



California ISO
Shaping a Renewed Future

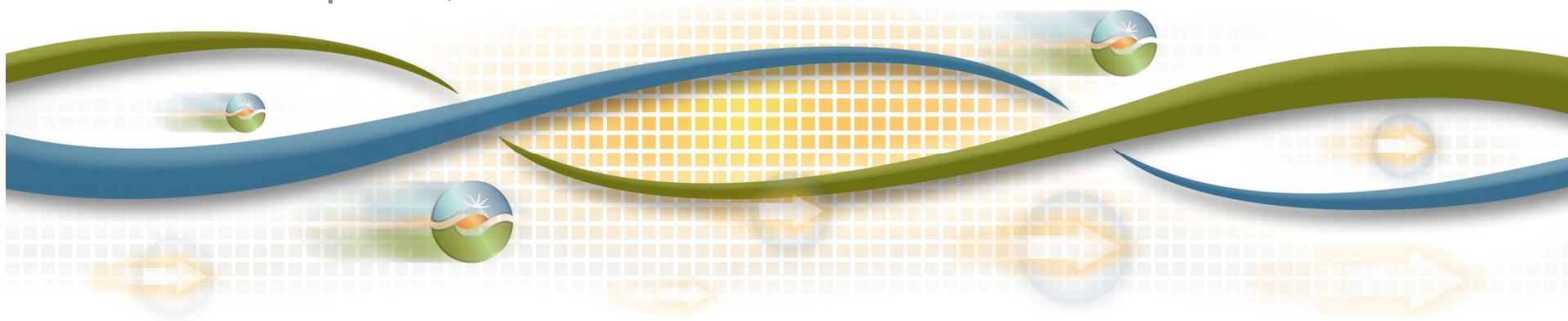
2012 Final LCR Study Results Sierra and Stockton Local Areas

