



2026 & 2030 Draft LCR Study Results Greater Bay Area

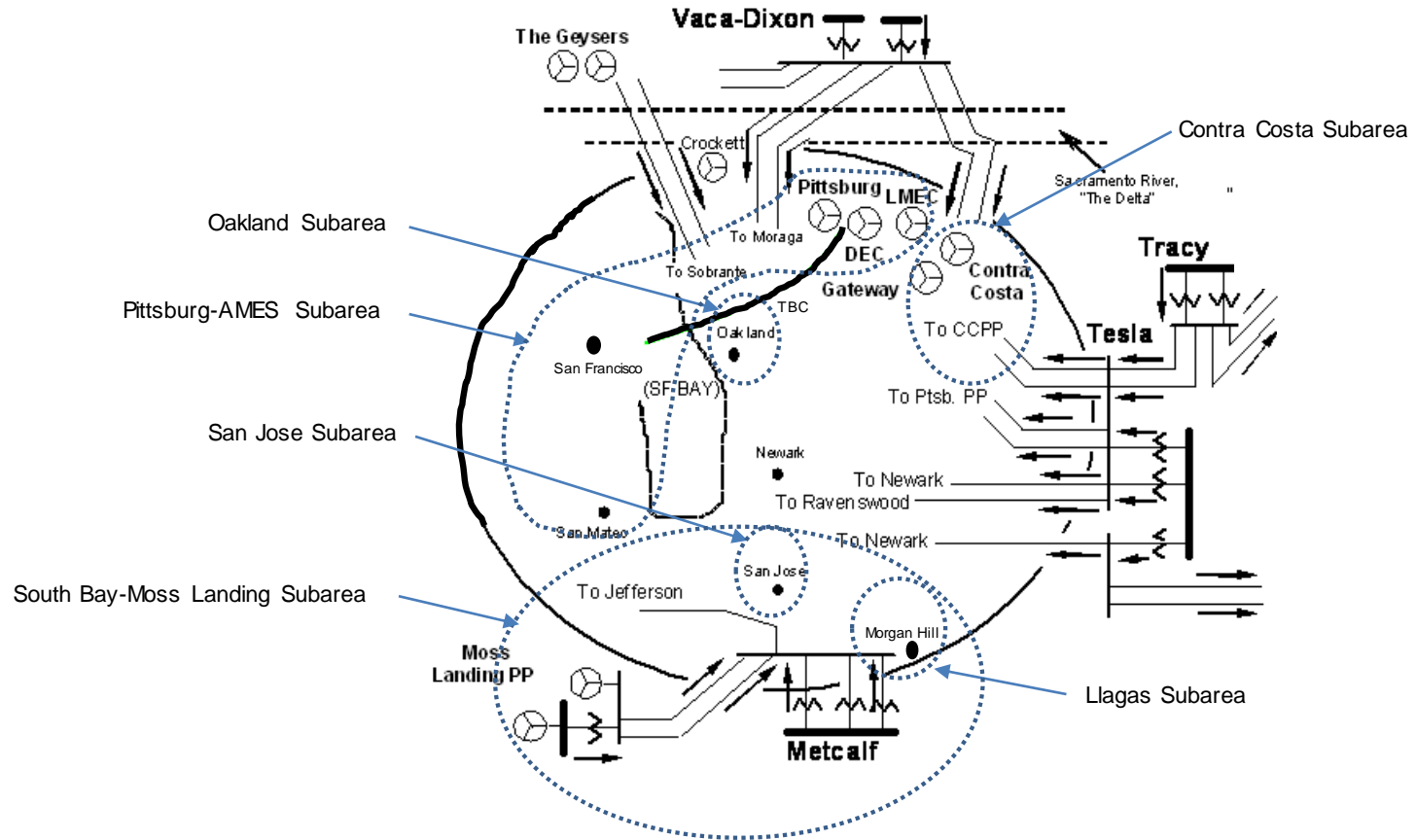
Uriel Rangel Diaz

Senior Regional Transmission Engineer

Stakeholder Call

March 6, 2025

Greater Bay Area Transmission System & LCR Subareas



New major transmission projects

Project Name	Division	In Service Year
Moraga-Castro Valley 230 kV Line Capacity Increase Project	Diablo	2024
Pittsburg 230/115 kV Transformer Capacity Increase	Diablo	2026
Lone Tree – Cayetano – Newark corridor Series Compensation	Diablo	2027
New Collinsville 500 kV substation	Diablo	2027
Oakland Clean Energy Initiative (The Oakland X 115 kV Bus Upgrade in-service as for 2022)	East Bay	2025
Christie-Sobrante 115 kV Line Reconductor	East Bay	2028
Ravenswood 230/115 kV transformer #1 Limiting Facility Upgrade	Peninsula	2025
South of San Mateo Capacity Increase	Peninsula	2027
Redwood City Area 115 kV System Reinforcement	Peninsula	2030
Series Compensation on Los Esteros-Nortech 115 kV Line	San Jose	2024
Newark-Milpitas #1 115 kV Line Limiting Facility Upgrade	San Jose	2024
Vasona-Metcalf 230 kV Line Limiting Elements Removal Project	San Jose	2025
Metcalf-Piercy & Swift and Newark-Dixon Landing 115 kV Upgrade	San Jose	2027
Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation)	San Jose	2027
San Jose Area HVDC Line (Metcalf – San Jose)	San Jose	2028
San Jose Area HVDC Line (Newark - NRS)	San Jose	2027

Power Plant Changes

Resource additions modeled in 2026 & 2030:

- 5 battery resources
- 1 wind resource and
- 25 smaller resources – most energy only

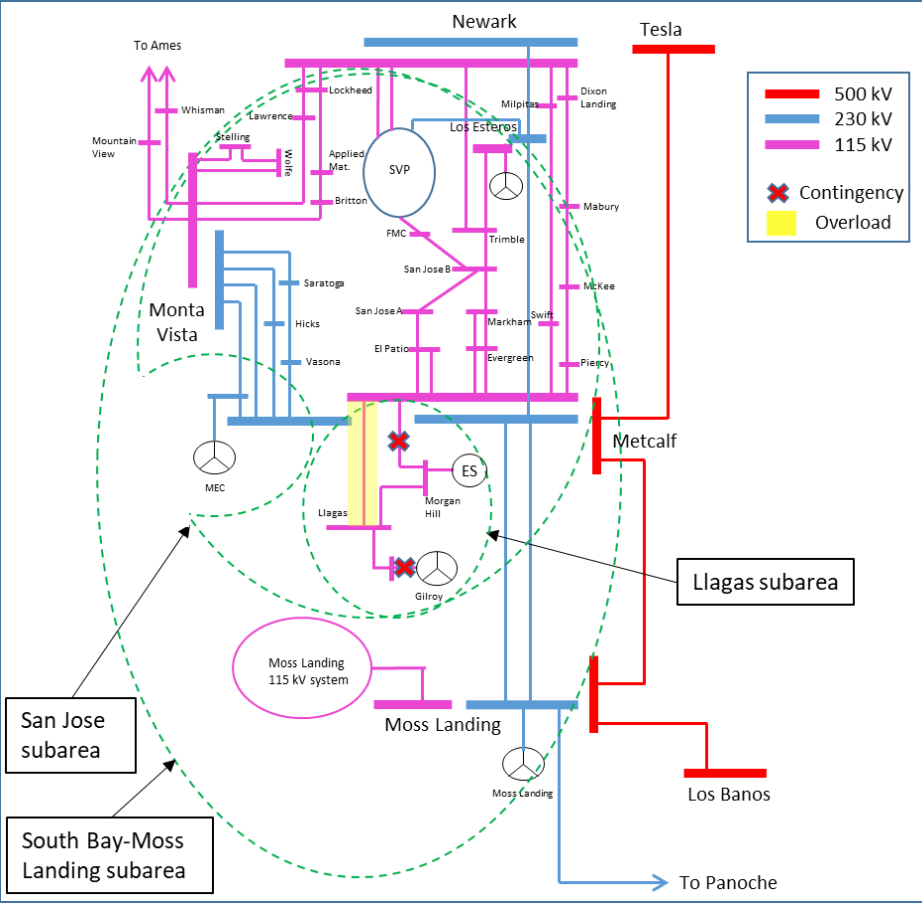
Retirements:

