

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish Annual
Local Procurement Obligations.

Rulemaking 11-10-023
(Filed October 20, 2011)

POST-WORKSHOP REPLY COMMENTS OF
THE UTILITY REFORM NETWORK
ON FLEXIBLE CAPACITY PROPOSALS

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April 15, 2013

POST-WORKSHOP REPLY COMMENTS OF THE UTILITY REFORM NETWORK ON FLEXIBLE CAPACITY PROPOSALS

I. INTRODUCTION AND SUMMARY

Pursuant to the Phase Administrative Law Judge's Ruling Resetting Schedule for Comments on Phase 2 Resource Adequacy Issues and Setting a Prehearing Conference (ALJ Ruling) issued March 11, 2013, TURN offers the following reply comments to certain parties' April 5, 2013 opening comments on proposals to add a "flexible capacity" procurement requirement to the Commission's Resource Adequacy (RA) program.

At the risk of oversimplifying parties' positions, virtually all parties' comments agree that the CAISO will need to increase its use of the system's ramping capabilities in the near future and to recognize that the inclusion of a flexible capacity procurement requirement in the Commission's RA program should help make such flexible capacity available. Parties also tend to agree that significant issues remain regarding both the Joint Parties' and Energy Division's proposals for such a requirement and that such issues should be resolved before the 2015 RA compliance year through efforts to be completed in time for a June 2014 Commission decision.

The key difference among parties' comments was primarily over whether a flexible capacity procurement requirement should be adopted in June 2013 for implementation in the 2014 RA compliance year. Several parties seemed generally to be in accord with TURN's general suggestion that a "Report Only" requirement be implemented for the 2014 RA compliance year.¹ Parties also identified a plethora of policy and implementation issues surrounding both the JP and ED proposals.

¹ See the April 5 opening comments of the Division of Ratepayer Advocates (DRA), pp. 2 and 14-17 ("amended 2014 RA filings"); Western Power Trading Forum (WPTF), pp. 4-5 ("trial run"); Independent Energy Producers (IEP), pp. 2-4 ("limited...requirement").

Parties' comments have not changed TURN's initial positions, namely, that the Commission should not issue a decision in June 2013 implementing a flexible capacity procurement requirement for the 2014 RA compliance year, or, in the alternative, the Commission could adopt a decision in June 2013 implementing such a requirement for the 2014 RA compliance year on a "Report Only" basis.²

Here, TURN will rebut comments arguing that a flexible procurement requirement is needed in 2014 and comment briefly on certain parties' ill-informed suggestion that a multi-year RA obligation is needed.

II. OPENING COMMENTS FAIL TO DEMONSTRATE A NEED FOR A FLEXIBLE CAPACITY REQUIREMENT FOR THE 2014 COMPLIANCE YEAR

In arguing for implementation of a flexible capacity requirement in 2014, the CAISO states that it will face an "urgent need for flexible capacity in the very near future" and that "flexible capacity will be absolutely critical to maintaining reliability...in the following years."³ The CAISO also spends over five pages arguing that there is a "reasonable likelihood" that it will be deficient of flexible capacity as early as 2014.⁴

However, the CAISO has significantly underestimated the amount of flexible capacity that will be available in 2014. On April 1, 2013, the CAISO provided the data supporting its computations of the supply of Effective Flexible Capacity (EFC). This email and the linked data file (as formatted for printing) are included as Attachment 1. However, as noted in TURN's opening comments, the CAISO's estimates of EFC did not include over 3,500 MW of new

² See TURN's Comments, pp. 3-4 and 9-10.

³ CAISO April 5 comments, p. 2.

⁴ *Id.*, pp. 19-25.

capacity expected to begin operations in the near future.⁵ The relevant page from the CAISO's 2013 Net Qualifying Capacity (NQC) list (as excerpted and formatted for printing) is provided as Attachment 2. Each of the units listed in Attachment 2 currently has an expected on-line date this year as shown in Attachment 3, an excerpt from the California Energy Commission's "Status of All Projects" list.⁶ The impact of these new, flexible, contracted resources must be considered in any sort of analysis of the supply of EFC.

Further, even if one accepts the CAISO's need assessments, the IOUs have already contracted for sufficient supplies of flexible capacity for the RA compliance years of 2014, 2015 and 2016 to meet the CAISO's estimated needs. The total amount of the flexible capacity the IOUs have already procured is shown in Attachment 4, which combines all of the EFC shown in Attachments 1 and 2.⁷ The public version of Attachment 4 shows that the combined total of the EFC of utility-controlled generation – both Utility-Owned Generation (UOG) and utility Power Purchase Agreements (PPAs) that are now public – exceeds or virtually meets need in all months of 2014 to 2016. The confidential version of Attachment 4 also shows the additional amounts of EFC IOUs have procured through PPAs that TURN believes may be considered confidential.^{8,9}

⁵ TURN's April 5 comments, p. 7.

⁶ Though it is possible that some of these units will not begin operations until next year.

⁷ Attachment 4 assumes that all the resources shown in Attachment 2 have on-line dates on or before January 1, 2014. Based on a sample of the ratio of EFC to nominal capacity of recently-built units in Attachment 1, the EFC of these units was computed assuming that all the Combustion Turbines (CTs) would have EFCs equal to their nominal capacities and that the Combined Cycle Gas Turbines (CCGTs) would have EFCs equal to 75 percent of their nominal capacities. Attachment 4 assumes that the Walnut Creek, Marsh Landing and Sentinel projects are CTs and that the Los Esteros, Russell City and El Segundo projects are CCGTs.

⁸ To the extent any shortages of flexibility need are not already met by the utilities' current multi-year forward procurement, TURN anticipates such shortages would be met by the additional multi-year forward procurement utilities regularly pursue. See the last section of these comments titled "Multi-Year Forward RA".

⁹ These additional data are redacted from the public version of Attachment 4. As stated in TURN's April 5 comments (p. 8, footnote 18), TURN understands it may provide the confidential attachment to staff of the Commission's ED and Division of Ratepayer Advocates (DRA) and other non-market participating parties that have signed appropriate Non-Disclosure Agreements with each of the three utilities.

As noted in TURN's opening comments,¹⁰ TURN recognizes that the IOUs may not report such resources on their RA filings and that such procurement thus does not mean that flexible capacity has been procured through the RA mechanism. However, TURN expects that, if the CAISO is having difficulty procuring ramping capacity, the IOUs would make such contracted capacity available. In suggesting that the Commission defer action on implementing a flexible capacity procurement requirement, TURN is thus not simply relying on what PG&E called a "trust it will be there" policy,¹¹ rather, a fuller analysis of the supply of EFC and its contractual status supports TURN's recommendation.

