

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021.

Rulemaking 20-11-003

REPLY TESTIMONY OF SAAVI ENERGÍA

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	SUPPLY OPTIONS.....	3
	A. Plant Upgrades and Temporary Generators Deployed at Existing Facilities May Represent California’s Most Realistic Short-Term Supply Options.....	3
	B. The Ability of Plant Upgrades and Microturbines to Provide Incremental Supply Depends on the Availability of Unused Interconnection Capacity...	6
	C. Saavi Can Provide 150-200 MW of Incremental Firm Supply by Summer 2022 Utilizing Existing Interconnection Capacity and CAISO Deliverability.	8
	D. Plant Upgrades and Temporary Generators Deployed at Existing Generation Sites Would Not Conflict with California’s Decarbonization Goals.	11
III.	CONCLUSION	12

REPLY TESTIMONY OF SAAVI ENERGÍA

In accordance with the *Assigned Commissioner's Amended Scoping Memo and Ruling for Phase 2* (Scoping Ruling), Saavi Energía (Saavi) respectfully submits this reply testimony.

I. INTRODUCTION

In this reply testimony, Saavi responds to the opening testimony of the Independent Energy Producers Association (IEP), San Diego Gas & Electric Company (SDG&E) and Wärtsilä North America, Inc. (Wärtsilä) concerning upgrades and the deployment of temporary generators at existing thermal plants to meet California's pressing short-term and mid-term firm capacity needs. Saavi believes IEP is correct that these represent the only measures "that can add appreciable level of new capacity by next summer."¹ Relatedly, Saavi agrees with SDG&E that "if unused interconnection capacity exists, it does provide an opportunity for bringing new resources online more quickly than would otherwise be the case."² Saavi also agrees with Wärtsilä that incremental thermal capacity, including temporary generators, can be deployed in a manner that is consistent with the Commission's mid-term reliability procurement directives and California's decarbonization goals.³ Indeed, Saavi has the ability to deploy temporary generators at an existing California Independent System Operator (CAISO) interconnected and

¹ IEP at 2:6-8. (All citations herein are to the applicable party's September 1, 2021 opening testimony, unless stated otherwise.)

² SDG&E at 13:18-19.

³ Wärtsilä at 2.

controlled facility to provide between 150 and 200 megawatts (MW) of incremental supply to California for summer 2022 utilizing existing deliverability derived from available interconnection capacity.

Saavi is one of Mexico's largest private power producers, with a generation portfolio that includes approximately 2,600 MW of thermal generation. Relevant to this proceeding is the La Rosita Power Project (LRPP) in Mexicali. The LRPP consists of two modern combined-cycle power plants and associated interconnection facilities. La Rosita I (LR1), which is currently serving the Mexico market, interconnects with the CENACE-controlled grid via the La Rosita Substation in Mexicali.⁴ La Rosita II (LR2), which was constructed to serve the California market, interconnects with the CAISO-controlled grid via a dedicated 230 kV transmission line owned by Saavi's affiliate Baja California Power, Inc. (BCP) and interconnecting to the Imperial Valley Substation to provide local capacity deliverability to the San Diego area.

In this reply testimony, Saavi focuses on opening testimony related to the proposals set forth in Section C.4 of the Staff Concept Paper,⁵ in which Staff outlined potential options for securing incremental supply that can serve the peak and net peak during the summers of 2022 and 2023. As discussed in Section II.A, California's most realistic options for increasing firm supply by summer 2022 are plant upgrades and deploying temporary generators at existing thermal generation facilities. In Sections II.B and II.C,

⁴ CENACE is the acronym for *Centro Nacional de Control de Energía* (National Energy Control Center), which serves the same grid and market operation functions in Mexico as the CAISO serves in California.

⁵ Energy Division, *Staff Concept Paper Proposals for Summer 2022 and 2023 Reliability Enhancements*, Aug. 16, 2021.