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Stakeholder Meeting

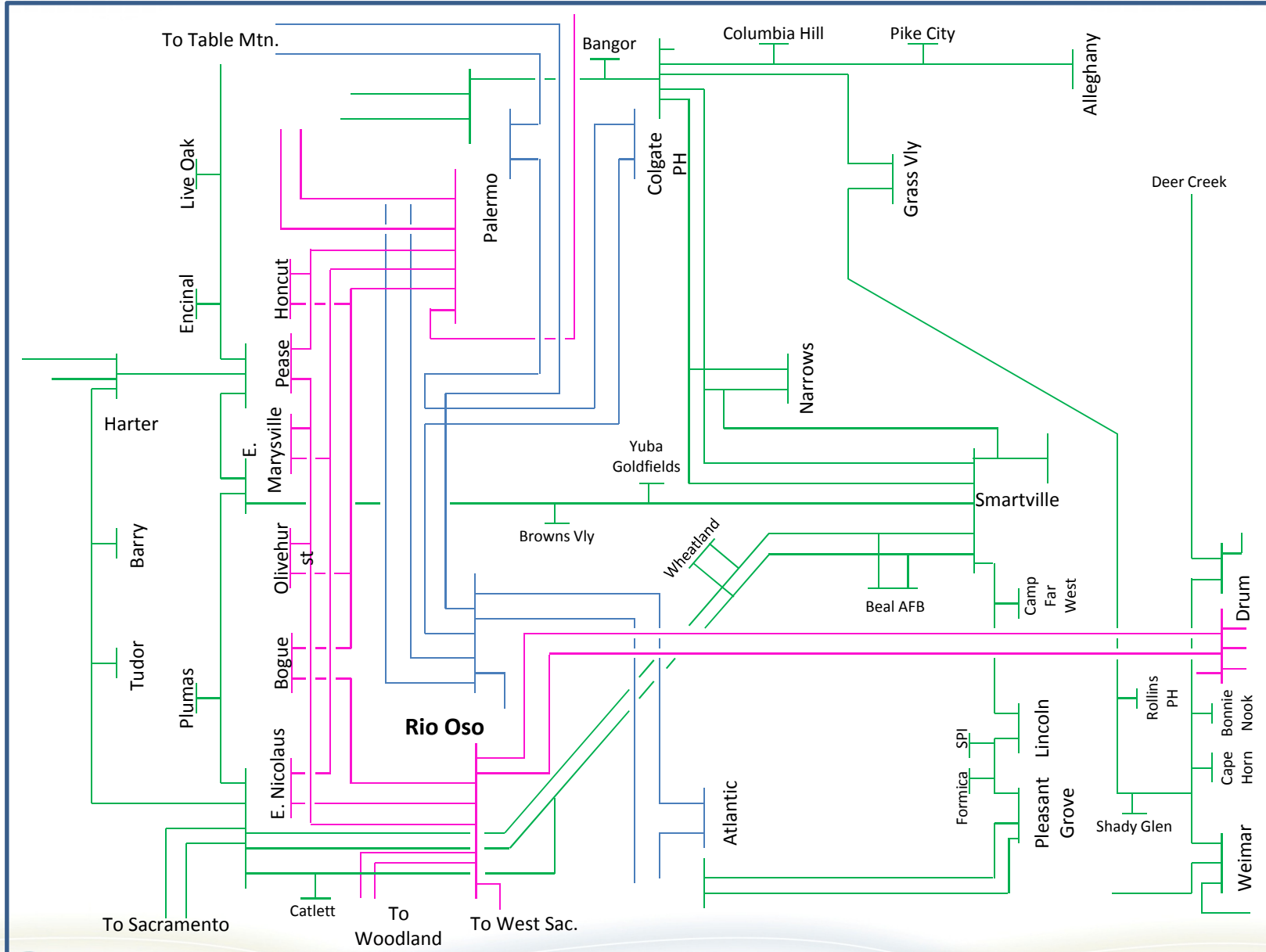
April 14, 2011



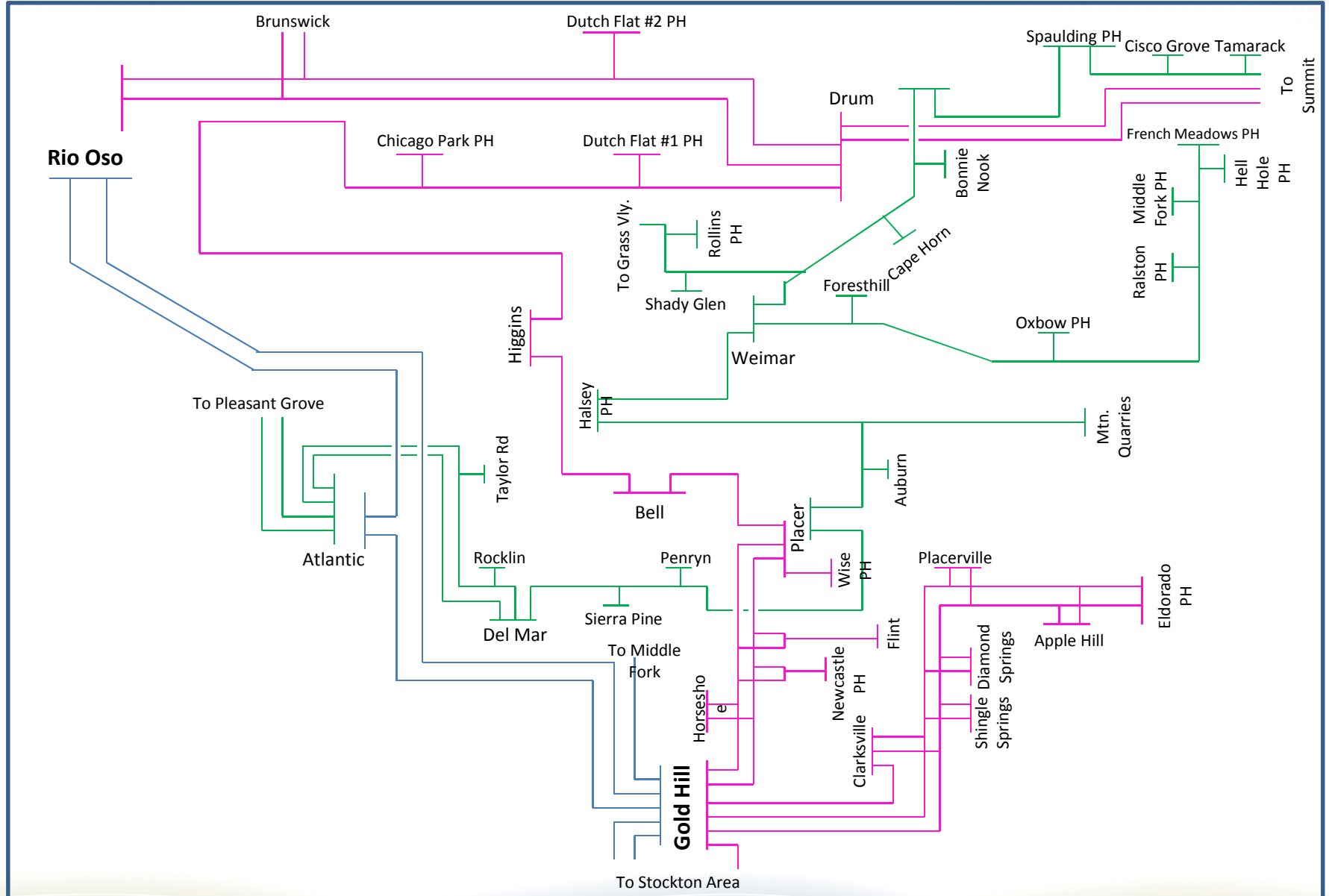
Sierra Area Load and Resources (MW)

