

Slice of Day Resource Counting & Penalty Process

RA Slice of Day Workshop

January 19, 2022

Agenda

- Slice of Day proposal (recap summary)
- CPUC showing and penalties
- Harmonizing CPUC and CAISO deficiency tests

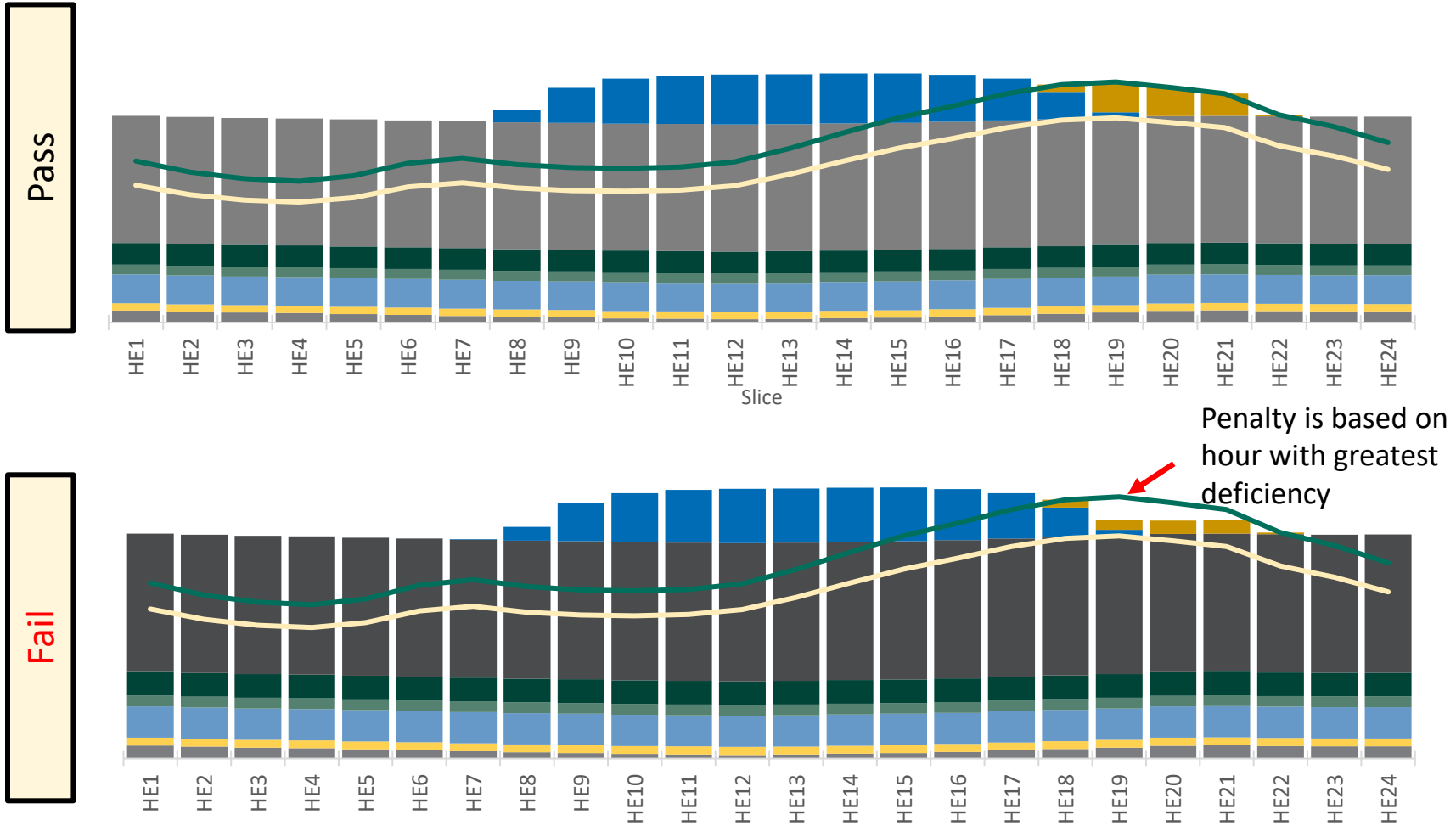
Summary of 24 Hourly Slices Framework

Component	SCE Proposal
Slice Definition	24 Hourly Slices
Showings	Single monthly using a standardized template (to be developed)—LSEs must meet their load + PRM in all 24 hours and show sufficient capacity to charge batteries to pass showing
Resource Counting	<p>Solar and wind will count based on their hourly profiles—<u>specific methodology</u> (e.g., exceedance, hourly ELCC, or other) to be determined in subsequent forum; must be fully deliverable</p> <p>Standalone batteries count based on their capacity and duration as shown by the LSE; Must demonstrate there is sufficient “excess capacity” in other hours for their dispatch (plus losses)</p> <p>Hybrid resources: Requires additional stakeholder discussion due to the unique and complex issues</p> <p>Use-limited resources count based on their capacity and available duration as shown by the LSE</p> <p>Other resources will have a single counting value (e.g., NQC)</p> <p>Contracted resources (e.g., 16-hour imports) must be shown in their available hours</p>
Load Forecast	Gross; specific level (e.g., 1-in-2, 1-in-5 weather year) to be determined in subsequent forum
Need Allocation	Bottoms-up; shaped based on LSEs’ historical load and adjusted by the CEC to ensure system demand is met in each hour on the monthly worst-day
Market Product	Resource attributes and capabilities are bundled (i.e., no unbundling of hourly slices) but resources can be split (e.g., 70% to LSE 1, 30% to LSE 2); SCE is not proposing load trading “swaps” but does not oppose others proposing it as a potential enhancement to SCE’s 24-hour framework
Energy Market Obligation	“Full capability/all-hour” must offer obligation (MOO)
Use-limitations	Use-limited 24-hour allocation; retain min 4-hour daily output availability requirement; eliminate flex requirements and MCC buckets
Penalties for Non-Compliance	Same principles as today: CPUC penalty for failing showing; CAISO first allocates backstop costs to LSEs who fail their showing and remaining costs (if any) are allocated to all LSEs

