



Workplan

December 1, 2023

3:00 p.m. – 5:00 p.m. PT

Hosted by the Energy Division of the California Public Utilities Commission

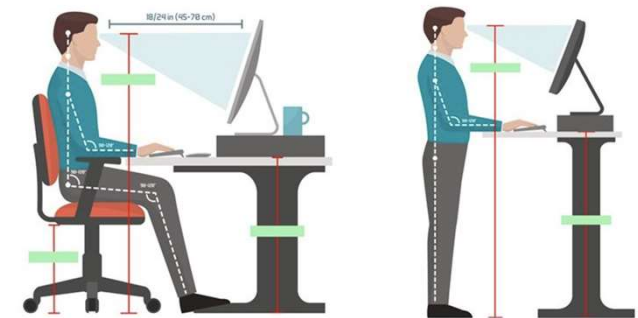
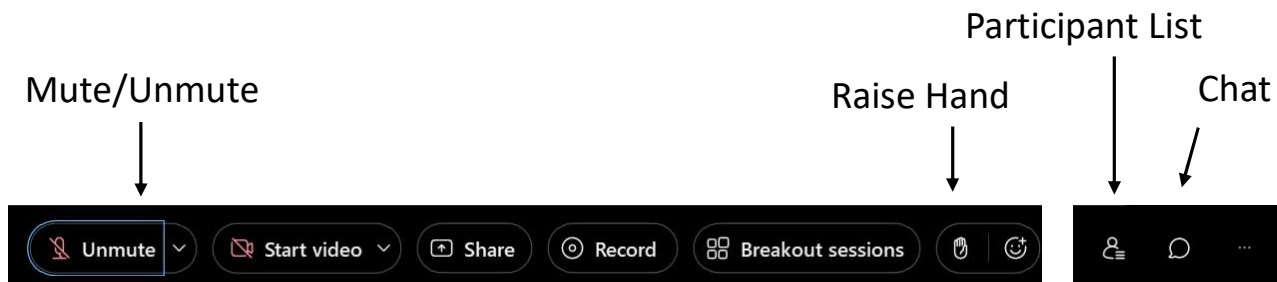
With support from the California Energy Commission



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Logistics

- Presentation will be uploaded onto [DR Workshops](#) website at a later time.
- All attendees are muted upon entry. Please stay muted unless you are speaking. Only one person should be speaking at a time.
- Please “raise your hand” if you would like to speak or use the chat.
- Safety: (1) Note surroundings & emergency exits, (2) Ergonomic check, (3) In case of emergency, call 9-1-1.
- Refrain from discussing any other proceedings in case Commissioners are present to avoid inadvertent ex-parte.

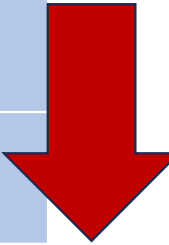




Bi-Weekly Schedule through November

Workshop Schedule

Months	August		September		October		November	
	08/10	08/24	09/8	09/21	10/5	10/19	11/2	11/16
BNLI	Intro Discussion	Feedback and Proposals	Finalize Element					
CSP			Intro Discussion	Feedback and Proposals	Finalize Element			
Penalty Enforcement					Intro Discussion	Feedback and Proposals	Finalize Element(s)	



Agenda

Note that times are approximate. There will be a brief pause for questions after each section. Participants may raise their (virtual) hand to ask a question at any time.

