



Steven Powell  
President and Chief Executive Officer

May 16, 2022

President Alice Reynolds  
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California Public Utilities Commission  
505 Van Ness Avenue, Fifth Floor  
San Francisco, CA 94102

**Re: SCE Response to CPUC March 11 Letter Regarding Prioritization of Interconnection to Ensure Grid Reliability**

Dear President Reynolds,

Thank you for your March 11, 2022, letter regarding prioritization of electricity generation projects seeking to interconnect to the transmission or distribution grid. SCE agrees that successfully interconnecting new clean energy generation resources and energy storage is critical to maintaining reliability and supporting the transition to zero-carbon electricity.

As noted in your letter, the interconnection process is more complex and more important today than ever before. Record procurement orders, advances in renewable generation technology, and a reduction in storage costs all contributed to a record level of interconnection requests in 2021 across IOUs in California. Today, SCE alone has over 65 GW nameplate capacity worth of projects in its interconnection queue. We expect high levels of interconnection requests in the coming years driven by climate change, retiring generation, and increasing customer load from electrification. The processes, tools, and resourcing levels that supported us through the previous decade of interconnections will not suffice for the next decade. Against this backdrop, we recognize and agree with the Commission that we must continue to expand our focus and work with our partners, including CAISO, to provide efficient, safe, and timely interconnection of new wholesale generation and storage resources.

One of SCE's core values is continuous improvement, and that has been the hallmark of SCE's approach to the highly complex and iterative interconnection process for many years. We have identified and acted on several opportunities to reduce delays and improve the experience of generators in recent years, and these enhancements have helped us serve our interconnection applicants despite increasing cluster sizes and project complexity.

However, given the importance of the interconnection process as highlighted in your letter, we launched an extensive review of SCE's end-to-end interconnection process to both i) ensure adequate staffing levels across all groups involved in interconnection, and ii) identify additional process improvements to ensure safe and efficient interconnections and timely and reliable assistance for generators – for 2022-23 as well as through 2026 and beyond. Through this review, we received input from internal groups as well as current interconnection applicants (*i.e.*, developers) regarding each step in the process. While the roadmap and sequencing for these future improvements are being refined, we are pleased to share findings on resourcing levels,

near-term process improvements, and areas for continued collaboration between SCE, CPUC, and FERC. Below, we have summarized our response to each of the four requested action items in the March 11 letter. For additional detail and context on how these items fit into our broader interconnection strategy, please see the dedicated section for each item.

- **Item 1:** SCE has completed a rigorous review of the 61 project IDs (58 line items) identified by the CPUC and can confirm that 50 are in service or on track to achieve in-service status by the end of 2023 with all SCE resources committed. Of the remaining 11 projects, 7 are on track but beyond 2023 (*e.g.*, in Cluster 14), 3 are delayed due to applicant causes (*e.g.*, MMA requests) and the final 1 is delayed due to upgrades for compliance/reliability at the nearest substation. To ensure the success of these near-term interconnections, SCE has proactively launched a series of initiatives to expedite materials, increase headcount of key technical resources, and improve communication.
- **Item 2:** SCE has added granularity to its resourcing forecasts with respect to interconnection demand by testing resource requirements across a variety of potential cluster sizes. We found that if Cluster 15 were larger than prior clusters, SCE would either need more time or additional resources, particularly for resources reviewing applications and those with specialized technical skillsets (*e.g.*, substation protection engineers). To ensure staffing of these critical resources, we are improving retention measures, training internal qualified candidates, hiring externally, and supplementing with contractors where feasible.

The highest priority process opportunities uncovered through our diagnostic include (see Item 2 below for additional detail): reducing time from Generator Interconnect Agreement to kickoff, designating resources within departments to handle interconnections, forecasting emergent project workload, and collaborating with the CAISO and others to enhance the tariff-established processes.

- **Item 3:** SCE has identified Andrea Tozer, Director of Grid Contracts Origination and Operations, as the ombudsperson.
- **Item 4:** SCE recommends the CPUC and FERC support and promptly approve the CAISO's Interconnection Process Enhancement Phase 1 proposed changes. Additionally, SCE requests the CPUC actively participate in the Phase 2 stakeholder process to ensure the CAISO proposals are in sync with procurement efforts. While not a solution for near-term interconnections, SCE also recognizes the need for a significant increase in transmission capacity to meet future interconnection demands. In Item 4 below, SCE recommends CPUC and FERC take a series of actions to extend the large-scale transmission planning horizon to 20 years as well as to help reduce the time it takes for licensing/permitting of transmission facilities.

**Background:**

SCE, the CPUC, the CAISO, and developers all have strong incentives to interconnect resources in a safe and timely fashion. These new resources not only improve grid reliability by reducing the risk of outages, but also help scale up renewable energy to deliver on California’s clean energy goals and SCE’s Pathway 2045 vision. Despite this alignment of incentives and the best efforts of all parties involved, the interconnection process remains complex and occasionally suffers from pain points and delays. While no process is perfect, there is opportunity both within SCE and externally to improve outcomes by reducing complexity, improving communication/education, and increasing resource levels.

Today, the interconnection process depends on the point of interconnection to the grid and corresponding tariff (*i.e.*, Rule 21, Wholesale Distribution Access Tariff (WDAT), Transmission Operator Tariff (TOT)). The average interconnection takes several years due to electrical studies, engineering design, and coordination with local/state/federal agencies as well as close collaboration with developers. As an example, the nine major steps of the TOT cluster process and major SCE groups involved are attached in [Exhibit A](#).

To prepare for future interconnections, we reviewed interconnection data from the past 15 years across tariff types to examine how applications moved through the process and where delays most frequently occurred. We found that SCE consistently met the timelines outlined in the tariffs up through the end of the studies, with no recorded instances of missing a deadline. We continue to look for opportunities to exceed the tariff timelines and deliver interconnections more quickly. However, our internal resources involved in the cluster study process and negotiation of interconnection agreements are spread increasingly thin by the rapid rise in interconnection demand. We support almost 10 projects in application for every 1 that is ultimately interconnected, resulting in disproportionate resource usage relative to grid benefits.

