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COMMENT OF GOLDEN STATE CLEAN ENERGY, LLC, ON WORKSHOP ON CLEAN ENERGY INTERCONNECTION â€“ BULK GRID

Additional submitted attachment is included below.

BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA

Accelerating Interconnection of Clean Energy Resources with the Bulk Power System for the 2023 Integrated Energy Policy Report	23-IEPR-04 (March 28, 2023)

COMMENT OF GOLDEN STATE CLEAN ENERGY, LLC, ON WORKSHOP ON CLEAN ENERGY INTERCONNECTION – BULK GRID

Golden State Clean Energy ("GSCE") appreciates the opportunity to submit this comment on the May 4, 2023, workshop held to gather information on the interconnection of clean energy resources to the bulk electric system. This workshop touched on a variety of planning efforts and processes occurring throughout the state, all of which play an important role in the interconnection of clean energy resources. We appreciate the Energy Commission convening this workshop to bring this group of stakeholders together to discuss the various planning efforts and processes so all can be better informed of current issues facing these processes and how these issues may interact across different venues.

Important reforms are underway with the California ISO's generator interconnection process and transmission planning process, as well as with the Energy Commission's land use screens. The Public Utilities Commission also recently announced it is beginning an update to its Integrated Resource Planning inputs and assumptions, which will involve incorporating the Energy Commission's new land use screens but also other important updates.

With the amount of new capacity appearing in the IRP resource portfolios and the transmission investment this will trigger, it is critical that this IRP inputs and assumptions update occur and synchronize with the Energy Commission's new land use screens and CAISO's zonal planning efforts. President Reynolds stated during the May 4 workshop that the CPUC is exploring how resource planning can be appropriately informed and guided by market participants. GSCE agrees that market participants can provide important and unique insights into resource planning, and we encourage the CPUC to create a means for the development community to share information that can inform CPUC resource planning and busbar mapping.

In addition to incorporating the new land use screens, the CPUC could create some form of confidential portal where developers can submit land ownership information or other relevant development plans for consideration in the busbar mapping process. Stronger input from developers in busbar mapping is currently missing among the voices of market participants, yet developers are the ones securing land and moving projects forward, which gives them the best insight into where new resources can be sited. As the CPUC looks within broad geographic areas provided by the land use screens, information as to where developers are able to secure and

permit land for development can provide much more meaningful and granular information than some of the assumptions currently being used. The CPUC does not need to scrap those existing assumptions, but it does not make sense for a general assumption to preclude resource potential from being identified if a developer can show the ability to develop a specific project.

There are a number of assumptions that may artificially limit resource potential in the busbar mapping process and be inconsistent with what a developer views as possible. Real world information on resource development potential (e.g., site control, permitting) should be considered within the zones identified in the land use screens. We encourage the CPUC to consider this type of information intake in its upcoming inputs and assumptions process.

Conclusion

GSCE appreciates all the presentations made at the May 4 workshop and the robust discussion that this workshop enabled. Given the multiple planning processes that were discussed, we are attaching a white paper that GSCE created last year that focuses on queue reform needs but also touches more broadly on planning challenges California faces and indicators of project viability.

Dated: May 23, 2023

Respectfully submitted,

/s/ *Daniel Kim*

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ATTACHMENT

White paper: Reliably meeting California's policy goals – building for the future

GOLDEN STATE
CLEAN ENERGY

White paper: Reliably meeting California's policy goals – building for the future

Executive Summary

Golden State Clean Energy ("GSCE") is the original developer of Westlands Solar Park, a master planned 20,000+ acre and 2,700+ MW competitive renewable energy zone development in California's Central Valley. Westlands Solar Park has strong support from environmental, agricultural, and local valley stakeholders. It is located almost exclusively on private, drainage-impaired farmland. Therefore, our renewable energy development is occurring on least conflict land and in a disturbed environment, rather than public land or a sensitive environment. Westlands Solar Park has several solar and storage projects in both early and late stages of the California Independent System Operator's ("CAISO") interconnection queue, as well as 252 MW of operational solar capacity.

