



Workstream 1 LSE Showing and Compliance Tools: Initial Discussion RA Reform Workshop

August 3, 2022

California Public Utilities Commission (CPUC)

CPUC Energy Division

Electric Market Design Branch

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Overview

- 24 Hour Load Forecast Process- Lynn Marshall, CEC
- Master Resource Database
- LSE Allocations
- LSE Allocation Tab
- LSE Compliance Automation Project

RA 2023 Dry Run Forecast Process

August 3, 2022



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Hourly Demand Forecast Data Request

D.20-060-050 directed staff to conduct a dry run load forecast process. Template will be issued this week.

Each LSE submits a forecast for 2023:

- Same underlying forecast assumptions and same monthly peak as submitted for RA 2023.
- At a minimum, provide a forecast of 24 hours per month, for the day of the LSE's own (noncoincident) peak.
- Optionally, LSEs may instead provide 8760 forecast for calendar 2023.
- Hourly load modifiers are also requested, if applicable.
- IOUs are also asked for 8760 forecast for their total service area loads.
- Due August 29, 2022



Implementation

- CEC forecast adjustment process:
 - Develop service area hourly reference forecast
 - Adjust LSE forecasts for transmission losses (peak hours) & UFE
 - Adjust for hourly coincidence
 - LSE forecast review
 - Apply same monthly peak benchmarks.
 - Evaluate hourly shapes and monthly energy
 - Adjust sum of forecasts to CEC service area total
 - Share initial results in Sept./October
- CEC will continue to provide CAISO with the same products: annual load ratio shares; year-ahead monthly coincident peaks; monthly noncoincident and coincident peaks.
 - Month-ahead load forecast template adjusts noncoincident peak estimates of load migration to coincident peak
 - The template could be modified to include hourly coincidence factors, assuming no change to month-ahead filing process.

CPUC Energy Division Master Resource Database and LSE Allocations



Master Resource Database Requirements

Decision (D).22-06-050 Appendix A

The Commission will maintain an official database of resources eligible to sell RA that includes their key attributes, as listed below. Resources must be fully represented in the RA Resource Master Database to be eligible for use in the Commission's 24-hour slice RA showing. The database shall include:

- Resource ID
- Available MW of RA capacity
 - Capmax reported to CAISO, confirmed in Masterfile.
- Hours available for production—represents the hours of its must-offer obligation and will set the parameters on how it can be shown in the Commission's RA showing
 - Suppliers will have to identify these based on contract use limitations (confirmed via contract).
- Other use-limitations (e.g., peaker permit limits)
 - Use-limited information reported to CAISO (daily run hours and energy limits). Contractual limitations not included in data.
- Continuous MWh run energy and charging efficiency (storage)
 - Reported to CAISO, confirmed in Masterfile.
- Configurations (hybrid and co-located)
 - Y/N flags for co-located and ver_NG reported in Masterfile. Qualifying Capacity process allows ED staff to identify MWs on resource configurations. What other info is needed?
- Applicable hourly profile for solar and wind
 - TBD workstream 2
- Additional parameters as identified through Workstreams. The Commission will coordinate with CAISO to the greatest extent possible to utilize the same unit information used by CAISO in its market operations (e.g., aligned with CAISO's Master File).



Master Resource Database Requirements

Decision (D.)22-06-050 Appendix A

- Information is public and available to inform trading and resource portfolio development

Resource ID	Technology	PMAX Capacity (MW)	Maximum Daily Run Hours	Storage Efficiency	Maximum Continuous Energy	First Available Hour (HE)	Last Available Hour (HE)	Profile	Hybrid Renewable MW	Hybrid Battery MW	Hybrid Battery MWh	Contractual Limitation	Interconnection	JAN	FEB
7STDRD_1_SOLAR	SOLR			0	0									0.8	(
ACACIA_6_SOLAR	SOLR			0	0									0.8	(
ADERA_1_SOLAR	SOLR			0	0									0	



Master Resource Database

- Optimal means to populate master resource database?
 1. Generators : Data request sent to various supplier/generator distribution lists:
 - Use scheduling coordinator (SC) contact data from CIRA - Scheduling Coordinator ID for the resource contacts do not always reflect generator owner, the SC may schedule the resource but may not control operation of the resource.
 - Send data request to CAISO's market notice list - May be distributed too broadly and may not reach the right people.
 - General Order 167 (GO 167) distribution list- Not inclusive of all generators and may not reach the right people.
 - CEC QFER- Not inclusive of all generators and may not reach the right people.
 - Supplier member group distribution lists (e.g., CESA, IEP, WPTF)
 2. LSEs : Data request sent to LSEs and they would have their contract counterparties (suppliers) populate the data request:
 - Provides a point person to collect the data, does not ensure that all resources are accounted for.
 3. Energy Division: Staff would populate the data with known fields and then send it out to LSEs or generator distribution lists to populate the remaining fields that are not verifiable using CAISO subpoena data