- None

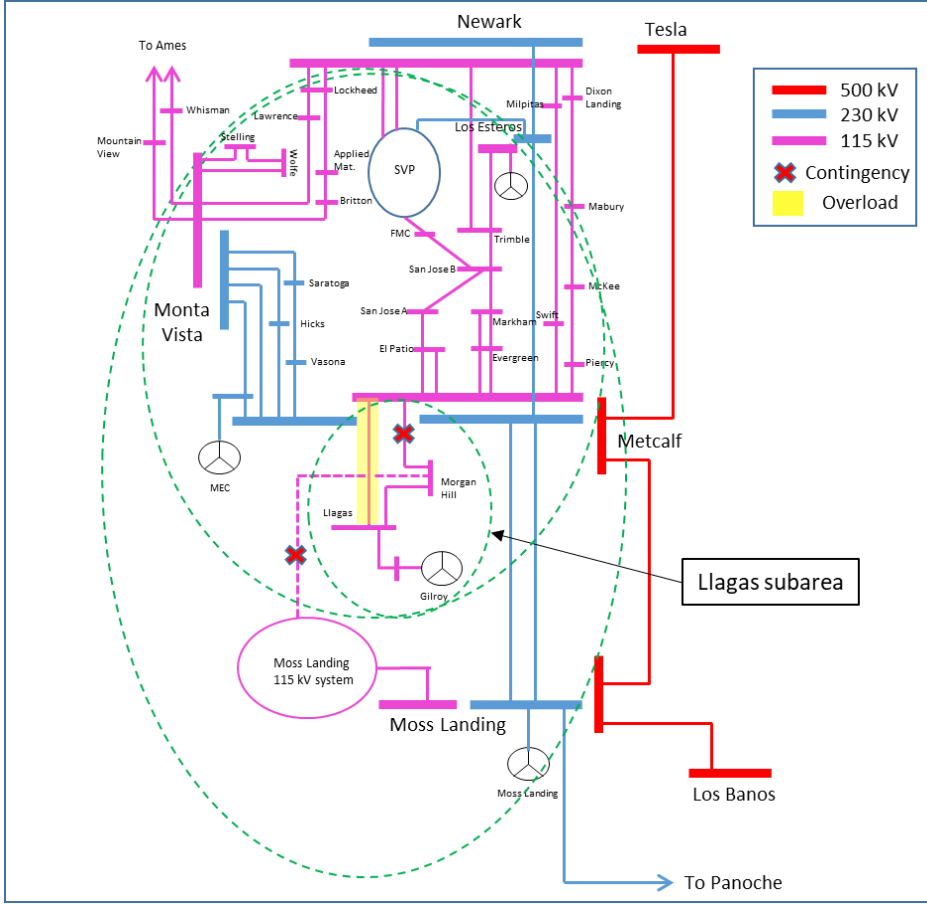
Llagas Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	275	456	Market/Net Seller	256
AAEE	-3	-5	Battery	20
Behind the meter DG	-12	-6	Muni/QF	0
Net Load	260	445	Solar	0
Transmission Losses	2	2	Existing 20-minute Demand Response	0
Pumps	0	0	Mothballed	0
Load + Losses + Pumps	262	447	Total	276

Llagas Sub-area: One-line diagram



2026



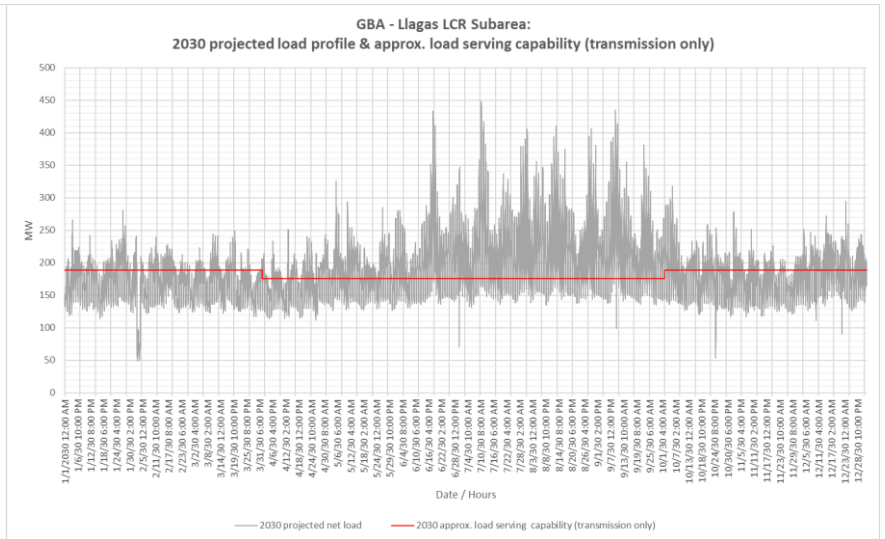
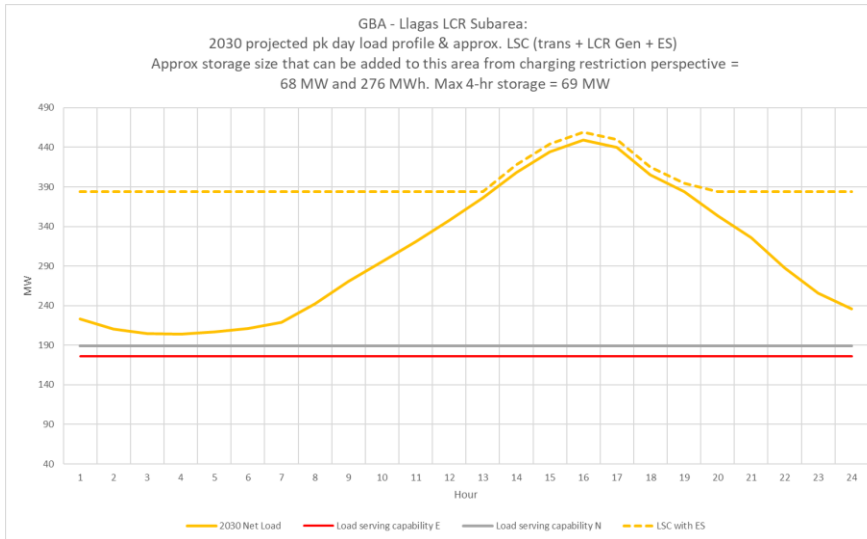
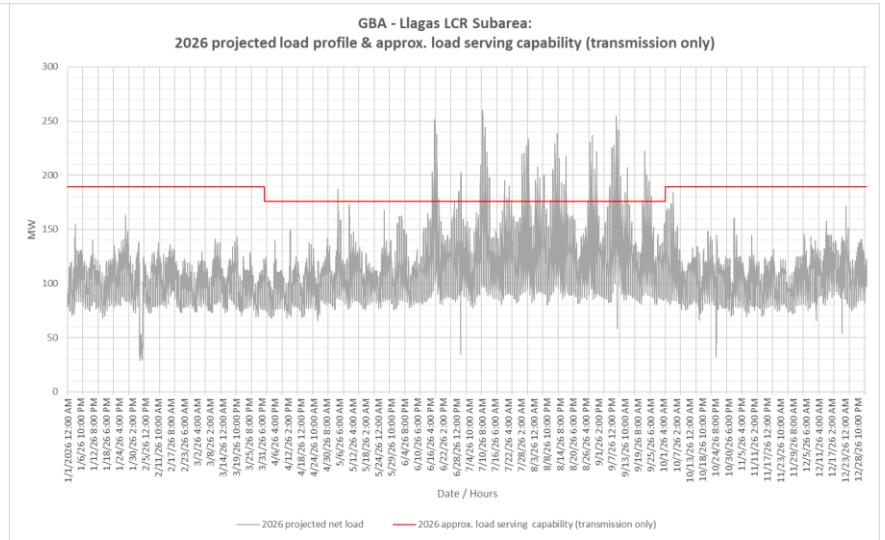
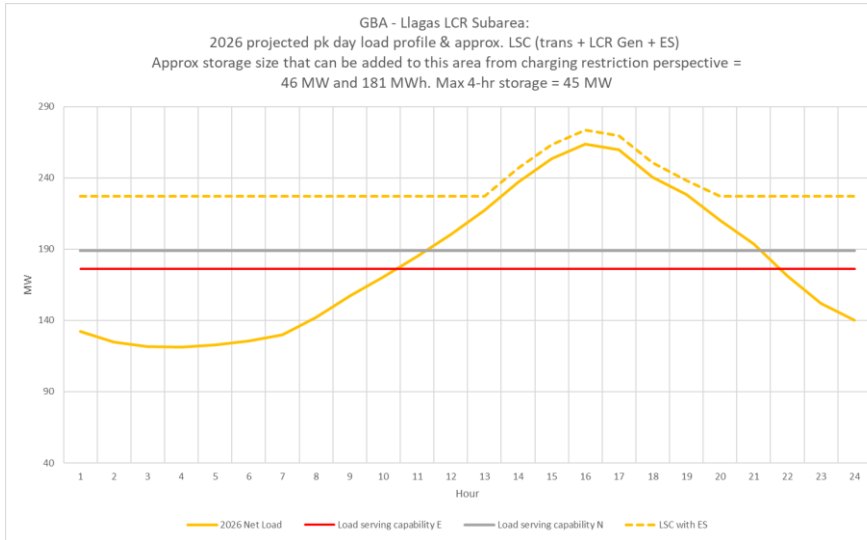
2030

Llagas Sub-area: Requirements

Year	Cat.	Limiting Facility	Contingency	LCR (MW)
2026	P3	Metcalf-Llagas 115 kV line	Metcalf-Morgan Hill + Gilroy Cogen Unit 1	95
2030	P6	Metcalf-Llagas 115 kV line	Metcalf-Morgan Hill & Morgan Hill-Green Valley 115 kV lines	288 (12)

*The worst contingency in the Llagas sub-area change in the 2030 scenario when the Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation) project becomes operational.