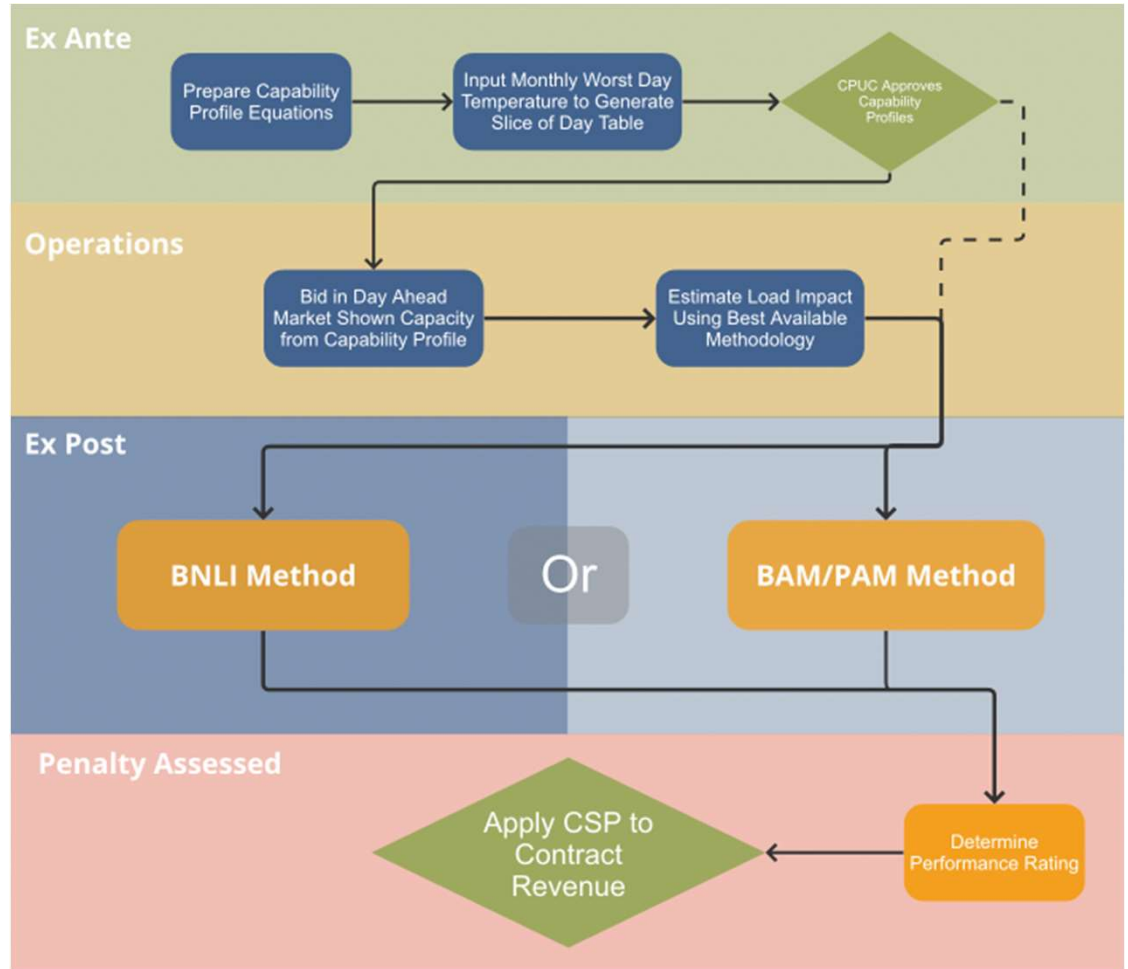
#	Topic	Time
1	Introductions, Logistics and Scheduling	3:00 PM – 3:10 PM
2	DR QC Workplan Proposal Details	3:10 PM – 4:00 PM
-	5 Min Break	4:00 PM – 4:05 PM
3	Discussion	4:05 PM – 4:30 PM
4	Next Steps	4:30 PM – 4:45 PM

DR QC Testing Workplan



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Proposal Comparisons



TTM and Capability Profile Equivalence

Model for TTM

Capability Profile

WLS Regression Results

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Dep. Variable:          impact    R-squared:          0.909
Model:                WLS       Adj. R-squared:     0.904
Method:               Least Squares   F-statistic:       170.9
Date:                 Fri, 17 Nov 2023   Prob (F-statistic): 0.00
Time:                 00:57:51        Log-Likelihood:    -61.777
No. Observations:     848           AIC:               219.6
Df Residuals:         800           BIC:               447.2
Df Model:              47
Covariance Type:      nonrobust
=====
  
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Sub-Lap Capability ~ Event_hour*Temp + HE*Temp + Weekday*Temp

