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SoCalGas Comments on the CEC IEPR Supply Side Demand Response Workshop

Additional submitted attachment is included below.



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Commissioner J. Andrew McAllister
California Energy Commission
Docket Unit, MS-4
Docket No. 21-IEPR-04
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comments on the CEC IEPR Supply Side Demand Response Workshop

Dear Commissioner McAllister:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide public comments on the California Energy Commissioner (CEC) Integrated Energy Policy Report (IEPR) Workshop on Supply Side Demand Response (DR) held December 3, 2021. SoCalGas commends the CEC for hosting a workshop specific to supply-side DR as well as the agency's long-term commitment to advancing programs to support long-term energy planning. We recognize your long-standing commitment to DR, load modifying resources, and the previous attempts to highlight barriers and develop solutions in the 2013 IEPR. SoCalGas also appreciates the engagement we have seen from the CEC, California Public Utilities Commission (CPUC), and California Independent System Operator (CAISO) in answering our inquiries during and after the workshop.

Our comments focus on the following topics: 1) DR should be discounted as a firm resource for long-term energy planning; 2) The annual capacity of CPUC and CAISO DR programs over the last decade show fluctuations which impact the assurance of these programs; 3) The availability of DR to be a long-term electricity asset should be contextualized in current economic conditions and integrate resource plans.

1) DR should be discounted as a firm resource for long-term energy planning

Demand response has been a valued program since the adoption of the State’s first Energy Action Plan in 2003, which incorporated a statewide DR goal of 5 percent of system peak demand.¹ “Demand response can play an important role in maintaining a reliable electric system by influencing demand according to system needs and constraints, *potentially* offsetting the need for new power plants and transmission lines (emphasis added).”² When the [State] adopted the 5 percent goal, most DR was available only under emergency conditions, intended as a backup reliability measure.³ Table 1 (below) shows CAISO’s aggregated total DR potential from 2013 to 2019, which indicates that in the CAISO balancing authority, it has hovered right around the 5 percent goal as far as procurement is concerned; with exceptional procurement resulting in 2019 at 7.2 percent.

Table 1. Aggregated total DR potential in the CAISO’s footprint over time⁴

	2013	2014 ⁵	2015	2016 ⁶	2017 ⁷	2018	2019 ⁸
Demand Resources (MW)	2,180	2,316	2,160	1,997	1,293	2,400	3,200
Percent of Peak Demand	4.8%	5.1%	4.4%	4.3%	2.6%	5.2%	7.2%

DR programs can help lower peak demand and lessen the chance of blackouts during intermittent periods of extra demand.⁹ As such, it is an extremely valuable tool for short-term planning (*i.e.*, a one-year planning horizon). However, results from recent blackouts indicate less assurance that the State can reasonably rely on DR as a firm resource for long-term planning needs. According to a 2020 Federal Energy Regulatory Commission (FERC) Staff Report on the California blackouts of August 14 and 15 in 2020:

¹ See CPUC Energy Action Plan, Adopted May 2003, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/utilities_and_industries/energy_electricity_and_natural_gas/2003-energy-action-plan.pdf.

² See CEC 2013 IEPR, at 8.

³ See CEC 2013 IEPR, at 62.

⁴ See references 7 through 10.

⁵ See 2015 FERC Assessment of Demand Response and Advanced Metering, December 2015, at 12, available at https://www.ferc.gov/sites/default/files/2020-04/demand-response_2.pdf.

⁶ See 2017 FERC Assessment of Demand Response and Advanced Metering, December 2017, at 19, available at https://www.ferc.gov/sites/default/files/2020-04/DR-AM-Report2017_0.pdf.

⁷ See 2019 FERC Assessment of Demand Response and Advanced Metering, December 2019, at 17, available at https://www.ferc.gov/sites/default/files/2020-04/DR-AM-Report2019_0.pdf.