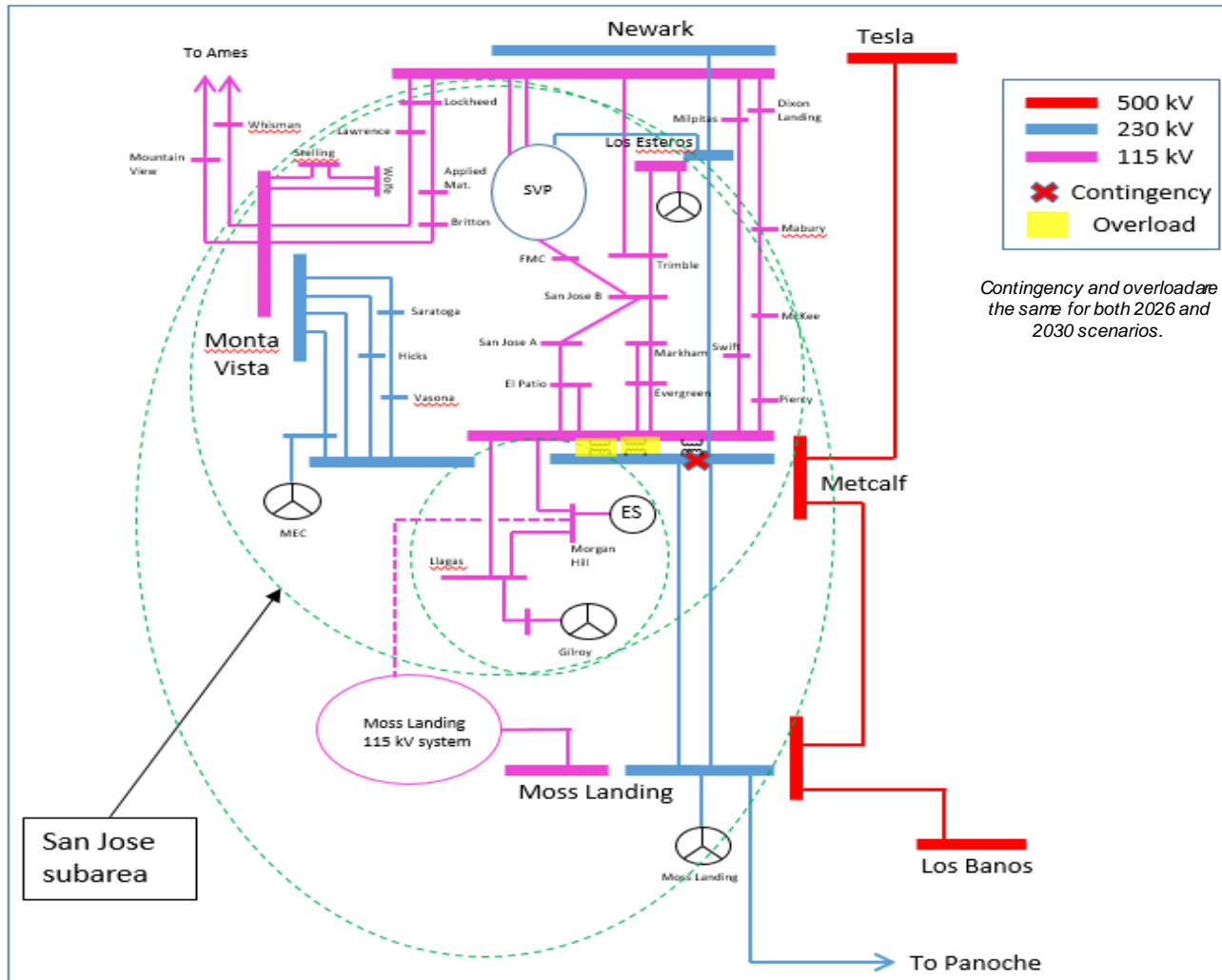
Llagas Sub-area: Load Profiles



San Jose Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	2,887	4,755	Market/Net Seller	584
AEE	-25	-41	Battery	95
Behind the meter DG	-54	-30	Muni/QF	191
Net Load	2,808	4,684	Solar	0
Transmission Losses	100	130	Existing 20-minute Demand Response	0
Pumps	0	0	Mothballed	0
Load + Losses + Pumps	2,908	4,814	Total	870

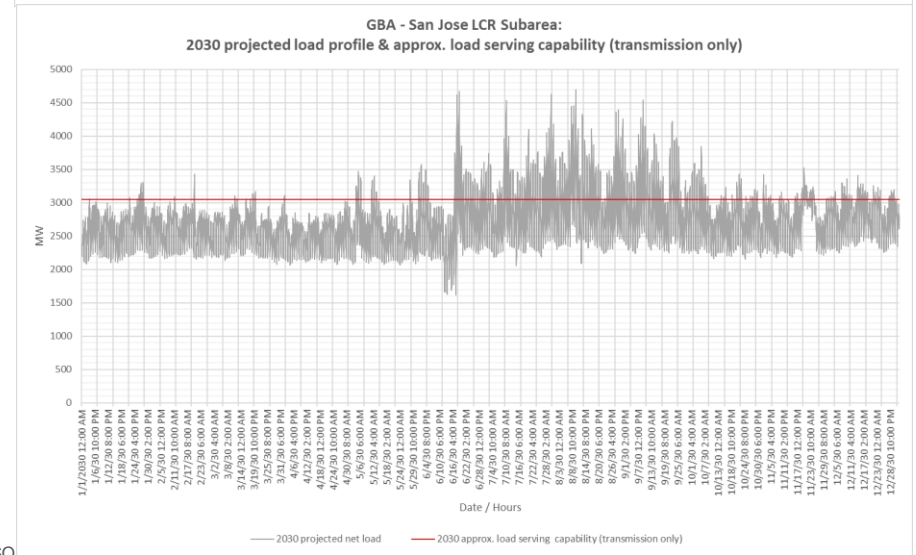
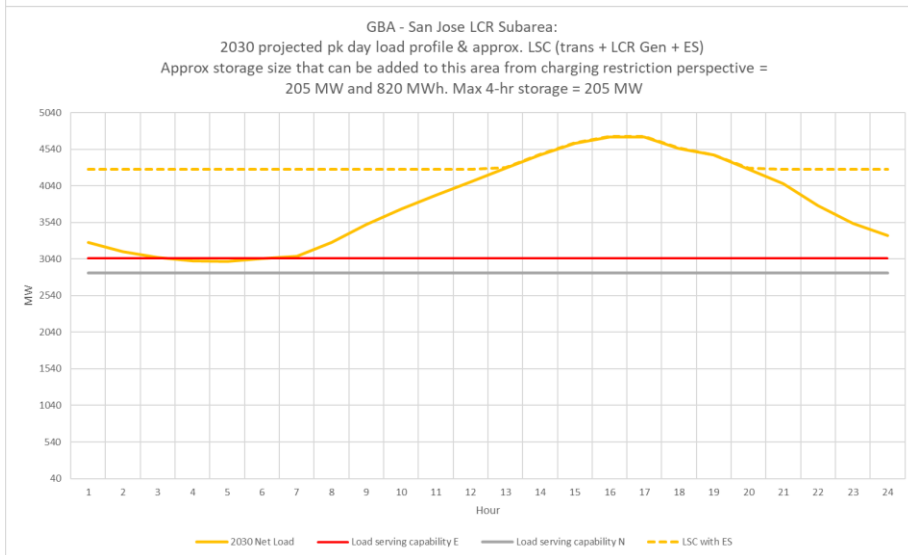
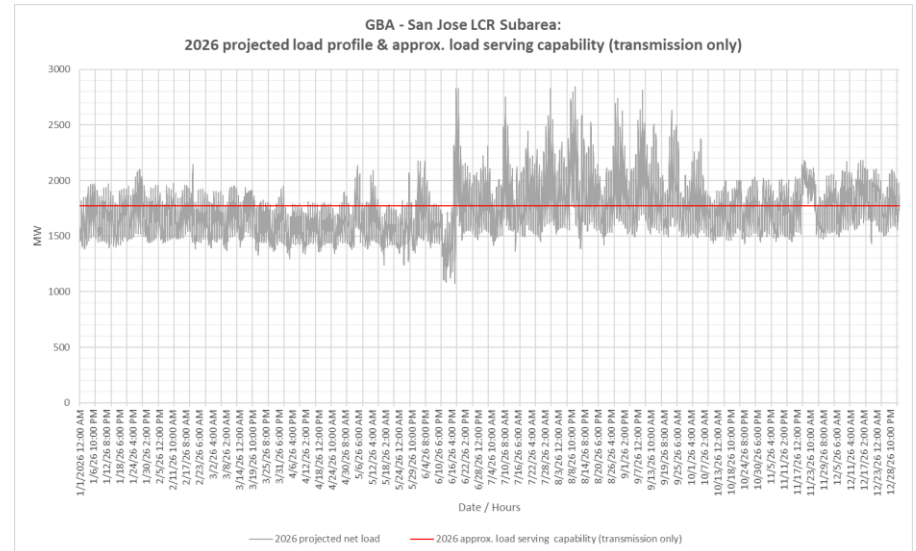
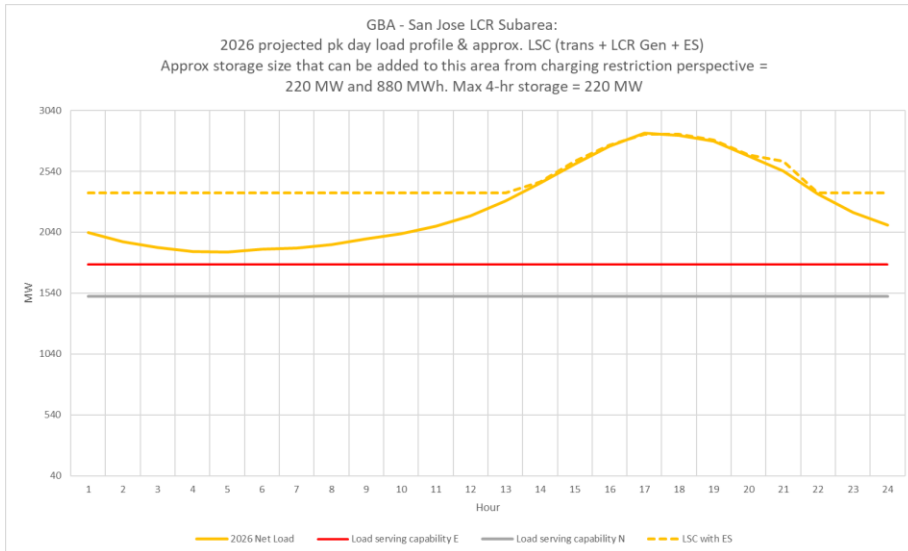
San Jose Sub-area: One-line diagram