		2012
Load	=	1713
Transmission Losses	=	103
Total Load	=	1816
Market Generation	=	760
Muni Generation	=	1101
QF Generation	=	176
Total Qualifying Capacity	=	2037

Northern Sierra



Southern Sierra





New transmission projects modeled:

1. Table Mountain-Rio Oso 230 kV Reconductoring and Tower Upgrade
2. Atlantic-Lincoln 115 kV Upgrade
3. Gold Hill – Horseshoe 115 kV line Reconductoring
4. Palermo-Rio Oso 115 kV Reconductoring

New Generation projects modeled:

1. Lodi Energy Center (280 MW) connecting to Lodi STIG 230 kV substation.

Critical Sierra Area Contingencies South of Table Mountain

South of Table Mountain Sub-area – Category C

Contingency: Table Mountain-Rio Oso 230 kV and Table Mountain-Palermo 230 kV DCTL outage

Limiting component: Thermal overload on the Caribou-Palermo 115 kV line

LCR need: 1399 MW (includes 176 MW of QF and 1101 MW of Muni generation)

South Of Table Mountain Sub-area – Category B

No additional category B requirement. Units required for South of Palermo satisfy the category B requirement for this sub-area.

Critical Sierra Area Contingencies

Pease & Bogue

Pease Sub-area

Contingency: Palermo-East Nicolaus 115 kV line with Green Leaf II Co-gen unit out of service

Limiting component: Thermal overload on the Palermo-Pease 115 kV line

LCR need: 103 MW (includes 62 MW of QF)

Bogue Sub-area

No requirement due to the Palermo-Rio Oso Reconductoring Project.

Critical Sierra Area Contingencies South of Palermo

South Of Palermo Sub-area – Category C

Contingency: Double Circuit Tower Line Table Mountain-Rio Oso and Colgate-Rio Oso 230 kV lines

Limiting component: Thermal overload on the Pease-Rio Oso 115 kV line

LCR need: 1626 MW (includes 694 MW of QF and Muni generation as well as 268 MW of Deficiency)

South Of Palermo Sub-area – Category B

Contingency: Palermo-E. Nicolaus 115 kV line with Belden unit out of service

Limiting component: Thermal overload on the Pease-Rio Oso 115 kV line

LCR need: 1394 MW (includes 694 MW of QF and Muni generation as well as 36 MW of Deficiency)

Critical Sierra Area Contingencies

Drum-Rio Oso

Drum-Rio Oso Sub-area – Category C

Contingency: Rio Oso #2 230/115 kV transformer followed by loss of the Rio Oso-Brighton 230 kV line or vice versa

Limiting component: Thermal overload on the Rio Oso #1 230/115 kV transformer

LCR need: 625 MW (includes 374 MW of QF and Muni)

Drum-Rio Oso Sub-area – Category B

Contingency: Rio Oso # 2 230/115 kV transformer

Limiting component: Thermal overload on the Rio Oso #1 230/115 kV transformer

LCR need: 254 MW (includes 374 MW of QF and Muni generation)

Critical Sierra Area Contingencies South of Rio Oso

South of Rio Oso Sub-area – Category C

Contingency: Rio Oso-Gold Hill 230 line followed by loss of the Rio Oso-Lincoln 115 kV line or vice versa

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

LCR need: 630 MW (includes 622 MW of QF and Muni generation)

South of Rio Oso Sub-area – Category B

Contingency: Rio Oso-Gold Hill 230 line with the Ralston unit out of service

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

LCR need: 453 MW (includes 622 MW of QF and Muni generation)