The CAISO also said in its comments that it had provided data that "the Commission can confidently use to set the flexible capacity requirements for 2014".¹² However, in conducting further review of the CAISO's load data, TURN noticed some significant anomalies in the "minute-by-minute" load data the CAISO used. In most hours of the year, the changes in load from one minute to the next behave as expected. However, in some hours, these load changes oscillate wildly from minute to minute, increasing by several hundred MW or even thousands of MW one minute, falling by a similar amount the next minute, and sometimes repeating this extreme pattern for several consecutive or proximate minutes. The worst stretch of such patterns for 2014, from early November, is shown in Attachment 5. Such patterns suggest strongly that the CAISO used a "raw" form of load data that had not been purged of such anomalies. TURN is not certain whether these anomalies affect the CAISO's computations, but these data do cast doubt on the care with which the CAISO conducted its needs analysis.

¹⁰ *Id.*, footnote 20.

¹¹ PG&E April 5 comments, pp. 13 and 16.

¹² CAISO Comments, p. 10.

III. SUGGESTIONS THAT THERE IS A NEED FOR A MULTI-YEAR FORWARD RA OBLIGATION IGNORE THE SIGNIFICANT MULTI-YEAR CONTRACTING THAT ALREADY OCCURS

WPTF and IEP both suggest in passing that the Commission adopt a multi-year forward RA obligation.¹³ Because it is outside the scope of this phase of the proceeding, TURN will not comment on this potential policy change at this time, but will take this opportunity to counter further the “urban myth” that no RA contracting occurs beyond the immediate year-ahead. Rather, as shown in Attachment 4, Load-Serving Entities (LSEs) – or at least the utilities – engage in substantial amounts of multi-year contracting for electric capacity and energy products under various Commission procurement policies. WPTF and IEP members already have the opportunity to make multi-year sales of RA and other products pursuant to some of these policies. In particular, the IOUs routinely issue Requests for Offers (RFOs) for various electric capacity and energy products for terms of up to five years pursuant to their Bundled Procurement Plans. In fact, just last week, generators had the opportunity to submit bids to provide RA capacity through the summer of 2017 in response to PG&E’s 2013 Intermediate-term RFO.¹⁴ The impact of prior utility multi-year procurement on their forward flexible capacity positions is reflected in part in the data shown in Attachment 4.

IV. CONCLUSION

The record developed to date does not support the need for a flexible capacity RA requirement for 2014. The Commission should order a robust record-development process with fixed deadlines to present and fully support complete flexible capacity proposals, thereby enabling a fully informed decision regarding flexible capacity issues in June 2014. If the

¹³ WPTF Comments, pp. 6-7; IEP Comments, pp. 10-11.

¹⁴ See <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/ITRFO2013/index.shtml>.

Commission wishes to take a further step in its June 2013 decision, it could adopt a Report Only requirement proposed in TURN's opening comments, for the 2014 RA compliance year.

Date: April 15, 2013

Respectfully submitted,

By: _____/s/_____
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ATTACHMENT 1

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Cc: Meeusen, Karl
Subject: R.11-10-023 - California ISO Draft Effective Flexible Capacity Calculations - April 1, 2013

The CAISO has posted a draft table that provides the CAISO's preliminary estimate of each listed resource's amount of effective flexible capacity. The table includes all resources that have met a minimum threshold of having submitted at least one economic bid into the CAISO's real-time market on at least ten days during 2012. The table also contains all hydro resources that 1) pass the qualification criteria provided by PG&E (attached to the most recent Energy Division proposal) and 2) have submitted at least one economic bid into the CAISO's real-time market on at least ten days during 2012. Therefore, the quantities shown in this table will differ from those provided in the CAISO presentation during the March 20, 2013 RA workshop. The table is posted on the CAISO's website at [http://www.aiso.com/Documents/R.11-10-023%20\(Order%20instituting%20rulemaking%20to%20oversee%20RA%20program\)](http://www.aiso.com/Documents/R.11-10-023%20(Order%20instituting%20rulemaking%20to%20oversee%20RA%20program)).

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Overview of Draft EFC Table,
Attachment 1 - Draft Effective Flexible Capacity Calculations Apr1_2013 - Formatted for Printing - 4-10 v1

Notes

These calculations have been made using the following equations for non hydro resources:



Start up time greater than 90 minutes

$$EFC = \text{Minimum of } (NQC - P_{\min}) \text{ or } (180 \text{ min} * RR_{\text{avg}})$$

Start up time less than 90 minutes

$$EFC = \text{Minimum of } (NQC) \text{ or } (P_{\min} + (180 \text{ min} - SUT) * RR_{\text{avg}})$$

Where:

- EFC: Effective Flexible Capacity
- NQC: Net Qualifying Capacity
- SUT: Start up Time
- RRavg: Average Ramp Rate

Hydro calculations are similar to those detailed above, however qualifications have been made subject to the physical capability of having a minimum of 6 hours of as built net storage capacity (immediate upstream reservoir or hydrologically inter linked storage sufficient to support 6 hours at P_{Max}), and subject to standard CAISO RA deliverability criteria.

The source data for these calculation is the ISO masterfile

As a qualification criteria, the ISO included all resources that have met a minimum threshold of having submitted at least one economic bid into the CAISO's real time market on at least ten days during 2012 Application of 10 days of bid to count.