San Jose Sub-area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (deficiency)
2026	P6	Metcalf #3 230/115 kV	Metcalf #2 & #4 230/115 kV	1,813 (943)
2030	P6	Metcalf #3 230/115 kV	Metcalf #2 & #4 230/115 kV	2,279 (1,409)

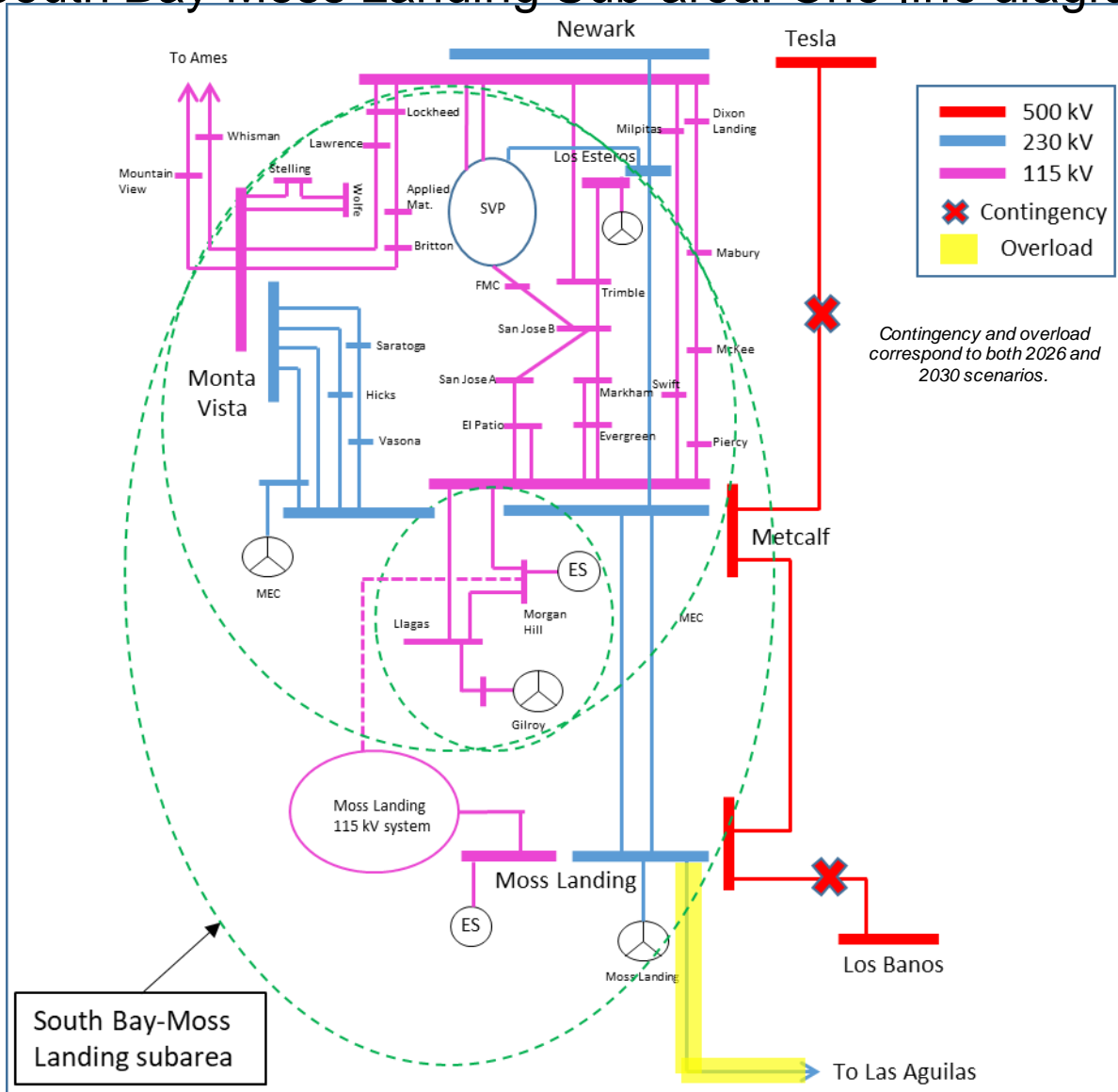
San Jose Sub-area: Load Profiles



South Bay-Moss Landing Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	4,514	6,655	Market/Net Seller	2,201
AAEE	-44	-73	Battery	1,048
Behind the meter DG	-108	-60	Muni/QF	191
Net Load	4,362	6,522	Solar	0
Transmission Losses	126	196	Existing 20-minute Demand Response	0
Pumps	0	0	Mothballed	0
Load + Losses + Pumps	4,488	6,718	Total	3,440