⁸ See 2020 FERC Assessment of Demand Response and Advanced Metering, December 2020, at 20, available at https://cms.ferc.gov/sites/default/files/2020-12/2020%20Assessment%20of%20Demand%20Response%20and%20Advanced%20Metering_December%202020.pdf.

⁹ See EIA Demand-side management programs save energy and reduce peak demand, March 19, 2019, available at <https://www.eia.gov/todayinenergy/detail.php?id=38872>.

“...less than two-thirds of the 1,847 MW of resource adequacy capacity met by demand response was available in real-time during load curtailment hours of August 14 and 15...approximately two-thirds of the 1,604 MW of resource adequacy utility demand response capacity was bid in or self-scheduled in real-time market hours 19 and 20 on August 14. On August 15, this total decreased to 58% and 57% in hours 19 and 20, respectively. Of the 243 MW of supply plan demand response capacity, 58% was bid in or self-scheduled in the real-time market during hours 19 and 20. On both August 14 and 15, 41% of supply plan demand response capacity was bid in or self-scheduled.”¹⁰

During the August 2020 blackouts, CAISO relied on DR programs to curtail load more frequently and at much higher levels than in nearly two decades. A significant portion of available supply-side DR was not fully scheduled or manually dispatched by the CAISO.¹¹ Despite these potential benefits and DR’s “position together with efficiency atop the loading order,”¹² the State must err on the side of caution when estimating the amount of demand response that can offset firm resources for long-term planning (*i.e.*, the 10-year planning horizon).

From a system planning perspective, DR bidding into Resource Adequacy (RA) should be discounted to ensure that California does not run short on energy responses that could result in additional stresses to the electric system. We suggest that the Joint Agencies further investigate why there was a discount of potential DR capacity bidding into the system during the August 2020 blackouts and how to ensure that higher percentages of the signed-up DR capacity turn up during the times of greatest need.

2) The annual capacity of CPUC and CAISO DR programs over the last decade show fluctuations which impact the assurance of these programs

During the December 3 CEC IEPR Workshop on Supply Side Demand Response, the CPUC and CAISO presented DR capacity results as a snapshot in time. This made it difficult for stakeholders to assess DR’s progress over the last decade. It would have been beneficial to stakeholders if the Joint Agencies, including the CAISO, included trends in the DR programs overtime. We attempted to mine the reports and pull together the data, but it could be helpful to stakeholders if the agencies leading these efforts provided these tables for the IEPR to verify our efforts to aggregate the data. We created Tables 2 through 5 below to show the DR capacity trends from the programs CPUC presented at the workshop.¹³ Aggregating the data reveals that the capacity of the DR programs fluctuates greatly year to year.¹⁴ In fact, from 2017 to 2018, the Capacity Bidding Program (CBP)

¹⁰ *Ibid.*, at 25.

¹¹ *Ibid.*, at 11.

¹² See CEC 2013 IEPR, at 9.

¹³ See CPUC Resource Adequacy Compliance Materials, available at <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/resource-adequacy-homepage/resource-adequacy-compliance-materials>.

¹⁴ Using the same timeframe of August every year to draw comparisons, following the method used by the CPUC during the workshop.

dropped by nearly two-thirds of the capacity in August. The data represented below is also very similar to the results of CAISO’s reported data.^{15, 16, 17, 18, 19, 20, 21, 22, 23, 24}

Table 2. Base Interruptible Program (BIP) from 2011 to 2020

Delivery Year		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capacity (Aug)	SCE	617	603	666	696	716	700	709	715	678	648
	PG&E	229	227	218	309	273	270	280	324	238	278
MW, with DFL adjustment	SDG&E	7	11	5	1	2	2	2	5	1	1
	Total	853	841	889	1005	990	972	990	1044	917	927

¹⁵ See 2011 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/11981-2011ioudrprogramtotalsfinal728.xls>.

¹⁶ See 2012 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/11965-2012ioudrprogramtotalsfinal728.xls>.

¹⁷ See 2013 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/11953-2013ioudrprogramtotalsfinal.xls>.

