



Local Capacity Requirements Potential Reduction Study

Catalin Micsa

Senior Advisor, Regional Transmission - North

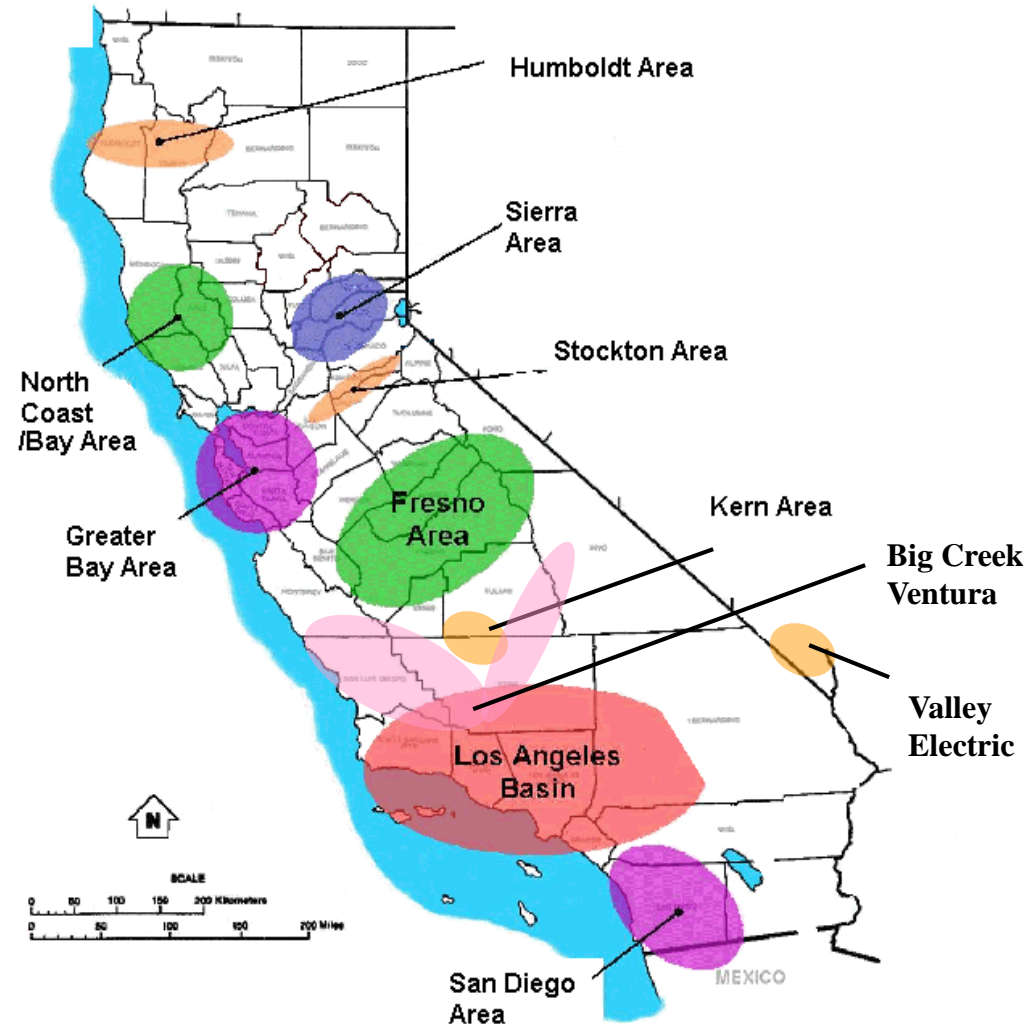
Stakeholder Call

April 18, 2018

Economic study being conducted as part of the 2018-2019 transmission planning cycle – as per final study plan

- to identify potential transmission upgrades that would economically lower gas-fired generation capacity requirements in local capacity areas or sub-areas
- will target exploring and assessing alternatives – conventional transmission and preferred resources - to reduce requirements in half of the existing areas and sub-areas
- areas and sub-areas will be prioritized based on the attributes of the gas-fired generation to provide other system benefits and on the gas-fired generation being located in disadvantaged communities
- recommendations for approval of the identified transmission upgrades will be based on the results of economic assessments

LCR Areas within CAISO



Input Assumptions, Methodology and Criteria

See October 31, 2017 stakeholder teleconference - for study assumptions, methodology and criteria. The latest information along with the latest LCR Manual can be found at: <http://www.caiso.com/informed/Pages/StakeholderProcesses/LocalCapacityRequirementsProcess.aspx> .