Penalty Process for Failed CPUC Showings

- Use the current penalty framework when an LSE fails showing
- Single monthly showing for all 24-hours
- An LSE “fails” the CPUC showing if they fail to meet their requirement in ANY of the 24-hours
 - If an LSE fails in multiple hours, penalty is based on the largest failure
- In addition to potential CPUC penalties, LSEs failing the CPUC showing should be the “first in line” to receive CAISO backstop costs resulting from showing deficiencies
 - Since LSEs decide what hours to show flexible (use-limited) resources, the actual hour of failure isn’t as relevant as the fact they failed the showing

Pass vs. Fail



CAISO Penalty Process: Example

- LSE1 fails its CPUC showing by 5MW in Hour 19
 - LSE1 is subject to CPUC penalties
- CAISO determines there is a showing deficiency and backstops 100MW
 - LSE1 should be first in line to receive $5/100\text{MW} = 5\%$ of the CAISO backstop costs (in addition to CPUC penalties)
 - The remaining 95% should be spread to other LSEs that failed their showings
- If the CAISO backstops for reasons other than a deficiency, cost allocation should continue as today
 - i.e., Local costs stay local, system costs spread to all LSEs

CPUC and CAISO Deficiency Tests must Harmonize

- The CAISO currently utilizes “NQC” base values when checking showings for a deficiency
 - E.g., a single NQC value is assumed for solar
- Under a 24-slice framework an Hourly Profile will be used for wind and solar (not NQC) for the CPUC showings
- The Hourly Profile may be significantly different from NQC depending on the hour considered
 - Example, consider a 100MW solar facility with a current NQC of 15 MW
 - However, assume the Hourly Profile for HE18 is 41MW
 - If the CAISO decides to test HE18 for deficiencies, they must count this solar based on its Hourly Profile value of 41MW, not the NQC of 15MW
 - Otherwise the CAISO may incorrectly conclude there is a $41\text{MW} - 15\text{MW} = 26\text{MW}$ deficiency
- For consistency, the CAISO will need to agree to use the CPUC Hourly Profiles in their deficiency tests

Illustrative Compliance Showing

- Showings will be similar to today
- Added step of demonstrating resources meet 24-hour requirement within the capabilities of the resources

Resource Name	Resource Type	Shown MW
Resource 1	HL IMPORT	150
Resource 2	BIOMASS	15
Resource 3	SUN	31.36
Resource 4	SUN	17.92
Resource 5	SUN	15.68
Resource 23	WIND	33.12
Resource 24	WIND	24.48
Resource 25	GEOHERMAL	85
Resource 26	GEOHERMAL	85
Resource 28	WATER	129.6
Resource 29	WATER	407
Resource 30	NATURAL GAS	47
Resource 31	DR	0.7
Resource 65	LESR	20
Resource 66	LESR	10
Resource 67	LESR	50
Resource 68	LESR	100
Resource 69	LESR	10
Resource 70	LESR	10

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24
0.00	0.00	0.00	0.00	0.00	0.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	0.00	0.00
15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.09	6.25	19.20	25.77	27.92	28.30	28.32	28.08	27.70	26.51	22.64	12.77	2.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.57	10.97	14.73	15.95	16.17	16.18	16.05	15.83	15.15	12.94	7.30	1.15	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.04	3.12	9.60	12.89	13.96	14.15	14.16	14.04	13.85	13.25	11.32	6.39	1.00	0.00	0.00	0.00	0.00	0.00
15.68	14.34	13.05	12.32	10.99	9.81	8.65	7.31	6.62	5.46	4.88	4.28	4.74	5.69	6.54	7.85	9.76	11.28	13.07	15.45	15.87	15.13	14.56	14.68
11.59	10.60	9.65	9.10	8.12	7.25	6.40	5.40	4.90	4.04	3.61	3.16	3.50	4.20	4.84	5.80	7.21	8.33	9.66	11.42	11.73	11.19	10.76	10.85
85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00
85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00
129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60	129.60
407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.70	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	20.00	20.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00	10.00	10.00	10.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	50.00	50.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00	10.00	10.00	10.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00	10.00	10.00	0.00	0.00	0.00

Administrative Details to be Addressed

- CAISO must let participants (including the CPUC) know which hour is being tested for deficiencies
- CAISO currently uses a single NQC by resource for all processes
 - Used in Must-Offer Obligation requirement
 - Used in CAISO deficiency test
- Going forward, CAISO will likely need two separate values
 - The correct hourly capacity value to be used in the associated deficiency test
 - The correct capacity value to be used in the Must-Offer Obligation