Critical Sierra Area Contingencies Placer

Placer Sub-area – Category C

Contingency: Gold Hill-Placer #1 115 kV line followed by loss of the Gold Hill-Placer #2 115 kV line or vice versa

Limiting component: Thermal overload on the Drum-Higgins 115 kV line

LCR need: 75 MW (includes 0 MW of QF and Muni generation)

Placer Sub-area – Category B

Contingency: Gold Hill-Placer #2 115 kV line with the Chicago Park unit out of service

Limiting component: Thermal overload on the Drum-Higgins 115 kV line

LCR need: 44 MW (includes 0 MW of QF and Muni generation)

Critical Sierra Area Contingencies Placerville

Placerville Sub-area – Category C

Contingency: Gold Hill-Clarksville 115 kV line followed by loss of the Gold Hill-Missouri Flat #2 115 kV line or vice versa

Limiting component: Thermal overload on the Gold Hill-Missouri Flat #1 115 kV line

LCR need: 81 MW (includes 0 MW of QF and Muni generation as well as 57 MW of Deficiency)

Placerville Sub-area – Category B

No requirements because of decrease in load.

Critical Sierra Area Contingencies Aggregate

	QF (MW)	Muni (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available generation	176	1101	760	2037

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
Category B (Single)	1489	36	1525
Category C (Multiple)	1685	289	1974

Each unit is only counted once, regardless in how many sub-areas it is needed.

In order to come up with an aggregate deficiency, where applicable the deficiencies in each smaller sub-area has been accounted for (based on their effectiveness factors) toward the deficiency of a much larger sub-area.

Changes

Since last stakeholder meeting:

- 1) Updated NQC

Since last year:

- 1) Load forecast went down by 161 MW.
- 2) New generator (280 MW) modeled.
- 3) Existing generation capacity need increased by 175 MW.
- 4) Magnitude of deficiency decreased significantly because of the addition of the new generator.
- 5) Overall LCR need has decreased by 110 MW.

Your comments and questions are welcome.

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

Stockton Area Load and Resources (MW)

