DOCKETED	
Docket Number:	21-ESR-01
Project Title:	Energy System Reliability
TN #:	243338
Document Title:	SoCalGas Comments on the CEC Staff Workshop on Summer and Midterm Reliability
Description:	N/A
Filer:	System
Organization:	Southern California Gas Company
Submitter Role:	Public
Submission Date:	5/27/2022 2:16:25 PM
Docketed Date:	5/27/2022

Comment Received From: Southern California Gas Company
Submitted On: 5/27/2022
Docket Number: 21-ESR-01

SoCalGas Comments on the CEC Staff Workshop on Summer and Midterm Reliability

Additional submitted attachment is included below.

Kevin Barker
Senior Manager
Energy and Environmental Policy
555 West 5th Street
Los Angeles, CA 90013
Tel: (916) 492-4252
KBarker@socalgas.com

May 27, 2022

Vice Chair Siva Gunda
California Energy Commission
Docket Unit, MS-4
Docket No. 21-ESR-01
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Comments on the CEC Staff Workshop on Summer and Midterm Reliability

Dear Vice Chair Gunda,

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide public comments on the May 20, 2022 CEC Staff Workshop on Summer and Midterm Reliability. As you insightfully pointed out during the workshop, "Reliability is important in advancing our clean energy goals; if we stumble on keeping the lights on, the whole climate agenda is at risk."[1] SoCalGas commends the CEC on the continued work of updating the Summer Stack Analysis with the most up-to-date information as California faces climate change and a continuously changing energy resources landscape. Delays in both new resources coming online and generation-plant retirements continue to highlight the gas grid's critical role in sustaining reliability and resiliency for the State's energy system during net peak periods when renewables are not available.

SoCalGas' comments focus on the following topics: **1)** a clean, reliable electric grid is enabled by gas system infrastructure and can help to build the grid of the future; **2)** supply chain disruptions and extreme fire risk continue to pose a threat to grid reliability and would impact the CEC Stack Analysis Results; and **3)** cost-effective, clean, and reliable procurement decisions are crucial for public health, air quality, and equity in disadvantaged communities.

[1] *See* "CEC Staff Workshop on Summer and Midterm Reliability," CEC, May 20, 2022, available at: https://www.energy.ca.gov/event/workshop/2022-05/session-1-staff-workshop-summer-and-midterm-reliability.

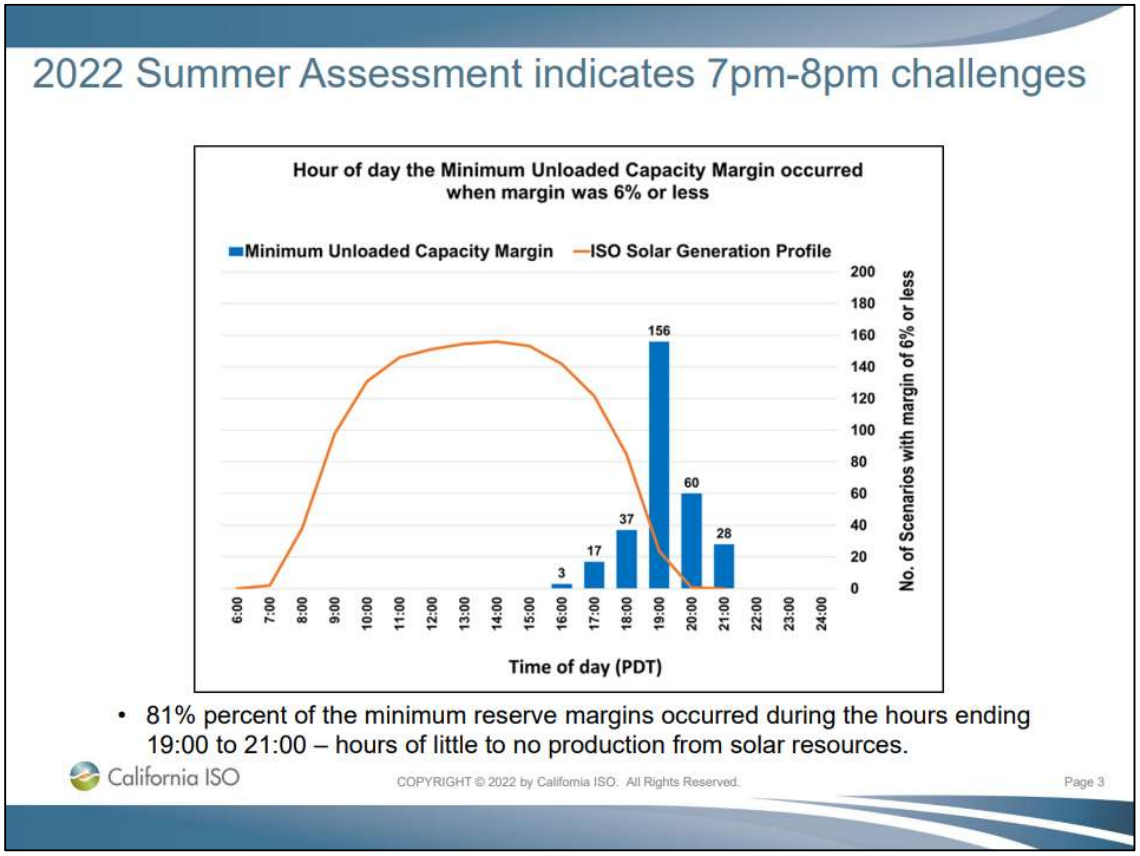
1) **A clean, reliable electric grid is enabled by gas system infrastructure and can help to build the grid of the future.**