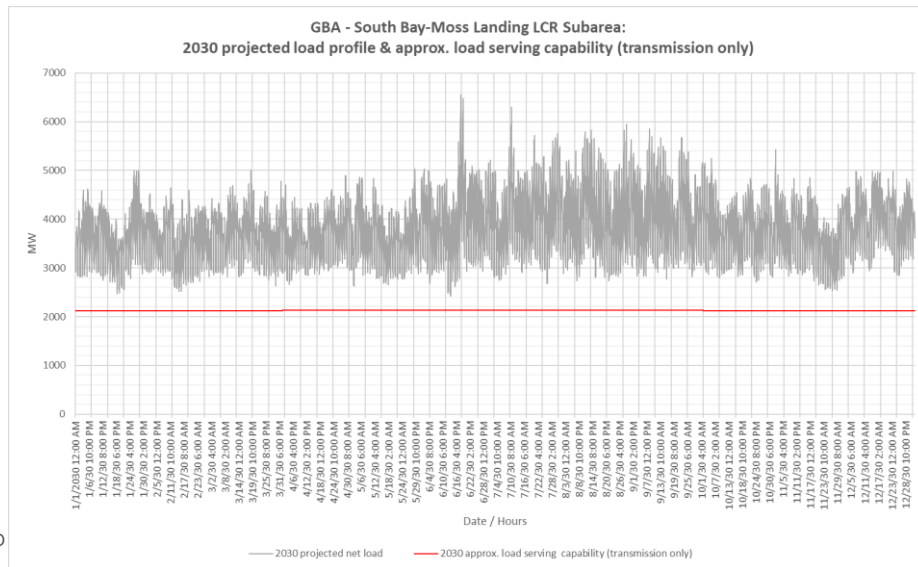
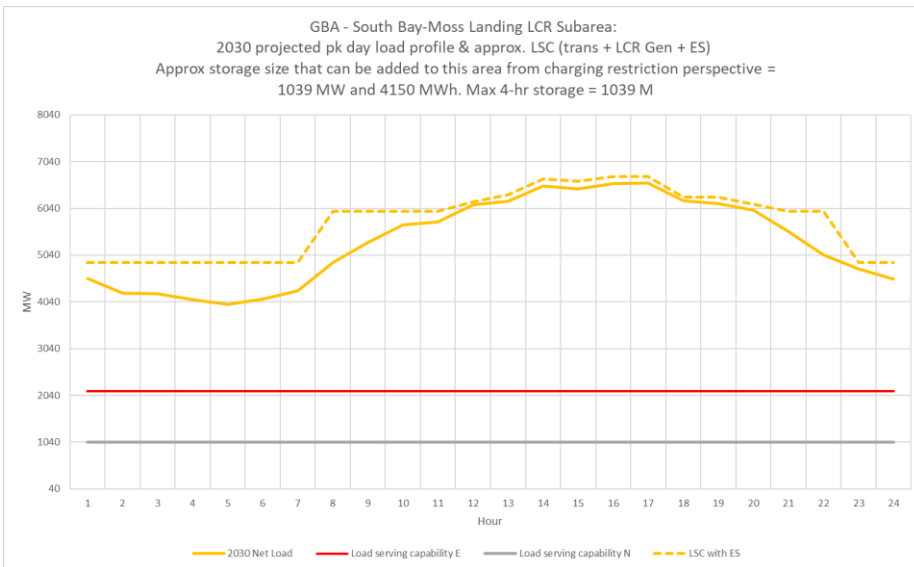
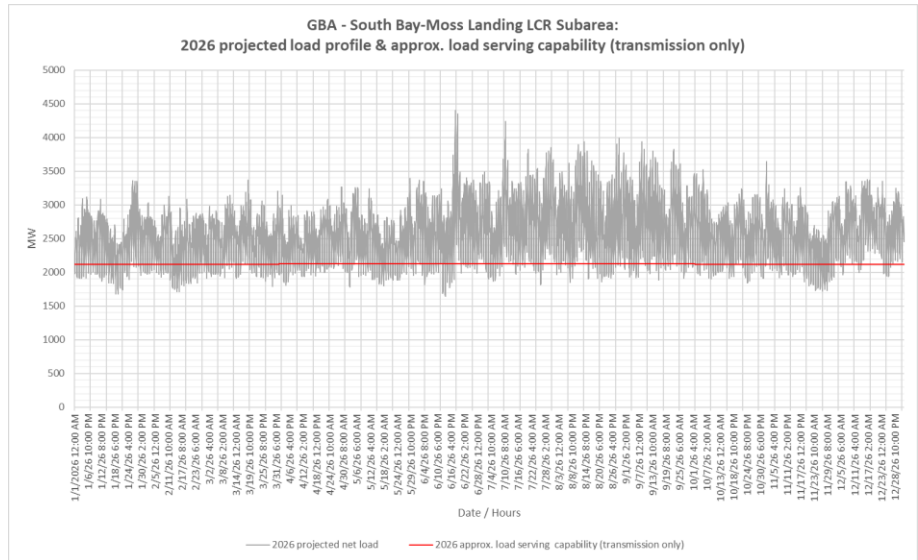
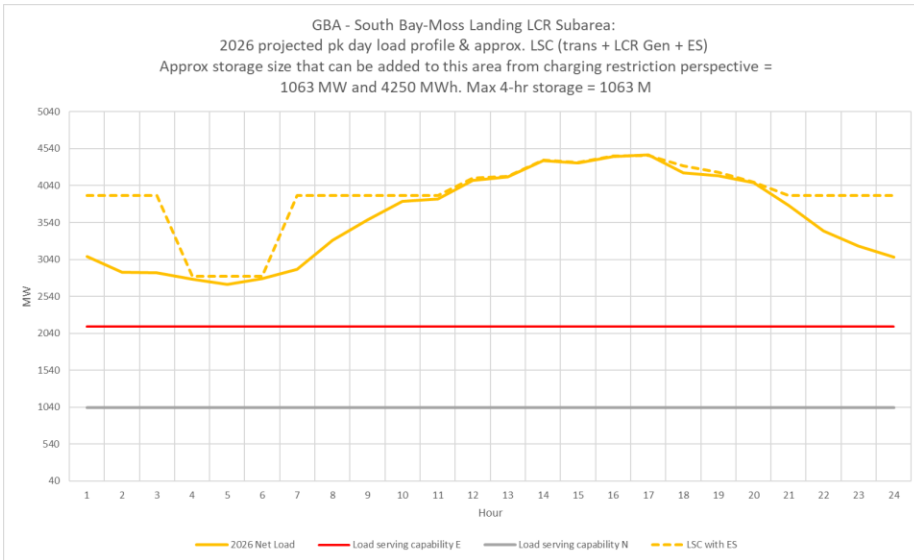
South Bay-Moss Landing Sub-area: One-line diagram



South Bay-Moss Landing Sub-area: Requirements

Year	Cat.	Limiting Facility	Contingency	LCR (MW)
2026	P6	Moss Landing-Las Aguilas 230 kV	Tesla-Metcalf 500 kV and Moss Landing-Los Banos 500 kV	2,497
2030	P6	Moss Landing-Las Aguilas 230 kV	Tesla-Metcalf 500 kV and Moss Landing-Los Banos 500 kV	3,892 (452)

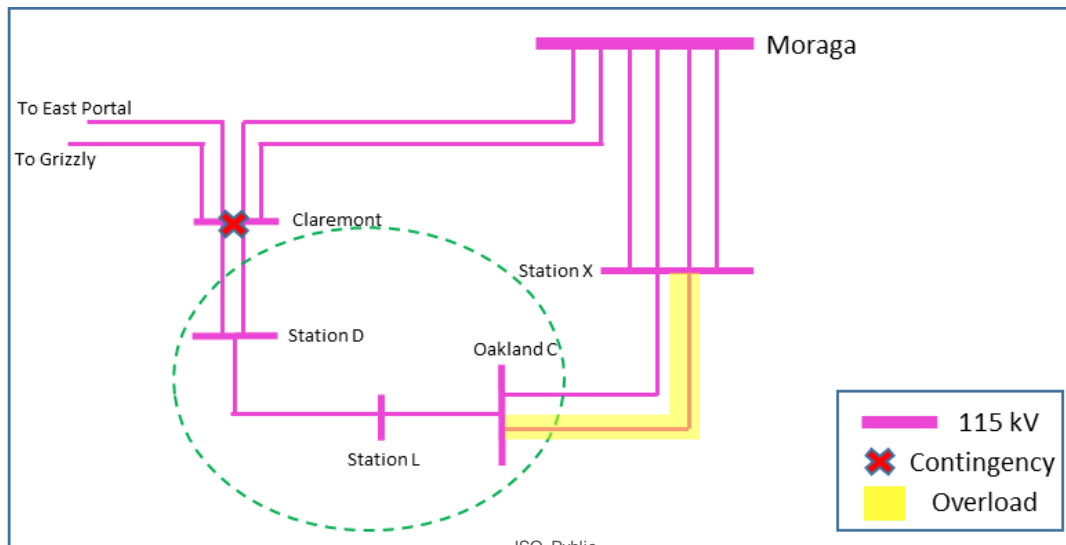
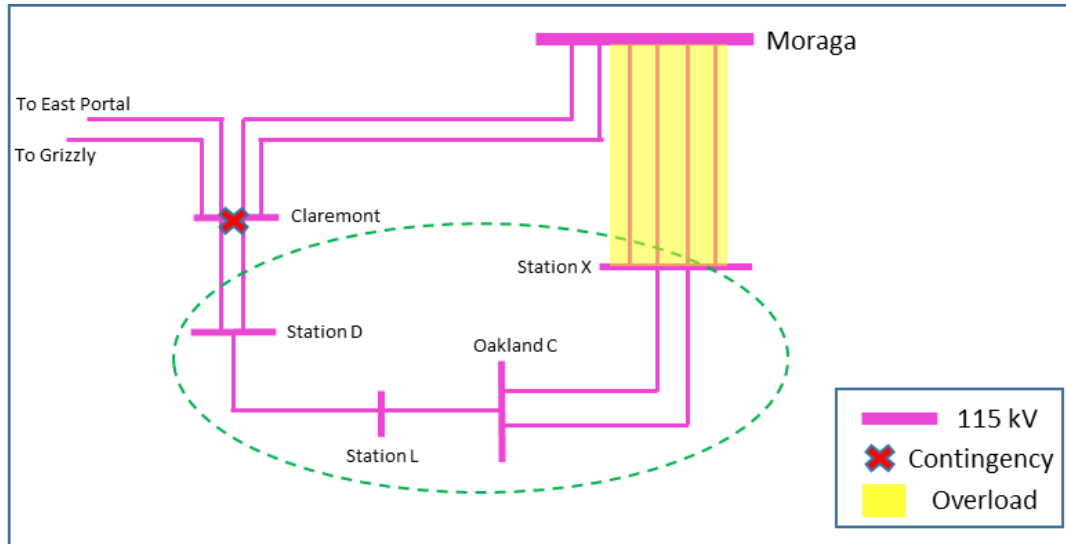
South Bay-Moss Landing Sub-area: Load Profiles