Transmission system configuration – all-projects with in-service dates up to June 1, 2028.

Generation – all-generation with COD up to June 1, 2028

Load Forecast – 1 in 10 local area peak (based on latest CEC forecast)

Criteria – see report for details

Methodology

1. Maximize Imports Capability into the local area
2. Maintain path flows
3. Maintain deliverability for deliverable units
4. Load pocket – fix definition
5. Performance levels B & C (if equal category B is most stringent)

Layers of LCR requirements

- **Local areas:** There are 10 active local areas.
- **Local sub-area:** Currently (2018) there are 53 distinct requirements in the LCR study (between areas and sub-areas), this number will decrease to 41 distinct requirements by 2026 due to new approved transmission projects that will completely eliminate the LCR need in 12 sub-areas.
 - Therefore this study will therefore focus on at least 21 area and sub-area needs, representing at least 50% of the remaining needs.
- **LCR requirements:** In addition to the most limiting constraint that establishes the current LCR need (areas or sub-areas) discussed in the LCR report, the subsequent next limiting constraints will also need to be assessed.

Confirmed Full LCR reduction

Sub-areas with LCR need eliminated in the next 10 years:

- 1. Sierra:** Placerville, Placer, Bogue, Drum-Rio Oso and South of Palermo.
- 2. Stockton:** Lockeford.
- 3. LA Basin:** West of Devers, Valley-Devers and Valley.
- 4. Big Creek/Ventura:** Moorpark.
- 5. San Diego/Imperial Valley:** Mission and Miramar.

These LCR requirements are eliminated therefore there is no need to study them again.

Confirmed Partial LCR reduction

Sub-areas with LCR needs already reduced in the next 10 years:

- 1. Stockton:** Tesla-Bellota and Stanislaus.
- 2. Bay Area:** Oakland and South Bay-Moss Landing.
- 3. LA Basin:** Western LA Basin, Eastern LA Basin and the overall LA Basin.
- 4. San Diego/Imperial Valley:** Overall San Diego-Imperial Valley.

These areas and sub-areas will be studied again to see if further LCR reduction may be achieved beyond the already achieved decrease.

	2018 Available Resources		2018 Existing Capacity Need	2022 Available Resources		2022 Existing Capacity Need
Area	# of Units	# of MWs	# of MWs	# of Units	# of MWs	# of MWs
Humboldt	22	210	169	22	210	169
NCNB	40	869	634	40	869	440
Sierra	82	2125	1826	82	2125	1905
Stockton	28	605	398	28	605	406
Bay Area	134	7103	5160	135	6879	5153
Fresno	133	3579	2081	133	3579	1860
Kern	24	566	453	24	566	123
LA Basin	241	10735	7525	233	8138	6022
BC/Ventura	158	5657	2321	155	3860	2597
San Diego/IV	83	4915	4032	86	4572	4572

Note: OTC resources are considered available until the appropriate OTC compliance date.

As of 3/26/2018	Announced Retirements/Non operation		Disadvantaged Community		Natural Gas/Petroleum Resources		Over 40 year old (not hydro, wind, solar)	
	# of Units	# of MWs	# of Units	# of MWs	# of Units	# of MWs	# of Units	# of MWs
Humboldt	0	0	0	0	10	163	3	24
NCNB	0	0	0	0	0	0	0	0
Sierra	2	95	0	0	10	568	2	16
Stockton	0	0	0	0	4	347	3	59
Bay Area	13	1111	38	4137	75	6613	26	447
Fresno	0	0	11	422	19	718	3	27
Kern	0	0	8	269	9	314	1	3
LA Basin	18	4458	28	1956	94	9527	41	4669
BC/Ventura	6	2131	18	2802	33	3823	20	2841
San Diego/IV	5	859	2	51	37	3961	8	864

Prioritization

- 1. Local areas and sub-areas with announced retirements or units being mothballed that were not previously studied.**
The studies for these areas and sub-areas need to have a higher priority due to potential pending retirements.
- 2. Local resources located in disadvantaged communities.**
Higher priority to local areas and sub-areas that rely on resources located in these communities.
- 3. Type of resources.** Higher priority will be given to local areas and sub-area that rely on resources that use natural gas and/or petroleum.
- 4. Age of resources.** Reduce reliance on old resources close to the end of their useful life. Reduction of resources (other than hydro, solar and wind) over 40 year old has priority.