GSCE has developed this white paper to highlight concerns that current efforts at both the state and federal levels to reform the generator interconnection process will not result in faster or more efficient development of required clean resources. The vast majority of projects that enter CAISO's queue fail to reach commercial operation. At the historical success rate of projects in CAISO's queue – only 6.3 percent of interconnection requests have reached commercial operation – California will miss its 2032 goal of adding 40,551 MW to the system by a large margin, potentially by as much as 30,000 MW.[i]

While some parties speak of an "overheated" queue, the irony is that if we assume the historical success rate, the capacity in the queue would need to grow from its current size of 163,020 MW to over 643,000 MW to meet California's 2032 goal.[ii] The urgency of the needed reforms is not just driven by policy goals, but by the critical need to push more viable projects through the pipeline quickly to support grid reliability. Obviously, major reform of the current queue process is critical. And the reforms to the interconnection queue process must be made in tandem with reforms to the transmission planning process.

We propose that more aggressive planning for transmission to encourage new projects in known renewable development zones, particularly where projects can be developed on disturbed land

using a master planning structure that streamlines permitting, will help accelerate the pace of renewable development and allow us to work smarter rather than longer and harder.

GSCE is not the only party raising concerns about the effectiveness of interconnection queues to meet demand. Others in CAISO's 2021 Interconnection Process Enhancements initiative have raised similar concerns. The U.S. Department of Energy commented recently on the Federal Energy Regulatory Commission's ("FERC") Notice of Proposed Rulemaking that "[b]ased on available evidence, the Department remains concerned that current interconnection queue processes are leading to rates that do not meet the 'just and reasonable' standard," referencing a record amount of new capacity seeking interconnection, an increase in time spent in the queue before reaching commercial operation, and an increase in withdrawal rates.[iii]

It is not realistic to assume that CAISO or the utilities could manage a queue of the size needed to produce the expected results, so the only logical conclusion is the success rate for projects in the queue must improve significantly – by as much as four-fold – to set California up to meet its policy goals. We must be looking for reforms that drive quality into the CAISO queue, not just volume.

While CAISO has made improvements in managing its queue through its Interconnection Process Enhancements initiatives, we do not believe the reforms proposed to date go far enough to address the fundamental problem posed by the low success rate of projects entering the queue. While we have made suggestions along the lines proposed in this paper in the stakeholder process, GSCE has created this white paper to propose meaningful and easily implementable reforms to a wider audience, reforms that we believe, based on our experience developing Westlands Solar Park, will significantly improve the success rate of clean energy projects in the queue.

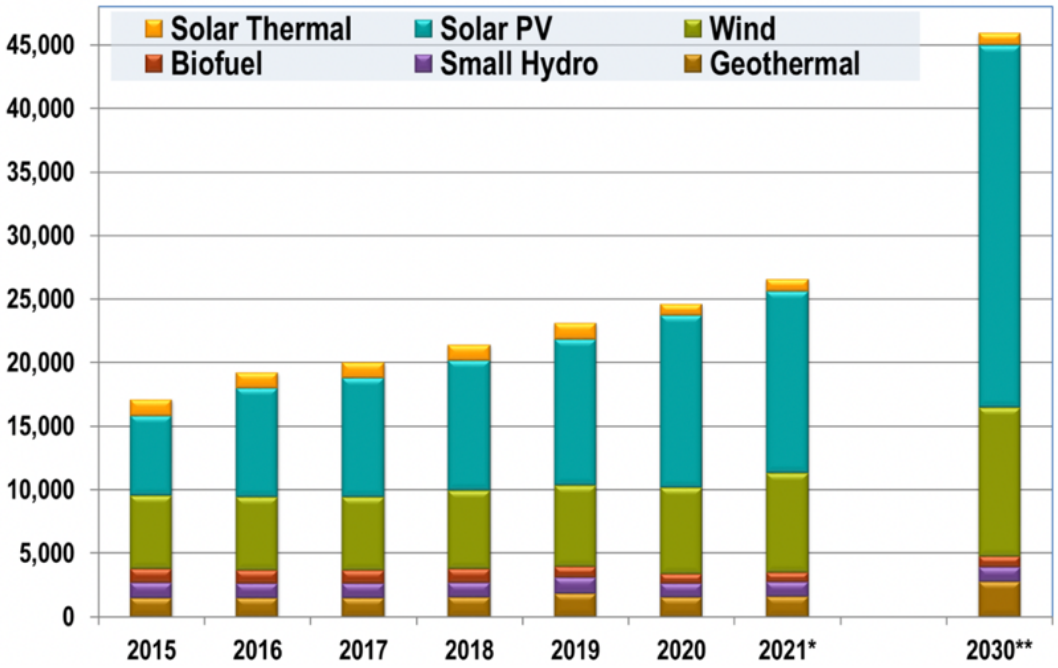
Significant queue reform is required for California to achieve its renewable development goals

State policy to address climate change is driving the need for a record-setting amount of new clean energy resources. The state energy agencies have identified a mix of mandatory procurement requirements and study projections that must be met for California to reliably meet its policy goals.