Timing of Master Resource Data Request

- Two options:
 - Wait for final Q1 decision before sending initial data request
 - Pros - Prudent to wait for final fields to be established so generators/suppliers only have to populate template once (and ED staff to verify only once).
 - Cons - If issues arise in the collection of this data, they will need to be resolved quickly for 2024.
 - Send initial request now/earlier, and final request after Q1 decision is adopted
 - Pros - May uncover distribution list issues earlier (not all resources respond to data request – requiring further outreach by resource to ensure the right person is contacted).
 - Pros - Generators/suppliers will have to populate the request once.



LSE Allocation Database

- Currently, LSEs are sent annual allocations populated in tables. LSEs copy these allocations into their compliance templates. LSEs update their allocation tab monthly to account for load migration and updated allocations. Tables populate summary tabs that aid LSE in determining compliance.
- Under the 24 Hour-Framework, LSEs would be sent allocations organized more like a database. LSEs would still have to update data to account for load migration and updated allocations. This tab would still populate summary tables for LSEs to determine compliance.



LSE Allocation Tab

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Local San Diego	TAC	Month	Hour	Submitted Forecast (MW)	Coincidence Adjustment	Coincident Peak Forecast (MW)	LSE Specific Total (MW)	copkadj with lseadj	ee/lmdr adjustment	Adjusted with LMDR (MW)	Pro Rata Adjustment	CAM Allocations (MW)	DR Allocations (MW)	RMR Allocations (MW)	Load Migration (MW)	Flex RAR Category 1	Flex RAR Category 2	Flex RAR Category 3	Final Adjusted Forecast (MW)
2		PGE	1	1	990.8	-29.724	961.076	0	961.076	0	961.076	9.61076	9.11	0.33	6.91	0	1	1	1	970.69
3		PGE	1	2	935.2	-28.056	907.144	0	907.144	0	961.076	9.07144	8.92	0.73	6.56	0	1	1	1	916.22
4		PGE	1	3	891.6	-26.748	864.852	0	864.852	0	961.076	8.64852	6.60	0.23	8.26	0	1	1	1	873.50
5		PGE	1	4	887.4	-26.622	860.778	0	860.778	0	961.076	8.60778	6.03	0.60	7.26	0	1	1	1	869.39
6		PGE	1	5	916.4	-27.492	888.908	0	888.908	0	961.076	8.88908	8.58	0.55	5.22	0	1	1	1	897.80
7		PGE	1	6	998	-29.94	968.06	0	968.06	0	961.076	9.6806	6.69	0.85	8.07	0	1	1	1	977.74
8		PGE	1	7	1180.2	-35.406	1144.794	0	1144.794	0	961.076	11.44794	6.92	0.85	8.40	0	1	1	1	1,156.24
9		PGE	1	8	1287	-38.61	1248.39	0	1248.39	0	961.076	12.4839	9.25	0.95	8.39	0	1	1	1	1,260.87
10		PGE	1	9	1231.8	-36.954	1194.846	0	1194.846	0	961.076	11.94846	5.90	0.80	6.36	0	1	1	1	1,206.79
11		PGE	1	10	1133.4	-34.002	1099.398	0	1099.398	0	961.076	10.99398	8.36	0.05	7.59	0	1	1	1	1,110.39
12		PGE	1	11	1067.5	-32.025	1035.475	1051.00713	2086.48213	0	961.076	20.8648213	7.43	0.49	6.03	0	1	1	1	2,107.35
13		PGE	1	12	1000	-30	970	984.55	1954.55	0	961.076	19.5455	5.31	0.97	7.17	0	1	1	1	1,974.10
14		PGE	1	13	959.5	-28.785	930.715	944.675725	1875.39073	0	961.076	18.7539073	8.86	0.29	7.10	0	1	1	1	1,894.14
15		PGE	1	14	964.1	-28.923	935.177	949.204655	1884.38166	0	961.076	18.8438166	7.55	0.76	5.97	0	1	1	1	1,903.23
16		PGE	1	15	1010.7	-30.321	980.379	995.084685	1975.46369	0	961.076	19.7546369	7.06	0.63	5.27	0	1	1	1	1,995.22
17		PGE	1	16	1096.7	-32.901	1063.799	1079.75599	2143.55499	-10.71777493	961.076	21.3283721	7.65	0.65	8.36	0	1	1	1	2,154.17
18		PGE	1	17	1217.7	-36.531	1181.169	1198.88654	2380.05554	-11.90027768	961.076	23.6815526	8.81	0.92	8.74	0	1	1	1	2,391.84
19		PGE	1	18	1392.9	-41.787	1351.113	1371.3797	2722.4927	-13.61246348	961.076	27.0888023	8.28	0.27	5.93	0	1	1	1	2,735.97
20		PGE	1	19	1458.1	-43.743	1414.357	1435.57236	2849.92936	-14.24964678	961.076	28.3567971	5.28	0.85	7.89	0	1	1	1	2,864.04
21		PGE	1	20	1430	-42.9	1387.1	1407.9065	2795.0065	-13.9750325	961.076	27.8103147	8.20	0.50	6.46	0	1	1	1	2,808.84
22		PGE	1	21	1367.4	-41.022	1326.378	0	1326.378	0	961.076	13.26378	8.79	0.69	7.14	0	1	1	1	1,339.64
23		PGE	1	22	1295.9	-38.877	1257.023	0	1257.023	0	961.076	12.57023	9.05	0.80	8.16	0	1	1	1	1,269.59
24		PGE	1	23	1183.9	-35.517	1148.383	0	1148.383	0	961.076	11.48383	9.31	0.72	8.34	0	1	1	1	1,159.87
25		PGE	1	24	1075.8	-32.274	1043.526	0	1043.526	0	961.076	10.43526	5.64	0.71	6.52	0	1	1	1	1,053.96
26		PGE	2	1	990.8	-29.724	961.076	0	961.076	0	961.076	9.61076	7.77	0.84	7.43	0	1	1	1	970.69
27		PGE	2	2	935.2	-28.056	907.144	0	907.144	0	961.076	9.07144	7.65	0.25	7.87	0	1	1	1	916.22
28		PGE	2	3	891.6	-26.748	864.852	0	864.852	0	961.076	8.64852	6.99	0.94	7.22	0	1	1	1	873.50
29		PGE	2	4	887.4	-26.622	860.778	0	860.778	0	961.076	8.60778	6.92	0.68	8.49	0	1	1	1	869.39
30		PGE	2	5	916.4	-27.492	888.908	0	888.908	0	961.076	8.88908	8.46	0.57	6.28	0	1	1	1	897.80



