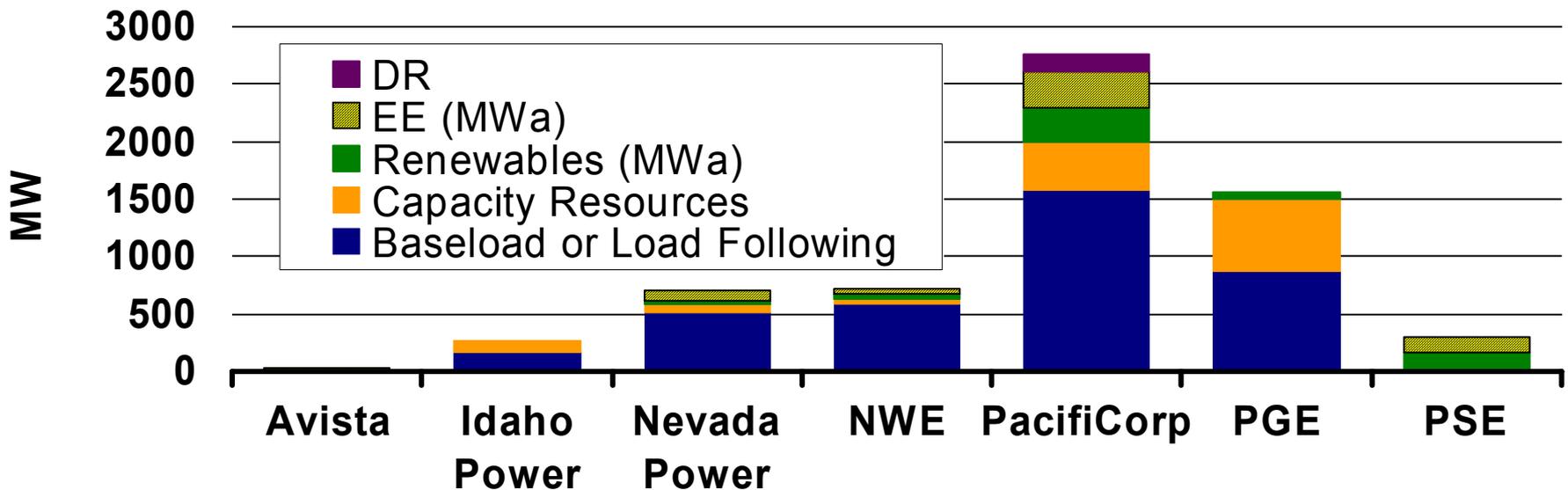
Capacity Deficit

(% of Peak)

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

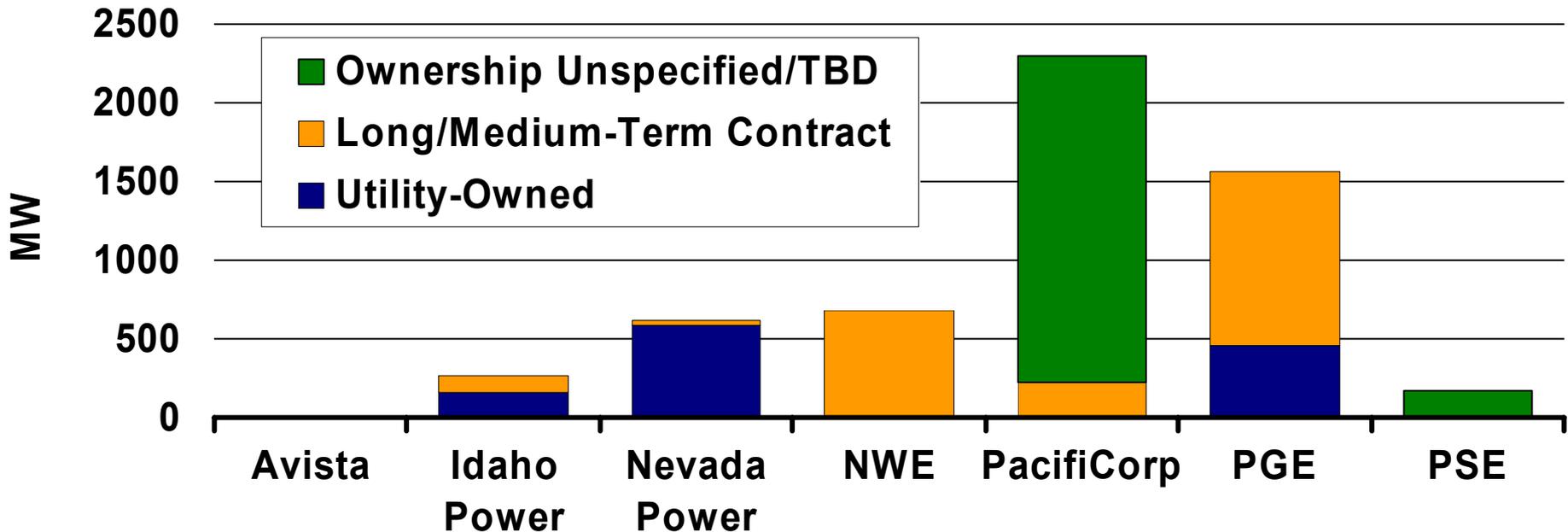
- Combination of current capacity position, load growth, retirements (few), and contract expirations
- Application of operating and/or planning reserves adds to these deficits

Proposed Resource Acquisitions 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
 - Resource diversification

Supply-Side Procurement Strategies



- Resource ownership specified in IRP or determined following RFP (PacifiCorp, PGE)
- Contract resources: PPAs, seasonal exchanges, tolling contracts, shaped products, etc.

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 (including 3 rd party programs)	~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, including C&I RTP.	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 indicated >200 MW cost-effective potential for winter peak clipping. No action items indicated in IRP.	-	-

Next Steps

- **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**