The gas grid underpins the electric grid's reliability and enables further deployment of renewables. Recent increases in renewable energy, in particular a large influx of solar and wind resources, supplied the 2020 grid with 55 percent clean electricity (hydro, renewables, and nuclear).[2] This accomplishment was supported by reliability support from the gas system which provided 37 percent of the generation in 2020.[3] California's carbon neutrality goals call for further electrification of other sectors, thereby increasing electric demand, while simultaneously increasing annual clean energy percentages of the electric grid.[4,5] This growth requires an unprecedented build-out of new clean energy resources, batteries, and transmission infrastructure to deliver those clean electrons to homes and businesses. But as the workshop's multiple presenters highlighted, growing the renewable and battery portfolio, while simultaneously increasing electric load is causing significant reliability challenges in the summers of 2022, 2023, and in the midterm (through 2026). The build-out challenges include supply chain issues and rising costs, making it difficult to finance and procure new resources.

Additionally, there are modeling and planning risks due to unknowns of the future changing landscape, including threats of extreme heat, drought, and wildfires that are increasingly difficult to predict. As you and others clearly articulated in the workshop, California's carbon neutrality goals must be met through paths that meet the reliability needs of the electric grid. Thus, as the State continues addressing the options to help build the future clean California grid, the gas grid will continue to support reliability. The gas grid, along with the flexible generation resources that use its fuel, provides ramping capabilities that enable and are necessary for intermittent resources and batteries to enter the market and contribute their maximum output while providing fuel for the grid to continue keeping on the lights well after the sun has set, the wind has died down, and the 4-hour batteries have been depleted.[6,7] The California Independent System Operator's (CAISO) 2022 Summer Assessment chart as presented at the workshop (Figure 1 below) illustrates that 7:00 PM - 8:00 PM will be the most challenging time interval, in terms of reliability.

[2] *See* "2020 Total System Electric Generation," CEC, available at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation.
[3] *Ibid.*
[4] *See* "Draft 2022 Scoping Plan Update," CARB, published May 10, 2022, available at: https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf.
[5] The CARB Draft 2022 Scoping Plan Update estimates that electricity demand will grow about 50% by 2035 to nearly 80% by 2045 compared to 2020. In addition, it states "in almost all sectors, electrification will play an important role. That means that the grid will need to grow at unprecedented rates and ensure reliability and resiliency through the next two decades and beyond."
[6] *See* "Flexible Resources to Help Renewables – Fast Fact", CAISO, available at: http://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.
[7] The CAISO Fast Fact Sheet explains that to reliably manage the green grid, the ISO needs flexible resources with ramping capability.

Figure 1: CAISO 2022 Summer Assessment[8]



Installing additional solar and wind resources will not help ameliorate this reliability risk given their resource profiles. Instead, batteries and firm dispatchable resources can help address these reliability concerns. To provide a long-term solution to addressing the reliability and energy shortfalls in the evening, emerging clean energy technologies will need to evolve to provide affordable longer battery life, affordable and deliverable green hydrogen and renewable natural gas (RNG), and other affordable clean dispatchable resources. In the meantime, gas infrastructure will continue delivering gas to electric generators in support of electric reliability. As the State progresses to carbon neutrality, gas system infrastructure can deliver clean fuels for electricity generation, resulting in clean, reliable energy that can be dispatched to meet energy system needs when solar, wind, and batteries have exhausted their output. This path can continue to maintain a clean and reliable grid. Further, as gas-fired generators elect to switch to clean fuels, gas infrastructure's reliability and resiliency services provided will continue to get cleaner.