Since 2005, there have been several rounds of tariff reforms aimed at improving these processes for CAISO, WDAT and Rule 21 (*e.g.*, the revised Rule 21 “Fast Track” in 2013, followed by the current proceeding, which began in 2017). Beyond tariff changes, SCE has made substantial improvements to its internal interconnection process in recent years to help drive efficiency and improve applicant experience:

- Implemented an automated end-to-end tool (Grid Interconnection Processing Tool) for Rule 21 non-export applications, leading to higher efficiency in the processing and technical evaluation of applications and an improved customer experience
- Reorganized our system planning department to align individuals with tariff types and geographies, enabling them to specialize in select system voltages and handle more complex interconnection requests
- Revamped our work order creation process to auto trigger when an interconnection agreement enters our digital signature system, thus reducing project startup times and increasing visibility for downstream groups
- Reduced time to true-up project costs after in-service status by using automation and an improved internal financial process, meeting the six-month tariff deadline over 99% of the time

These process improvements have allowed us to serve an increasing demand of interconnections (our 2021 WDAT/CAISO interconnections of 15 in-service projects were twice as high as the average of 2017-2020) with relatively constant resourcing levels. While SCE intends to build on these efforts through additional improvements described below, in the short term, we remain focused on the delivery of resources critical to grid reliability in 2022 and 2023. In the long term, we see generator interconnections as part of a unified strategy that includes both customer and generator interconnections, grid hardening, and new system designs to support growth in zero carbon energy resources, as envisioned in SCE's Pathway 2045 whitepaper.

**Item 1: Focus on ensuring SCE has sufficient resources, including increasing staffing as necessary, to support the interconnection of new projects that are critical to grid reliability in summer 2022 and 2023.**

Interconnecting resources to support grid reliability in summer 2022 and 2023 is a top priority for SCE. Most projects eligible to achieve in-service dates in 2022 or 2023 entered the interconnection queue several years ago and are in the final stages of the interconnection process. These projects have already undergone all necessary studies and signed interconnection agreements, at which point SCE began work on design/engineering, materials procurement, and construction activities, including ordering materials and assigning construction resources. While the near-term projects will not necessarily benefit from any future process improvements at this stage, SCE will take all commercially reasonable measures to deliver on its commitments to interconnect near-term projects.

SCE has completed a rigorous review of the interconnection queue through 2023 (including the 58 projects identified in the appendix of the March 11 letter that seek interconnection to SCE's system).<sup>1</sup> We include a current status of these projects, clearly identifying those projects where SCE does not foresee any utility-based barriers to interconnection, as well as one where a utility-based delay has been identified and interconnection customers notified accordingly. Of the 58 SCE projects identified in the appendix, there were some line items that contained multiple IDs, in total representing 61 projects:

- 14 are already in-service
- 36 are on track to achieve in-service status by 2023, with all required SCE resources committed
- 3 are delayed due to applicant-related reasons (*e.g.*, requesting a later in-service date)
- 7 are on track, but are beyond 2023 (*e.g.*, in Cluster 14, which will not finish studies in time to reach in-service status in 2023)
- 1 is delayed due to compliance and reliability projects at the interconnecting substation, and the SCE team is working to expedite the portion of work within its control

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<sup>1</sup> Although the letter identified 60 projects, two were determined to be outside of SCE's service area and therefore are not addressed in this response.

- For a summary of the status of these projects, please see **Exhibit B**; for a detailed review of the status of each project, please see **Exhibit C**

Beyond this project-level information, SCE also launched a holistic review of its current resourcing levels for every SCE group that contributes to grid interconnection, for both 2022/23 projects and beyond. We can confirm that SCE has sufficient resourcing across all groups to support projects with potential for 2022 and 2023 in-service dates, including accounting for a normal level attrition and vacation schedules.

To increase the certainty of delivering these critical projects on time, SCE has proactively launched the following initiatives for summer of 2022:

- Negotiating agreements with contractors and increasing headcount for key resources within our business where we are most vulnerable to workforce attrition (*e.g.*, certain types of engineering and field talent)
- Requesting expedited delivery options from all materials suppliers to provide interconnection applicants with the option to reduce equipment delivery lead-time where the supplier allows
- Improving our customer communication during the construction process, particularly with respect to forecasting impact of customer scope changes on projected in-service dates

We commit to updating the CPUC on the status of these 61 projects via email on a monthly basis to maintain an ongoing dialogue and enable all parties to plan for summer 2022/2023.

Beyond the projects with very near-term in-service dates, we have evaluated various scenarios for future project volumes to identify where groups have a longer-term risk of resource constraints. Based on this review, we are taking several proactive steps to supplement resources (as described in Item 2 below).

**Item 2: Take action to identify the necessary interconnection resources and process improvements to facilitate the ongoing interconnection required to support the CPUC’s recent procurement orders of 14,800 MW NQC of new resources by 2026.**

To build on the recent process improvements described above and accelerate future interconnections, we have undertaken an end-to-end review of our interconnection process in coordination with selected resource developers. Our focus in this review was to identify and reduce utility-based sources of delays by ensuring we have the right resource levels, processes, and tools to accommodate expected growth in demand for interconnection services.

**Resources:**

We have recently expanded our resource planning process to provide additional granularity with respect to interconnection demand. We catalogued all major resources currently involved in the interconnection process at SCE and their relative utilization levels. We then analyzed how past interconnection applications have moved through the process and what volume of resources were required to support them at each step. We then used this baseline view to simulate our resourcing

needs in various scenarios of interconnection demand (e.g., if future clusters such as Cluster 15 are significantly larger than Cluster 14 due to the buildup of applications and growing demand for interconnection).

We found that if Cluster 15 was larger than Cluster 14, SCE may need to either add resources or file for an extension of timelines for the study process, similar to what was done for Cluster 14, the “supercluster.” In particular, the initial application review would likely require either incremental time or additional (contractor) resources to complete, given the linear relationship between application review volume, available time, and required resources. In comparison, the integrated systems modeling in Phase I and Phase II of the interconnection studies to identify upgrades scales more easily, albeit with increased complexity.