	coef	std err	t	P> t	[0.025	0.975]
Intercept	-4.4692	0.731	-6.110	0.000	-5.905	-3.033
C(event_hour)[T.2.0]	0.4360	0.130	3.349	0.001	0.180	0.692
C(event_hour)[T.3.0]	0.4766	0.187	2.551	0.011	0.110	0.843
C(event_hour)[T.4.0]	0.3034	0.295	1.027	0.305	-0.276	0.883
C(hour)[T.18]	0.4111	0.196	2.102	0.036	0.027	0.795
C(hour)[T.19]	1.1332	0.229	4.946	0.000	0.683	1.583
C(hour)[T.20]	1.3405	0.247	5.434	0.000	0.856	1.825
C(hour)[T.21]	1.2139	0.339	3.576	0.000	0.547	1.880
C(sublap_id)[T.Sublap 02]	-0.6007	0.945	-0.636	0.525	-2.455	1.253
C(sublap_id)[T.Sublap 03]	1.4371	0.718	2.002	0.046	0.028	2.846
C(sublap_id)[T.Sublap 04]	2.1868	0.849	2.576	0.010	0.520	3.853
C(sublap_id)[T.Sublap 05]	-1.2663	0.839	-1.510	0.132	-2.913	0.380
C(sublap_id)[T.Sublap 06]	4.3442	7.274	0.597	0.551	-9.934	18.622
C(sublap_id)[T.Sublap 07]	5.1320	1.078	4.759	0.000	3.015	7.249
C(sublap_id)[T.Sublap 08]	2.2126	0.761	2.908	0.004	0.719	3.706
C(sublap_id)[T.Sublap 09]	2.5051	2.537	0.987	0.324	-2.475	7.485
C(sublap_id)[T.Sublap 10]	1.4721	0.777	1.895	0.058	-0.052	2.997
C(sublap_id)[T.Sublap 11]	3.0168	0.727	4.152	0.000	1.591	4.443
C(sublap_id)[T.Sublap 12]	2.7799	0.715	3.886	0.000	1.376	4.184
C(sublap_id)[T.Sublap 13]	5.1316	0.815	6.299	0.000	3.533	6.731
C(sublap_id)[T.Sublap 14]	0.9236	0.789	1.170	0.242	-0.626	2.473
C(sublap_id)[T.Sublap 15]	1.4898	0.822	1.813	0.070	-0.123	3.103
C(sublap_id)[T.Sublap 16]	-0.4463	0.931	-0.480	0.632	-2.273	1.381
C(weekday)[T.1.0]	-0.3540	0.156	-2.274	0.023	-0.660	-0.048
avgtemp	0.0684	0.009	7.575	0.000	0.051	0.086
C(event_hour)[T.2.0]:avgtemp	-0.0094	0.002	-5.633	0.000	-0.013	-0.006

SubLAP/ Aggregation	Intercept	avgtemp	event_hour=2	event_hour=3	event_hour=4	hour=18	hour=19	hour=20	hour=21	weekday=1	event_hour=2: avgtemp	event_hour=3: avgtemp	event_hour=4: avgtemp	hour=18: avgtemp	hour=19: avgtemp	hour=20: avgtemp	hour=21: avgtemp	weekday=1: avgtemp
01	-4.469	0.068	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
02	-5.070	0.080	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
03	-3.032	0.051	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
04	-2.282	0.040	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
05	-5.736	0.091	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
06	-0.125	0.004	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
07	0.663	0.008	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
08	-2.257	0.039	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
09	-1.964	0.038	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
10	-2.997	0.049	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
11	-1.452	0.028	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
12	-1.689	0.031	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
13	0.662	-0.008	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
14	-3.546	0.058	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
15	-2.979	0.049	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005
16	-4.916	0.075	0.436	0.477	0.303	0.411	1.133	1.341	1.214	-0.354	-0.009	-0.012	-0.010	-0.006	-0.015	-0.019	-0.019	0.005

Growth Factors

May represent

of customers, MW of batteries, etc. (A)

OR

Unitless increase (B)

Ex	J	F	M	A	M	J	J	A	S	O	N	D
A	52k	54k	56k	58k	60k	64k	68k	70k	71k	72k	73k	74k
B	1.0	1.02	1.06	1.08	1.12	1.16	1.18	1.20	1.21	1.22	1.23	1.24

Two-Stage Bidding (In Absence of Conditional Bidding)

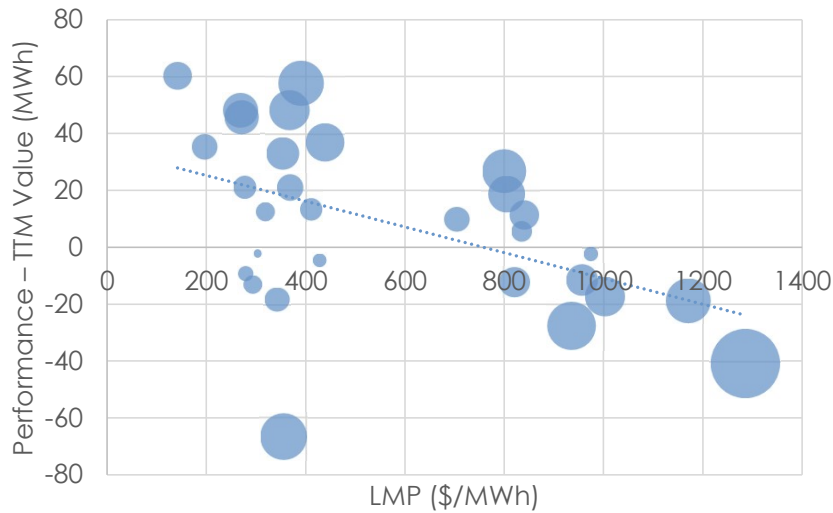
HE	17	18	19	20	21	22
Capability Profile						
HE 18–21 (Shown Hours)	-	10.0	6.0	3.0	1.0	-
HE 19–22	-	-	9.0	5.0	2.0	1.0
DAM						
Bid: Shown Hours, \$200/MWh	6.0	10.0	6.0	3.0	1.0	1.0
LMPs, 9/4/22	\$155	\$197	\$391	\$438	\$232	\$165
DAM Schedule HE19–21	-	-	6.0	3.0	1.0	-
RTM						
Bid: DAM Dispatch Hours @ Net Benefits Threshold	-	-	9.0	5.0	2.0	-