¹⁸ See 2014 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/11943-2014ioudrprogramtotals-rev130910.xlsx>.

¹⁹ See 2015 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/64472015totalioudemandresponseprogramtotalsbyprogramandlocalareagrossedupfordtlosses.xls>.

²⁰ See 2016 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/64522016totalioudemandresponseprogramtotalsbyprogramandlocalareagrossedupfordtlosses.xls>.

²¹ See 2017 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/12447-2017-dr-program-totals.xlsx>.

²² See 2018 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/6442454788-2018-dr-program-totals.xlsx>.

²³ See 2019 Total IOU Demand Response allocations by Program and Local Area – Grossed up for T&D Losses, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/d/6442458163-dr-allocations-2019-corrected.xlsx>.

²⁴ See 2020 IOU Demand Response Program Totals, CPUC, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/2/6442462513-2020-dr-programs-total.xls>.

Table 3. Agricultural Pumping Program (API) from 2011 to 2020

Delivery Year		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capacity (Aug)	SCE	41	44	50	71	68	48	68	54	43	42
	PG&E	0	0	0	0	0	0	0	0	0	0
MW, with DFL adjustment	SDG&E	0	0	0	0	0	0	0	0	0	0
	Total	41	44	50	71	68	48	68	54	43	42

Table 4. A/C Cycling (Residential) from 2011 to 2020

Delivery Year		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capacity (Aug)	SCE	0	0	0	0	0	0	335	250	226	195
	PG&E	0	0	0	0	0	0	80	79	61	55
MW, with DFL adjustment	SDG&E	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	415	330	287	250

Table 5. Capacity Bidding Program (Day of and Day Ahead) from 2011 to 2020

Delivery Year		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capacity (Aug)	SCE	16	22	31	12	64	54	32	31	31	10
	PG&E	60	61	38	55	21	17	130	21	84	35
MW, with DFL adjustment	SDG&E	27	35	27	12	21	24	13	6	3	3
	Total	102	118	97	79	106	96	176	59	119	48

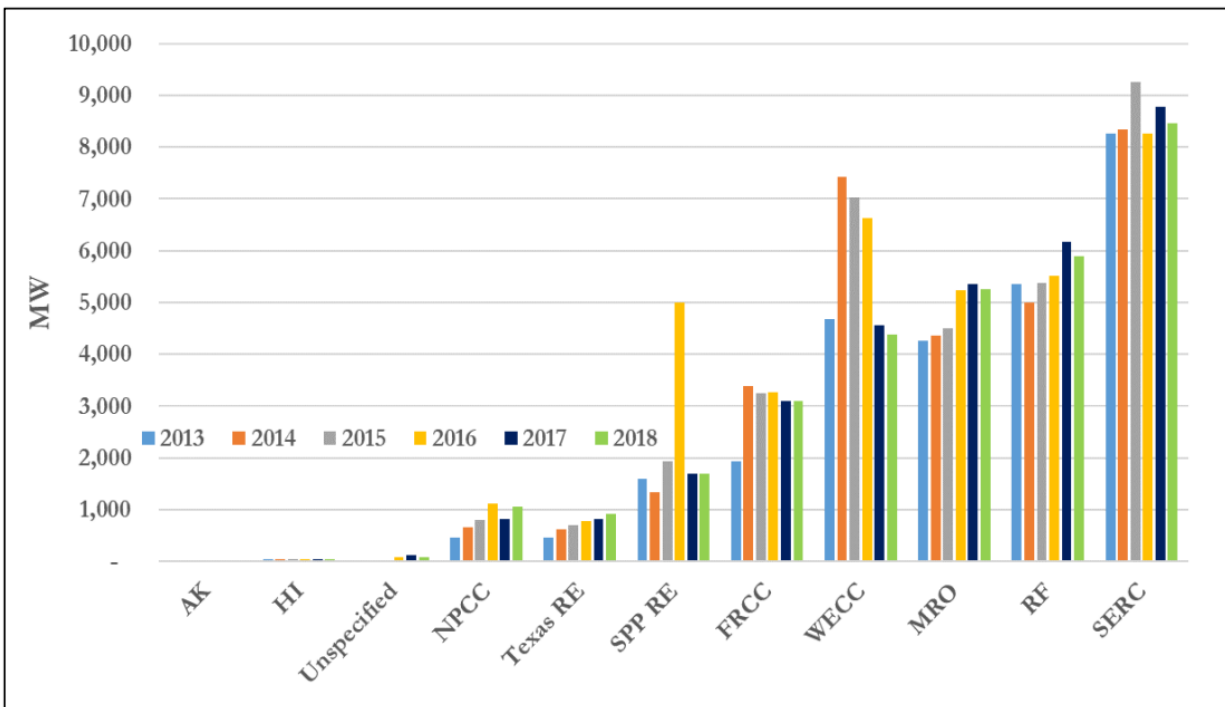
3) The availability of DR as a long-term electricity asset should be contextualized in current economic conditions