2012

Load = 1067

Transmission Losses = 19

Total Load = **1086**

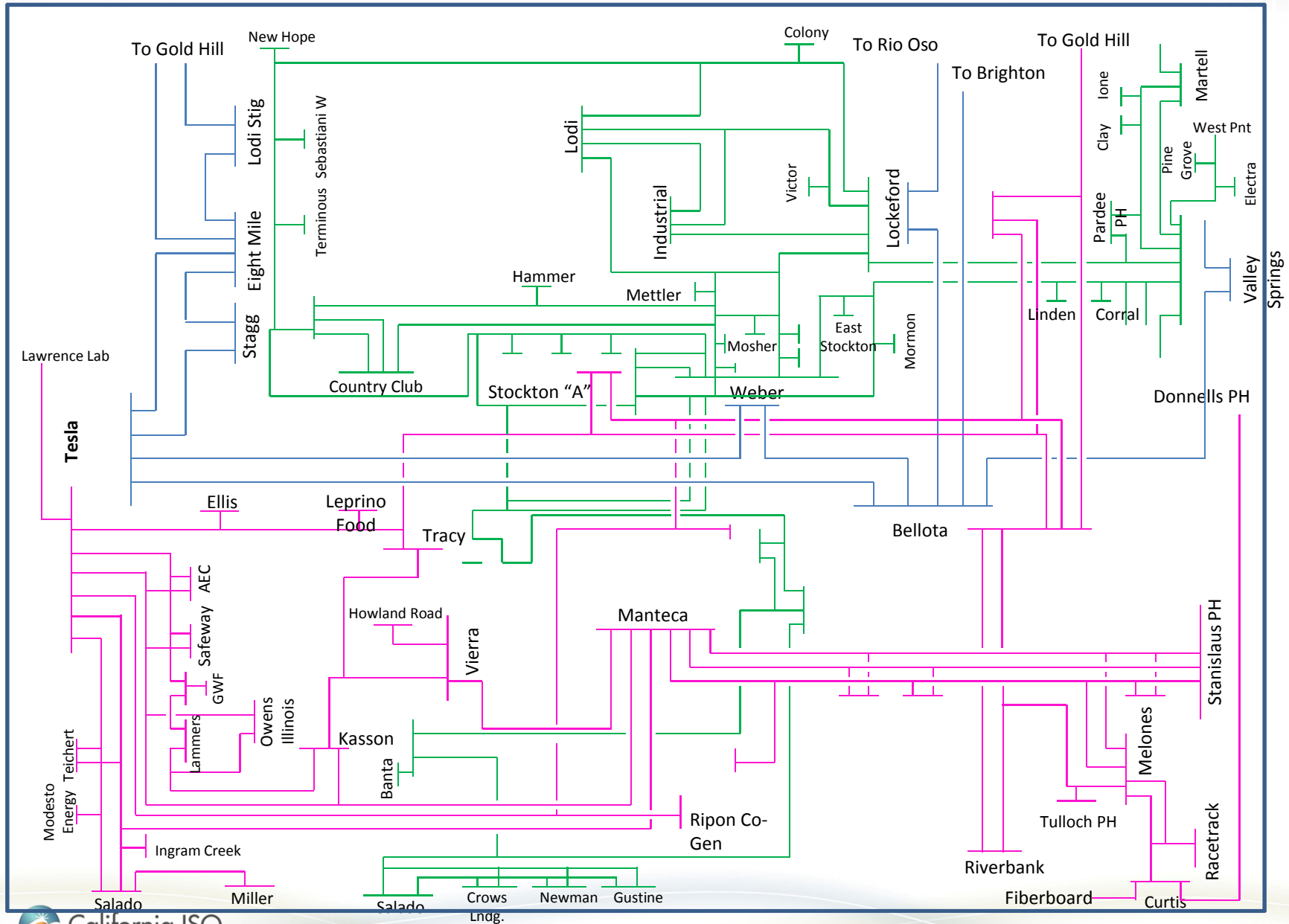
Market Generation = 259

Muni Generation = 141

QF Generation = 105

Total Qualifying Capacity = **505**

Stockton Area



Critical Stockton Area Contingencies

Tesla-Bellota Sub-area

Tesla-Bellota Sub-area – Category C

Contingency 1: Tesla-Tracy 115 kV line and Schulte-Lammers 115 kV line.

Limiting component 1: Thermal overload on the Tesla-Kasson-Manteca 115 kV line.

LCR Need: 401 MW (194 MW of QF/Muni and 114 MW of deficiency).

Contingency 2: Tesla-Tracy 115 kV line and Tesla-Kasson-Manteca 115 kV line.

Limiting component 2: Thermal overload on the Tesla-Schulte 115 kV line.

LCR Need: 337 MW (includes 194 MW of QF and Muni generation).

TOTAL LCR Need: 451 MW (194 MW of QF/Muni and 114 MW of deficiency)