- 11,500 MW of qualifying capacity by 2026[iv] (since qualifying capacity is discounted for a number of reasons, the installed capacity will be much higher, roughly double by one estimate[v])
- 40,551 MW by 2032[vi]
- 173,100 MW by 2045[vii]

This capacity need will also involve a rate of development that is record-setting. However, based on the historical success rate of development, California is not on track to even come close to meeting these goals.

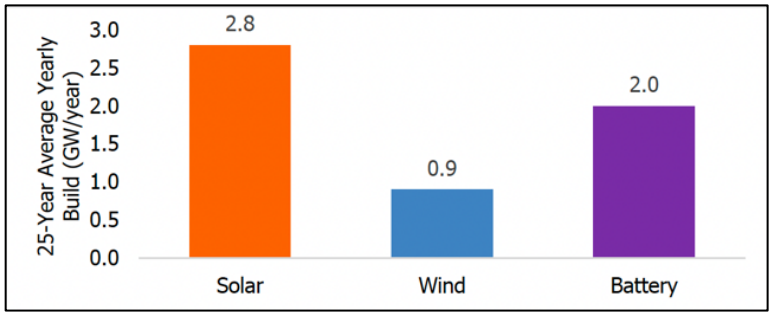
Renewable capacity (MW) that has reached commercial operation through 2021 (CAISO)[viii]



California is not on track to meet the 2032 goal, and we are even further behind in progress towards the 2045 goal. An average of 6,000 MW of new solar, wind and batteries must be added **each year** until 2045 to reach the primary capacity target modeled in the 2021 SB 100 Report.[ix] While the need is 6,000 MW on average a year, over the past decade California only succeeded with adding an average of 1,000 MW of utility-scale solar and 300 MW of wind to the grid each year.[x]

This rate of solar development has remained steady over the last five years (2017-2021), but wind development has dropped to about 120 MW a year over this same period.[xi] It is important to note that this modest level of development occurred while interconnecting projects had the benefit of available transmission capacity to support deliverability and allow interconnection without routinely triggering significant network upgrades. This is no longer the case.

Average build rates required by the SB 100 Core High Electrification scenario[xii]



To address the significant gap between the current rate of development and what must be added to the grid in the near future, California must increase the rate of viable projects entering the queue. In tandem, CAISO must proactively approve new least-regrets transmission to both help improve the success rate of projects in the queue and provide a path to economically, efficiently and timely achieve the level of new interconnections required to meet California's reliability and policy needs.

The human resources needed to study and manage projects in the queue are scarce. There is already a need to reduce the strain on staff at CAISO and the participating transmission owners. CAISO's decision to not open an interconnection window in 2022 was clearly a result of the lack of human resources available to timely study the projects seeking to interconnect in Cluster 14, despite the fact that the state continues to need new applications for renewable and energy storage development.

Cluster 14 showed that CAISO and the participating transmission owners can be overwhelmed, leading to significant delays in interconnection studies, harmful impacts on the rest of the queue (delays in processing modification requests, for example), and postponing the opportunity for new resources to seek interconnection. The scarcity of human resources to study projects and manage them through the queue, combined with the high failure rate of interconnection requests, creates the imperative for CAISO and FERC to enact meaningful changes to interconnection processes to improve efficiency and increase the chances that only viable projects enter the queue.

GSCE recognizes there may be multiple paths to meaningful queue reform, but we suggest that the current reforms under consideration on both the state and federal level are not sufficient to move the needle. Reforming commercial readiness factors so they better reflect the likelihood of reaching commercial operation is essential, and we propose that the following four reforms will go a long way to improve the success rate of projects in the queue:

1. Require a commercial readiness demonstration to enter the interconnection study process, basing those requirements on steps that are necessary to successfully develop a project rather than the current CAISO and FERC proposals focused on offtake negotiations:

    a. Phase I study readiness requirement: site exclusivity or a substantial at-risk readiness deposit (far above the current deposit amount and with a significant portion at risk upon withdrawal); and

    b. Phase II study readiness requirement: site exclusivity (which CAISO has recently enacted) and having initiated environmental review under CEQA/NEPA.