2) **Supply chain disruptions and extreme fire risk continue to pose a threat to grid reliability and would impact the CEC Stack Analysis Results.**

You and CEC staff acknowledged during the presentation of the Summer Stack Analysis that there are some variables with the potential to impact reliability that are not captured in the stack analysis results. As CEC staffer Hannah Craig highlighted, the 22.5% planning reserve margin (PRM) for the Summer

[8] *Ibid*., CEC Midterm Reliability Workshop.

Stack Analysis does not incorporate extreme wildfire risk and transmission losses which previously have been identified by the CEC as reliability risks. In the summer of 2021, southern Oregon wildfires, including the Bootleg wildfire, resulted in the loss of 4,000 MW of imports to California.[9] In addition, while the 22.5% PRM does consider procurement delays due to supply chain disruptions in 2022, it does not consider potential procurement delays beyond this time period. Thus, supply chain disruptions are not currently captured in the stack analysis results for 2023 to 2026. There may also be an even greater contingency need during peak hours than is currently reflected in the results, especially if extreme wildfire and supply chain risks affect available capacity to a greater degree than the Summer Stack Analysis currently assumes for the 2023 to 2026 time period.

Supply chain disruptions continue to be a challenge that impact the ability of energy projects to come online in a timely matter, as highlighted by CEC staff and the California Public Utilities Commission (CPUC) Tracking Energy Development (TED) Task Force during the workshop.[10] Situations like the Auxin Circumvention Case where the imports of solar panels are being restricted affects the availability of such components, adding uncertainty to the supply chain and potentially delaying the completion of renewable energy resources that are assumed to come online by their scheduled procurement date. According to the U.S. Energy Information Administration's (EIA) 2020 Annual Solar Photovoltaic Module Shipments Report, approximately 82 percent of the photovoltaic module imports into the U.S. came from Malaysia, Thailand, Vietnam, and South Korea, which are the countries affected by the Auxin Circumvention Case.[11] The high volume of photovoltaic modules anticipated to come from these countries suggests the potential for delay to solar projects is likely.

Significant barriers in the production of battery storage units also point to the possibility of higher contingency need than is currently captured in the Stack Analysis Results. The Stack Analysis Results comparing September 2022 and September 2023 shows that there is a maximum shortfall of 3500 MW from 6:00 PM to 8:00 PM in September 2022 and a maximum shortfall of only 600 MW from 7:00 PM to 8:00 PM in September 2023.[12] The smaller shortfall in September 2023 is attributed to an assumption that approximately 3000 MW of batteries will come online by that time.[13] This is a large quantity of capacity expected to come online in just one year. Supply chain disruptions, oil and shipping costs, lithium cost increases, the Auxin Circumvention Case, and interconnection, transmission, and permitting delays are affecting the battery and lithium supply as mentioned during the workshop by Alex Morris of the California Energy Storage Alliance (CESA). Thus, there is a possibility that these batteries will not be able to come online by September 2023 as assumed in the Stack Analysis results.

As the impacts of supply chain disruptions on solar and battery components and extreme fire risks are realized and new data is available, SoCalGas encourages the CEC to continue its efforts of updating the Summer Stack Analysis in order to have the most accurate results to inform energy planning. In addition,

---

[9] *See* "Reliability at Forefront of CEC," California Energy Markets, May 13, 2022, available at: https://www.newsdata.com/california_energy_markets/regulation_status/reliability-at-forefront-of-cec-discussions-state-unprepared-for-summer-2022/article_2647efc4-d308-11ec-a6cb-9fd4ea28a020.html.

[10] *Ibid*., CEC Midterm Reliability Workshop.

[11] *See* "2020 Annual Solar Photovoltaic Module Shipments Report", U.S. EIA, July 2021, available at: https://www.eia.gov/renewable/annual/solar_photo/pdf/pv_full_2020.pdf.

[12] *Ibid*., CEC Midterm Reliability Workshop.

[13] *Ibid*., CEC Midterm Reliability Workshop.

we commend the close interagency collaboration between the CEC, CPUC, and CAISO, and encourage the CEC to leverage the CPUC's TED Task Force for updates on the status of ongoing energy projects.