This draft EFC calculation was made on 4/1/2013

Raw Data,
 Attachment 1 - Draft Effective Flexible Capacity Calculations Apr1_2013 - Formatted for Printing - 4-10 v1,
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name	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
ADLIN_1_UNITS	8	8	8	8	8	8	8	8	8	8	8	8
AGRICO_6_PL3N5	20	20	20	20	20	20	20	20	20	20	20	20
AGRICO_7_UNIT	49	49	49	49	49	49	49	49	49	49	49	49
ALAMIT_7_UNIT 1	165	165	165	165	165	165	165	165	165	165	165	165
ALAMIT_7_UNIT 2	165	165	165	165	165	165	165	165	165	165	165	165
ALAMIT_7_UNIT 3	312	312	312	312	312	312	312	312	312	312	312	312
ALAMIT_7_UNIT 4	316	316	316	316	316	316	316	316	316	316	316	316
ALAMIT_7_UNIT 5	428	428	428	428	428	428	428	428	428	428	428	428
ALAMIT_7_UNIT 6	425	425	425	425	425	425	425	425	425	425	425	425
ALMEGT_1_UNIT 1	24	24	24	24	24	24	24	24	24	24	24	24
ALMEGT_1_UNIT 2	24	24	24	24	24	24	24	24	24	24	24	24
ANAHM_2_CANYN1	49	49	49	49	49	49	49	49	49	49	49	49
ANAHM_2_CANYN2	48	48	48	48	48	48	48	48	48	48	48	48
ANAHM_2_CANYN3	48	48	48	48	48	48	48	48	48	48	48	48
ANAHM_2_CANYN4	49	49	49	49	49	49	49	49	49	49	49	49
ANAHM_7_CT	43	43	43	43	43	41	41	41	41	41	43	43
BALCHS_7_UNIT 1	33	33	33	33	33	33	33	33	33	33	33	33
BALCHS_7_UNIT 2	53	53	53	53	53	53	53	53	53	53	53	53
BALCHS_7_UNIT 3	53	53	53	53	53	53	53	53	53	53	53	53
BARRE_6_PEAKER	47	47	47	47	47	47	47	47	47	47	47	47
BEARCN_2_UNITS	9	9	9	9	9	9	9	9	9	9	9	9
BELDEN_7_UNIT 1	115	115	115	115	115	115	115	115	115	115	115	115
BIGCRK_2_EXESWD	774	774	774	774	801	801	801	801	774	774	774	774
BLACK_7_UNIT 1	85	85	85	85	85	85	85	85	85	85	85	85
BLACK_7_UNIT 2	84	84	84	84	84	84	84	84	84	84	84	84
BLCKBT_2_STONEY	2	2	1	4	3	2	2	2	2	2	2	1
BOGUE_1_UNITA1	46	46	46	46	46	46	45	45	45	46	46	46
BORDER_6_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
BRDWAY_7_UNIT 3	47	47	47	47	47	47	47	47	47	47	47	47
BUCKBL_2_PL1X3	318	318	318	318	318	318	318	318	318	318	318	318
BUCKCK_7_PL1X2	58	58	58	58	58	58	58	58	58	58	58	58
BUTTVL_7_UNIT 1	41	41	41	41	41	41	41	41	41	41	41	41
CALPIN_1_AGNEW	5	8	8	8	8	8	8	8	8	8	8	8
CAPMAD_1_UNIT 1	0	0	0	0	0	0	0	0	0	0	0	0
CARBOU_7_PL2X3	48	48	48	48	48	48	48	48	48	48	48	48
CARBOU_7_PL4X5	120	120	120	120	120	120	120	120	120	120	120	120
CARBOU_7_UNIT 1	24	24	24	24	24	24	24	24	24	24	24	24
CENTER_6_PEAKER	47	47	47	47	47	47	47	47	47	47	47	47
CENTRY_6_PL1X4	36	36	36	36	36	36	36	36	36	36	36	36
CHILLS_1_SYCENG	0	0	0	0	0	0	0	0	0	0	0	0
CHILLS_7_UNITA1	2	2	2	2	2	2	2	2	2	2	2	1
CHINO_7_MILIKN	1	1	1	1	1	2	2	1	2	2	1	1
CHWCHL_1_BIOMAS	2	2	3	2	0	2	1	2	2	3	2	2
CHWCHL_1_UNIT	48	48	48	48	48	48	48	48	48	48	48	48
COCOPP_7_UNIT 6	292	292	292	292	292	292	292	292	292	292	292	292
COCOPP_7_UNIT 7	292	292	292	292	292	292	292	292	292	292	292	292
COLGAT_7_UNIT 1	150	149	153	159	163	166	165	162	157	152	150	148
COLGAT_7_UNIT 2	150	149	153	159	163	166	165	162	157	152	150	148
COLTON_6_AGUAM1	43	43	43	43	43	43	43	43	43	43	43	43
COLUSA_2_PL1X3	518	512	506	500	492	485	480	480	485	492	506	518
COLVIL_7_PL1X2	247	247	247	247	247	247	247	247	247	247	247	247
CONTAN_1_UNIT	26	26	26	26	26	26	26	26	26	26	26	26
CORONS_6_CLRWTR	8	8	8	8	8	8	8	8	8	8	8	8
CRESTA_7_PL1X2	70	70	70	70	70	70	70	70	70	70	70	70
CSCCOG_1_UNIT 1	6	6	6	6	6	6	6	6	6	6	6	6
CSTRVL_7_PL1X2	2	2	2	2	2	2	3	2	3	3	3	2
CWATER_7_UNIT 1	46	46	46	46	46	46	46	46	46	46	46	46
CWATER_7_UNIT 2	63	63	63	63	63	63	63	63	63	63	63	63
CWATER_7_UNIT 3	205	205	205	205	205	205	205	205	205	205	205	205
CWATER_7_UNIT 4	206	206	206	206	206	206	206	206	206	206	206	206
DELTA_2_PL1X4	608	608	602	592	582	567	560	560	560	582	597	608
DINUBA_6_UNIT	10	10	10	10	10	10	10	10	10	10	10	10
DONNLS_7_UNIT	66	66	68	65	70	72	72	72	72	70	68	67
DOUBLC_1_UNITS	48	47	47	47	47	47	47	47	47	47	47	47
DREWS_6_PL1X4	36	36	36	36	36	36	36	36	36	36	36	36
DUANE_1_PL1X3	138	138	138	138	138	138	138	138	138	138	138	138
DVLCYN_1_UNITS	46	103	199	186	235	235	235	235	186	182	177	176
ELCAJN_6_LM6K	48	48	48	48	48	48	48	48	48	48	48	48
ELCAJN_6_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
ELCAJN_7_GT1	16	16	16	16	16	16	16	16	16	16	16	16