2. Expand the deliverability allocation groups to value other key developmental steps and prioritize projects that have made significant financial commitments.

    a. Allocation groups should include projects that have made a financial commitment to major equipment or interconnection facilities, and projects that have made their third financial security posting (meaning the entire financial security is at risk of

forfeiture if the project withdraws) and have issued a notice to proceed to construction.

b. For projects that can meet environmental permitting and site control requirements, CAISO should reinstate a "balance sheet financing" option to support these projects qualifying for an early deliverability allocation. As we discuss below, environmental permitting and site control are much more accurate indicators of likely project success than a power purchase agreement.

3. Create a new fast track interconnection process to accelerate projects that can expedite development and encourage more projects to adopt the practices needed to reach commercial operation quickly and reliably. Requirements for this new fast track process should include:

    a. Site control;

    b. Programmatic environmental permitting for multi-project master plans;

    c. Development on lands promoted in the SB 100 Report process; and

    d. An early financial commitment to major equipment or interconnection facilities.

This white paper discusses these proposed reforms, why the reforms will be more effective than the current proposals being considered by CAISO and FERC, and how the reforms interact with transmission planning to give California a comprehensive strategy for timely and efficiently meeting its policy goals. This white paper is intended to start the conversation with the state and federal energy regulatory agencies with the goal of achieving the queue reform needed to support a higher project success rate.

The problem: the failure rate of projects entering the queue

CAISO's interconnection process has seen a very low percentage of the capacity it studies reach commercial operation. According to our analysis, **only 6.3 percent of all interconnection request capacity that CAISO has studied has reached commercial operation** (excluding Cluster 14 given it has not completed its Phase II studies and does not yet fairly inform the queue's success rate).

If only interconnection requests studied in CAISO's queue cluster process are considered (i.e., excluding projects entering the queue before 2009 and Cluster 14), the numbers are even worse – 2.6 percent of projects have reached commercial operation and 75 percent have withdrawn. Although the success rate of interconnection requests nationally is low, a recent Lawrence Berkeley National Laboratory study shows CAISO's to be the lowest nationally over a recent 16-year span.[xiii]

CAISO interconnection request capacity as of July 2022, net at the POI[xiv]

		Online MW	Pending MW	Withdrawn MW	Total MW
Pre-queue cluster (No RPS)	1996-2009	17,742 (13.4%)	4,290 (3.2%)	110,200 (83.3%)	132,232
Cluster 1-7 (33% RPS)	2009-2014	4,930 (5.5%)	2,566 (2.8%)	82,854 (91.7%)	90,350
Cluster 8-10 (50% RPS)	2015-2018	1,259 (2.2%)	17,628 (30.5%)	38,874 (67.3%)	57,760
Cluster 11-13 (100% clean energy)	2018-2020	420 (0.4%)	36,850 (34.7%)	69,008 (64.9%)	106,278
Cluster 14 (mid-term reliability procurement & storage)	2021	-	101,686 (95.4%)	4,863 (4.6%)	106,549
Total MW		**24,351**	**163,020**	**305,799**	**493,169**

Projecting our analysis of the historical success rate into the future, even using a 6.3 percent success rate of projects reaching commercial operation will only produce about 10,270 MW of operational capacity from the current queue (net at the point of interconnection). This falls well short of what is needed to satisfy the California Public Utilities Commission's midterm reliability procurement order (considering that obligation is in terms of qualifying capacity), and it is only about a quarter of the megawatts expected to be needed in 2032 according to the CPUC's preferred system plan that CAISO is studying in this year's transmission planning process.[xv]

Significant time, money, and precious human resources are currently focused on studying too many projects that will never become operational. At the same time, GSCE does not believe the current process, the reforms proposed by CAISO in its Interconnection Process Enhancements initiative, nor the reforms proposed by FERC with its recent Notice of Proposed Rulemaking, will support California in meeting its GHG reduction goals and reliability needs. There is a need at the state and federal level to dramatically increase support for development of large renewable resource areas on an expedited timeline and the transmission needed to make such least-regrets resources deliverable with a clear path to economic viability.