Our resource modeling exercise also highlighted that there may be challenges later in the interconnection process if Cluster 15 and beyond are larger than Cluster 14 and reach interconnection agreement/construction stages at similar rates and timelines as previous clusters. Specifically, there are several technical resources with specialized skillsets that are in short supply, including:

- Added facility / interconnection facility responsible engineers – these individuals play a critical role in Phase I and Phase II studies, including owning all electrical and protection engineering for the studies and interfacing with other groups (e.g., IT telecom) to finalize scope and cost estimates
- Substation Protection Engineers and Test Specialists capable of designing and testing the sophisticated system protection schemes known as Centralized Remedial Action Schemes (CRAS) necessary to protect the grid as we connect additional customers
- Meter Engineering – while metering is a small part of the interconnection process, it is critical to bringing projects online, and a specialized skillset is required to design meter interfaces and install meters for generation or battery storage projects
- Transmission crews – given the number of high-priority projects impacting Transmission crews, the potential for resource shortages in future years exists. Given the ~3-year timeline for individuals to progress from groundman to journeyman lineman, we have already started an initiative to increase recruitment and training of these resources to ensure we have adequate capacity to support critical projects for years to come.

To alleviate the potential for shortfalls of technical resources in these areas, we are building a multi-pronged approach to retain existing talent, train qualified internal candidates, hire and train external resources, and supplement with external contractor resources where feasible. Our refined forecast resource model is intended to allow us to re-run this analysis regularly with updated assumptions on project volumes and success rates to identify any new areas of concern and proactively mitigate any constraints before they have the potential to create a delay.

**Process improvements/tools:** We conducted dozens of interviews with both internal and external stakeholders throughout the grid interconnection process to identify incremental improvement opportunities that will help ensure we fully support any interconnection requests

through 2026 and beyond. This review identified a few key areas where we believe there is opportunity for improvement:

- Given the large number of individuals with different areas of expertise that are required to successfully study, design, and interconnect a project, there are opportunities to streamline communication and information sharing across SCE groups
- We can improve the level of communication and expectation setting with resource developers, particularly those that are less familiar with the grid interconnection process and application requirements (*e.g.*, more explicitly highlighting areas where developer changes in scope or delays have the potential to disproportionately affect the interconnection timeline)
- While every group within SCE has a tool for managing projects and information, we can improve integration across the end-to-end process to reduce the need for manual intervention and improve our ability to make data-driven decisions
- In specific areas with the potential for bottlenecks, we can clarify roles, set specific service-level agreements, and implement tighter project tracking to identify when a process step is at risk of causing a delay

Based on these discussions, we created a broad set of potential enhancements to the interconnection process. These opportunities were sized for their potential value and difficulty of implementation to create a prioritized list. While this work will continue, we have identified several high-priority opportunities that we plan to tackle in the coming months.

Highest priority opportunities to support ongoing interconnections through 2026 identified to date include:

- Reduce our time from Generator Interconnect Agreement execution to customer kickoff by utilizing automation, drafting scope earlier in process, and standardizing scope elements
- Designate individuals in each department related to interconnections to handle requests and update service-level agreements (SLAs) to reflect revised processes
- Create a single source for interconnection information from application to construction and long-term management, with automation to reduce manual entry and intervention across process steps
- Incorporate forecasts for emergent project work such as interconnections into long-term work planning process and resourcing requirements
- Collaborate with CAISO, CPUC, and other IOUs to amend tariff guidelines to improve application quality and process timelines

Each of these initiatives have identified owners within SCE to ensure work is completed and full benefits are realized. This work will be overseen at the officer level by our Vice President of Vegetation, Inspection, and Operational Services. These initiatives underpin a broader effort by SCE to bring all interconnections (from generators and wholesale load customers) into the same strategic planning process with grid hardening and other capital projects as part of our Pathway

2045 vision. We look forward to continued collaboration with developers, the CAISO, and other agencies in the coming years to improve the grid interconnection process.

**Item 3: Identify an ombudsperson(s) for CPUC’s Energy Division to coordinate with on any interconnection issues or projects.**

SCE selected Andrea Tozer, Director of Grid Contracts Origination and Operations, as the ombudsperson for any interconnection issues or projects. Rod Vickers will continue to function as Rule 21 ombudsperson.

**Item 4: Identify regulatory requests, if any, to CPUC or the Federal Energy Regulatory Commission (FERC) that require resolution to support SCE’s activities related to wholesale generator interconnections**

SCE appreciates the opportunity to provide its recommendations to support wholesale generator interconnections. SCE has categorized its recommendations into two areas:

- A) “Generator Interconnection” actions that directly support the interconnection process for wholesale generation
- B) “Transmission Additions” actions to accommodate additional generation capacity

A summary of the recommendations is provided in **Exhibit D**.

**A. Generator Interconnection**

In response to the unprecedented volume of interconnection requests received in Cluster 14 (“supercluster”), the CAISO launched the 2021 Interconnection Process Enhancements (IPE) stakeholder initiative. The CAISO has divided this effort into two phases. Phase 1 includes near-term enhancements to the existing interconnection processes that the CAISO can resolve for Cluster 14 and before the summer of 2022. Phase 2 will focus on resolving longer-term modifications and broader reforms to align interconnection processes with procurement activities and stakeholder need. The CAISO’s Phase 2 draft proposal is due June 7, 2022, with CAISO Board approval targeted for November 2022. Given the interconnection of wholesale generation is largely governed by the CAISO’s tariff (subject to FERC jurisdiction), SCE views improvements to the CAISO’s process as one of the primary levers to improve generator interconnections through 2026.<sup>2</sup>

One such improvement is CAISO’s Phase 1 IPE proposal to revise its tariff to accept emergency generation study requests under certain conditions, including when a specific emergency state mandate is issued by the governor of California, and only for interconnections and additions

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<sup>2</sup> SCE also has a large volume of wholesale generation that interconnects to its distribution system through its Wholesale Distribution Access Tariff (WDAT), which is a FERC-jurisdictional tariff that governs the interconnection to SCE’s distribution system for generation that will participate in the CAISO markets. SCE has made an effort, where possible, to align its WDAT interconnection processes with the CAISO’s tariff.



specifically designated by a state agency, not including counties, municipalities, or CCAs.<sup>3</sup> Other comprehensive changes are expected when the CAISO issues its Phase 2 IPE proposal in June 2022, including considering higher fees, deposits, and site exclusivity as part of the interconnection request requirements, streamlining interconnection studies, and better aligning interconnection schedules with resource procurement. SCE believes these proposed changes are in the best interests of not only the interconnection stakeholders, but also the state as a whole, given their potential to improve the interconnection process.