Raw Data,
Attachment 1 - DraftEffectiveFlexibleCapacityCalculationsApr1_2013 - Formatted for Printing - 4-10 v1,
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name	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
ELKCRK_6_STONYG	2	2	3	2	2	2	2	2	1	0	0	1
ELKHIL_2_PL1X3	482	482	482	482	482	482	482	482	482	482	482	482
ELNIDP_6_BIOMAS	0	0	2	0	0	2	1	1	1	2	3	2
ELSEGN_7_UNIT 3	315	315	315	315	315	315	315	315	315	315	315	315
ELSEGN_7_UNIT 4	315	315	315	315	315	315	315	315	315	315	315	315
ENCINA_7_EA1	86	86	86	86	86	86	86	86	86	86	86	86
ENCINA_7_EA2	84	84	84	84	84	84	84	84	84	84	84	84
ENCINA_7_EA3	90	90	90	90	90	90	90	90	90	90	90	90
ENCINA_7_EA4	280	280	280	280	280	280	280	280	280	280	280	280
ENCINA_7_EA5	310	310	310	310	310	310	310	310	310	310	310	310
ENCINA_7_GT1	15	15	15	15	15	15	15	15	15	15	15	15
ESCND0_6_PL1X2	36	36	36	36	36	36	36	36	36	36	36	36
ESCND0_6_UNITB1	45	45	45	45	45	45	45	45	45	45	45	45
ETIWND_6_GRPLND	46	46	46	46	46	46	46	46	46	46	46	46
ETIWND_7_MIDVLY	2	2	2	2	2	2	2	2	2	2	1	2
ETIWND_7_UNIT 3	295	295	295	295	295	295	295	295	295	295	295	295
ETIWND_7_UNIT 4	295	295	295	295	295	295	295	295	295	295	295	295
EXCHEC_7_UNIT 1	32	32	37	48	57	71	70	62	53	48	46	45
FMEADO_7_UNIT	14	14	15	15	16	17	17	16	15	14	14	14
FORBST_7_UNIT 1	39	39	39	39	39	39	39	39	39	39	39	39
GATES_6_PL1X2	0	0	0	0	0	0	0	0	0	0	0	0
GATWAY_2_PL1X3	419	419	419	419	419	404	400	400	404	419	419	419
GEYS11_7_UNIT11	43	43	43	43	43	43	43	43	43	43	43	43
GEYS12_7_UNIT12	28	28	28	28	28	28	28	28	28	28	28	28
GEYS13_7_UNIT13	34	34	34	34	34	34	34	34	34	34	34	34
GEYS14_7_UNIT14	28	28	28	28	28	28	28	28	28	28	28	28
GEYS16_7_UNIT16	24	24	24	24	24	24	24	24	24	24	24	24
GEYS17_2_BOTRCK	15	15	15	15	15	15	15	15	15	15	15	15
GEYS17_7_UNIT17	31	31	31	31	31	31	31	31	31	31	31	31
GEYS18_7_UNIT18	23	23	23	23	23	23	23	23	23	23	23	23
GEYS20_7_UNIT20	18	18	18	18	18	18	18	18	18	18	18	18
GILROY_1_UNIT	25	25	25	25	20	15	10	10	15	25	25	25
GILRPP_1_PL1X2	95	95	95	93	92	91	91	91	92	93	95	95
GILRPP_1_PL3X4	46	46	46	46	46	46	46	46	46	46	46	46
GLNARM_7_UNIT 2	22	22	22	22	22	22	22	22	22	22	22	22
GLNARM_7_UNIT 3	45	45	45	45	45	45	45	45	45	45	45	45
GLNARM_7_UNIT 4	42	42	42	42	42	42	42	42	42	42	42	42
GOLETA_6_ELLWOD	54	54	54	54	54	54	54	54	54	54	54	54
GRIZLY_1_UNIT 1	18	18	18	18	18	18	18	18	18	18	18	18
GWFPWR_1_UNITS	84	84	84	84	84	84	84	84	84	84	84	84
GYS5X6_7_UNITS	56	56	56	56	56	56	56	56	56	56	56	56
GYS7X8_7_UNITS	52	52	52	52	52	52	52	52	52	52	52	52
HAASPH_7_PL1X2	136	136	136	136	137	140	139	136	139	143	141	137
HARBGN_7_UNITS	35	35	35	35	35	35	35	35	35	35	35	35
HELM PG_7_UNIT 1	404	404	404	404	404	404	404	404	404	404	404	404
HELM PG_7_UNIT 2	404	404	404	404	404	404	404	404	404	404	404	404
HELM PG_7_UNIT 3	404	404	404	404	404	404	404	404	404	404	404	404
HENRTA_6_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
HENRTA_6_UNITA2	45	45	45	45	45	45	45	45	45	45	45	45
HIDSRT_2_UNITS	519	519	519	519	519	519	519	519	519	519	519	519
HINSON_6_LBECH1	65	65	65	65	65	65	65	65	65	65	65	65
HINSON_6_LBECH2	65	65	65	65	65	65	65	65	65	65	65	65
HINSON_6_LBECH3	65	65	65	65	65	65	65	65	65	65	65	65
HINSON_6_LBECH4	65	65	65	65	65	65	65	65	65	65	65	65
HNTGBH_7_UNIT 1	206	206	206	206	206	206	206	206	206	206	206	206
HNTGBH_7_UNIT 2	206	206	206	206	206	206	206	206	206	206	206	206
HUMBPP_1_UNITS3	65	65	65	65	65	65	65	65	65	65	65	65
HUMBPP_6_UNITS1	49	49	49	49	49	49	49	49	49	49	49	49
HUMBPP_6_UNITS2	49	49	49	49	49	49	49	49	49	49	49	49
HYTTHM_2_UNITS	404	324	342	293	505	646	646	613	585	568	550	554
INDIGO_1_UNIT 1	42	42	42	42	42	42	42	42	42	42	42	42
INDIGO_1_UNIT 2	42	42	42	42	42	42	42	42	42	42	42	42
INDIGO_1_UNIT 3	42	42	42	42	42	42	42	42	42	42	42	42
INLDEM_5_UNIT 1	195	195	195	190	180	170	165	165	170	180	190	195
INLDEM_5_UNIT 2	195	195	195	190	180	170	165	165	170	180	190	195
KEARNY_7_KY1	16	16	16	16	16	16	16	16	16	16	16	16
KEARNY_7_KY2	59	59	59	59	59	59	59	59	59	59	59	59
KEARNY_7_KY3	61	61	61	61	61	61	61	61	61	61	61	61
KELSO_2_UNITS	196	193	194	194	184	184	184	184	184	193	194	195
KERNFT_1_UNITS	47	47	47	47	47	47	47	47	47	47	47	47

