2010 LCR Study
Bay Area

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Stakeholder Meeting

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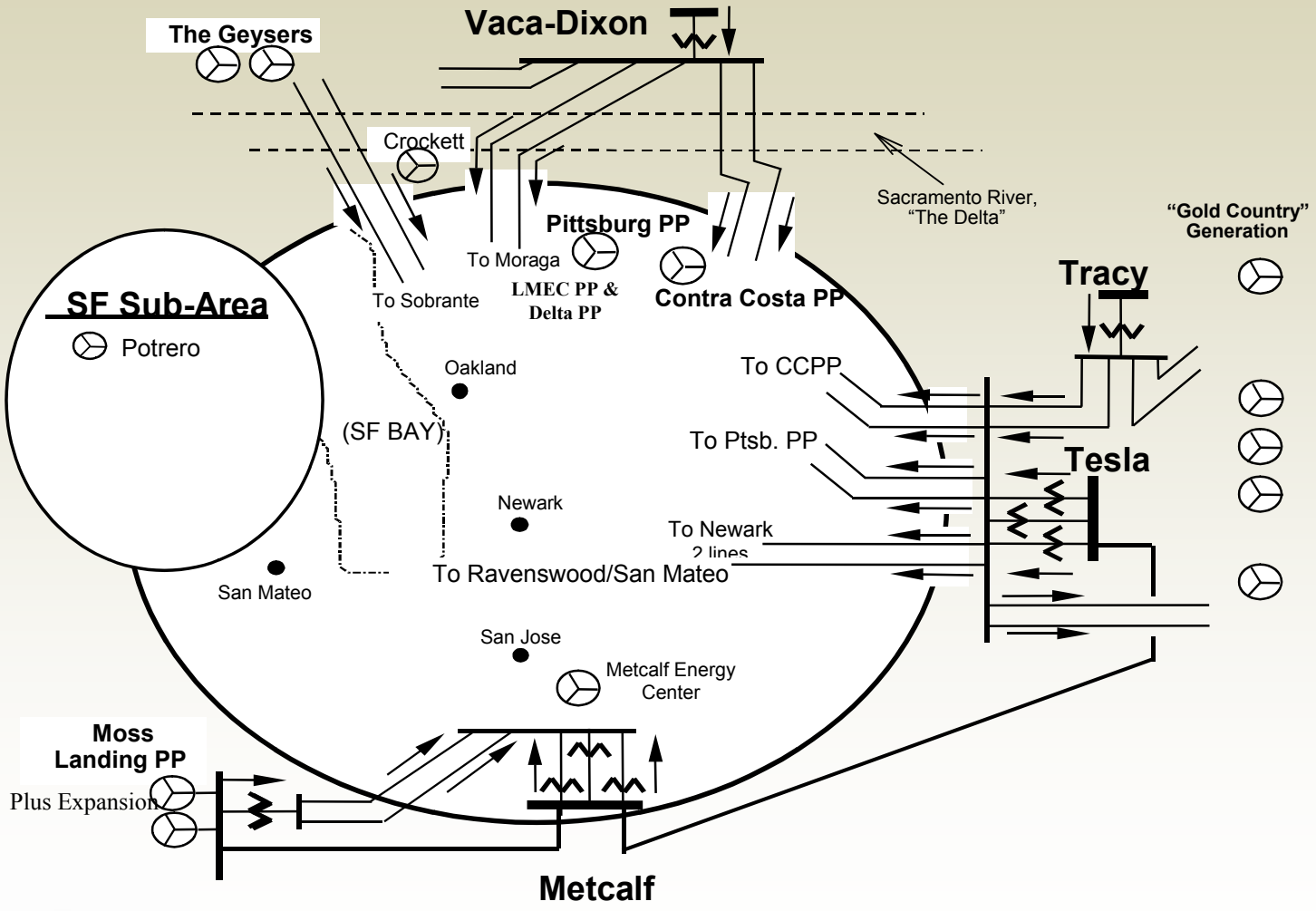
Greater Bay Area Map

Greater Bay Area Transmission System



New major transmission projects

- Metcalf-Moss Landing 230 kV Lines Reconductoring Nov-08
- Vaca Dixon-Birds Landing 230 kV Reconductoring May-09
- Martin-Hunters Point #4 115 kV Cable Apr-09
- Contra Costa-Las Positas 230 kV Reconductoring June-09
- Transbay DC Cable March-10
- Pittsburg-Tesla 230 kV Lines Reconductoring May-10
- Oakland Underground Cable May-10
- Rerate of Tesla #4 and #6 500/230 kV Transformers
- A-H-W #2 Re-Cabling April-2010