*CPUC Action* – SCE recommends that the CPUC support the CAISO’s Phase 1 IPE proposals when they are presented to the CAISO Board and filed with FERC. In addition, SCE recommends that CPUC staff actively participate in CAISO’s Phase 2 stakeholder process by providing suggestions to ensure the CAISO proposals align with resource planning occurring with state agencies, the procurement requirements of load serving entities, and broader state policy development.

*FERC Action* – SCE recommends that FERC promptly approves CAISO’s proposed IPE changes to the extent they are found to be just and reasonable. When evaluating CAISO’s proposal, SCE recommends FERC take into consideration the unique regional circumstances (*e.g.*, interconnection and renewables demand) in CAISO’s operating area.

## **B. Transmission Additions to Accommodate New Generation Capacity**

While additional transmission capacity will not address near-term interconnection needs through 2026, it will be critical to meet California’s long-term clean energy goals. Additional transmission capacity is essential to quickly and affordably interconnecting the thousands of MW of clean energy resources needed in California. As stated in the CAISO’s 20-Year Transmission Outlook,

California is facing an unprecedented need for new renewable resources over the next 10 to 20 years. This heightened requirement is being driven by increased customer demand for clean energy, the continuing electrification of transportation and other industries and by the requirements of Senate Bill 100 that renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045. This transformation will not only drive significant investment in a technologically and geographically diverse fleet of resources, including storage, **but also significant transmission** to accommodate all the new capacity being added.<sup>4</sup>

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<sup>3</sup> Additional limitations are included in the CAISO’s proposal; see [FinalProposal-InterconnectionProcessEnhancements2021Phase1.pdf \(caiso.com\)](#) (pages 18-19).

<sup>4</sup> [Draft20-YearTransmissionOutlook \(caiso.com\)](#) (page 1) (emphasis added).

In support of those needed transmission additions, SCE recommends CPUC and FERC actions in two general areas: 1) the need for a longer-term transmission planning horizon and 2) the need to expedite the licensing/permitting for transmission additions.

### 1. *Transmission Planning Horizon*

This year, the CAISO produced its first ever 20-Year Transmission Outlook in collaboration with the CPUC and the California Energy Commission (CEC) with the goal of exploring the longer-term grid requirements and options for meeting California’s greenhouse gas reduction and renewable energy objectives reliably and cost-effectively. SCE supports the CAISO’s effort to look beyond the 10-year planning horizon under its annual transmission planning process. However, while the CAISO’s annual transmission plan is “actionable” (*i.e.*, results in approved transmission projects), the CAISO’s 20-year Transmission Outlook currently is “not actionable” (*i.e.*, does not directly result in approved transmission projects). SCE supports the CAISO expanding its annual planning process to include a 20-year time horizon for the identification and approval of large, long-lead time transmission projects. This will better align transmission planning with the state’s longer-term clean energy goals. It is SCE’s understanding that no CAISO tariff changes are required to make an actionable 20-year transmission assessment, because the CAISO’s current tariff states that the *minimum* planning horizon shall be 10 years.<sup>5</sup>

*CPUC Action* – SCE recommends that the CPUC support a 20-year transmission planning horizon, including by sending a letter to the CAISO indicating that it supports the CAISO expanding the planning horizon for its annual transmission planning process from 10 to 20 years for the identification of major transmission projects needed to meet the state’s clean energy goals.

*FERC Action* – None (CAISO tariff allows it to expand its annual transmission planning process to a 20-year time horizon).

### 2. *Transmission Licensing/Development*

To achieve future state and federal GHG reduction and renewable energy goals in a timely manner, revisions will be needed in the siting, licensing, and permitting of new transmission lines and upgrades necessary to deliver new clean energy resources. The current process to identify, license/permit, and construct a transmission project often takes 10 to 12 years. To keep pace with required build rates of renewable power, SCE’s ["Mind the Gap" white paper](#) recommends that this 10- to 12-year process be reduced by 3 to 4 years.<sup>6</sup>

Permitting and licensing often make up 3+ years (with significant variation) of the total 10- to 12-year timeline for transmission. While some improvements have been made (*e.g.*, in September 2005, the CPUC opened Investigation 05-09-005 to proactively examine and improve

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<sup>5</sup> Section 24.2: The Transmission Planning Process shall, at a minimum: b) Reflect a planning horizon covering a minimum of ten (10) years that considers previously approved transmission upgrades and additions, Demand Forecasts, Demand-side management, capacity forecasts relating to generation technology type, additions and retirements, and such other factors as the CAISO determines are relevant.

<sup>6</sup> Mind the Gap White Paper, page 9.

the CPUC's transmission planning and permitting processes as they relate to renewable resources), several opportunities for further improvement remain. Lightening the burden on stakeholders and reducing timelines will lower the ultimate cost to ratepayers for this infrastructure as well as accelerate deployment of renewable resources necessary to achieve long-term (2045) clean energy goals. To achieve this, SCE urges the CPUC to both renew the dialogue on potential improvements within the existing process, as well as open a new rulemaking to examine issues and changes that can streamline and simplify the permitting process.

