



Year 2007 Local Capacity Requirements Study Greater Bay Area

Draft Summary of Findings

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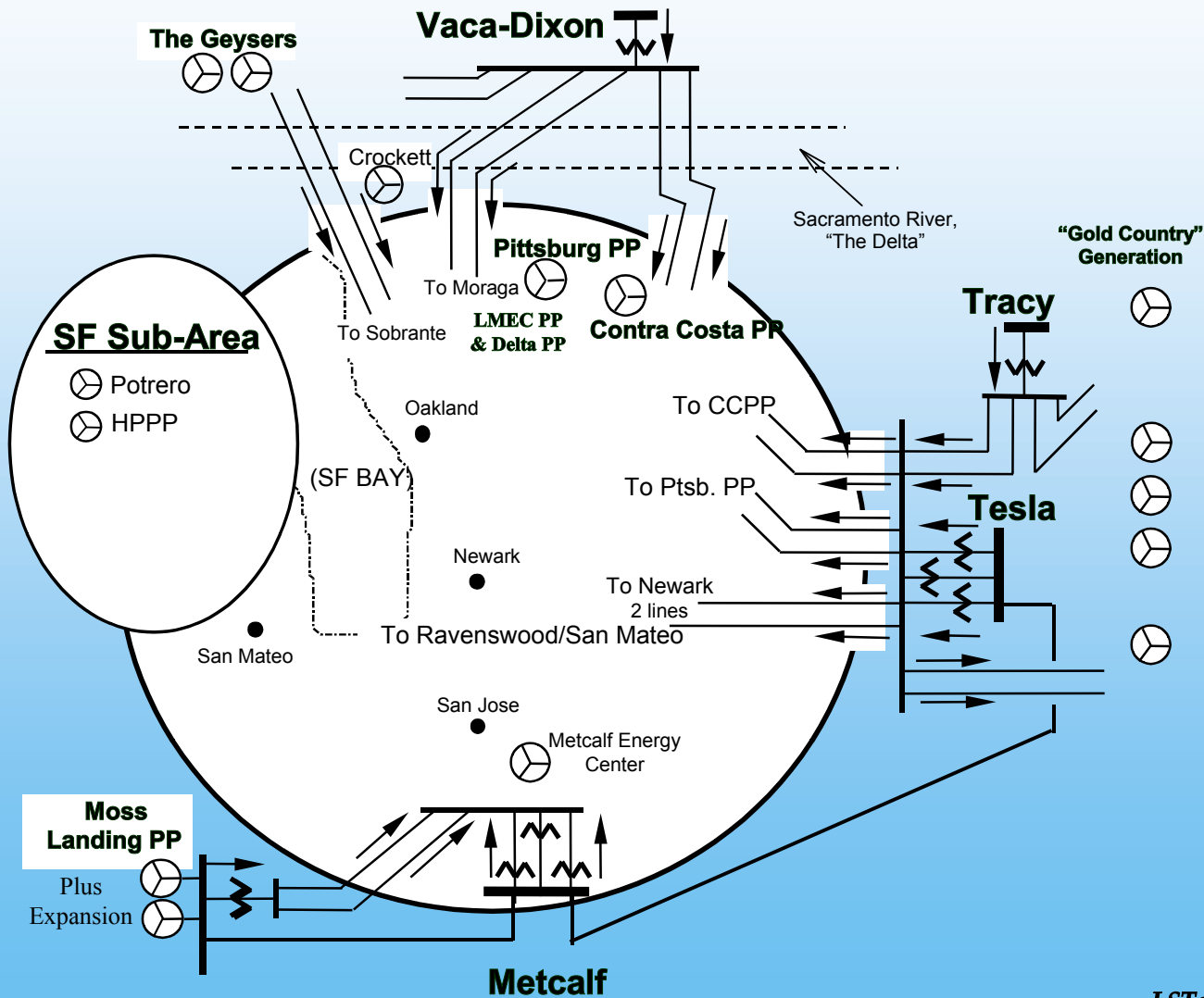


General Greater Bay Area Geographic Area





Greater Bay Area Transmission System



Greater Bay Area Power Flow Zones

The Greater Bay Area LCR Area is described by the following list of Zones defined by PG&E within power flow base cases.

1. San Francisco
2. Peninsula
3. DeAnza
4. San Jose
5. Mission
6. East Bay
7. Diablo
8. Silicon Valley Power
9. NCPA

Greater Bay Area

2007 1-in-10 Year Load Representation

Total Load = 9402 MW

Transmission Losses = 231 MW

Total Load + Losses = 9633 MW

Greater Bay Area LCR Category C Contingency

- The most critical over-lapping contingency is the loss of the Vaca Dixon 500/230 kV transformer followed by loss of the Contra Costa unit 7 or vice versa. The area limitation is thermal overloading of the Tesla-Delta Switching Yard 230 kV line.
- This limiting contingency establishes a Local Capacity Requirement of 5341 MW (includes 1314 MW of Wind, QF and Muni generation)
- This is the minimum capacity necessary for reliable load serving capability within this area.