New power plant projects

- High Winds # 3
- SF Peakers – Removed, slip from 6/09 to indefinite
- SF Airport Peaker – Removed, slip from 6/09 to indefinite

Greater Bay Area Load

2010 1-in-10 Year Load Representation

Total Load = 9,879 MW

Transmission Losses = 240 MW

Pumps = 157 MW

Total Load + Losses + Pumps = 10,276 MW

San Francisco Sub Area

1. All Potrero units (#3, #4, #5 and #6) are needed before Trans Bay DC is operational
2. CAISO estimates that at minimum 150 MW of generation is required
   - Clearances for the remaining three re-cabling projects within San Francisco
   - Newark-Ravenswood 230 kV reconductoring (tentative schedule September-November 2010)
3. Therefore 150 MW is assumed available through 2010, in order to potentially allow for mid-year termination of RMR contract for Potrero #3
4. After all projects including re-cablings are operational the LCR need is:

Contingency: overlapping outage of the Trans Bay 230 kV cable and A-H-W #1 115 kV cable

Limiting Component: thermal overload of A-H-W #2 115 kV cable

LCR Need: 25 MW (includes 0 MW of QF/Muni generation)

San Jose Sub Area

San Jose Sub-area – Category C

Contingency: Metcalf El Patio #1 or #2 overlapped with the outage of Metcalf-Evergreen #1 115 kV

LCR need: 386 MW (includes 247 MW of QF/Muni generation)

Limiting component: Thermal overload of Metcalf-Evergreen #2 115 kV

San Jose Sub-area – Category B

No need

Llagas Sub Area

Llagas Sub-area – Category B

Contingency: Metcalf D-Morgan Hill 115 kV with one of the Gilroy peakers off line
LCR need: 135 MW (includes 0 MW of QF/Muni generation)
Limiting component: Thermal overload on the Metcalf-Llagas 115 kV as well as 5% voltage drop at the Morgan Hill substation

Llagas Sub-area – Category C

Not binding

Oakland Sub Area

Oakland Sub-area – Category C

Contingency: overlapping Claremont K-Oakland "D" #1 and #2 115 kV Cables

LCR need: 50 MW (includes 49 MW of QF/Muni generation)

Limiting component: Thermal overload on the Moraga-Oakland X #1-#4 115 kV lines

Oakland Sub-area – Category B

No need

This requirement does not include the need for the Pittsburg/Oakland sub-area

Pittsburg/Oakland Sub Area

Pittsburg/Oakland Sub-area – Category C

Contingency: Moraga #3 230/115 kV and Delta Energy Center out

LCR need: 3248 MW (includes 540 MW of QF/Muni generation)

Limiting component: Thermal overload on the Moraga #1 230/115 kV

Pittsburg/Oakland Sub-area – Category B

Contingency: Moraga #3 230/115 kV

LCR need: 2418 MW (includes 540 MW of QF/Muni generation)

Limiting component: Thermal overload on the Moraga #1 230/115 kV

Greater Bay Area Overall

Bay Area Overall – Category C

Contingency: overlapping Tesla-Metcalf 500 kV line and Tesla-Newark #1 230 kV line

LCR need: 5051 MW (includes 1096 MW of QF/Muni/Wind generation)

Limiting component: Thermal overload on the ADCC-Newark section of the Tesla-Newark #2 230 kV line

Bay Area Overall – Category B

Contingency: Tesla-Metcalf 500 kV line with Delta Energy Center out of service

LCR need: 4224 MW (includes 1096 MW of QF/Muni/Wind generation)

Limiting component: Reactive margin within the Bay Area

Greater Bay Area Total LCR

2010	Wind (MW)	QF/Selfgen (MW)	Muni (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available generation	217	624	255	5608	6704

2010	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW LCR
Category B (Single)	4224	0	4224
Category C (Multiple)	5051	0	5051

Changes

Since our last stakeholder meeting:

1) Detail description of San Francisco conditions and timeline

2) Changes to the overall needs due to re-dispatch to account for sub-area needs and Metcalf 500 kV capacitors on automatic mode

3) Updated NQC

Since last year:

1) Load forecast is lower by 175 MW

2) LCR Need has increased by 268 MW from last year

- much higher LCR need for the Pittsburg/Oakland sub-area
- these units are not effective in mitigating the Tesla-Newark #2 230 kV line
- other units not needed for sub-area LCR needs are needed to satisfy the overall LCR needs

Your comments and questions are welcome.

For written comments, please send to: RegionalTransmission@caiso.com