

Why I Hate POSO

- ◆ In 2013/2014 CAISO changed definition of Planned vs Forced outage from T-3 to T-7 days.
 - Outages submitted 8 or more days prior to start of outage are planned outages and 7 or fewer days are forced outages
 - Distinction is not the same for GADS and therefore part of reason as to why CAISO sees why more forced outages compared to GADS
- ◆ In 2021, all planned outages must include substitute capacity otherwise they are denied
- ◆ CAISO runs RA Substitute Capacity process daily at 8AM and requires SCs to submit substitute capacity within 24 hours
- ◆ If substitution requests for third party SCs are not approved within 24 hours, the outage is denied and outage must be resubmitted again

A Game of Tetris



- ◆ Not all planned outages are for all days of the month
- ◆ Substitute capacity is procured on the bilateral market and parties seeking it compete with LSEs seeking the same capacity for their compliance showings
- ◆ Non-RA capacity primarily sold for entire month because the seller does not distinguish buyer's intent
- ◆ Planning for outages starts during summer the year before
 - Contractual obligations to notify buyers of planned outages during next year
 - Scheduling crews and contractors based on availability

Unit	Rep Unit	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	29-Apr	30-Apr
Unit 1	Res 1-14	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	
Unit 1	Res 15-33	420	420	420	420	420	420	420	420	420	420	420	420	420	420	420	420	420													
Unit 2	Res20																		12	12	12										
Unit 2	Res23																		12	12	12										
Unit 2	Res25																				25	25	25	25	25	25	25	25	25	25	
Unit 2	Res26																				25	25	25	25	25	25	25	25	25	25	
Unit 2	Res33																		28	28	28										
Unit 3	Res20																					12	12	12	12	12	12	12	12	12	
Unit 3	Res23																					12	12	12	12	12	12	12	12	12	
Unit 3	Res24																		0	0	0	3	3	3	3	3	3	3	3	3	
Unit 3	Res25																		48	48	48	21	21	21	21	21	21	21	21	21	
Unit 4	Res15																		15	15	15	15	15	15	15	15	15	15	15	15	
Unit 4	Res16																		14	14	14	14	14	14	14	14	14	14	14	14	
Unit 4	Res17																		12	12	12	12	12	12	12	12	12	12	12	12	
Unit 4	Res18																		9	9	9	9	9	9	9	9	9	9	9	9	
Unit 4	Res19																		11	11	11	11	11	11	11	11	11	11	11	11	
Unit 4	Res24																		2	2	2	2	2	2	2	2	2	2	2	2	
Unit 4	Res33																		35	35	35	35	35	35	35	35	35	35	35	35	
Unit 5	Res26																		25	25	25										
Unit 5	Res33																		25	25	25	50	50	50	50	50	50	50	50	50	
Unit 6	Res33																		45	45	45	45	45	45	45	45	45	45	45	45	
Unit 7	Res31																					12	12	12							
Unit 7	Res32																					28	28	28	28	28	20	20			



- ◆ Bilateral markets are not efficient ways to procure substitution capacity
 - Bilateral market is similar to buying a car, good for long term PPAs, not good for 8-day outages
 - Substitute capacity is more granular than RA capacity for compliance
 - Less liquid market for daily substitution RA far in advance which means supply community procuring full month capacity and then effectively holding onto daily surplus
 - Executing contracts take days/weeks hours
- ◆ 24-hour time limit creates approval challenges
 - Hope that all third party SCs are checking emails
 - RASC runs on weekends
 - Unable to submit substitutions well in advance of RASC and lock them in
- ◆ CIRA problems
 - RASC doesn't always run correctly
- ◆ Outage plans change and procured substitution capacity is wasted
 - i.e. recent gas curtailment notices outside of supply community control

Make POSO Better

- ◆ Return to previous standards of first come first served? No, past that point.
- ◆ Focus efforts on improving efficiency of the marketplace and process

Suggestion 1

- Allow SCs to submit outages and substitutions well in advance and allow for up until T-8 to deny outage if not enough substitution provided
- **Benefits**
 - CAISO gets planned outage data well in advance
 - Allows SCs and supply community to lock in substitutions early and continue to work on additional needs
- **Implementation Questions**
 - Resource not yet RA for x months out

Suggestion 2

- Change the existing compliance program into a single year-ahead showing and then the month ahead process is only between suppliers and CAISO
- **Benefits**
 - CAISO gets all shown RA capacity at YA process for its short term LOLE analysis
 - Allows LSEs to count resources not yet COD during YA process
- **Implementation Questions**
 - What if new resource is delayed?

Suggestion 3

- Build a centralized market just for substitution capacity on a daily basis
- **Benefits**
 - Supported by CPUC staff in the past
 - Can replace RAAIM
- **Implementation Questions**
 - Self-procured substitution option?
 - How to incentivize bids for this market?
 - How does CAISO efficiently create a market to transact substitute capacity?
 - How far advanced is this?

Suggestion 4

- Include estimated planned outages into RA requirements and allow CAISO to approve/deny outages based on planned outage buffer.
- **Benefits**
 - Ensures reliable operations for the year
 - Can work in conjunction with UCAP
- **Implementation Questions**
 - How much capacity to procure as buffer?

Q&A