Raw Data,
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name	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
KINGRV_7_UNIT 1	51	51	51	51	51	51	51	51	51	51	51	51
KNGCTY_6_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
LAPLMA_2_UNIT 1	120	120	120	120	120	120	120	120	120	120	120	120
LAPLMA_2_UNIT 2	120	120	120	120	120	120	120	120	120	120	120	120
LAPLMA_2_UNIT 3	146	146	146	146	146	146	146	146	146	146	146	146
LAPLMA_2_UNIT 4	124	124	124	124	124	124	124	124	124	124	124	124
LARKSP_6_UNIT 1	46	46	46	46	46	46	46	46	46	46	46	46
LARKSP_6_UNIT 2	46	46	46	46	46	46	46	46	46	46	46	46
LAROA1_2_UNITA1	48	48	48	48	48	48	48	48	48	48	48	48
LAROA2_2_UNITA1	137	137	137	137	137	137	137	137	137	137	137	137
LEBEC5_2_UNITS	611	611	600	585	575	575	575	575	575	580	595	611
LMBEPK_2_UNITA1	48	48	48	48	47	47	47	47	47	48	48	48
LMBEPK_2_UNITA2	48	48	48	48	47	47	47	46	46	46	48	48
LMBEPK_2_UNITA3	48	48	48	48	47	47	47	47	47	48	48	48
LMEC_1_PL1X3	371	371	371	371	366	366	366	366	366	371	371	371
LODI25_2_UNIT 1	23	23	23	23	23	23	23	23	23	23	23	23
LODIEC_2_PL1X2	114	114	114	114	114	114	114	114	114	114	114	114
MALAGA_1_PL1X2	96	96	96	96	96	96	96	96	96	96	96	96
MDFKRL_2_PROJCT	205	205	207	209	213	213	211	209	207	206	203	202
METEC_2_PL1X3	413	413	413	413	405	395	390	390	400	413	413	413
MIRLOM_6_PEAKE	46	46	46	46	46	46	46	46	46	46	46	46
MNDALY_6_MCGRTH	47	47	47	47	47	47	47	47	47	47	47	47
MNDALY_7_UNIT 1	195	195	195	195	195	195	195	195	195	195	195	195
MNDALY_7_UNIT 2	195	195	195	195	195	195	195	195	195	195	195	195
MNDALY_7_UNIT 3	130	130	130	130	130	130	130	130	130	130	130	130
MORBAY_7_UNIT 3	275	275	275	275	275	275	275	275	275	275	275	275
MORBAY_7_UNIT 4	275	275	275	275	275	275	275	275	275	275	275	275
MOSSLD_2_PSP1	369	369	369	369	369	369	369	369	369	369	369	369
MOSSLD_2_PSP2	370	370	370	370	370	370	370	370	370	370	370	370
MOSSLD_7_UNIT 6	702	702	702	702	702	702	702	702	702	702	702	702
MOSSLD_7_UNIT 7	704	704	704	704	704	704	704	704	704	704	704	704
MRCNHT_2_PL1X3	239	239	239	239	239	239	239	239	239	239	239	239
MRGT_6_MEF2	48	48	48	48	48	48	48	48	48	48	48	48
MRGT_6_MMAREF	48	48	48	48	48	48	48	48	48	48	48	48
MRGT_7_UNITS	36	36	36	36	36	36	36	36	36	36	36	36
MTNPOS_1_UNIT	45	46	36	43	41	45	42	30	45	40	22	37
NCPA_7_GP1UN1	11	11	11	11	11	11	11	11	11	11	11	11
NCPA_7_GP1UN2	8	8	8	8	8	8	8	8	8	8	8	8
NCPA_7_GP2UN4	38	38	38	38	38	38	38	38	38	38	38	38
OGROVE_6_PL1X2	100	100	100	100	100	100	100	100	100	100	100	100
OMAR_2_UNIT 1	9	9	9	9	9	9	9	9	9	9	9	9
OMAR_2_UNIT 2	9	9	9	9	9	9	9	9	9	9	9	9
OMAR_2_UNIT 3	7	7	7	7	7	7	7	7	7	7	7	7
OMAR_2_UNIT 4	7	7	7	7	7	7	7	7	7	7	7	7
ORMOND_7_UNIT 1	641	641	641	641	641	641	641	641	641	641	641	641
ORMOND_7_UNIT 2	725	725	725	725	725	725	725	725	725	725	725	725
OTAY_6_PL1X2	36	36	36	36	36	36	36	36	36	36	36	36
OTMESA_2_PL1X3	449	449	449	449	449	449	449	449	449	449	449	449
PALALT_7_COBUG	5	5	5	5	5	5	5	5	5	5	5	5
PALOMR_2_PL1X3	366	366	366	366	366	366	366	366	366	366	366	366
PANDOL_6_UNIT	22	26	20	24	16	18	31	32	31	22	31	29
PIT3_7_PL1X3	71	71	71	71	71	71	71	71	71	71	71	71
PIT4_7_PL1X2	95	95	95	95	95	95	95	95	95	95	95	95
PIT5_7_PL1X2	80	80	80	80	80	80	80	80	80	80	80	80
PIT5_7_PL3X4	80	80	80	80	80	80	80	80	80	80	80	80
PIT6_7_UNIT 1	39	39	39	39	39	39	39	39	39	39	39	39
PIT6_7_UNIT 2	40	40	40	40	40	40	40	40	40	40	40	40
PIT7_7_UNIT 1	56	56	56	56	56	56	56	56	56	56	56	56
PIT7_7_UNIT 2	55	55	55	55	55	55	55	55	55	55	55	55
PIT7_7_UNIT 5	267	267	267	267	267	267	267	267	267	267	267	267
PIT7_7_UNIT 6	272	272	272	272	272	272	272	272	272	272	272	272
PIT7_7_UNIT 7	597	597	597	597	597	597	597	597	597	597	597	597
PNCHEG_2_PL1X4	381	381	381	381	381	381	381	381	381	381	381	381
PNCHEG_1_PL1X2	111	111	111	111	111	111	111	111	111	111	111	111
PNOCHE_1_PL1X2	50	50	50	50	50	50	50	50	50	50	50	50
PNOCHE_1_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
POEPH_7_UNIT 1	60	60	60	60	60	60	60	60	60	60	60	60
POEPH_7_UNIT 2	60	60	60	60	60	60	60	60	60	60	60	60
RCKCRK_7_UNIT 1	56	56	56	56	56	56	56	56	56	56	56	56
REDBLF_6_UNIT	44	44	44	44	44	44	44	44	44	44	44	44