SCE makes the following specific recommendations:

- **Increase the 50 kilovolt (kV) threshold in General Order (GO) 131-D for licensing new electric subtransmission lines within California.** Many subtransmission lines will be needed for the increased volume of resources on the system. Increasing the 50 kV threshold in GO 131-D for requiring a Permit to Construct subtransmission lines or substations, for example to a 150 kV threshold, would significantly accelerate the construction of needed subtransmission facilities. These facilities will help interconnect moderately sized resources in the range of 10 to 200 MW and larger electrification loads, such as those for transportation depots and fleets.
- **Streamline the review and approval requests of utility infrastructure upgrades and grid capability through trusted partnerships with utilities and agencies.** As the pace of transmission build-out and major distribution upgrades increases, project lifecycles, including permitting and licensing timelines, should be reduced by at least four years. SCE believes the licensing / permitting process could be reduced by one year. Conceptual proposals could include a streamlined Proponent's Environmental Assessment (PEA) document, an expedited PEA/Application process for projects that meet certain policy-driven criteria, and changes to General Order 131-D to simplify licensing and/or add exemptions.
- **Proactive Licensing.** State agencies and corridor and infrastructure owners should proactively license existing utility corridors that are large enough in size for upgrades and increased capacity. New corridors will also be needed, and proactively identifying either general or specific paths may be worthwhile.
- **Avoid Re-Litigating Purpose and Need Already Established by the CAISO.** SCE respects and understands the need for GO131-D need and environmental reviews, along with other associated permitting and licensing review. However, the scope of these activities has expanded over time, and re-litigation of issues such as purpose and need extends timelines and consumes resources at a rate disproportionate to benefits. Wherever reasonable, SCE requests that decisions by CAISO establishing purpose and need be respected as final or be resolved expeditiously if re-opened. SCE remains committed to building projects that reliably serve customers and mitigate climate change while balancing potential impacts to the environment.
- **Designate new National Interest Electric Transmission Corridors via FERC and license and permit interstate transmission lines expeditiously sited within them.** Corridor designation should maximize adding clean electricity resources while considering effects on lands, wildlife, cultural resources and communities.

*CPUC Action:* Support expedient clearing of projects through the existing process for licensing and permitting transmission facilities, as well as open a limited rulemaking, as needed, to consider improvements (*e.g.*, increasing the 50 kilovolt (kV) threshold for licensing new electric transmission lines within California).

*FERC Action:* Designate new National Interest Electric Transmission Corridors via FERC and license and permit interstate transmission lines expeditiously sited within them. Corridor designation should maximize adding clean electricity resources while considering effects on lands, wildlife, cultural resources and communities.

SCE appreciates the opportunity to share its response and efforts to support grid reliability in 2022, 2023, and beyond. We believe interconnecting resources safely, quickly, and efficiently is essential for reliability and our longer-term climate and clean energy goals. We look forward to continued dialogue and collaboration with the Commission and other stakeholders as we build our clean energy future.

Sincerely,



Steven Powell

CC:

