



California ISO  
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California Independent  
System Operator

**2009  
LOCAL CAPACITY TECHNICAL  
ANALYSIS**

**REPORT  
AND STUDY RESULTS UPDATE  
FOR SAN DIEGO AREA**

Updated September 30, 2008

# Local Capacity Technical Analysis Overview and Study Results Update for San Diego Area

## I. Executive Summary

This update amends the results and recommendations of the 2009 Local Capacity Technical Analysis, dated May 1, 2008 (2009 LCR Study), with respect to the San Diego Area. The changes included in this update are made at the request of the Commission and reflect: (1) the addition of the San Diego Demand Response (DR) as an eligible RA resource in the San Diego Area and (2) the elimination of the Lake Hodges, Margarita, Orange Grove (Pala) and Otay Mesa projects from the list of eligible Local Capacity Area Resources. The California Public Utilities Commission (CPUC) has finalized the 2009 DR allocation for RA purposes. The DR resource is very important in San Diego because it is projected that this area will be overall deficient in 2009 as such a correct account of all RA resources is needed. The Lake Hodges, Margarita, Orange Grove (Pala) and Otay Mesa projects are being removed because of information provided by developers indicating that the “in-service date” for these projects has been delayed beyond summer of 2009, making it ineligible for inclusion in the 2009 LCR Study.

The following discussion replaces “Section 10 San Diego Area” on pages 92-97 of the 2009 LCR Study.

## 10. San Diego Area

### Area Definition

The transmission tie lines forming a boundary around San Diego include:

- 1) Imperial Valley – Miguel 500 kV Line
- 2) Miguel – Tijuana 230 kV Line
- 3) San Onofre - San Luis Rey #1 230 kV Line
- 4) San Onofre - San Luis Rey #2 230 kV Line
- 5) San Onofre - San Luis Rey #3 230 kV Line
- 6) San Onofre – Talega #1 230 kV Line
- 7) San Onofre – Talega #2 230 kV Line

The substations that delineate the San Diego Area are:

- 1) Imperial Valley is out Miguel is in
- 2) Miguel is in Tijuana is out
- 3) San Onofre is out San Luis Rey is in
- 4) San Onofre is out San Luis Rey is in
- 5) San Onofre is out San Luis Rey is in
- 6) San Onofre is out Talega is in
- 7) San Onofre is out Talega is in

Total 2009 busload within the defined area: 4926 MW with 126 MW of losses resulting in total load + losses of 5052 MW.

Total units and qualifying capacity available in this area:

MKT/SCHED RESOURCE ID	BUS #	BUS NAME	kV	NQC	UNIT ID	LCR SUB-AREA NAME	NQC Comments	CAISO Tag
BORDER_6_UNITA1	22149	CALPK_BD	13.8	43.80	1	South Bay 69		Market
CBRILLO_6_PLSTP1	22092	CABRILLO	69	3.11	1	None		QF/Selfgen
CCRITA_7_RPPCHF	22124	CHCARITA	138	3.50	1	None		QF/Selfgen
CHILLS_1_SYCLFL	22120	CARLTNHS	138	1.00	1	None		QF/Selfgen
CHILLS_7_UNITA1	22120	CARLTNHS	138	2.50	2	None		QF/Selfgen
CPSTNO_7_PRMADS	22112	CAPSTRNO	138	3.53	1	None		QF/Selfgen
CRSTWD_6_KUMYAY	22915	KUMEYAAY	34.5	8.82	1	None	Monthly NQC - used August for LCR	Wind
DIVSON_6_NSQF	22172	DIVISION	69	47.00	1	None		QF/Selfgen
EGATE_7_NOCITY	22204	EASTGATE	69	0.89	1	None		QF/Selfgen
ELCAJN_6_UNITA1	22150	CALPK_EC	13.8	42.20	1	El Cajon		Market
ELCAJN_7_GT1	22212	ELCAJNGT	12.5	13.00	1	El Cajon		Market
ENCINA_7_EA1	22233	ENCINA 1	14.4	106.00	1	None		Market
ENCINA_7_EA2	22234	ENCINA 2	14.4	103.00	1	None		Market
ENCINA_7_EA3	22236	ENCINA 3	14.4	109.00	1	None		Market
ENCINA_7_EA4	22240	ENCINA 4	22	299.00	1	None		Market
ENCINA_7_EA5	22244	ENCINA 5	24	329.00	1	None		Market
ENCINA_7_GT1	22248	ENCINAGT	12.5	14.00	1	None		Market
ESCND0_6_PL1X2	22257	MMC_ES	13.8	35.50	1	None		Market
ESCND0_6_UNITB1	22153	CALPK_ES	13.8	45.50	1	None		Market
ESCO_6_GLMQF	22332	GOALLINE	69	46.79	1	None		QF/Selfgen
KEARNY_7_KY1	22377	KEARNGT1	12.5	15.00	1	Rose Canyon		Market
KEARNY_7_KY2	22373	KEARN2AB	12.5	14.00	1	Rose Canyon		Market

