Using ELCC to Calculate Net Qualifying Capacity and Effective Flexible Capacity for DR and Storage Resources

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More discussion of the core ELCC modeling assumptions is needed

- The ISO is committed to working with the CPUC staff and other parties to better understand the staff proposal and the modeling assumptions used

- The proposal and model would benefit from additional public vetting similar to the discussion of the E3, SCE, and ISO models in LTPP

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The proposal needs to clarify the treatment of variable energy resources in the ELCC methodology

- It is not clear how the proposed methodology considers the continued penetration of non-diverse VERs
  - More non-diverse VERs will decrease ELCC for a given resource each year (i.e. a resource could have a decreasing NQC over time)

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The same ELCC methodology used for calculated NQC may not be appropriate to calculate Effective Ramping Capability (ERC)

- The ELCC and Effective Ramping Capability (ERC) calculated based on the Loss of Load Expectation (LOLE) and Loss of Ramp Expectation (LORE) approaches are sensitive to:
  - System conditions
  - Ramping shortages may not occur at peak load
  - Penetration of variable energy resources
- The model appears to only consider hourly static load
  - Does not recognize five-minute to five-minute load-following needs

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Lack of ramping expectancy may not be able to accurately calculate the ERC for DR or storage

- Calculating a lack of ramping expectancy (LORE) depends on an event in which ramping needs cannot be met
  - If there is no such event with DR or storage removed, the EFC cannot be determined
  - If there is no such event with DR or storage included and there are such events with DR removed, it could greatly understate the EFC of DR resources.
  - Likelihood of an event decreased due to assumption of hourly load
- How will the "bundling" principle for flexible and generic capacity apply to DR and storage NQC and EFC?

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It is unclear how the model addresses the use-limitations of DR resources

- Model runs single day Monte Carlo simulation using various weather patterns
  - It is not clear that monthly and/or annual DR use limitations are considered
- Treatment of various operating states for DR and storage requires additional clarification
  - Outage rates and operational parameters
  - Correlation with load
    - i.e. weekday/weekend differences
    - Performance levels

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Implementing some aspects of the proposal would require stakeholder initiatives at the ISO

- While the ISO may host a stakeholder process to address these issues in the near future, ISO does not currently have a market functionality for
  - Aggregation of DR across an LSE
    - The ISO is currently able to aggregate by sub-LAP by LSE.
    - All DR must be identified by sub-lap and LSE, can't have multiple LSEs in single PDR resource
  - Aggregation of storage resources across an LSE
  - Aggregation of storage and DR resources

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