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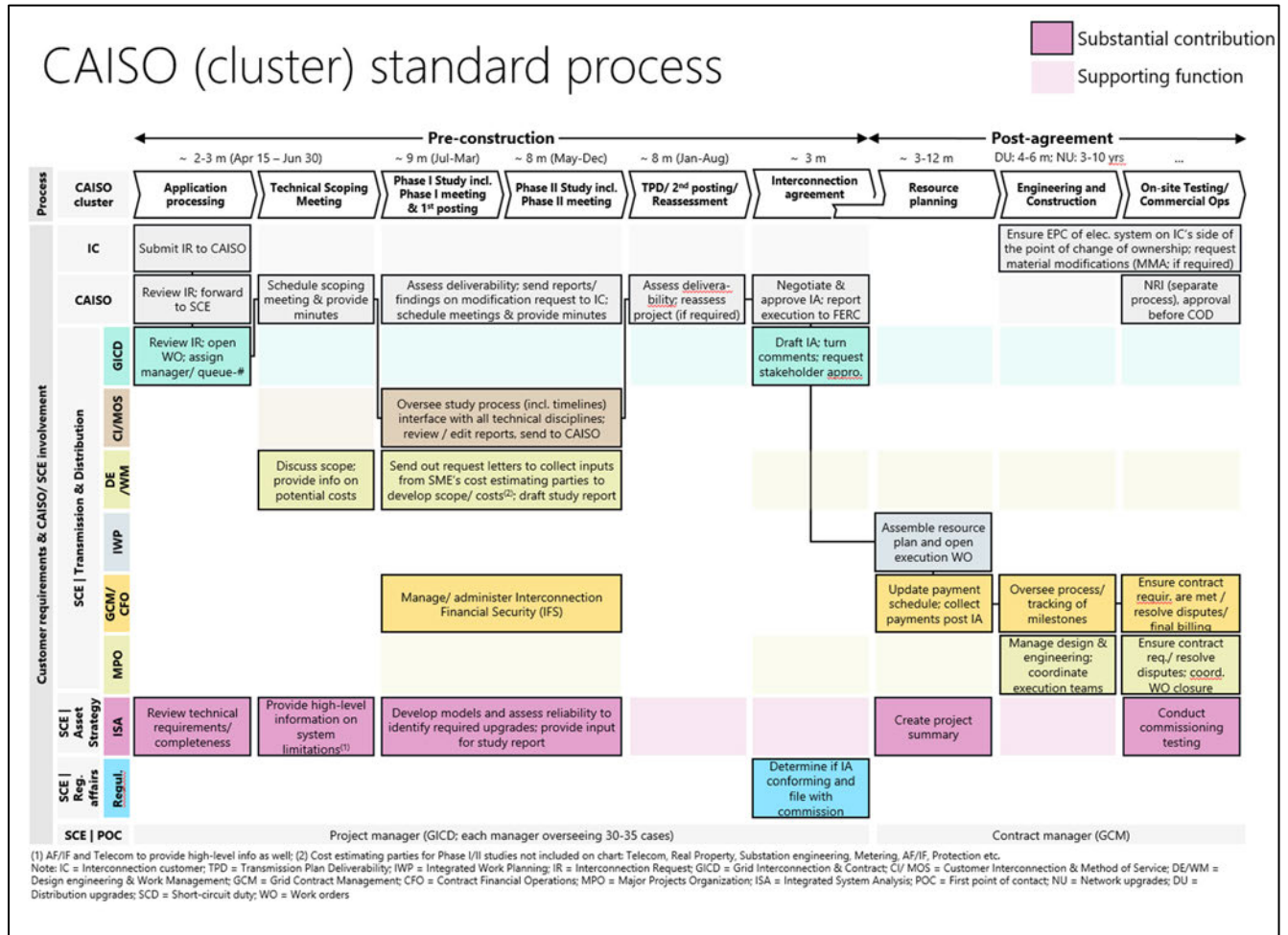
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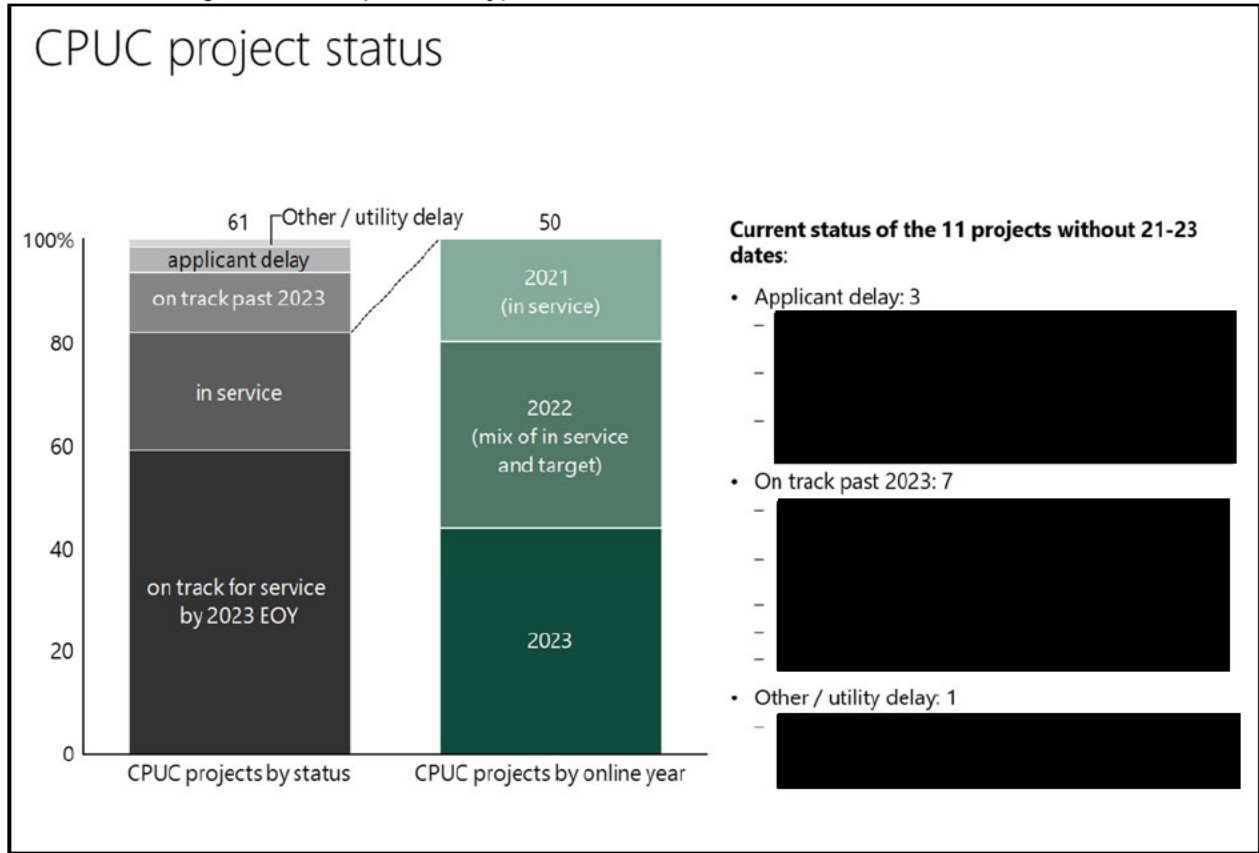
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# Exhibit A: Sample Cluster Process Today



**Exhibit B: Project Status (Summary)**



**CONFIDENTIAL -This Document Is Marked Confidential In Accordance With D.16-08-024 and D.17-09-023. Basis for Confidentiality In Accompanying Confidentiality Declaration. Public Disclosure Restricted.**

**Exhibit C: Project Status (Detailed)**

CPUC Project Number	CAISO Queue Number (if any)	SCE Project ID	Project Name	Other or previous project names	Developer Name	County Location	Point of Interconnection	Size (MW)	Forecast In-Service (Energized)	Project status	Notes to status where delayed or additional information available
1	146 147	TOT198 TOT199	Desert Sunlight (BESS Addition)		NextEra	Riverside	Red Bluff 220 kV	230	10/1/2023	on track	[REDACTED]
2	294	TOT276	Dracker (BESS Addition)	Blythe Solar Power	NextEra	Riverside	Colorado River 220 kV	485 (Actual)	5/11/2021	in service	[REDACTED]
3	1074	TOT727	Gaskell West	Phases 2-5	Recurrent Energy	Kern	Whirlwind 220 kV	128	8/1/2022	on track	[REDACTED]
4	1076	TOT726	Willow Springs Solar 3			Kern	Whirlwind 230 kV	50	1/1/2023	on track	[REDACTED]
5	1196	TOT781	Arlington (BESS Addition)	McCoy Solar 2	NextEra	Riverside	Colorado River 230 kV	400 (Actual)	10/15/2021	in service	[REDACTED]
6	1200	TOT760	Victory Pass Solar		Raven Solar	Riverside	Red Bluff 230 kV	200	7/1/2023	on track	[REDACTED]
7	1208	TOT762	Antelope Solar 2		AES / Spower	Los Angeles	Antelope 230 kV	650	1/20/2022	in service	[REDACTED]
8	1215	TOT777	Rabbitbrush Solar			Kern	Whirlwind 230 kV	150	1/14/2023	on track	[REDACTED]
9	1302	TOT830	Sol Catcher BESS		Clearway	Riverside	Red Bluff 230 kV	213.5	7/1/2023	on track	[REDACTED]
10	1313	TOT811	Daggett Solar 2			San Bernardino	Kramer 230 kV	375	1/15/2023	on track	[REDACTED]
11	1314	TOT810	Daggett Solar 3			San Bernardino	Kramer 230 kV	623	12/9/2022	on track	[REDACTED]
12	1319	TOT793	Willy 9		Chapparal Solar LLC	Kern	Whirlwind 230 kV	250	6/26/2022	on track	[REDACTED]