Saavi clearly identifies an achievable solution to utilize existing interconnection capacity and local market deliverability associated with our LRPP to provide 150-200 MW of incremental firm capacity and quick-ramping energy through deployment of temporary generators at the LRPP site. In Section III.D, Saavi discusses why it believes the CAISO and/or load-serving entities (LSEs) contracting with Saavi for temporary generators at the LRPP site would be consistent with California's decarbonization goals.

II. SUPPLY OPTIONS

A. Plant Upgrades and Temporary Generators Deployed at Existing Facilities May Represent California's Most Realistic Short-Term Supply Options.

The Commission and CAISO have recognized the need for incremental supply during the summers of 2022 and 2023 due to: (i) low hydro resource availability; (ii) decreased imports from outside the CAISO; and (iii) forced/planned outages of existing generation, including aging once-through cooling (OTC) resources. The forced outage at a fairly new (less than 8-years old) combined cycle facility in Hayward in late May substantiates the need for ongoing contingency planning. Recent procurement directives in the Integrated Resource Planning (IRP) proceeding attempt to address the long-term procurement of capacity to simply maintain a near status quo capacity balance due to the retirement of the once-through-cooling (OTC) resources, including Diablo Canyon. However, the Commission's long-term procurement directives do not address the immediate reliability need within the CAISO.

In its opening testimony, the CAISO recommends the Commission: (1) set additional system resource adequacy (RA) requirements to meet the 8:00 p.m. demand

with an appropriate reserve margin; and (2) increase the existing planning reserve margin at a minimum to 17.5%.⁶ Saavi agrees with the CAISO that there is a clear need to adopt an appropriate system net peak RA requirement. Saavi also agrees with Wärtsilä's observation that "[i]n order to meet the immediate reliability needs, all capacity options must be considered."⁷ Saavi recognizes and applauds the viability of properly implemented demand-side programs. However, the implementation of such programs and the voluntary participation during peak periods contribute to potential errors in planning. Saavi believes that clearly identified capacity-based resources compliment the implementation of demand-side programs, as well as continued implementation of intermittent renewables. The combination of all such resources will result in the lowest cost, lowest emissions and highest sustainable reliability during this bridge period of 2022-2023 (and 2024).

In its opening testimony, Southern California Edison Company (SCE) observes that "the market for new resources able to come online by summer 2022 is already limited, and when combined with the lengthy CAISO interconnection queue, there are a limited number of resources that may be able to come online by summer 2022."⁸ Saavi agrees with SCE's observation, and also agrees with the following assessment of IEP regarding the limited new supply that, as a practical matter, could be operational by next summer:

At the outset, IEP observes that unless new capacity projects have already been approved and are in the permitting, interconnection, and construction pipeline with a target

⁶ CAISO at 12.

⁷ Wärtsilä at 3.

⁸ SCE at 54:17-20.

operational date in 2022, it is simply not feasible for them to achieve commercial operation by next summer. It may be possible to squeeze additional MW from existing thermal facilities through various efficiency improvements. At the California Energy Commission's (CEC's) August 30 workshop in the Electric System Reliability docket, CEC staff noted that approximately 200 MW of additional capacity may be available by next summer from software and equipment upgrades at existing gas-fired units. [Footnote omitted.] Apart from these upgrades, the only measure that can add appreciable level of new capacity by next summer is the addition of temporary generators to existing facilities...⁹

The need for incremental capacity to serve the summer net peak during this transitory period has been clearly documented and further exasperated by severe limitations on hydroelectric generation, reduced firm energy available from import resources, forced outages of existing, critical thermal resources in the CAISO (e.g., the May 2021 Hayward event), the relatively poor reliability of OTC units, and the supply-chain problems and other delays plaguing battery energy storage system (BESS) developers. Incremental capacity derived from technology enhancements or the installation of temporary generation capacity at existing thermal facilities can provide accountable and reliable resource adequacy (RA) during the transitory procurement period identified in the IRP decisions. Moreover, the installation of incremental capacity under clearly defined programs will provide quicker ramping capabilities and higher reliability performance than the end-of-life OTC units being relied upon over the next few years.

