Allocation of Flexible Capacity Requirements

Flexible Resource Adequacy Criteria and Must-Offer Obligation

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Summary

- **PG&E seeks efficient and reasonable markets. Causation principles should apply.**
- **PG&E's adjustments to the allocation of the Flexible Capacity Requirement may better promote causation and limit free-ridership versus CAISO proposal.**

- **Point 1: Requirements driven by VERs[1] should be allocated such that:**
  - **VER SC receives the allocation.**
  - **Allocations can flow to CAISO-member LSE *if* VER is contracted with one (and contracts allow).**
- **Point 2: Requirements driven by load[2] should be allocated such that:**
  - **Calculate each LSE's largest three-hour ramp, regardless of time-of-day.**

1. FRAC-MOO terminology is labeled as Δ Wind, Δ Solar PV, Δ Solar Thermal
2. FRAC-MOO terminology is "Δ Load"

Point 1: Allocation to Variable Energy Resources (VERs)

- **Contribution to Flexible Capacity Requirement**

  = Δ Load - Δ Wind - Δ Solar PV - Δ Solar Thermal

- **Allocation for Δ VERs**
  - **Current: entire contribution is attributed to LSEs' load**
  - **Alternative:**
    - **VERs receive obligation at SC level.**
    - **VERs contracted to CAISO-member LSEs pass their requirement to contracted SC for the resource**

- **For vast majority of VERs, the LSE is the SC on the contract, so LRAs/LSEs retain the allocation**
  - **Backstop procurement on behalf of non-contracted VERs may mitigate VER-procurement difficulties**

Assessment

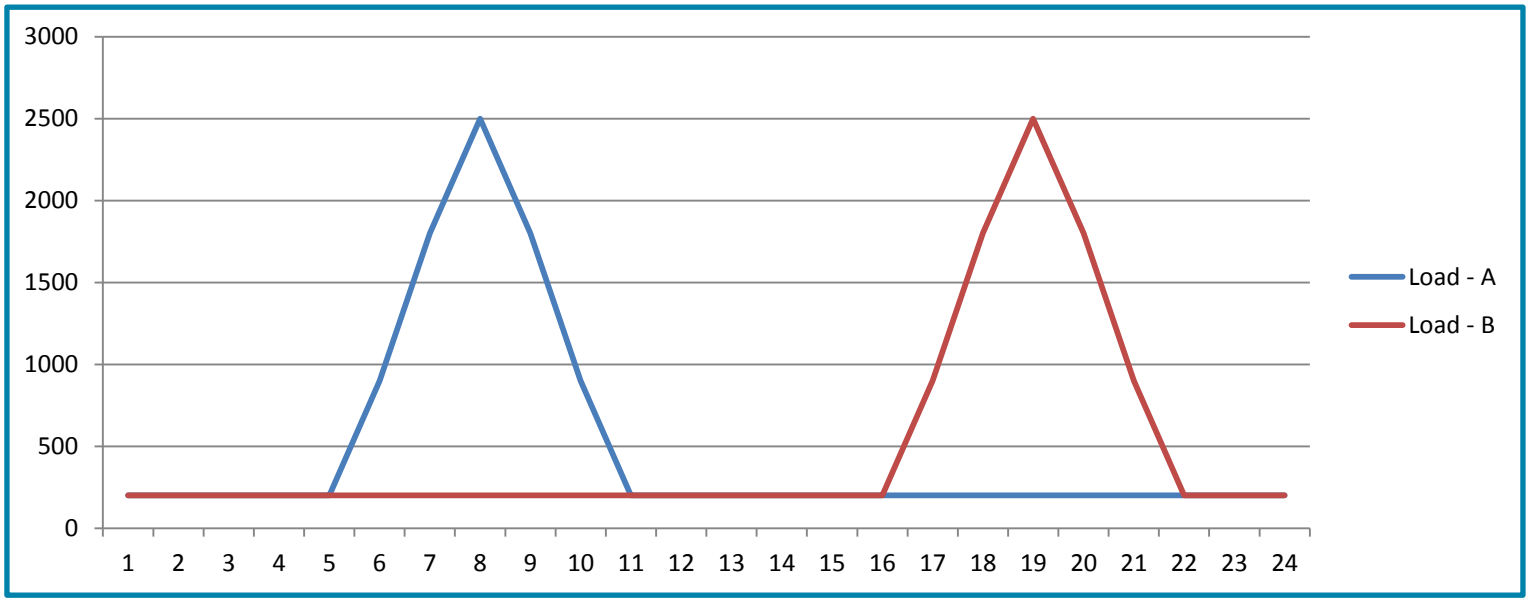
Take-Away:
PG&E's approach fits well with key market efficiency and fairness principles.

Assessment Criteria	3rd Revised Straw	4th Revised Straw :	PG&E's Proposal:
Allocation Based on Causation	No allocation to VERs at SC-level	No allocation to VERs at SC-level	SCs of resources who drives requirements gets a share of allocation
Free Ridership	Non-CAISO contracted VERS have their load firmed and shaped by CAISO LSEs	Non-CAISO contracted VERS have their load firmed and shaped by CAISO LSEs	No, non-CAISO contracted VERs receive allocation
FERC Precedence *(Optional)*	Not Assessed	Not Assessed	FERC Precedence applies[3]

3. Order Granting Rehearing In Part, Westar Balancing Area Services Agreement and Schedule 3A, Generator Regulation and Frequency Response Service, November 17, 2011.

Question

Which load should be allocated the requirement for flexibility?



Point 2: Allocation to Load

Take-Away:
Both methodologies focus on coincidence of ramp with peak.