Raw Data,
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name	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
REDOND_7_UNIT 5	169	169	169	169	169	169	169	169	169	169	169	169
REDOND_7_UNIT 6	165	165	165	165	165	165	165	165	165	165	165	165
REDOND_7_UNIT 7	376	376	376	376	376	376	376	376	376	376	376	376
REDOND_7_UNIT 8	366	366	366	366	366	366	366	366	366	366	366	366
RVRVIEW_1_UNITA1	49	49	49	49	48	46	46	46	47	49	49	49
RVSIDE_2_RERCU3	49	49	49	49	49	49	49	49	49	49	49	49
RVSIDE_2_RERCU4	49	49	49	49	49	49	49	49	49	49	49	49
RVSIDE_6_RERCU1	48	48	48	48	48	48	48	48	48	48	48	48
RVSIDE_6_RERCU2	49	49	49	49	49	49	49	49	49	49	49	49
SANJOA_1_UNIT 1	8	8	8	8	8	8	8	8	8	8	8	8
SANTFG_7_UNITS	30	30	30	30	30	30	30	30	30	30	30	30
SANTGO_6_COYOTE	6	6	6	6	6	6	6	6	6	6	6	6
SAUGUS_7_CHIQCN	6	7	6	6	6	5	4	2	5	5	2	5
SAUGUS_7_LOPEZ	5	5	5	6	6	6	5	5	6	6	6	5
SBERDO_2_PSP4	325	325	325	325	325	325	325	325	325	325	325	325
SBERDO_2_PSP3	325	325	325	325	325	325	325	325	325	325	325	325
SCHLTE_1_PL1X3	239	236	233	235	211	211	211	211	211	232	234	239
SCHLTE_1_UNITA1	84	84	84	84	84	84	84	84	84	84	84	84
SCHLTE_1_UNITA2	83	83	83	83	83	83	83	83	83	83	83	83
SIERRA_1_UNITS	47	47	47	47	47	47	47	47	47	47	47	47
SLYCRK_1_UNIT 1	6	7	9	12	13	13	13	10	8	8	8	7
SMUDGO_7_UNIT 1	22	22	22	22	22	22	22	22	22	22	22	22
SNMALF_6_UNITS	5	5	5	5	5	5	5	4	4	4	4	4
SPICER_1_UNITS	6	6	6	6	6	6	6	6	6	6	6	6
STIGCT_2_LODI	15	15	15	15	15	15	15	15	15	15	15	15
SUNRIS_2_PL1X3	465	465	465	465	465	465	465	465	465	465	465	465
SUTTER_2_PL1X3	345	345	345	345	345	335	325	320	335	340	345	345
TERMEX_2_PL1X3	455	455	455	455	451	443	441	443	446	455	455	455
UKIAH_7_LAKEMN	2	2	2	2	2	2	2	2	2	2	2	2
VACADX_1_UNITA1	45	45	45	45	45	45	45	45	45	45	45	45
VALLEY_7_BADLND	1	1	1	1	1	1	1	1	1	1	1	1
VERNON_6_GONZL1	6	6	6	6	6	6	6	6	6	6	6	6
VERNON_6_GONZL2	6	6	6	6	6	6	6	6	6	6	6	6
VERNON_6_MALBRG	78	78	78	78	78	78	78	78	78	78	78	78
VESTAL_6_WDFIRE	2	2	2	2	0	2	2	2	2	2	0	0
WARNE_2_UNIT	76	74	74	76	76	76	76	76	76	65	76	76
WDFRDF_2_UNITS	20	20	20	20	20	20	20	20	20	20	20	20
WDLEAF_7_UNIT 1	55	55	55	55	55	55	55	55	55	55	55	55
WOLFSK_1_UNITA1	47	47	47	47	46	46	46	46	46	47	47	47
YUBACT_6_UNITA1	46	46	46	46	46	46	46	46	46	46	46	46
Total	31,459	31,430	31,525	31,459	31,650	31,732	31,684	31,610	31,557	31,649	31,686	31,745

ATTACHMENT 2

Market Notice



October 16, 2012

Categories

Grid Operation
Market Operations

Requested Client Action

Information Only

Final Net Qualifying Capacity Report for Compliance Year 2013

Summary

The California ISO has posted the final net qualifying capacity report for compliance year 2013.

Main Text

The ISO has posted the final net qualifying capacity report for compliance year 2013 on its website at <http://www.caiso.com/Documents/FinalNetQualifyingCapacityList-2013.xls>. The posting includes input from the California Public Utilities Commission (CPUC), includes a tab listing resources under construction and reflects updated wind and solar factors. The ISO will use the posted net qualifying capacity values for compliance year 2013.

The CPUC manual for the qualifying capacity calculation is available on the CPUC website at http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/ra_history.htm.

For More Information Contact

ReliabilityRequirements@caiso.com

The California ISO strives to be a world-class electric transmission organization built around a globally recognized and inspired team providing cost-effective and reliable service, well-balanced energy market mechanisms, and high-quality information for the benefit of our customers.

250 Outcropping Way, Folsom, CA 95630

[Glossary of terms and acronyms](#)

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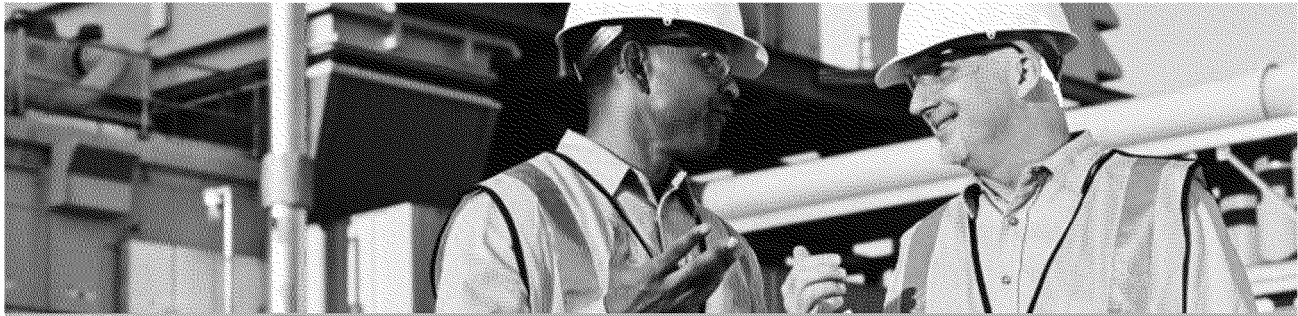
Attachment 2 - FinalNetQualifyingCapacityList-2013 - Formatted for Printing 4-10 v1, Other

Resources on this tab have not yet declared COD. NQC values for resources listed on this tab are not final and are subject to change based on the status of transmission upgrades, Unit Capability at time of COD, and declaration of COD. Month ahead NQC may be decreased per actual Pmax test.