Oakland Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	376	343	Market/Net Seller	110
AAEE	-3	-4	Battery	0
Behind the meter DG	-7	-3	Muni/QF	48
Net Load	366	336	Solar	0
Transmission Losses	1	1	Existing 20-minute Demand Response	0
Pumps	0	0	Mothball	0
Load + Losses + Pumps	367	337	Total	158

Oakland Sub-area: One-line diagram

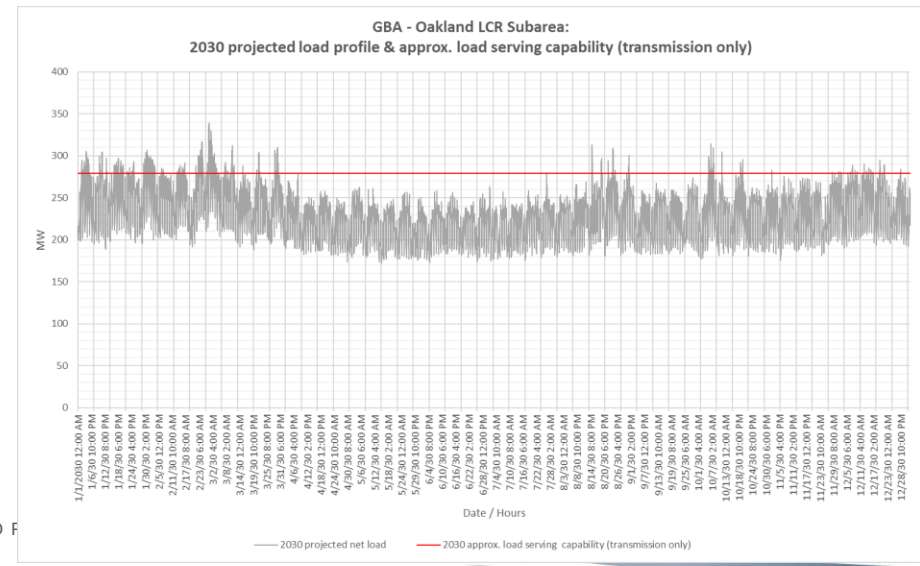
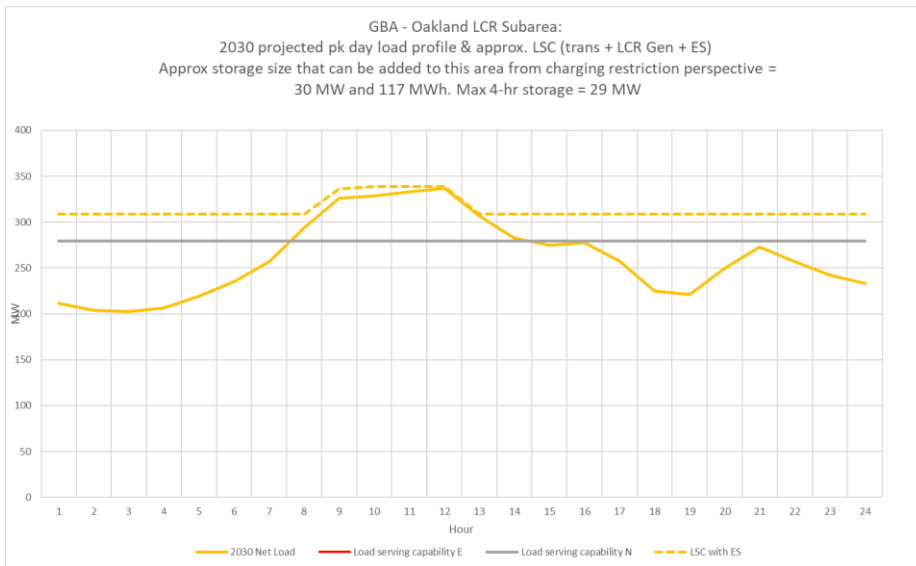
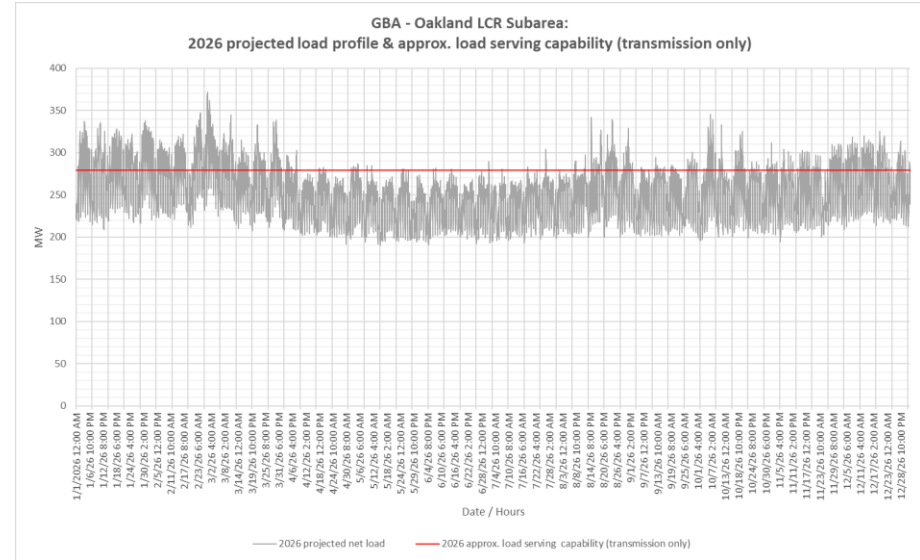
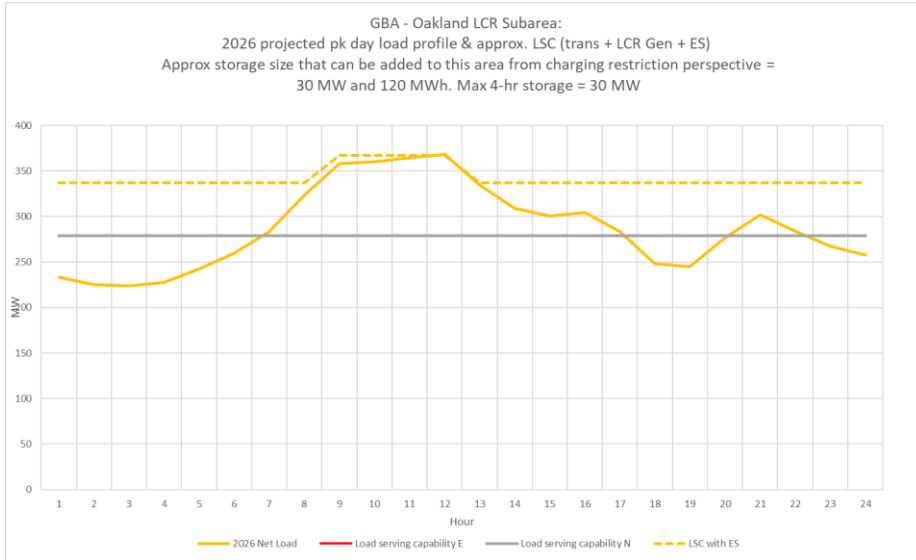


Oakland Sub-area: Requirements

Year	Cat.	Limiting Facility	Contingency	LCR (MW)
2026	P2	Moraga D – Oakland X #1-4	Claremont 115 kV Section 1D & 2D	55
2030	P2	Oakland C – Oakland X #2	Claremont 115 kV Section 1D & 2D	79

The limiting facility and related contingency changes in 2030 due to the Moraga – Oakland X rebuild project with ISD of 2030. With this project in service, the pocket definition changes and only includes the loads at Oakland D, L, and C.