3) **Cost-effective, clean, and reliable procurement decisions are crucial for public health, air quality, and equity in disadvantaged communities.**

Equity and providing reliable energy for all Californians should continue to be a critical aspect to inform CEC decision-making. Per the adopted Final 2021 Integrated energy Policy Report (IEPR) Volume II: Ensuring Reliability in a Changing Climate, the CEC is evaluating approaches to analyze the social costs and non-energy benefits of different resource build scenarios, "to ensure that scenarios are evaluated to a broader set of criteria such as greenhouse gas emissions reductions and equity and environmental impacts."[14]

When implementing grid reliability strategies within California, the CEC must adeptly weigh the costs and benefits of related policies that result in a proliferation of backup generation to assure reliable electricity. The Disadvantaged Communities Advisory Group (DACAG) 2021 Annual report states that Public Safety Power Shutoff (PSPS) events were reviewed and the DACAG made recommendations to reduce impacts in disadvantaged communities, such as the reduced use of diesel generators and to improve notification and communication with disadvantaged communities on the scope and duration of PSPS events.[15] The increase in diesel generation statewide to ensure reliability is troublesome, as the generators tend to be located near public spaces, such as schools and workplaces.[16] Even more concerning is that many of the diesel generators are located within vulnerable communities in California and can potentially burden these residents with high levels of carcinogenic pollutants.[17]

These facts were further supported by researchers from the University of California, Irvine (UCI) that modeled the potential adverse impacts on air quality and public health during grid disruption events in the South Coast Air Basin.[18] Results from the UCI study show that increased back up generation use during PSPS events led to significant air quality degradation and increased public health costs in disadvantaged communities.[19] The growing reliance on these higher-emitting gensets undermines efforts made by the State regarding climate change mitigation, energy affordability, equity, air quality attainment requirements, and reliability on clean energy resources.

In addition, power outages, especially those that are long-duration and system-wide, are costly and can adversely affect millions of Californians, especially those in disadvantaged communities. For example, in October 2020, a large-scale power outage in Northern and Central California impacted 2.7 million

[14] *See* "Adopted Final 2021 Integrated Energy Policy Report, Volume II, Ensuring Reliability in a Changing Climate," CEC, p. 71, available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=241583.
[15] *See* "DACAG 2021 Annual Report," CEC, p. 8, available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=240542.
[16] *See* "Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California," M. Cubed, available at: https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf.
[17] *Ibid.*
[18] *See* "Energy Future for South Coast Air Quality Management District" Jack Brouwer (University of California, Irvine), May 12, 2022, available at: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/spec-mtg--brd-retreat-agenda-may-2022.pdf?sfvrsn=24.
[19] *Ibid.*

people (about the population of Mississippi) and could have cost approximately $2.5 billion.[20] In a recent analysis from the American Council for an Energy-Efficient Economy (ACEEE), ACEEE assessed regional energy burdens across nine census regions and found that the gap between low-income and median energy burdens is largest in the Pacific Region, which includes California.[21] The report found that low-income households spend three times more of their income on energy costs compared to the median spending of non-low-income households.[22, 23] Additional research from the Energy Institute at the UC (University of California) Berkeley Haas School of Business indicates that prices California consumers pay are two-to-three times the cost of providing electricity and lower- and middle-income households bear a greater cost burden.[24] Thus, we urge the CEC to continue to focus on cost-effective and reliable procurement planning so as not to further exacerbate the energy burden in California's disadvantaged communities.

Conclusion

SoCalGas appreciates the opportunity to provide insights and engage with the CEC so we may collectively advance the next generation of grid reliability-enhancing management approaches that promote equity, clean air, and public health. To that end, we are open to and look forward to further engagement and perspectives on determining if additional energy resources beyond current procurement orders are needed. Additional energy resources can enable new intermittent resources and batteries to enter the market and contribute to their maximum output, while natural gas provides, and in the future green hydrogen will provide, support for the grid to continue keeping on the lights well after the sun has set, the wind has died down, and the 4-hour batteries have been depleted. We should manage our electricity system with resiliency and reliability woven into the fabric of the plan, so that we do not resort to last minute band aids which could lead to air quality issues and greenhouse gas emission increases. Thank you for your consideration of our comments.

Respectfully,

/s/ Kevin Barker

Kevin Barker
Senior Manager
Energy and Environmental Policy

---

[20] *See* "PG&E power outage could cost the California economy more than $2 billion," CNBC, October 10, 2019, available at: https://www.cnbc.com/2019/10/10/pge-power-outage-could-cost-the-california-economy-more-than-2-billion.html.
[21] *See* "Report: Low-Income Households, Communities of Color Face High 'Energy Burden' Entering Recession," ACEEE, available at: https://www.aceee.org/press-release/2020/09/report-low-income-households-communities-color-face-high-energy-burden.
[22] The report found that national and regional patterns are mirrored in U.S. cities. The energy burden findings acknowledge that many highly burdened groups are intersectional.
[23] *See* "How High are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States," ACEEE, available at: https://www.aceee.org/sites/default/files/pdfs/u2006.pdf.
[24] *See* "Californians pay up to triple what it costs to provide electricity," Berkeley Haas, available at: https://newsroom.haas.berkeley.edu/research/report-californians-pay-up-to-triple-what-it-costs-to-provide-electricity/.