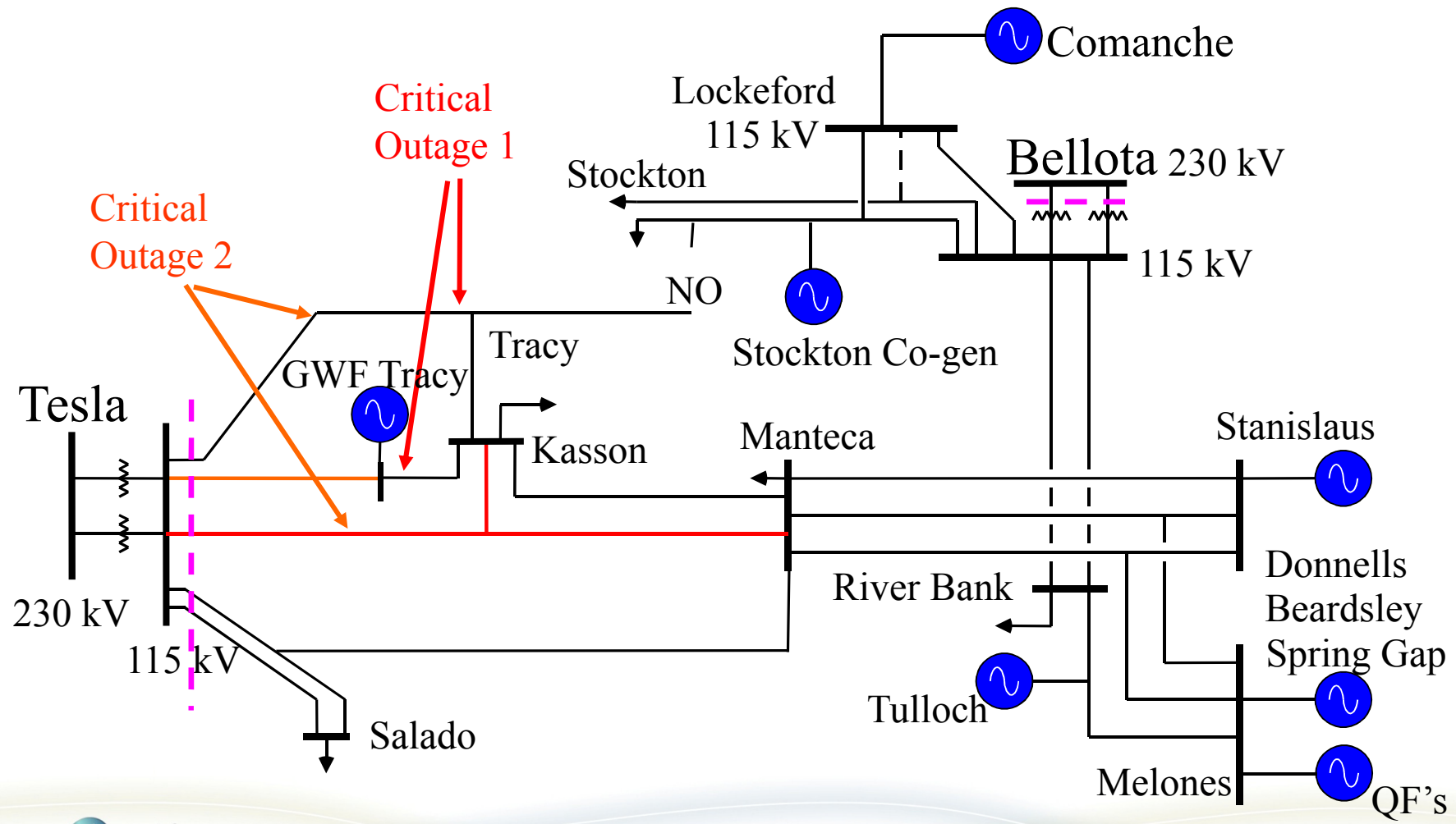
Tesla-Bellota Sub-area – Category B

Contingency: Tesla-Tracy 115 kV line and the loss of Stanislaus #1.

Limiting component: Thermal overload on the Tesla-Schulte 115 kV line.

LCR Need: 123 MW (includes 194 MW of QF and Muni generation).

Tesla-Bellota 115 kV Area Transmission



Critical Stockton Area Contingencies

Lockeford Sub-area

Lockeford Sub-area – Category C

Contingency: Lockeford-Industrial followed by Lockeford-Lodi #2 60 kV line or vice versa

Limiting component: Thermal overload on the Lockeford-Lodi Jct. section of the Lockeford-Lodi #3 60 kV line

LCR need: 55 MW (includes 25 MW of QF and Muni generation as well as 30 MW of Deficiency)

Lockeford Sub-area – Category B

No category B requirement.

Critical Stockton Area Contingencies

Weber Sub-area

Weber Sub-area – Category C

Contingency: Weber 230/60 kV Transformer #1 and the loss of Cogeneration National

Limiting component: Thermal overload on the Weber 230/60 kV Transformers #2 & #2a

LCR need: 61 MW (includes 27 MW of QF and Muni generation as well as 34 MW of Deficiency)

Weber Sub-area – Category B

Contingency: Weber 230/60 kV Transformer #1

Limiting component: Thermal overload on the Weber 230/60 kV Transformers #2 & #2a

LCR need: 22 MW (includes 27 MW of QF and Muni generation)

Critical Stockton Area Contingencies Aggregate

	QF (MW)	Muni (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available generation	105	141	259	505

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
Category B (Single)	145	0	145
Category C (Multiple)	389	178	567

Each unit is only counted once, regardless in how many sub-areas it is needed.

In order to come up with an aggregate deficiency, where applicable the deficiencies in each smaller sub-area has been accounted for (based on their effectiveness factors) toward the deficiency of a much larger sub-area.

Changes

Since last stakeholder meeting:

- 1) Updated NQC

Since last year:

- 1) Load forecast went down by 77 MW.
- 2) Couple of new transmission upgrades modeled.
- 3) As a combined effect, the overall Stockton LCR went down by 115 MW.

Your comments and questions are welcome.

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