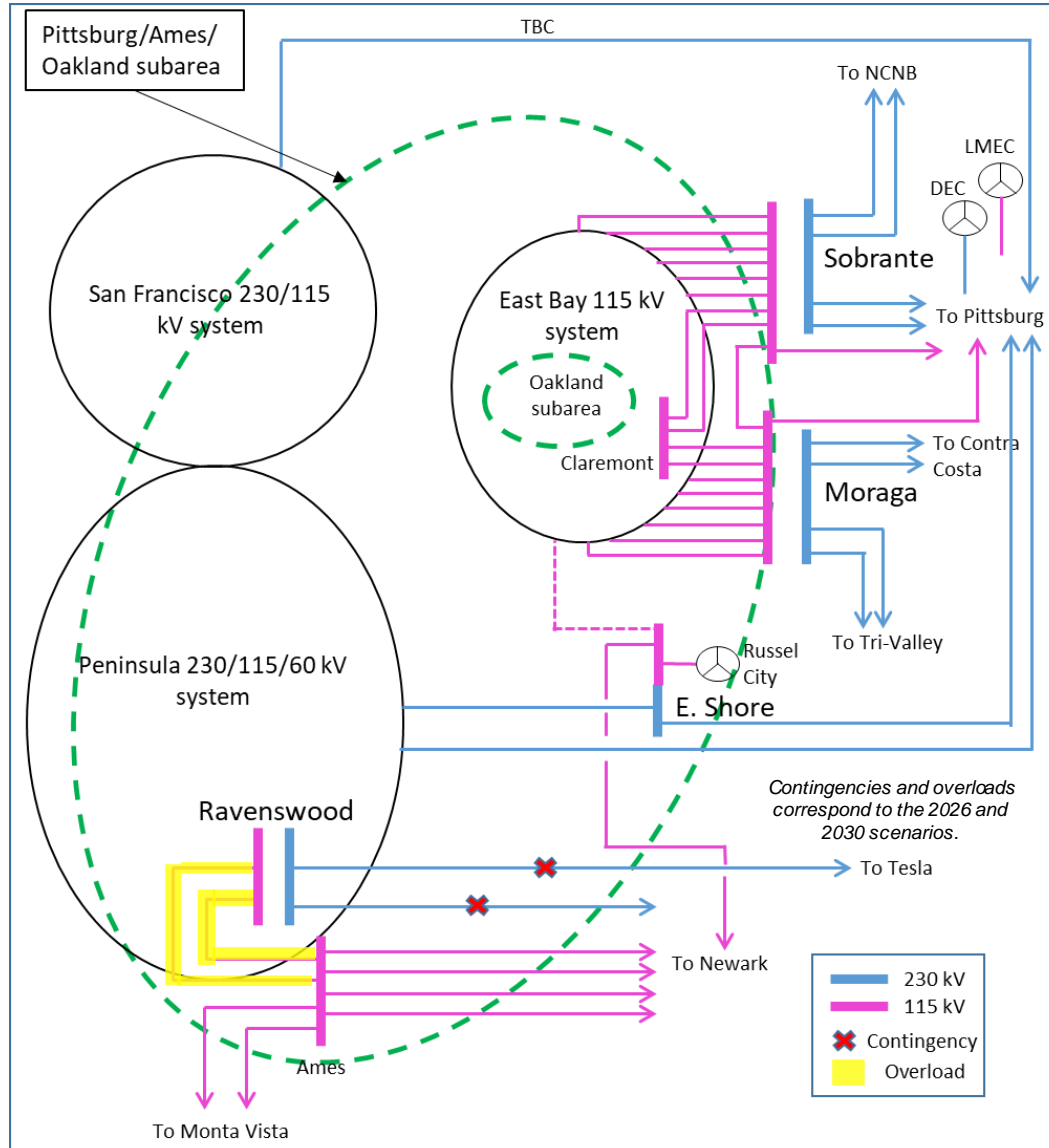
Oakland Sub-area: Load Profiles



Ames-Pittsburg-Oakland Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	NA – Flow through area.		Market/Net Seller	2,292
AAEE			Battery	200
Behind the meter DG			Muni/QF	276
Net Load			Solar	5
Transmission Losses			Existing 20-minute Demand Response	0
Pumps			Mothballed	0
Load + Losses + Pumps			Total Qualifying Capacity	2,773

Ames/Pittsburg/Oakland Sub-area: One-line diagram



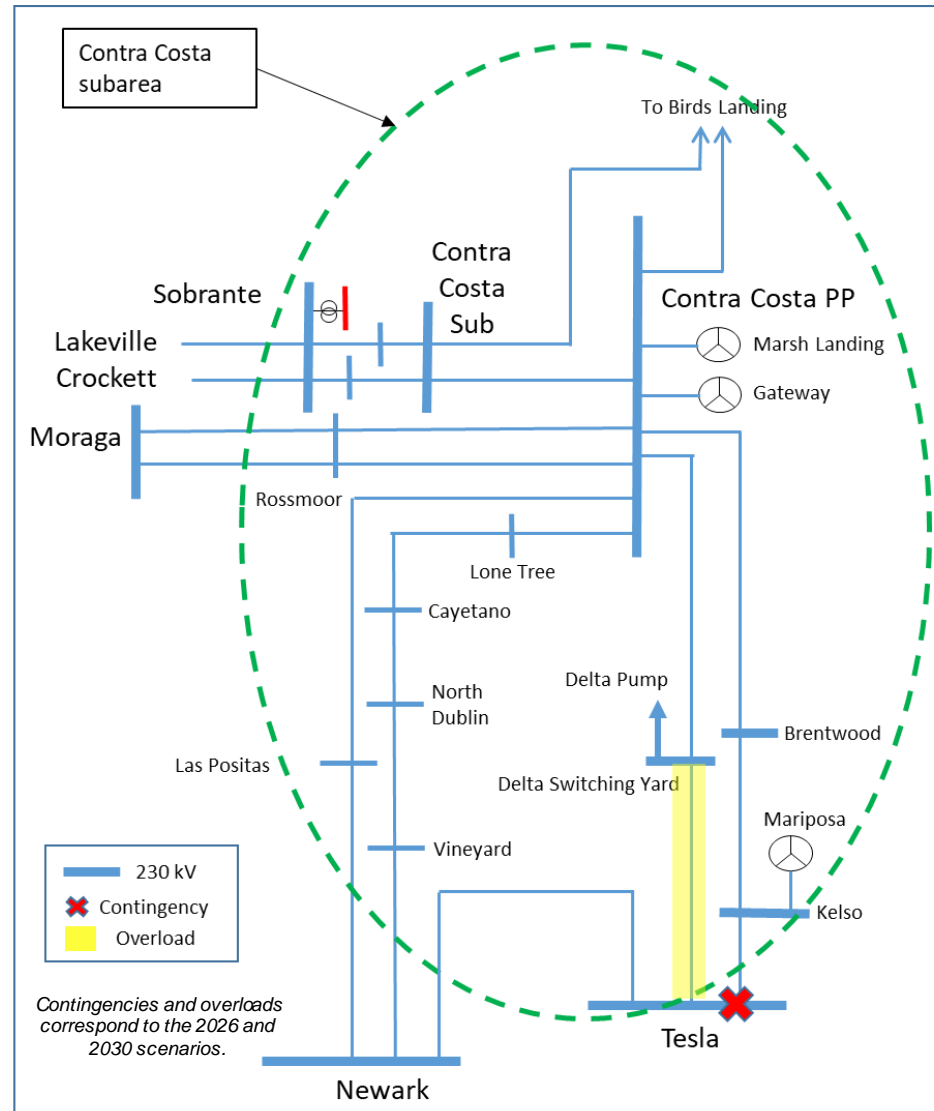
Ames/Pittsburg/Oakland Sub-area: Requirements

Year	Cat.	Limiting Facility	Contingency	LCR (MW) (deficiency)
2026	P6	Ames-Ravenswood #1 & #2 115 kV lines	Newark-Ravenswood 230 kV & Tesla-Ravenswood 230 kV lines	2,960 (187)
2030	P6	Ames-Ravenswood #1 & #2 115 kV lines	Newark-Ravenswood 230 kV & Tesla-Ravenswood 230 kV lines	3,135 (362)

Contra Costa Sub-area: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	NA – Flow through area.		Market/Net Seller	1,662
AAEE			Wind	373
Behind the meter DG			Battery	100
Net Load			Muni/QF	127
Transmission Losses			Solar	0
Pumps			Existing 20-minute Demand Response	0
Load + Losses + Pumps			Total	2,222

Contra Costa Sub-area: One-line diagram



Contra Costa Sub-area: Requirements

Year	Cat.	Limiting Facility	Contingency	LCR (MW) (deficiency)
2026	P2	Tesla – Delta Switching Yard 230 kV line	Tesla E 230 kV -Sections 2E & 1E	921
2030	P2	Tesla – Delta Switching Yard 230 kV line	Tesla E 230 kV -Sections 2E & 1E	1,398