Assumptions:

- 4-hour max duration
- Availability HE 17–22
- Shown HE 18–21
- Long-start resource

LMP Weighting under BAM-PAM

Reasonable and flexible averaging across **months, days, hours**, sub-LAPs, aggregations, and Resource IDs



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Dispatch Hour/Day	Expected Capability (Dispatch Hrs)	Load Impact (MWh)	LMP (\$/MWh)	Expected Capability Value	Load Impact Value	PAM (Unweighted)	PAM (Weighted)
1	748.6	1003.21		421130	484134	134%	115%
16-Aug	26.2	71.96	271.12	7091	19510	275%	
17-Aug	39.5	30.24	279.93	11068	8465	76%	
30-Aug	26.2	74.39	269.02	7052	20011	284%	
31-Aug	41.5	89.75	367.62	15239	32995	217%	
1-Sep	68.3	94.98	799.75	54583	75964	139%	
3-Sep	106.1	119.54	409.92	43510	49002	113%	
4-Sep	48.5	106.15	390.51	18937	41454	219%	
5-Sep	83.1	103.99	368.01	30574	38271	125%	
7-Sep	131.2	103.63	935.79	122786	96978	79%	
8-Sep	89.9	78.32	956.62	86029	74922	87%	
9-Sep	58.7	40.41	342.20	20077	13829	69%	
26-Sep	29.5	89.84	141.74	4182	12733	305%	
2	491.2	577.33		345870	334504	118%	97%
16-Aug	18.1	30.65	318.83	5760	9771	170%	
17-Aug	23.1	20.97	303.62	7019	6366	91%	
30-Aug	18.1	39.11	277.82	5031	10864	216%	
31-Aug	23.2	56.45	354.22	8216	19995	243%	
1-Sep	40.0	58.71	804.59	32147	47236	147%	
3-Sep	74.4	69.97	428.27	31843	29967	94%	
4-Sep	27.4	64.51	437.88	12002	28248	235%	
5-Sep	54.4	60.19	834.62	45438	50234	111%	
7-Sep	95.0	54.34	1285.90	122147	69872	57%	
8-Sep	61.6	44.23	1001.88	61715	44308	72%	
9-Sep	36.5	23.48	293.91	10741	6900	64%	
26-Sep	19.4	54.75	196.22	3810	10743	282%	
3	123.7	114.21		128158	113673	92%	89%
5-Sep	30.1	41.52	839.85	25244	34869	138%	
7-Sep	59.5	40.73	1170.60	69704	47675	68%	
8-Sep	34.1	31.97	973.82	33210	31130	94%	
4	77.3	8.39		52696	26004	11%	49%
5-Sep	17.7	-48.89	355.42	6294	-17377	-276%	
7-Sep	38.3	26.08	820.11	31378	21390	68%	
8-Sep	21.3	31.20	704.77	15023	21991	146%	
Grand Total	1440.8	1703.15		947854	958316	118%	101%

BNLI Regression Monthly/Hourly Capacity Weights

- Alternative to monthly-hourly capacity prices demonstrated in previous meeting

Dispatch Hour / Month	Events	Jun	Jul	Aug	Sep	Oct	Hourly Total
Capacity Price		\$8.88	\$8.88	\$8.88	\$8.88	\$8.88	\$44.40
1	12	0.08	0.08	0.08	0.08	0.08	0.40
2	12	0.08	0.08	0.08	0.08	0.08	0.40
3	3	0.02	0.02	0.02	0.02	0.02	0.10
4	3	0.02	0.02	0.02	0.02	0.02	0.10
Monthly Total	30	0.20	0.20	0.20	0.20	0.20	1.00

Next Steps



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Next Steps

- Workplan comments due January 8th
 - Final workplan by mid/late January
- No other immediate meetings planned
- Will reach out to parties regarding issues, questions and data
- Analytical work likely to continue through April
- Ad Hoc Working Group Meetings may be scheduled, be sure to keep us up-to-date on contacts for our distribution list
- Final report is due December 2024



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Thank you!