KEARNY_7_KY2	22373	KEARN2AB	12.5	14.00	2	Rose Canyon		Market
KEARNY_7_KY2	22374	KEARN2CD	12.5	14.00	1	Rose Canyon		Market
KEARNY_7_KY2	22374	KEARN2CD	12.5	13.00	2	Rose Canyon		Market
KEARNY_7_KY3	22375	KEARN3AB	12.5	14.00	1	Rose Canyon		Market
KEARNY_7_KY3	22375	KEARN3AB	12.5	15.00	2	Rose Canyon		Market
KEARNY_7_KY3	22376	KEARN3CD	12.5	14.00	1	Rose Canyon		Market
KEARNY_7_KY3	22376	KEARN3CD	12.5	14.00	2	Rose Canyon		Market
LARKSP_6_UNIT 1	22074	LRKSPBD1	13.8	46.00	1	South Bay 69		Market
LARKSP_6_UNIT 2	22075	LRKSPBD2	13.8	46.00	1	South Bay 69		Market
MRGT_6_MMAREF	22486	MFE_MR1	13.8	46.60	1	None		Market
MRGT_7_UNITS	22488	MIRAMRGT	12.5	17.00	1	None		Market
MRGT_7_UNITS	22488	MIRAMRGT	12.5	16.00	2	None		Market
MSHGTS_6_MMARLF	22448	MESAHGTS	69	2.93	1	None		QF/Selfgen
MSSION_2_QF	22496	MISSION	69	2.10	1	None		QF/Selfgen
NIMTG_6_NIQF	22576	NOISLMTR	69	35.58	1	None		QF/Selfgen
OTAY_6_PL1X2	22617	MMC_OY	13.8	35.50	1	South Bay 69		Market
OTAY_6_UNITB1	22604	OTAY	69	1.42	1	South Bay 69		QF/Selfgen
OTAY_6_UNITB1	22604	OTAY	69	1.41	2	South Bay 69		QF/Selfgen
OTAY_7_UNITC1	22604	OTAY	69	3.40	3	South Bay 69		QF/Selfgen
PALOMR_2_PL1X3	22262	PEN_CT1	18	155.42	1	None		Market
PALOMR_2_PL1X3	22263	PEN_CT2	18	155.42	1	None		Market
PALOMR_2_PL1X3	22265	PEN_ST	18	230.64	1	None		Market
PTLOMA_6_NTCCGN	22660	POINTLMA	69	2.29	2	None		QF/Selfgen
PTLOMA_6_NTCQF	22660	POINTLMA	69	22.19	1	None		QF/Selfgen
SAMPSN_6_KELCO1	22704	SAMPSON	12.5	9.39	1	None		QF/Selfgen
SMRCOS_6_UNIT 1	22724	SANMRCOS	69	0.99	1	None		QF/Selfgen
SOBAY_7_GT1	22776	SOUTHBGT	12.5	15.00	1	South Bay 69		Market
SOBAY_7_SY1	22780	SOUTHBY1	15	146.00	1	South Bay 69		Market
SOBAY_7_SY2	22784	SOUTHBY2	15	149.60	1	None		Market
SOBAY_7_SY3	22788	SOUTHBY3	20	175.00	1	None		Market
SOBAY_7_SY4	22792	SOUTHBY4	20	222.00	1	None		Market
KYCORA_7_UNIT 1	22384	KYOCERA	69	0.00	1	None	No NQC - historical data	QF/Selfgen
NA	22008	ASH	69	0.90	1	None	No NQC - historical data	QF/Selfgen
NA	22532	MURRAY	69	0.20	1	None	No NQC - historical data	QF/Selfgen
NA	22680	R.SNTAFE	69	0.40	1	None	No NQC - historical data	QF/Selfgen
NA	22680	R.SNTAFE	69	0.30	2	None	No NQC - historical data	QF/Selfgen

