Resource Adequacy Advisory Committee

Coordinating Resource Analyses with California Entities

Steering Committee Meeting
December 6, 2013

Northwest Power and Conservation Council

Topics

- Goals for coordination
- Who to coordinate with
- Comparison of current adequacy analyses
- Next Steps

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Goals for Coordination

- Framework for systematic, sound analysis
- Open, transparent process
- Reliable data sources
- Identify and assess uncertainties
- Ongoing relationships and information exchange with entities in California

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Who to Coordinate With

- California Energy Commission
- California Public Utilities Commission
- California Independent System Operator
- Other California balancing authorities
- California utilities
- Western Electricity Coordinating Council
- Trade publications
- Consultants?

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Comparisons of Current Adequacy Assessments

- NERC Pilot Program
- WECC
  - Load and resource annual report
  - Compliance with NERC pilot program
- Council

NERC Pilot Program

- Stems from 2005 Energy Act
- Use probabilistic approach
- Standardize metric for measuring
- Does not set a threshold (standard)
- Proposed metrics
  1. Loss of load hours = expected number of hours of shortage per year (hours)
  2. Expected Unserved Energy = expected amount of unserved load (MW-hours)
  3. Normalized EUE

WECC

- Annual loads and resources report
  - Reports target and projected planning reserve margins (surplus peak hour capacity)
  - For 10 years, for both winter and summer
  - For various combinations of planned resources
  - Under normal and adverse weather
- Calculates LOLH and EUE for NERC

WECC L&R Report 2013 "No Problem"

Summer Normal Weather

Northwest US	Existing/Class 1	Target 17.5%	40.1%	36.5%	32.2%	29.2%	24.9%	22.2%	18.9%	17.6%	17.6%	17.6%
	Existing/Class 1/Class 2		44.5%	45.3%	45.2%	44.6%	42.6%	41.2%	37.6%	35.9%	34.7%	31.8%
	Existing/Class 1/Class 2/Class 3		44.9%	45.3%	45.2%	44.6%	43.5%	41.9%	38.4%	36.0%	34.7%	31.9%
	Existing/Class 1/Class 2/Class 3/Class 4		44.9%	45.3%	45.2%	44.6%	43.6%	43.7%	40.1%	37.7%	36.4%	33.6%

Winter Normal Weather

Northwest US	Existing/Class 1	Target 19.2%	33.5%	32.4%	30.5%	29.9%	29.3%	26.1%	23.7%	23.1%	21.4%	19.3%
	Existing/Class 1/Class 2		32.0%	34.4%	32.9%	33.4%	32.8%	30.6%	29.1%	27.8%	26.1%	23.9%
	Existing/Class 1/Class 2/Class 3		33.9%	34.5%	32.9%	33.4%	33.5%	31.4%	29.9%	28.2%	26.4%	24.3%
	Existing/Class 1/Class 2/Class 3/Class 4		34.0%	34.5%	32.9%	33.5%	33.6%	33.7%	32.2%	30.4%	28.7%	26.5%

Extreme Weather

Canada/Northwest US/ Northern California	Existing/Class 1/Class 2	Canada/Northwest US/Northern California 1-20 Demand - Other Subregions 1-10 (Winter)	Target 15.7%	34.2%	35.5%	36.0%	35.6%	35.2%	35.1%	33.9%	32.3%	30.9%	28.8%

WECC's Submittal to NERC "No Problem"

			2014	2016
EUE (MWh)			0.00	0.00
EUE (ppm)			0.00	0.00
LOLH (hours/year)			0.00	0.00

Council's 2017 Assessment

Metric	Value	Units
LOLP	6.6	Percent
LOLH	2.7	Hours
EUE	5000	MW-hours

Obvious disconnect between Council and WECC assessments!

Next Steps

- Set up framework for coordinated analyses
- Cross check load and resource data
- Review transmission assumptions
- Compare methodologies for both deterministic and probabilistic analyses