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13	1324 TOT819		Edsan 1			Kern	Windhub 230 kV	300	9/14/2022	on track	[REDACTED]
14	1339 TOT809		Silver Peak Solar	Techren Solar	174 Power Global	Nevada	Eldorado 230 kV	300	5/1/2024	other delay	[REDACTED]
15	1402 TOT870		Atlas Solar	Gannymede Solar	174 Power Global	Arizona	DCRT Line 500 kV via loop-in Cielo Azul substation (APS territory)	3200 N/A	10/8/2021	applicant delay	[REDACTED]
16	1405 TOT849		Athos Power Plant		NRG	Riverside	Red Bluff 230 kV	450 (Actual)		in service	[REDACTED]
17	1414 TOT847		High 5 Solar		Ryan Hulett (consult San Bernardino owned gen-tie)		Victor 230 kV via SCE-	100	7/21/2021	in service	[REDACTED]
18	1424 TOT855		Edsan 2			Kern	Windhub 230 kV	500	9/14/2022	on track	[REDACTED]
19	1428 TOT321		Maverick	Almasol	EDF Renewables	Riverside	Red Bluff 230 kV	800	1/2/2025	on track past 2023	[REDACTED]
<del>20</del>	<del>1493</del>		<del>IN-PG&amp;E TERRITO Azalea</del>			<del>Kern</del>					[REDACTED]
<del>21</del>	<del>1495</del>		<del>IN-PG&amp;E TERRITO Chalan Solar</del>			<del>Kern</del>					[REDACTED]
22	1516 TOT896		Rexford Solar Farm		8 Minute Energy	Tulare	Vestal 230 kV	300	6/9/2023	on track	[REDACTED]
23	1518 TOT876		SANBORN SOLAR 2		Terra Gen	Kern	Windhub 230 kV	500	6/27/2022	on track	[REDACTED]
24	1617 TOT914		SEGS EXPANSION HYBRID (TERRA-GEN REPOV)		Terra Gen	San Bernardino	Kramer 230 kV	150	10/15/2023	on track	[REDACTED]
25	1632 TOT915		Sanborn ESS III		Terra Gen	Kern	Windhub 230 kV	1400	5/1/2025	on track past 2023	[REDACTED]
26	1642 TOT910		OBERON			Riverside	Red Bluff 500 kV	500	3/10/2023	on track	[REDACTED]
27	1198 & 1526	TOT749, TOT872	QUARTZITE SOLAR 8, 11		EDF Renewables	Riverside	Colorado River 230 kT	300	7/1/2023	on track	[REDACTED]
28	1204 TOT773		ARATINA SOLAR CENTER 1		8 Minute Energy	Kern, San Berna	Kramer 230 kV	200	10/7/2022	on track	[REDACTED]
28	1604 TOT904		ARATINA SOLAR CENTER 2		8 Minute Energy	Kern, San Berna	Kramer 230 kV	200	8/1/2024	on track past 2023	[REDACTED]
29	1341 TOT796		YELLOW PINE 2		NextEra	Nevada	Trout Canyon 230 kV	254	12/31/2022	on track	[REDACTED]
29	1654 TOT950		YELLOW PINE 3		NextEra	Nevada	Trout Canyon 230 kV	250	7/1/2025	on track past 2023	[REDACTED]
30	602, 1329	TOT823	CATALINA/TROPICO SOLAR			Kern	Whirlwind 230 kV	110	7/14/2021	in service	[REDACTED]

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31	GFID8469	GFID8469	5149 LANCASTER ENERGY		Community Solar	Los Angeles	Stealth 12 kV out of Oasis 66/12 kV sub	3	5/1/2023	on track	
32	GFID8554 (TYPC GFID8554)		TAJIGUAS RESOURCE RECOVERY LANDFILL			GA County of Santa Bart Santa Barbara County		2	9/16/2021	in service	
33	GFID8580EXP	GFID8580EXP	TRONA SOLAR 3			San Bernardino	Hackman 33 kV out of Searles 115/33 kV sub	1	9/1/2022	on track	[REDACTED]
34	GFID8612	GFID8612	LEIPZIG WIND		WDG Capital Partner	Kern	Oak Creek 12 kV out of Rosamond 66/12 kV sub		5/1/2023	on track	[REDACTED]
35	GFID8730	GFID8730	LONG BEACH TRIGEN FUEL CELL		Fuel Cell Energy	Los Angeles	Dredge 12 kV	2.8	9/1/2022	on track	[REDACTED]
36	GFID8750	GFID8750	VICTORVILLE ENERGY CENTER (COGEN)		Primary Energy	San Bernardino	New Ring Bus looping 115 kV out of Southdown sub	20.1	6/1/2026	applicant delay	[REDACTED]
37	N/A	TOT692, TOT693,	Resurgence Solar Project	Luz, SEGs	NextEra	San Bernardino	Kramer 115 kV	180	1/20/2023	on track	
38	2138	TOT1133	Etiwanda ("Separator")		SCE Generation	San Bernardino	Etiwanda 230 kV	300	N/A	on track past 2023	In QC14
39	2082	TOT1122	Hinson ("Cathode")		SCE Generation	Los Angeles	Hinson 230 kV	300	N/A	on track past 2023	In QC14
40	2135	TOT1105	Springville ("Anode")		SCE Generation	Tulare	Springville 230 kV	300	N/A	on track past 2023	In QC14
41	WDT1483	WDT1483	Calpine Santa Ana III (See #51)		Calpine	Orange			3/12/2021	in service	
42	WDT1510	WDT1510	Pomona Energy Storage 2 LLC		Alta Gas	Los Angeles	Ganesha - Simpson 66 kV	20	10/1/2022	on track	[REDACTED]
43	WDT1649	WDT1649	Canyon Country ESS I, LLC	Placerita Canyon	Terra Gen	Los Angeles	Saugus - Newhall - North Oaks 66 kV various 33 kV lines	80	6/1/2023	on track	
44	WDT1129QFC, 1 WDT1129QFC, W1		Coachella Hills Wind Project (Repower of 4)		Terra Gen	Riverside	out of Garnet sub	100	4/1/2021	in service	
45	1208	TOT762	Raceway (last phase of TC Expansion)		AES / Spower	Kern	Antelope 230 kV	125	2/28/2023	on track	[REDACTED]
46	WDT1012, WDT WDT1012, WDT10		Mountain View Wind (repowers)		AES	Riverside	Devers - Farrell - Windland 66 kV	66	3/29/2022	in service	[REDACTED]
47	WDT1648	WDT1648	Beaumont Energy Storage		Terra Gen	Riverside	Banning - Maraschino 115 kV	100	6/1/2023	on track	[REDACTED]