Existing OTC units that are nearing end-of-life under their permits and mechanical conditions cannot provide the quick ramping and reliability performance that can be

⁹ IEP at 1:25 to 2:8.

efficiently provided with substantially lower emissions by the efficiency enhancements and temporary installments of new capacity at existing sites. Thus, the extension of certain OTC units previously designated for retirement will not provide the needed quick ramping and performance availability. Nor do such OTC units compliment the state's goals of continuously lowering emissions. Capacity from such end-of-life OTC resources should be adjusted for planning purposes to properly account for potential performance shortfalls. Reliability risk may in fact increase from the over-reliance of end-of-life capacity, with antiquated technology contributing to slower ramping capability and higher emissions. In contrast, the efficient, quick ramping deliverable capacity derived from technology upgrades and/or temporary generators can reliably achieve availability standards above 92 percent.

B. The Ability of Plant Upgrades and Microturbines to Provide Incremental Supply Depends on the Availability of Unused Interconnection Capacity.

As SCE and others pointed out in their opening testimony, the need to secure firm interconnection rights through CAISO processes severely limits the amount of newly procured supply resources that realistically could be brought online by summer 2022. In contrast, plant upgrades and temporary generators that can utilize interconnection capacity at existing generation facilities do not face such obstacles. SDG&E addressed this in its opening testimony:

Finally, the Independent Energy Producers Association (IEP) notes [in August 6, 2021 comments] that “one possible source of new supply that could come online quickly is the installation of reciprocating engines or microturbines at existing generation facilities that have available additional interconnection capacity.” [Footnote omitted.] SDG&E agrees

that if unused interconnection capacity exists, it does provide an opportunity for bringing new resources online more quickly than would otherwise be the case.¹⁰

Whether a potential supply source faces interconnection obstacles should, in Saavi's view, be a major consideration in the Commission's deliberations in Phase 2 of this proceeding. The ability of plant upgrades and temporary generators to utilize previously allocated interconnection capacity and firm deliverability status is also important in that the deliverability of capacity will be essential in economically and reliably meeting summer net peak demand during the transitory period. Also important is the fact that, by virtue of utilizing existing transmission infrastructure, without the need for system upgrades, the new supply can be quickly and easily integrated into the CAISO's existing dispatch and least-cost market operations processes.

As discussed in more detail below, Saavi maintains existing interconnection capacity and deliverability at its LRPP facility due to joint operating procedures with the adjacent North Baja balancing authority, and that interconnection capacity and deliverability can be used to assist California meet its short and mid-term reliability needs with incremental capacity from temporary generators, efficiency upgrades, BESS and/or other new resources. To that end, Saavi supports SDG&E's recommendation that "the CAISO provide a listing of the locations where unused interconnection capability is available," to the extent the data are not confidential.¹¹

¹⁰ SDG&E at 13:15-19.

¹¹ SDG&E at 13:20 to 16:1.

C. Saavi Can Provide 150-200 MW of Incremental Firm Supply by Summer 2022 Utilizing Existing Interconnection Capacity and CAISO Deliverability.

In its opening testimony, IEP presents the following proposal with respect to temporary generators deployed at existing facilities:

The Commission could authorize additional temporary generation capacity modeled on the agreements executed by DWR [the Department of Water Resources]. The temporary generators would be installed at existing facilities that have headroom in their interconnection agreements for additional capacity, with a preferred online date of June 1, 2022 and a maximum online date of August 1, 2022. Like the generators procured by DWR, contracts would be limited to a term of no more than five years.