- **Contribution = Δ Load - Δ Wind - Δ Solar PV - Δ Solar Thermal**
- **Allocation as proposed by CAISO:**

3rd Revised Straw:	4th Revised Straw:
Δ Load: *"LSE's **% of average load change during the daily coincident maximum 3-hour load ramps** * total change in CAISO load"*	Δ Load: *"LSE's **average contribution to load change during top five daily max. 3-hour net-load ramps within a given month** from the previous year * total change in CAISO load"*

(Emphasis added.)

PG&E Alternative

Take-Away:
Loads that drive ramping needs, even if off-peak, receive an allocation under this approach.

- **Key Considerations:**
  - Causation-based Allocation
  - Mitigate Free-Ridership
  - FERC Precedence *(optional)*
- **Key difference: non-coincident ramps matter too**

PG&E's Allocation Alternative:
Δ Load: *[(LSE's **monthly max. 3-hour load ramp**)/(**sum of all LSEs' monthly 3-hour ramps**)] * total change in CAISO load*

Assessment

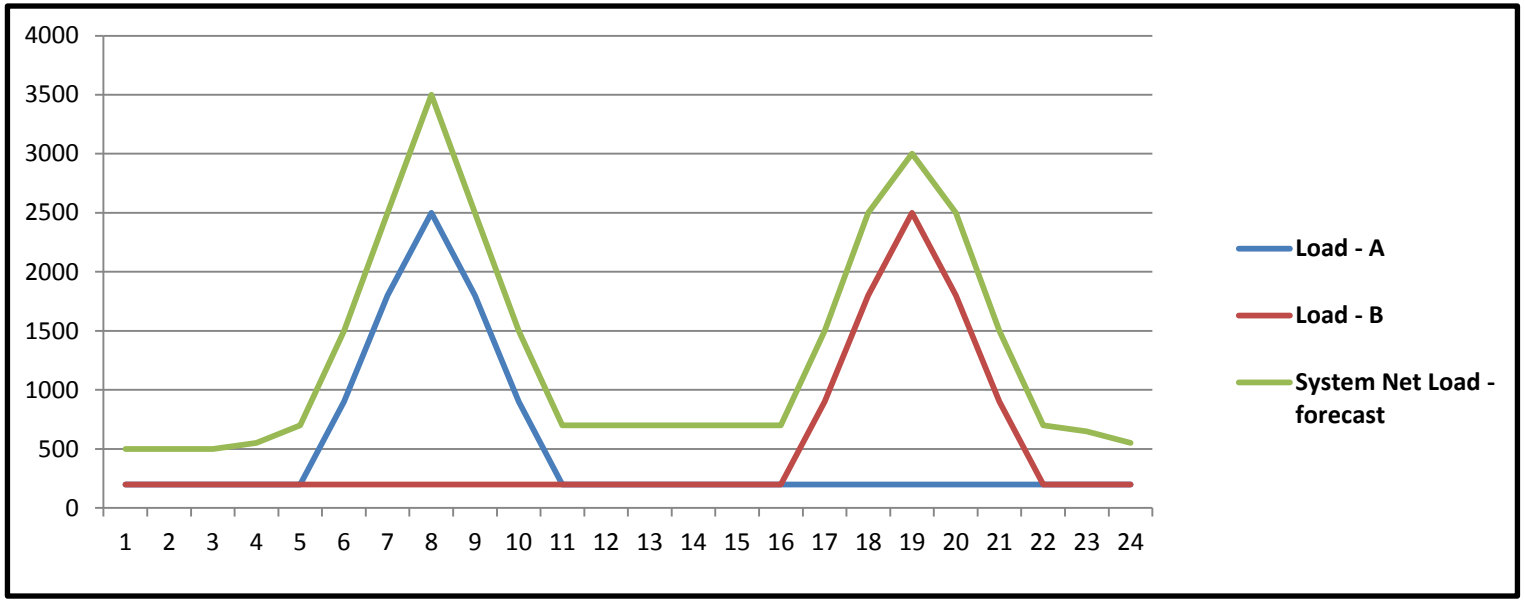
Take-Away:
PG&E's approach better fits with key assessment criteria.

	3rd Revised Straw :	4th Revised Straw:	PG&E's Proposal:
Allocation Based on Causation	More closely linked to causation than previous versions	May be more closely linked to causation than previous versions	Parties have incentives to lower max ramping needs
Free Ridership	Enables free-ridership	Potential for free-ridership; further evaluation required	Even if off peak, still get an allocation
FERC Precedence *(Optional)*	Not Assessed	Not Assessed	FERC Precedence applies[4]

4. FERC Transmission Planning and Cost Allocation by Transmission Owning Utilities, Notice of Proposed Rulemaking, Issued June 17, 2010, Docket RM10-23-000.

Example

Take-Away:
4th Revised Straw approach will allocate all Load-based flex Capacity Obligations to A, even if it has equal ramp with B.



Thank You

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Appendix

Example – Allocation reflecting proposed treatment of Δ Load:

	LSE's maximum 3-hour load change in month	LSE's share of total LSE load ramps in month	System's load ramp coincident with system's maximum 3-hour net-load ramp in month	LSE's monthly allocation of load for flexible requirement
LSE 1	2,000 MW (Day 2, HE 14-HE17)	2,000 MW/8,000 MW = 25%	5,000 MW	25% * 5,000 MW = 1,250 MW
LSE 2	3,000 MW (Day 6, HE 15-HE18)	3,000 MW/8,000 MW = 37.5%		37.5% * 5,000 MW = 1,875 MW
LSE 3	1,000 MW (Day 15, HE 14-HE17)	1,000 MW/8,000 MW =12.5%		12.5% * 5,000 MW = 625 MW
LSE 4	2,000 MW (Day 30, HE 14-HE17)	2,000 MW/8,000 MW = 25%		25% * 5,000 MW = 1,250 MW
Total	8,000 MW			