

Briefing on Renewable Integration – Operational Requirements

Mark Rothleder, Executive Director Market Analysis and Development

Board of Governors General Session July 12-13, 2012 Updates to the renewable integration analysis:

- Provided analysis and proposal in support of introducing flexibility requirements into CPUC resource adequacy program
- Replacing 3,100 MW of local resources reduces potential for system needs from 4,600 MW to 1,200 MW
- System needs may arise by 2018 depending on retirement of resources
- Potential for significant over generation conditions may be masked by assuming the rest of west can absorb California's over supply



Supply variability and uncertainty will increase while the flexible capability of the fleet decreases.





Large amounts of wind and solar resources will greatly increase ramping requirements.



California ISO

Introducing 3,100 MW of local resources reduces potential need for system resources from 4,600 MW to 1,200 MW in 2020.





Large quantity of net export observed in 2020 does not match historical pattern; may be masking over generation condition.



Next Steps

- Complete stochastic analysis to determine probability of flexibility shortage and potential needs
- Recommend a revised capacity and flexibility requirement to maintain reliability criteria
- Review potential causes for high levels of exports
- Review potential for over generation condition
- Evaluate alternatives to meet observed shortages