CAISO must enact meaningful queue reforms that (1) limit access to only projects that evidence viability; (2) allow ready projects to distinguish themselves and prioritize interconnection access for these projects; (3) set more realistic requirements for what constitutes a commercially viable and ready project across various stages of project development; and (4) change how projects qualify for deliverability so projects with the greatest chance and a demonstrable path to commercial success are eligible for an allocation.

Queue reform proposals and needed changes

Contracting alone is not the answer and instead creates new concerns

Throughout CAISO's 2021 Interconnection Process Enhancements initiative, GSCE has advocated that CAISO's proposals do not go far enough to address the underlying issues with the overheated queue or reform the interconnection process to promote commercially viable projects.

Both CAISO and FERC have recently proposed commercial readiness requirements to enter the interconnection study process, but these proposals place far too much emphasis on contracting requirements and term length as the hallmarks of commercial viability and readiness. CAISO and FERC must emphasize different factors than contracting as indicators of commercial viability. This is no more obvious than the reality of practically every recently-contracted renewable and battery project being renegotiated to reflect the realities of the current worldwide pricing and supply chain challenges. Readiness requirements are important, but basing them solely on contracting status does not work and is misguided for the following reasons:

- First, it does not focus on early-stage developmental steps that drive project viability and indicate true commercial readiness.

- Second, it provides incentives for project developers who have not taken concrete steps toward project readiness to bid low in competitive solicitations, creating fictional 'contracted' capacity in the pipeline that may never prove viable.

- Third, the contracting landscape is evolving, and long-term contracting is no longer required for successful project financing or the emerging realities of capital markets. In fact, across the country with the inflationary environment, long-term contracts may currently be *harder* to finance than short-term contracts.

- Finally, a narrow focus on contracting to enter the study process forces commercial negotiations to occur before projects are studied and have sufficient cost certainty or development timeline assurances.

CAISO and FERC are doubling down on the notion that a power purchase agreement is the hallmark of commercial success by taking an overly narrow policy that is already present in the deliverability allocation process and applying it to commercial readiness. This one-track interconnection policy does not set the system up for success, and the focus primarily on contracting creates barriers for projects that have other more meaningful ways to demonstrate commercial readiness, especially at the earliest stages of development.

We agree that a readiness demonstration is needed to manage the queue, but queue management will make far greater improvements with a readiness proposal that focuses on different forms of viability that are more indicative of the project's likelihood to proceed to commercial operation. CAISO and FERC should look to the experience of developers for common examples of early-stage commercial viability. Another consideration is in lieu of PPAs, a company's track record of

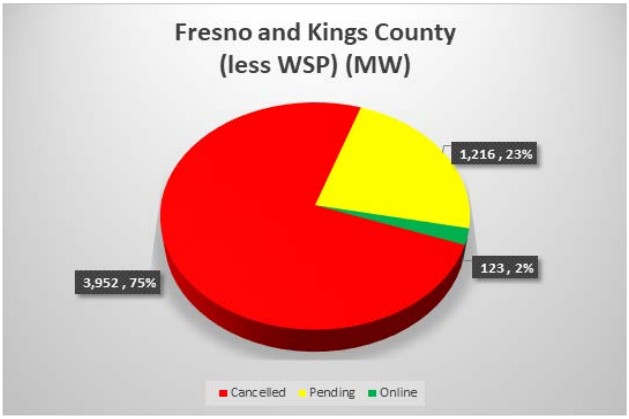
past commercial success would be a more relevant proxy for viability in today's market. GSCE offers its experience to share what made our projects viable.

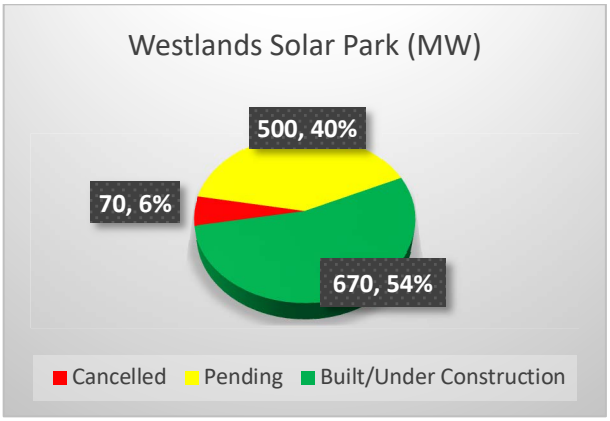
The Westlands Solar Park example

GSCE has demonstrated that the model for queue reform we are proposing in this white paper can work to drive to commercial operation and at a level of success that is far greater than the average achieved by the queue. There are also similar success stories from other developers that should be mined for ideas to improve queue processes.

