

Linking the Capacity Metric to Loss of Load Probability

Resource Adequacy Technical Committee

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Portland Airport Conference Center

Objective

- Design a capacity metric that is transparent and easy to calculate.
- Link the capacity metric to a more sophisticated analysis (e.g. LOLP).
- Calibrate the energy and capacity targets to assure that they yield the same level of resource adequacy.

Proposed Capacity Standard

- **Metric** – Surplus sustained-peaking capacity (%)
 - over the highest load period (for each month)
 - period duration is **TBA** hours
 - normal weather
 - max generation shaped to load
 - use critical hydro ('37 water)

- **Target** – **TBA** percent (i.e. reserve margin)

Regional Capacity Assessment

(L/R Bal = 2,500 aMW, LOLP = 0%)

January 2006	1-Hour	2-Hour	4-Hour	10-Hour
Hydro ('37)	26,850	21,131	20,541	18,686
Non-hydro	13,760	13,760	13,760	13,760
Uncommitted	0	0	0	0
Firm Imports	-1,218	-1,218	-1,218	-1,218
Spot Imports	0	0	0	0
Total Resource	39,392	33,673	33,083	31,228
Load (Avg)	25,633	25,506	24,847	22,691
Balance	13,759	8,168	8,236	8,537
Reserve	54%	32%	33%	38%
Load ('89)	34,533	34,361	33,470	30,555
Balance	4,859	-688	-387	673

Regional Capacity Assessment

(L/R Bal = -1,500 aMW, LOLP = 5%)

January 2006	1-Hour	2-Hour	4-Hour	10-Hour
Hydro ('37)	26,850	21,131	20,541	18,686
Non-hydro	9,760	9,760	9,760	9,760
Uncommitted	0	0	0	0
Firm Imports	-1,218	-1,218	-1,218	-1,218
Spot Imports	0	0	0	0
Total Resource	35,392	29,673	29,083	27,228
Load (Avg)	25,633	25,506	24,847	22,691
Balance	9,759	4,167	4,236	4,537
Reserve	38%	16%	17%	20%
Load ('89)	34,533	34,361	33,470	30,555
Balance	859	-4,688	-4,387	-3,327

Proposed Capacity Standard

(For January - Yields a 5% LOLP)

- **Metric** – Surplus sustained-peaking capacity (%)
 - over the highest load period (for each month)
 - period duration is **10** hours (over 5 days)
 - normal weather
 - max generation shaped to load
 - use critical hydro ('37 water)

- **Target** – **20** percent (i.e. reserve margin)

Action Items

- Assess the target reserve margin for all months
- Analyze sensitivity of target reserve margin to load
- What would the target be for an “economic” standard?