Resource ID	Area Name	Generator Name	NQC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Path 26	Deliverability Status Full Capacity (FC), Energy Only (EO), Energy Only with Interim Deliverability (EO with ID), Partial Deliverability to Value (PD to ##)	Dispatchability
COCOPP_2_C TG1	Bay Area	Marsh Landing Unit 1		204.31	204.31	202.37	199.31	196.35	193.50	191.46	191.46	193.50	196.35	202.37	203.39	North	EO with ID	Y
COCOPP_2_C TG2	Bay Area	Marsh Landing Unit 2		204.31	204.31	202.37	199.31	196.35	193.50	191.46	191.46	193.50	196.35	202.37	203.39	North	EO with ID	Y
COCOPP_2_C TG3	Bay Area	Marsh Landing Unit 3		204.31	204.31	202.37	199.31	196.35	193.50	191.46	191.46	193.50	196.35	202.37	203.39	North	EO with ID	Y
COCOPP_2_C TG4	Bay Area	Marsh Landing Unit 4		204.31	204.31	202.37	199.31	196.35	193.50	191.46	191.46	193.50	196.35	202.37	203.39	North	EO with ID	Y
ELSEGN_2_UN1011	LA Basin	EI Segundo Repower Units 5-6	275.00													South	FC	Y
ELSEGN_2_UN2021	LA Basin	EI Segundo Repower Units 7-8	275.00													South	FC	Y
LECEF_1_UNITS	Bay Area	Los Esteros Expansion		295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	North	FC	Y
RUSCTY_2_UNITS	Bay Area	Russell City Energy Center		612.80	612.80	612.80	612.80	612.80	612.80	612.80	612.80	612.80	612.80	612.80	612.80	North	FC	Y
SENTNL_2_UNITS	LA Basin	Sentinel		728.80	728.80	728.80	728.80	728.80	728.80	728.80	728.80	728.80	728.80	728.80	728.80	South	FC	Y
WALCRK_2_C TG1	LA Basin	Walnut Creek Unit 1		95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	South	FC	Y
WALCRK_2_C TG2	LA Basin	Walnut Creek Unit 2		95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	South	FC	Y
WALCRK_2_C TG3	LA Basin	Walnut Creek Unit 3		95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	South	FC	Y
WALCRK_2_C TG4	LA Basin	Walnut Creek Unit 4		95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	South	FC	Y
WALCRK_2_C TG5	LA Basin	Walnut Creek Unit 5		95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	95.76	South	FC	Y
al (including EI Segundo 5-8)				3,483	3,483	3,475	3,463	3,451	3,439	3,431	3,431	3,439	3,451	3,475	3,479			

SB GT&S_0523113

ATTACHMENT 3



Home -> sitingcases

Status of All Projects

[Download this information as an Excel file \(150.5 kb\).](#)

CALIFORNIA ENERGY COMMISSION - ENERGY FACILITY STATUS Power Plant Projects Since 1996, Updated: April 8, 2013

COLOR KEY:

Operational / On Line

Approved

In Review

On-line date is expected to be delayed beyond the date shown.

Expected and disclosed

Planned but undisclosed

On hold or suspended. According to developers,

the new on-line date will be determined when the markets are favorable and financing is available.

Project approved but cancelled by applicant or approved and license expired before construction began; or proceeding terminated by Commission.

Projects On Line Arranged by Date On Line	Docket Number	Status	Capacity (MW)	Construction Completed (percent)	Location	Date Approved	Construction Start Date	Original On-Line Date	Actual On-Line Date*
1a Sunrise - Texaco & Edison Mission E.	98-AFC-4	Operational	320	100	Kern Co.	12/6/00	12/7/00	7/01	6/27/01
2 Sutter - Calpine	97-AFC-2	Operational	540	100	Sutter Co.	4/14/99	7/1/99	7/01	7/2/01
3 Los Medanos (Pittsburg) - Calpine	98-AFC-1	Operational	555	100	Contra Costa	8/17/99	9/17/99	7/01	7/9/01
4 Wildflower Larkspur - Intergen	01-EP-1	Operational	90	100	San Diego Co.	4/4/01	4/5/01	7/01	7/16/01
5 Wildflower Indigo 1,2&3 - Intergen	01-EP-2	Operational	135	100	Riverside Co.	4/4/01	4/5/01	7/01-9/01	7/26-9/10/01
6 Drews - Alliance	01-EP-5	Operational	40	100	San Bernardino	4/25/01	4/26/01	9/01	8/15/01
7 Hanford - GWF	01-EP-7	Operational	95	100	Kings Co.	5/10/01	5/11/01	9/01	9/1/01
8 Century - Alliance	01-EP-4	Operational	40	100	San Bernardino	4/25/01	4/26/01	9/01	9/15/01
9 Escondido - Calpeak	01-EP-10	Operational	49.5	100	San Diego Co.	6/6/01	6/7/01	9/01	9/30/01
10 Border - Calpeak	01-EP-14	Operational	49.5	100	San Diego Co.	7/11/01	7/12/01	9/01	10/26/01
Subtotal On Line 2001			1,914						
11 Gilroy I, Units 1,2&3 - Calpine	01-EP-8	Operational	135	100	Santa Clara Co.	5/21/01	5/22/01	9/01	Units 1&2: 1/29/02 Unit 3: 2/20/02
12 King City - Calpine	01-EP-6	Operational	50	100	Monterey Co.	5/2/01	5/3/01	9/01	1/14/02

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	Lodi Energy Center - NCPA					San Joaquin				
		Subtotal On Line 2012		902						
55	Walnut Creek Peaker - Edison Mission E.	2005-AFC-2C	Testing	500	91	Los Angeles	2/27/2008	6/2011	N/A	5/2013
56	Marsh Landing Generating Station	2008-AFC-3C	Testing	760	97.9	Contra Costa	8/25/2010	1/15/2010	6/2013	6/2013
57	Sentinel Peaker - CPV	2007-AFC-3C	Testing	850	98	Riverside	12/1/2010	6/2011	8/2013	8/2013
		Subtotal On Line 2013		2,110						
		ON-LINE TOTAL - In Operation With Testing Plants		17,775						
				19,885						