NA	22756	SCRIPPS	69	0.00	1	None	No NQC - historical data	QF/Selfgen
NA	22760	SHADOWR	138	0.10	1	None	No NQC - historical data	QF/Selfgen
NA	22870	VALCNTR	69	0.10	1	None	No NQC - historical data	QF/Selfgen
NA	22916	PFC-AVC	0.6	0.00	1	None	No NQC - historical data	QF/Selfgen
San Diego DR	N/A	N/A	N/A	91	N/A	None	CPUC Allocation	DR

**Major new projects modeled:**

1. None

**Critical Contingency Analysis Summary**

***El Cajon Sub-area:***

The most critical contingency for the El Cajon sub-area is the loss of the El Cajon-Jamacha 69 kV line (TL624) followed by the loss of Miguel-Granite-Los Coches 69 kV line (TL632), which would thermally overload the El Cajon-Los Coches 69 kV line. This limiting contingency establishes a LCR of 55 MW (including 0 MW of QF generation) in 2009 as the minimum generation capacity necessary for reliable load serving capability within this sub-area.

**Effectiveness factors:**

All units within this sub-area (El Cajon Peaker and El Cajon GT) are needed therefore no effectiveness factor is required.

***Rose Canyon Sub-area***

The most critical contingency for the Rose Canyon Sub-area is the loss of Old Town-Pacific Beach 69 kV line (TL613) followed by the loss of Rose Canyon-Penasquitos 69 kV line (TL661), which would thermally overload the Eastgate-Rose Canyon 69 kV line (TL6927). This limiting contingency establishes a LCR of 28 MW (including 0 MW of QF generation) in 2009 as the minimum generation capacity necessary for reliable load serving capability within this sub-area.

**Effectiveness factors:**

All units within this area (Kearny GTs) have the same effectiveness factors.

***Bernardo Sub-area***

While the Bernardo sub-area still has an operational need it has no LCR requirement for 2009, because there are no resources available within this sub-area.

**Effectiveness factors:**

Not applicable.

***Border-Otay Sub-area***

Sub-area eliminated based on the new short term emergency ratings.

***South Bay 69 kV Sub-area***

The most critical contingency for the South Bay 69 kV Sub-area is the loss of South Bay-Grant Hill 138 kV line, which would thermally overload the South Bay #50 138/69 kV transformer bank. This limiting contingency establishes a LCR of 146 MW (including 6 MW of QF) in 2009 as the minimum generation capacity necessary for reliable load serving capability within this sub-area.

**Effectiveness factors:**

The following table has units that have at least 5% effectiveness to the above-mentioned constraint within the South Bay 69 kV sub-area:

Gen Bus	Gen Name	Gen ID	Eff Fctr (%)
22780	SOUTHBY1	1	26
22776	SOUTHBGT	1	26
22617	MMC_OY	1	25
22604	OTAY	1	25
22604	OTAY	2	25
22604	OTAY	3	25
22074	LRKSPBD1	1	17
22149	CALPEAK_BD	1	17
22075	LRKSPBD2	1	17

***San Diego overall:***

The most limiting contingency in the San Diego area is described by the outage of the 500 kV Southwest Power Link (SWPL) between Imperial Valley and Miguel Substations over-lapping with an outage of the Palomar Combined-Cycle Power plant (541 MW) while staying within the South of San Onofre (WECC Path 44) non-simultaneous import capability rating of 2,500 MW. This contingency establishes a LCR of 3093 MW in 2009 (includes 192 MW of QF generation and 9 MW of Wind) as the minimum generation capacity necessary for reliable load serving capability within this area.

**Effectiveness factors:**

All units within this area have the same effectiveness factor. Units outside of this area are not effective.

**Changes compared to last year’s results:**

Overall the load forecast went up by 60 MW and that lead to an increase in the LCR by same amount.

***San Diego Overall Requirements:***

2009	QF (MW)	Wind (MW)	Market (MW)	DR (MW)	Max. Qualifying Capacity (MW)
Available Resources	192	9	2759	91	3051

2009	Existing Resources Capacity Needed (MW)	Deficiency (MW)	Total MW LCR Need
Category B (Single) <sup>1</sup>	3051	42	3093
Category C (Multiple) <sup>2</sup>	3051	42	3093

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<sup>1</sup> A single contingency means that the system will be able the survive the loss of a single element, however the operators will not have any means (other then load drop) in order to bring the system within a safe operating zone and get prepared for the next contingency as required by MORC.

<sup>2</sup> Multiple contingencies means that the system will be able the survive the loss of a single element, and the operators will have enough generation (other operating procedures) in order to bring the system within a safe operating zone and get prepared for the next contingency as required by MORC.