Greater Bay Area LCR Category B Contingency

- The most critical single contingency is the loss of the Vaca Dixon 500/230 kV transformer. The area limitation is thermal overloading of the Tesla-Delta Switching Yard 230 kV line.
- This limiting contingency establishes a Local Capacity Requirement of 4771 MW (includes 1314 MW of Wind, QF and Muni generation)
- This is the minimum capacity necessary for reliable load serving capability within this area.

Greater Bay Area Overall Requirements					
	Wind (MW)	QF/Selfgen (MW)	Muni (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available Gen	78	988	248	5231	6545

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Requirement
Category B (Single)	4771	0	4771
Category C (Multiple)	5341	0	5341

San Francisco Sub-Area

- Per the CAISO Revised Action Plan for SF, all Potrero units (360 MW) will continue to be required until completion of the plan as it is presently described.
- The most critical LCR contingency is an overlapping outage of two 115 kV cables between Martin and Hunters Point Substations. The area limitation is thermal overloading of the Martin-Bayshore-Potrero 115 kV #1 and #2 cables.
- This limiting contingency requires all of the existing Potrero Power plant generation (Potrero units 3-6) 360 MW be on-line.
- This is the minimum capacity necessary for reliable load serving capability within this sub-area.

Oakland Sub-Area

- The most critical contingency is an outage of the D-L 115 kV cable (with one of the Oakland CT's off-line)
- The sub-area area limitation is thermal overloading of the C-X 115 kV cable
- This limiting contingency establishes a Local Capacity Requirement of 100 MW. This includes 50 MW of Alameda Muni generation.
- This is the minimum capacity necessary for reliable load serving capability within this sub-area.

Llagas Sub-Area

- The most critical contingency is an outage between Metcalf D and Morgan Hill 115 kV (with one of the Gilroy Peaker off-line).
- The area limitation is thermal overloading of the Metcalf-Llagas 115 kV line. As documented within a CAISO Operating Procedure, this limitation is dependent on power flowing in the direction from Metcalf to Llagas/Morgan Hill.
- This limiting contingency establishes a Local Capacity Requirement of 100 MW.
- This is the minimum capacity necessary for reliable load serving capability within this sub-area.

San Jose Sub-Area

- The most critical contingency is the category C outage of Evergreen 1 – Markham – San Jose B 115 kV line and the Metcalf D – IBM HR – El Patio 115 kV line. The area limitation is thermal overloading of the Baily J3 – El Patio 115 kV line. This contingency prevents the Metcalf E 115 bus from feeding the San Jose B 115 kV load. Power must flow through the remaining Metcalf D – El Patio 115 kV circuit and then to the load at San Jose B 115 kV bus.
- This limiting contingency establishes a Local Capacity Requirement of 457 MW (including 265 MW of QF and Muni generation)
- This is the minimum capacity necessary for reliable load serving capability within this sub-area.

Pittsburg Sub-Area

- The most critical contingency is an outage of the Pittsburg-Tesla #1 or #2 230 kV line (with Delta Energy Center off-line)
- The sub-area area limitation is thermal overloading of the parallel Pittsburg-Tesla 230 kV line
- This limiting contingency establishes a Local Capacity Requirement of 2208 MW (including 678 MW of QF generation) as the minimum capacity necessary for reliable load serving capability within this sub-area.
- This is the minimum capacity necessary for reliable load serving capability within this sub-area.

GBA System Changes Between 2006 & 2007

1. A new normal rating of the Delta Switching Yard-Tesla 230 kV line (954 kcmil ACSR). PG&E has submitted an update to the ISO Transmission Register to reflect the summer interior normal rating of 996 Amps (based on wind speed of 4 fps) on the Delta Switching Yard-Tesla 230 kV line. The summer interior emergency rating of this line remains at 1129 Amps based on wind speed of 4 fps.
2. Rerate San Mateo - Martin 115 kV No. 4 (San Mateo-Burlingame), Newark - Ames Dist 115 kV No. 1, Newark - Ames 115 kV No. 3, Green Valley - Llagas 115 kV (Llagas-Morgan Hill J2), Newark - Tesla 230 kV No. 2 (Newark-ADCC)
3. Remove Martin-Hunters Point #3 115 kV cable, Monta Vista 115/60 kV transformer bank.
4. Open Loyola-Los Altos 60 kV line and close Westinghouse Jct-Los Altos 60 kV line.
5. The Greater Bay Area 1-in-10 year load projection increased from 9485 MW in 2006 to 9633 MW in 2007.



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Stakeholder Comments

*LSTobias/CAISO
Regional Transmission*