To be included in the 2018-2019 TPP's LCR potential reduction study

1. **Humboldt:** Overall and any sub-areas (if needed).
2. **North Coast/North Bay:** Studies not required.
3. **Sierra:** Pease, South of Rio Oso sub-areas and overall (if needed).
4. **Stockton:** None.
5. **Bay Area:** Llagas, San Jose, South Bay-Moss Landing sub-areas and overall need (if required).
6. **Fresno:** Hanford, Herndon and Reedley sub-areas.
7. **Kern:** Overall and all sub-areas.
8. **LA Basin:** Eastern sub-area.
9. **Big Creek/Ventura:** Santa Clara sub-area.
10. **San Diego/Imperial Valley:** El Cajon, Pala, Border, Esco, San Diego sub-areas and the overall San Diego-Imperial Valley area.

Selection of study areas and sub-areas

No.	Area or Sub-area	Anticipated or announced retirements	Generation in disadvantaged communities	Natural Gas/Petroleum resources	Older generation
1	Humboldt	-	-	X	X
2	Sierra	X	-	X	X
3	- Pease	X	-	X	-
4	- South of Rio Oso	-	-	X	X
	Bay Area (overall studied only if required)	X	X	X	X
5	- Llagas	X	X	X	X
6	- San Jose	X	X	X	X
7	- South Bay-Moss Landing	X	X	X	X
	Fresno (overall studied only if required)	-	X	X	X
8	- Hanford	-	X	X	-
9	- Herndon	-	X	X	X
10	- Reedley (special case)	-	-	-	-
11	Kern	-	X	X	X
12	- Westpark	-	-	X	-
13	- Kern Oil	-	X	X	X

Selection of study areas and sub-areas

No.	Area or Sub-area	Anticipated or announced retirements	Generation in disadvantaged communities	Natural Gas/Petroleum resources	Older generation
14	LA Basin (combined with San Diego/Imperial Valley)	x	x	x	x
15	- Eastern	x	x	x	x
	Big Creek/Ventura (overall studied only if required)	x	x	x	x
16	- Santa Clara	x	x	x	x
17	San Diego/Imperial Valley (combined with LA Basin)	x	x	x	x
18	- San Diego	x	x	x	x
19	- El Cajon	-	x	x	-
20	- Pala	-	-	x	-
21	- Border	-	-	x	x
22	- Esco	-	-	x	-

Conclusion

- **Studies will focus on 22 distinct area and sub-area needs, representing over 50% of total. These areas and sub-areas have the highest priority based on the prioritization criteria.**
- **The remaining 19 distinct area and sub-area LCR needs have either lower priority or do not require any studies:**
 - There is no need to study 6 sub-areas since they do not have any units in the priority criteria: Eagle Rock, Fulton, Lakeville, Borden, Vestal and Rector.
 - The remaining 13 LCR needs in other areas and sub-areas may be studied in future TPP cycles.

Planned Study Results

- 1. Evaluate potential economic transmission solutions to mitigate all needs in order to allow resource retirements in certain areas and sub-areas.** This will most likely be applicable for relatively smaller MWs local capacity needs (Sierra, Stockton etc.).
- 2. Evaluate potential economic transmission solutions to mitigate part of the needs in order to allow some resource retirements in certain areas and sub-areas.** This will likely be applicable for relatively larger and more complex LCR areas (Bay Area, LA Basin etc.).
- 3. Options for resource replacement.** Obtain load shapes vs. LCR needs in order to estimate preferred resource characteristic requirements for replacement of gas-fired generation with new energy-limited resources.

Schedule

Potential reductions/reliance on older gas resources in meeting LCR needs

- Stakeholder meeting to present study scope and methodology – April 18, 2018
- Develop study cases (part of TPP assessments)
- Present preliminary results of LCR assessment and potential transmission upgrades or preferred resource alternatives – November 16, 2018
- Final assessment results with economic assessment included in Draft Transmission Plan – January 31, 2019

Questions?

Your comments and questions are welcome.

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

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