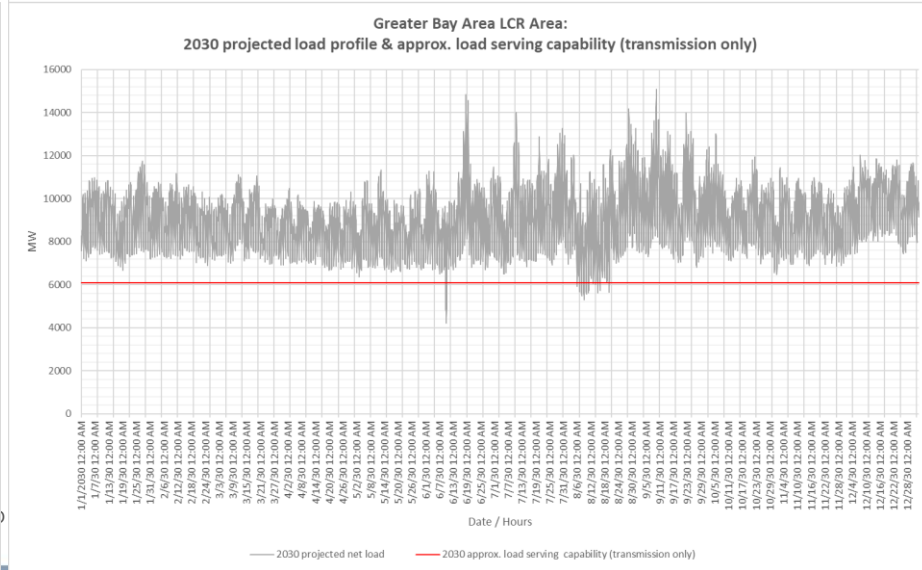
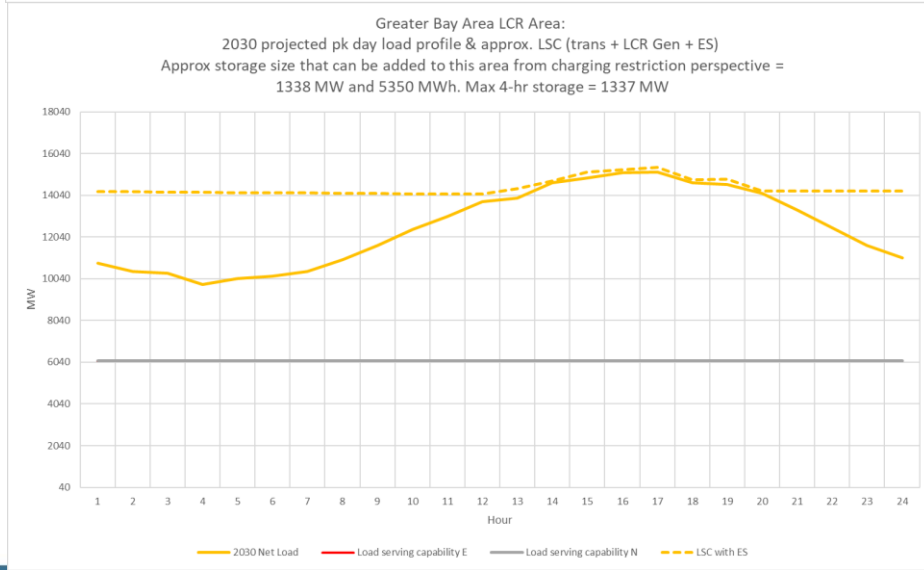
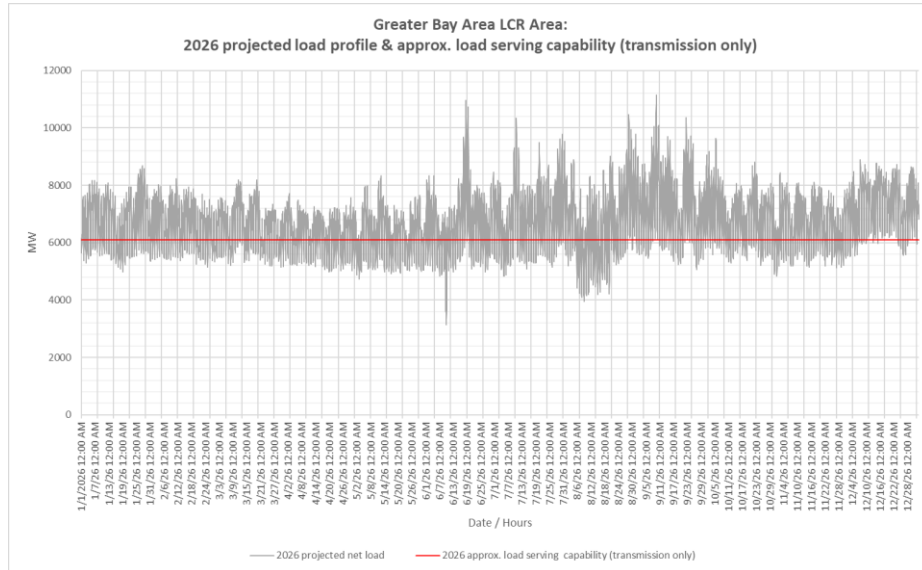
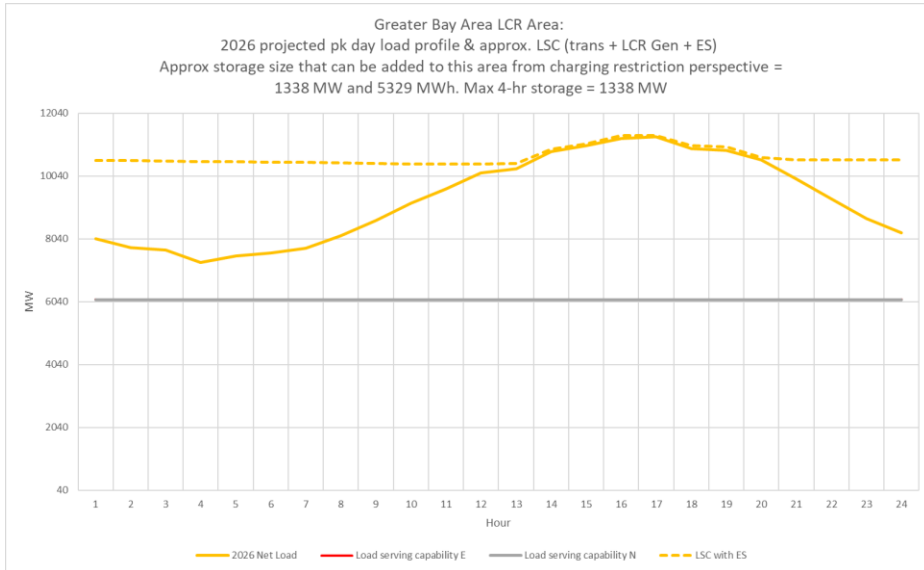
Greater Bay Area Overall: Load and Resources

Load (MW)	2026	2030	Generation (MW)	Aug NQC
Gross Load	11,429	14,908	Market/Net Seller	6,117
AAEE	-110	-179	Wind	373
Behind the meter DG	-267	-152	Battery	1,347
Net Load	11,052	14,577	Muni/QF	596
Transmission Losses	291	506	Solar	8
Pumps	264	264	Existing 20-minute Demand Response	65
Load + Losses + Pumps	11,607	15,347	Total	8,506

Greater Bay Area Overall: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (deficiency)
2026	P6	Metcalf #13 500/230 kV	Metcalf #11 & #12 500/230 kV	7,852 (294)
2030	P6	Metcalf #13 500/230 kV	Metcalf #11 & #12 500/230 kV	8,652 (1,094)

Greater Bay Area: Load Profiles



Greater Bay Area Total Generation & LCR Need

Generation	Market/Net Seller (MW)	Wind (MW)	Muni/QF (MW)	Solar (MW)	Existing 20-minute Demand Response (MW)	Battery (MW)	Total MW
Aug NQC	6,117	373	596	8	65	1,347	8,506

Year	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
2026	7,558	1,130	8,688
2030	8,308	1,771	10,079

The overall LCR requirement has slightly decreased in 2026 vs 2025 mostly due to slight load forecast decrease. However the “Capacity Needed” has slightly increased due to availability of new resources (replacing “deficiencies”).

The overall LCR requirement has significantly increased in 2030 vs 2029 mostly due to significant load forecast increase.

Changes Compared to Previous Year's LCR Requirements

Sub-area	2025		2026		2029		2030	
	Load	LCR	Load	LCR	Load	LCR	Load	LCR
Llagas	229	60	262	95	249	80	447	288 (12)
San Jose	2,997	1,418 (542)	2,908	1,813 (943)	3,288	183	4,814	2,279 (1,409)
South Bay – Moss Landing	4,639	2,399	4,488	2,497	4,910	2,334	6,718	3,892 (452)
Oakland	434	101	367	55	434	103	337	79
Pittsburg – Ames – Oakland	NA	2,606	NA	2,960 (187)	NA	1,409	NA	3,135 (362)
Contra Costa	NA	948	NA	921	NA	438	NA	1,398
Overall	11,992	7,976 (535)	11,607	7,852 (294)	12,333	6,259	15,347	8,652 (1,094)