Saavi supports IEP's proposal and is prepared to deploy up temporary generators at the LRPP site that could provide 150-200 MW of incremental firm generation capacity to the CAISO and California LSEs utilizing existing interconnection capacity and deliverability allocated to the LRPP.¹²

The market response to intermediate reliability programs by market participants has been proven. The CAISO has implemented such reliability programs, such as the Summer Reliability Agreements in 2000, which were procured to bridge longer-term procurement. The objective of such program approved and identified in the October 4, 2000 press release from the CAISO, appears all too relevant nearly twenty years later. In

¹² Under BCP's interconnection agreement with SDG&E and the Presidential Permit issued to BCP for the dedicated transmission line interconnecting the LRPP with the CAISO system, Saavi and our affiliates have access to 521.5 of interconnection capacity. Saavi's LR2 plant currently utilizes 322 MW of the interconnection capacity, while a portion of the LR1 unit previously utilized 181.5 MW. (The LR1 CT-C unit that was previously interconnected to the CAISO system via the Imperial Valley Substation is currently interconnected to the CENACE system via the La Rosita Substation.) Thus, nearly 200 MW of interconnection capacity and previously allocated deliverability for the LRPP is currently not being utilized.

addition to LSE procurement of temporary generation, direct procurement by the CAISO, rather than by a quasi-public agency, such as CDWR may be a plausible approach, as the CAISO maintains the ultimate responsibility for grid reliability.

(Folsom, CA) The California Independent System Operator (California ISO) Board of Governors voted today, October 4, 2000, to let the California ISO staff pursue and enter into agreements for temporary peaking power generators that would be used on a limited basis to maintain electric reliability during the summer months. ISO management is authorized to sign peaking generation contracts at a cost of up to \$255 million per year. The projects under consideration amount to approximately 2,000 megawatts, after preliminary evaluation based upon environmental, economical and reliability criteria. The objective is to create a portfolio of generation resources that will meet the needs of California's skyrocketing demand for electricity, while minimizing costs to consumers and impact to air quality.

The action by the Board of Governors today allows the ISO staff to take the next step in fostering development of temporary peaking generation resources. Currently, the ISO forecasts a generation shortfall of approximately 5,000 megawatts for summer 2001.

"We never anticipated the ISO would take on the responsibility of stimulating development of generation resources this directly," said California ISO President & CEO Terry Winter. "However, if we do not assume this role, we will be increasingly challenged in our efforts to protect consumers from suffering rotating blackouts next summer."

The ISO would have the right to call on the peaking power for up to 500 hours each summer season (June 1 – October 31) in exchange for a capacity payment. The ISO would require that the generation be scheduled in the forward markets to the extent possible.

Saavi is actively exploring a range of options for leveraging that interconnection capacity and deliverability, including efficiency upgrades at the LRPP site. While such projects are feasible, the availability of significant, new capacity prior to summer 2022 would be limited. However, the deployment of temporary, highly reliable generators

fueled by clean, natural gas at the LRPP site within that timeframe is entirely feasible. In fact, Saavi already maintains nearly 100 MW of these efficient, quick-ramping natural gas turbines at the LRPP site that can be made available to the CAISO for the summers of 2022 and 2023. Moreover, the temporary generators could be maintained in operation during 2023 (and subsequent years, as needed), in compliment of the recently ordered IRP mid-term reliability procurement.

Saavi has already responded to short-term reliability needs and achieved proof of concept for the deployment of temporary generators at the LRPP site. As the Commission may be aware, North Baja has faced summer capacity shortages for the past several years. The disciplined planning activity of CENACE, under their corrective protocol process, has significantly enhanced summer reliability through the procurement of incremental (temporary or permanent) generation resources, thus reducing export demand from the CAISO on the southern interties. In response to procurement directives similar to the ones issued in this proceeding, Saavi has been a lead provider of incremental summer reliability capacity over the last three years in the CAISO-adjacent Baja Norte balancing authority area (BAA).¹³ Specifically, Saavi has installed and reliably operates approximately 100 MW of incremental capacity at the LRPP site, with the installations being completed within sixty days of notice of award. Based on that experience, Saavi is confident that it could install additional temporary generators at the LRPP site in time for summer 2022, thereby increasing the firm supply available to the CAISO and California LSEs by 150-200 MW.