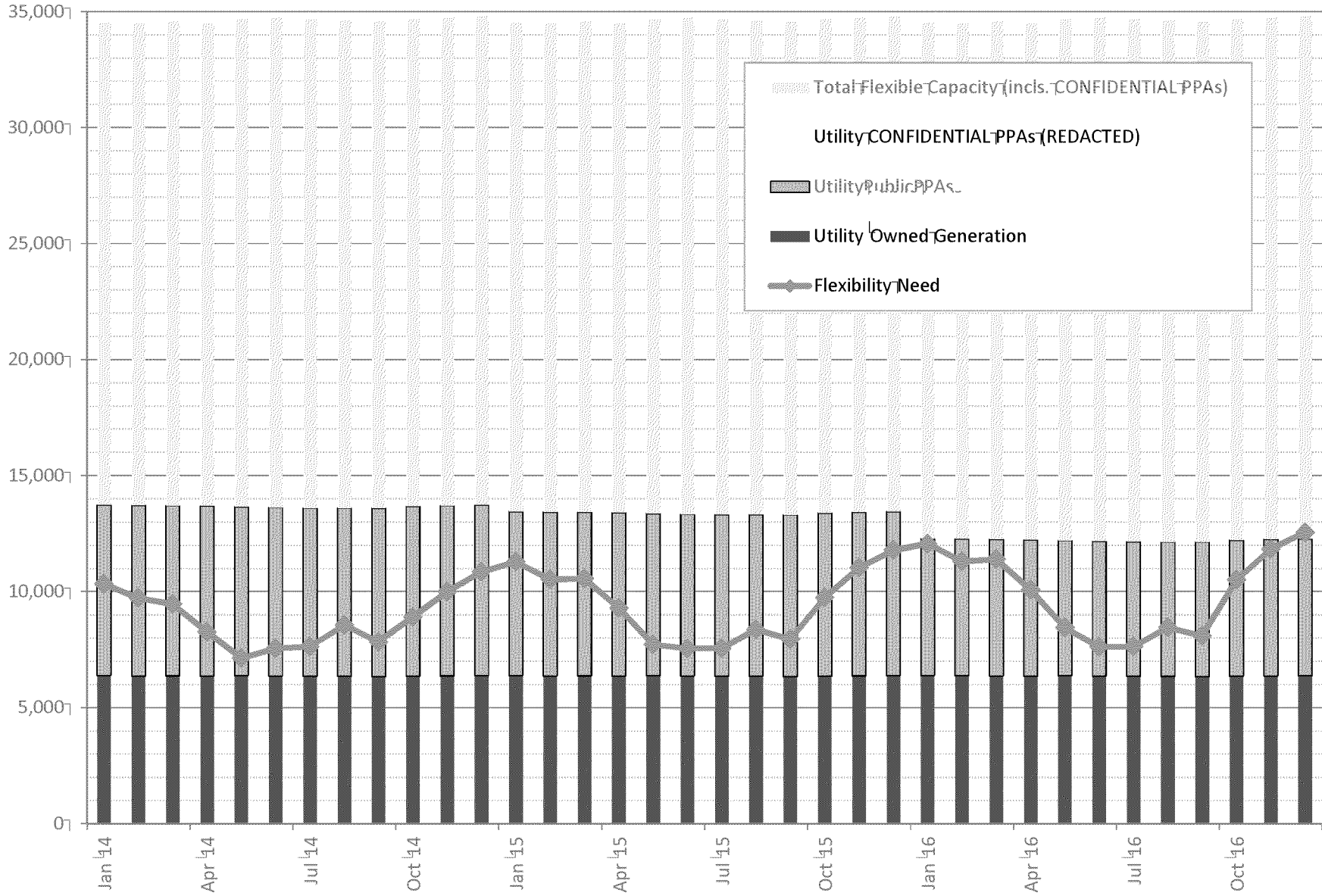
	Approved and/or Under Construction (Arranged By Date Approved)	Docket Number	Status	Capacity (MW)	Construction Completed (percent)	Location	Date Approved	Construction Start Date	Original On-Line Date	Current On-Line Date*
1	Los Esteros Combined Cycle - Calpine	2003-AFC-2C	Under Construction	140	79.2	Santa Clara	10/11/2006	5/26/2011	N/A	6/2013
2	Russell City - Calpine & GE	2001-AFC-7C	Under Construction	600	85	Alameda	10/03/2007	9/1/2010	2013	7/2013
3	El Segundo Power Redevelopment (Dry Cooling Amendment)	2000-AFC-14C	Under Construction	630	80	Los Angeles	7/1/2010	5/6/2011	8/2010	8/2013
4	Abengoa Mojave Solar Project - Mojave Solar LLC	2009-AFC-5C	Under Construction	250	33	San Bernardino	9/8/2010	N/A	N/A	N/A
5	Blythe Solar - NextEra Blythe Energy Center LLC	2009-AFC-6C	Under Construction	1000	Hold	Riverside	9/15/2010	11/4/2010	N/A	2015
6	Ivanpah Solar - Brightsource	2007-AFC-5C	Under Construction	370	78	San Bernardino	9/22/2010	10/2010	10/2012 - 2014	10/2012 - 2014 Phased
7	Genesis Solar Energy Project - NextEra Energy	2009-AFC-8C	Under Construction	250	49.2	Riverside	9/29/2010	1/17/2011	N/A	N/A
8	Oakley Generating Station (formerly Contra Costa)	2009-AFC-4C	Under Construction	624	10	Contra Costa	5/18/2011	6/8/2011	2013	2016
9	Santa Clara SC-1 Data Center, Phase 2 Xeres Ventures, LLC	2011-SPPE-1	Under Construction	36	--	Santa Clara	3/28/2012	N/A	N/A	N/A
	Approved and/or Under Construction Subtotal			3,900						

	Approved and/or Pre-Construction (Arranged By Date Approved)	Docket Number	Status	Capacity (MW)	Pre-Construction Completed (percent)	Location	Date Approved	Construction Start Date	Original On-Line Date	Current On-Line Date*
1	Victorville Hybrid Gas-Solar - City of Victorville	2007-AFC-1C	pre-Construction	563	0	San Bernardino	7/16/2008	TBD	8/2010	TBD
2	Avenal Energy - Avenal Power Center, LLC	2008-AFC-1C	pre-Construction	600	Delayed	Kings	12/16/2009	TBD	12/2011	TBD
3	Hanford Combined-Cycle Power Plant (Hanford Energy Peaker Project Expansion) - GWF Energy LLC	2001-EP-7C	pre-Construction	25	0	Kings	3/24/2010	TBD	10/2012	TBD
4	Henrietta Peaker Project Combined Cycle Expansion - GWF Energy LLC	2001-AFC-18C	pre-Construction	25	0	Kings	3/24/2010	TBD	10/2012	TBD
5		2008-AFC-2C	pre-Construction	250	Pending	Kern	8/25/2010	TBD	N/A	N/A

ATTACHMENT 4 (PUBLIC VERSION)

PUBLIC, REDACTED

Utility Forward Procurement of Flexible Capacity and CAISO Projected Needs (MW)



Sources for Attachment 4

Total Flexible Capacity:	CAISO data on Effective Flexible Capacity (EFC) provided April 1 for existing units. New units' EFC estimated from nominal capacity shown in the "Other" worksheet of CAISO's 2013 Net Qualifying Capacity spreadsheet.
Utility CONFIDENTIAL PPAs:	CAISO EFC data and utilities' confidential responses to TURN data requests. Some contracts in this category may be reclassified as "Utility Public PPAs" upon further research.
Utility Public PPAs:	CAISO EFC data and public information regarding utility PPAs.
Utility Owned Generation:	CAISO EFC data and public information regarding utility ownership.
Flexibility Need:	Slides 15 to CAISO's April 5 Comments showing revised flexibility needs.

ATTACHMENT 5

Changes in CAISO Estimated Minute by Minute Load (MW) Nov. 3 to Nov. 5, 2014