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48		TOT274, TOT275	COSO Navy, BLM, repowers		Coso Power	Inyo	Kramer 230 kV	75	8/11/2021	in service	
49	1192	TOT764	Sonoran West Holdings 2 Crimson		Recurrent Energy	Riverside	Colorado River 230 kV	350	4/19/2022	in service	
50	1295	TOT789	Marvel (FKA Desert Peak) Desert Peak		NextEra	Riverside	Devers 230 kV	400	10/1/2022	on track	
51	WDT1396	WDT1396	Johanna Energy Center (A I	Santa Ana Storage	Calpine	Orange	Johanna - Camden 66 kV	120	3/12/2021	in service	
52	WDT1399	WDT1399	Sheep Creek Solar Project		Phelan Solar	San Bernardino	Kennworth 12 kV out of Roadway 115/12 kV sub	3	9/1/2022	on track	
53	WDT1454	WDT1454	Goleta ESS		Alta Gas	Santa Barbara	Isla Vista 66 kV	60	1/14/2023	on track	
54	WDT1490	WDT1490	Tulare Solar 5			Tulare	Growers 66 kV line	55.8	2/15/2022	in service	
55	WDT1539	WDT1539	Painter Energy Storage			Santa Barbara	Carpool 16 kV line out of Carpinteria 66/16 kV sub	10	8/1/2022	on track	
56	WDT1582	WDT1582	Los Alamitos 1		Bright Canyon	Orange	Commanche 12 kV out of Shawnee 66/12 sub (#1)	10	5/30/2023	on track	
56	WDT1583	WDT1583	Los Alamitos 2		Bright Canyon	Orange	Garnsey 12 kV out of Cypress 66/12 sub (#2)	10	5/8/2023	on track	
57	WDT1636	WDT1636	Ortega Grid		Hecate	Riverside	Meyer 33 kV out of Elsinore 115/33 kV sub	20	8/15/2023	on track	
58	WDT1701	WDT1701	Black Walnut		Hecate	Ventura	Wakefield 66 kV	15	10/30/2024	applicant delay	
59	WDT1710	WDT1710	Homestead Energy		Hecate	Los Angeles	new 16 kV circuit out of Elizabeth Lake 66/16 kV sub	15	12/1/2023	on track	
60	WDT1732	WDT1732	Visalia CSG			Tulare	Wutchuma 12 kV out of Rector 12 kV sub	3	4/10/2023	on track	

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**Exhibit D: Summary of Item 4 Recommendations**

Topic	Description	FERC Action	CPUC/State Action
<b>Generator Interconnection</b>			
Near-term improvements to the CAISO’s generator interconnection process through Phase 1 of the Interconnection Process Enhancements (IPE)	<ul style="list-style-type: none"> <li>Emergency generation interconnection studies</li> <li>Removing downsizing window and simplifying downsizing request requirements</li> </ul>	<ul style="list-style-type: none"> <li>Approve CAISO’s proposed revisions found to be just and reasonable</li> </ul>	<ul style="list-style-type: none"> <li>Support and actively participate in CAISO and FERC efforts</li> </ul>
Longer-term improvements to the CAISO’s generator interconnection process through Phase 2 of IPE	<ul style="list-style-type: none"> <li>Consider higher fees, deposits, site exclusivity as part of submitting an interconnection request</li> <li>Streamline interconnection studies</li> <li>Better align interconnection schedule with resource procurement</li> </ul>	<ul style="list-style-type: none"> <li>Approve CAISO’s proposed revisions found to be just and reasonable</li> </ul>	<ul style="list-style-type: none"> <li>Coordinate with CAISO/stakeholders on alignment of resource procurement and interconnection</li> </ul>
<b>Transmission Additions to Accommodate New Generation Capacity</b>			
Increase CAISO’s “actionable” transmission planning horizon from 10 years to 20 years	<ul style="list-style-type: none"> <li>Align transmission investment with longer-term energy clean energy goals</li> </ul>	<ul style="list-style-type: none"> <li>None required (allowed under CAISO Tariff)</li> </ul>	<ul style="list-style-type: none"> <li>Send letter to CAISO supporting 20-year “actionable” transmission planning horizon</li> </ul>
Improve licensing, siting, permitting process for new transmission infrastructure	<ul style="list-style-type: none"> <li>Increase 50 kV threshold for licensing new electric transmission lines within California</li> <li>Streamline review and approval of utility infrastructure upgrades</li> <li>Defer to CAISO for transmission need determination</li> </ul>	<ul style="list-style-type: none"> <li>FERC designation of national transmission corridors</li> </ul>	<ul style="list-style-type: none"> <li>Revise 50 kV threshold for licensing</li> <li>Reduce timelines for completing review/approval of applications (CPCN, PTC)</li> </ul>