¹³ Baja Norte is a WECC participant.

D. Plant Upgrades and Temporary Generators Deployed at Existing Generation Sites Would Not Conflict with California’s Decarbonization Goals.

In its opening testimony, Middle River Power LLC (MRP) discusses three recent studies that have reached the common conclusion that “the least-cost way to maintain reliability over at least the next decade, and even out to 2045, while still progressing towards California decarbonization goals, is to retain most (in the long term) or all (in the near- to mid-term) of the existing gas-fired generation fleet.”¹⁴ In a similar vein, Calpine Corporation (Calpine) posits that the incremental gas-fired generation capacity that could result from upgrades to existing thermal power plants “is cleaner than many of the solutions that the state is implementing or considering, such as diesel back-up generators.”¹⁵ Finally, as Wärtsilä convincingly argues, the addition of “fast, flexible” capacity like that provided by temporary generators will not only provide immediate reliability benefits but could also “accelerate carbon reductions, allowing California to reach its carbon goals even sooner.”¹⁶ Wärtsilä explains: “[F]lexible resources with efficient start-ups and low minimum operating levels can both balance renewable variability and meet peak load when needed with an overall minimum emissions impact when all relevant factors are considered.”¹⁷

The temporary generators that Saavi can quickly deploy at the LRPP site would use existing, available interconnection capacity to deliver incremental firm supply to the

¹⁴ MRP at 12-15 (with the quoted language appearing at 14:8 to 15:2).

¹⁵ Calpine at 8:6-7.

¹⁶ Wärtsilä at 4-5.

¹⁷ *Id.* at 6-7.

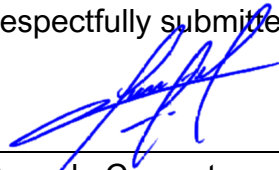
CAISO, as well as providing insurance against forced outages amongst California's existing fleet of thermal plants, which as MRP correctly points will be sorely needed for reliability during the transition to a carbon-free resource portfolio. Highly flexible and efficient generators fueled by cleaner natural gas maintain significantly less emissions than other emergency supply options such as diesel-powered backup generators. The integration of quick ramping, dispatchable generation from temporary generation and facility upgrades to compliment renewable and battery resources could result in less emissions in the near term while even cleaner resources are brought online in response to the Commission's IRP planning and procurement directives.

III. CONCLUSION

Saavi believes that incremental capacity (derived from technology enhancements or temporary generation) installed at existing sites will minimize market price signal disruption and curtailment risk. Such resources could be superior for delivering reliable, incremental resource adequacy with quick-ramping energy dispatch in response to alerts, warnings and other stages of emergency, particularly if demand-side, storage and intermittent renewable resources are not available. The net emission impact of this approach is significantly less than over-reliance of an aging OTC fleet or on-site customer backup generators. Thus, plant upgrades and temporary generators deployed at existing plant sites can assist in resolving the capacity deficits forecast for summers of 2022 and 2023 while enabling the CAISO to efficiently manage reliability under various market conditions and achieve lower overall emissions. Saavi therefore urges the Commission to: (1) adopt IEP's proposal to authorize the IOUs and other LSEs to execute contracts for

incremental gas-fired generation capacity provided by plant upgrades and temporary generators deployed at existing sites; and (2) encourage the CAISO to publish non-confidential data showing the locations where unused interconnection capability is available for such purposes.

Respectfully submitted,



Gerardo Cervantes
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September 10, 2021

VERIFICATION

I, Gerardo Cervantes, am authorized to make this verification on behalf of Saavi Energía. I declare under penalty of perjury that the statements in the foregoing reply testimony are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, I believe them to be true.

Executed on September 10, 2021, at Mexico City, Mexico.

A handwritten signature in blue ink is written over a solid horizontal black line. The signature is stylized and appears to be the name Gerardo Cervantes.