Allocation Considerations

- Load Ratios - Allocations are currently based on monthly *peak* load ratios. Is this still appropriate for a 24-hour framework?
 - Allocations should follow costs - How are DR and CAM costs recovered from customers?
 - Proposal: Base hourly allocations on peak load ratio shares
- NP26/SP26 - Allocations would now be represented by TAC. Removal of NP/SP-26 allocations and summary tables.
- Debit/Credit Mechanism for CAM – CAM credits/debits should reflect resource availability and energy sufficiency need.
 - Should we allocate by slice or allocate at a resource level rather than across slices?
 - If we allocate by slice, do allocations need to be locked down or can we provide flexibility in the hourly allocation in determining compliance?
 - How should energy storage charging needs be handled in allocations?
- Load Migration Adjustments - Is this still needed? No re-opening of Direct Access, load migration is limited between months unless unexpected return of customers (e.g., POLR).



Hourly CAM Credits and Debits (cont.)

- The 24-hour framework adds energy sufficiency requirements for energy storage resources
- Under the current mechanism IOUs would receive an energy sufficiency requirement associated with the entire CAM resource (rather than their portion of the CAM resource)
- How to ensure that energy sufficiency requirements associated with CAM storage are equitably allocated?
 - Solution/proposal: Energy sufficiency credit/debits to ESPs/CCAs



Future RA Implementation Goals

- RA compliance today is currently verified using excel templates that utilize formulas and macros to determine annual and monthly compliance.
- Current efforts to streamline this process have been made on the backside using python code which is currently being tested to ensure accurate outcomes.
- No work on the interface - LSEs still rely on excel formulas in templates and need to input compliance allocations.
- Implementation of the 24-hour slice will make this compliance showings more complicated to validate and there could be more room for error.



LSE Compliance Tools Automation Project

- Goal: Design an external facing application with a user interface where 40+ Load Serving Entities (LSEs) could submit monthly compliance data to an interface where they can upload data, see requirements, and if requirements are being met prior to submittal.
- Benefits: Could reduce the potential for compliance errors if LSEs were using the same information as the CPUC for compliance. In time, would reduce administrative complexity.
- Progress: Data gathering efforts - How other internal CPUC programs and agencies (CAISO and CEC) programs are using external facing applications. Researching project needs and identifying barriers.
- Timeline: Goal would be to have something functional and tested for RA compliance Year 2025.
- Next Steps: Continue to develop project design efforts internally, gather party input on how compliance can be streamlined and prioritized to achieve the goal.