It is worth contextualizing whether DR can be planned for and assumed to be a consistent long-term electricity asset. Figure 1 below shows aggregated DR resources in the Western Electricity Coordinating Council (WECC), which peaked in 2016 at approximately 7,500 MW and has since fallen to about 4,250 MW in 2018.²⁵ Because DR often serves as load aggregation, it can fluctuate greatly. As such, it is important to account for any fluctuations that may result due to the COVID-19 pandemic and its impact on the energy demand of DR market participants. For example, prior to the COVID-19 pandemic, large retail spaces such as shopping malls worked with an aggregator to participate in the DR market. Post-COVID-19 pandemic, many businesses have moved out of

²⁵ See, FERC, “Assessment of Demand Response and Advanced Metering,” December 2020, at 18, available at https://cms.ferc.gov/sites/default/files/2020-12/2020%20Assessment%20of%20Demand%20Response%20and%20Advanced%20Metering_December%202020.pdf.

shopping malls, which will result in much fewer onsite retail purchases.^{26, 27} There may no longer be enough energy demand at these large retail spaces for them to bid into the market and the procurement accounted for will not be available when needed in that specific year. This dramatic change in the DR market landscape needs to be considered and expectations of the availability of DR as a long-term electricity asset should be re-evaluated to match this new reality.

Figure 1. Potential Peak Demand Savings (MW) from Retail Demand Response Programs by Region (2013-2018)²⁸



Further, the data from Table 1 (above) shows a level of uncertainty from year to year. For instance, in 2016 the total potential demand resources was about 2,000 MW; and the following year it was about 1,300 MW. This is a loss of about 700 MW, which is similar in size to losing 1.5 gas-fired power plants. This data suggests that there is limited assurance that DR can be accounted for in long-term planning because it can fluctuate significantly from year-to-year. As such, SoCalGas recommends that the reliance capacity be discounted to account for uncertainty in DR.

²⁶ Coresight Research estimates 25% of America’s 1000 malls will be closed in the next three to five years. Moody’s Analytics Real Estate Solutions (REIS) estimates retail development will fall 15.7% due to the pandemic.

²⁷ See “25% of U.S. malls are expected to shut within 5 years,” CNBC, August 27, 2020. Available at: <https://www.cnbc.com/2020/08/27/25percent-of-us-malls-are-set-to-shut-within-5-years-what-comes-next.html>.

²⁸ *Ibid.*

Conclusion

SoCalGas appreciates the opportunity to provide insights and engage with the CEC, CPUC, and CAISO as we advance the discourse on the decarbonization of California's energy system while maintaining reliability and safety. SoCalGas looks forward to continued engagement with the CEC and sister agencies, which we have found to be mutually beneficial in sharing knowledge and perspectives. Thank you for your consideration of our comments.

Respectfully,

/s/ Kevin Barker

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CC: Darcie Houck, CPUC Commissioner
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