

RESOURCE ADEQUACY AND CAPACITY MARKETS PRINCIPLES

Drafted by the OMS Resource Adequacy Working Group

The OMS Resource Adequacy and Capacity Markets Principles recommend that the MISO, in determining region-wide resource adequacy requirements and designing a capacity market, will

1. Provide resource suppliers an opportunity to recover a portion of their investment costs, as part of an available revenue stream.
2. Design a capacity market that proactively moves toward a larger regional market while respecting existing reserve sharing agreements and neighboring systems' capacity market requirements while operating under the scrutiny of the MISO Independent Market Monitor;
3. Base reserve margin and capacity market requirements on three factors:
 - a. Unforced capacity,
 - b. Regional Reliability Organization (RRO) and existing State planning and operating reserve requirements,
 - c. Reserve obligations based on an aggregate of individual RRO assessments of loss-of-load expectation of one day in ten years;
4. Set planning horizon and commitment periods to be sufficiently forward looking to allow consideration of new capacity additions (of all fuel types and technologies) as resource options, while also providing mechanisms that allow the participation of demand response and load reduction;
5. Set planning and operating capacity reserve responsibilities in advance and allocate them fairly and equitably to all Load Serving Entities (LSEs) on a load-ratio basis;
6. Allow dispatchable demand response, verifiable load reduction and renewable resources to participate in the capacity market;
7. Allow LSEs to meet their capacity reserve responsibilities through such mechanism as
 - a. Self-supply,
 - b. Bilateral contracts with suppliers,
 - c..Spot market capacity offerings,

- d. Demand response or load reduction,
 - e. Forward capacity assessment and markets, or
 - f. A combination of all of the above.
8. Require capacity certification/accreditation/ratings test procedures and deliverability verification to certify a capacity resource that is being relied upon to meet MISO capacity requirements for a predetermined time period (seasonal, monthly);
9. Allow capacity transactions with generators internal and external to MISO by addressing the following:
- a. Certified capacity provided into the MISO market internally,
 - b. Capacity provided by a generator located in the MISO area to an external area under a reserve-sharing or other agreement,
 - c. Capacity provided by a generator located in the MISO area to an external area as a resource participant in the external area's capacity market,
 - d. Capacity provided into the MISO capacity market by a generator located outside the MISO area under a reserve-sharing or other agreement,
 - e. Capacity provided into the MISO capacity market by a generator located outside the MISO area as a resource participant in the MISO's capacity market, as well as
 - f. Issues of non-recallability either by MISO or by the operator of the external area.
10. Require an annual forward-looking report to include a long-term MISO load forecast and a supply plan for meeting capacity and reserve requirements with accredited and deliverable capacity;
11. Each entity responsible for serving MISO Load should be audited periodically to ensure that accredited and deliverable capacity sufficient to meet peak load plus the applicable reserve requirement was in place at all times during the previous period;
12. Assess an "obligation" payment for audited deficiencies in maintaining reserve requirements in an amount sufficient to deter risking future inadequate reserves.

OMS observations: Resource adequacy for electric suppliers means having enough generating capability to serve all load regardless of probable contingencies such as unforeseen outages or loads that turn out to be larger than expected. Some utilities

have accomplished resource adequacy through regional pooling of reserve generation, thus maintaining adequate reserves while minimizing costs to individual utilities. Utilities in most regions share two types of generating reserves, often referred to as operating reserves and planning reserves.

Operating reserves are derived from generators that are either spinning or able to come on line within a prescribed time. Requirements for operating reserves are set by Regional Reliability Organizations (RROs) at levels deemed necessary to prevent real-time imbalances between supply and demand.

Planning reserves are an additional margin of generating capability beyond what is immediately needed for operating reserves. Difficulties in forecasting load, unexpected generator outages and long lead times for new construction all contribute to the likelihood that electric supply shortages could occur. Planning reserves provide insurance against the risk of insufficient operating reserves, which could result in loss of load, unreliable electric service or, as a worse case, system collapse. Historically, RROs have performed studies to set planning reserve requirements at a level typically resulting in a loss of load probability of one day in ten years.

In addition to reliability of electric service, planning reserves are further necessary for price stability in energy and capacity markets. Electric supply can be considered inelastic over the short term because it can be difficult for markets to respond quickly to unexpected shortages. Absent adequate planning reserves, prolonged periods of volatile market prices are likely.

Planning reserve requirements help to encourage diversity among generation fuels. Shorter construction time, less capital investment and environmental factors have combined to make natural gas the fuel of choice in competitive electric markets. Natural gas prices are already reflecting the increased demand. Requirements for maintaining long-term planning reserve margins help dampen market fluctuations so that projects that might otherwise respond to supply urgency are more likely selected according to total lifetime costs.

Planning reserve requirements encourage capacity markets. Bilateral contracts for generating capacity occur naturally under minimum capacity requirements, regardless whether auctions or other market-structures are enacted. The resulting recovery of fixed generator costs through fixed capacity charges reduces financial risk for generators and enhances market price signals.

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