Westlands Solar Park had complete site control of 20,000+ acres and a programmatic EIR for the entire development footprint by the time its initial interconnection requests were submitted. We now have solar and battery projects spanning multiple queue clusters and 252 MW of operational solar capacity. Our projects have full capacity deliverability status that was initially allocated largely based on the legacy balance sheet financing option, which is an option CAISO has done away with in favor of focusing on contracting, even though this deliverability allocation is part of what set up our projects for success and led them to reaching offtake agreements.

The success rate of the Cluster 8 and 9 Westlands Solar Park projects to date within Fresno and Kings County is dramatically better than the rest of the queue for these same clusters. We believe that the elements that have been driving our success include the early site control on least conflict land and a programmatic EIR for the entire project area, as well as the significant up-front investment in a shared gen-tie that supports multiple facilities. The graphs below illustrate GSCE's success in Cluster 8 and 9 compared to other projects in the same development area and in the same queue clusters.





Lessons learned and proposed reforms

Site control, programmatic environmental permitting for multi-project master plans, development on lands promoted in the SB 100 Report process, and an early financial commitment to interconnection facilities – these elements should be valued as indicators of commercial viability and interconnection readiness. We have been able to sign offtake

agreements because of these indicators of success; other development activity critically occurred before contracting, including receipt of deliverability on a merchant basis. Westlands Solar Park's 252 MW Aquamarine project, which reached commercial operation in December of 2021, is operating mostly as a successful merchant facility, with some short-term capacity, energy, and Index+ contracts, showing that a long-term offtake agreement need not occur for a project to be commercially successful.

Creating generator interconnection rules that would limit commercial value and eligibility criteria to projects with a long-term contract focuses on the end result of project development with the hopes that commercial negotiations by themselves will solve the myriad other important steps that a project needs to address up-front, such as land control, permitting, equipment orders, and financing. We do not see readiness criteria requiring contracting as an improvement because it is inconsistent with the typical timeline for offtake negotiations and does not allow contracting parties to be informed by the interconnection studies that provide important commercial certainty.

In addition, focusing the readiness demonstrations primarily on offtake negotiations will create incentives for developers to bid unrealistically low prices and irresponsibly contract with counterparties, leading to late-stage price renegotiations and project cancellations as negotiations fall apart. Without other measures of commercial readiness – site control, permitting, equipment funding, etc. – these projects create unrealistic expectations that they will succeed. As unrealistic contracts need to be renegotiated, these projects may be sitting on deliverability allocations that could be used for projects with a greater likelihood of success, and we believe they are causing some of the wasted churning by CAISO and the participating transmission owners on studies.

For these reasons, and given our experience, we strongly recommend CAISO and FERC refocus their attention on different commercial readiness criteria that projects must demonstrate to proceed through the queue cluster study process. We propose the following requirements:

A. Phase I study readiness: site exclusivity or a substantial at-risk readiness deposit; and

B. Phase II study readiness: site exclusivity and having initiated environmental review under CEQA/NEPA.

We also propose CAISO expand its deliverability allocation eligibility to move away from the narrow focus on offtake negotiations. GSCE proposes that projects that have made a financial commitment to interconnection facilities or major equipment, or projects that have made their third security posting and have issued a notice to proceed to construction, be added as new allocation groups, thereby injecting readiness into the deliverability allocation process and increasing commercial certainty by incentivizing projects to fully commit financially and secure the governmental approval necessary to allow them to proceed to construction.

A deliverability allocation process that allows projects on a clear trajectory to commercial operation to quality for an allocation with readiness requirements, along with increased scrutiny of projects meeting the milestones in their generator interconnection agreements, as CAISO has

proposed, will be far more helpful in supporting viable projects to completion than the current rules and proposals.

Finally, for projects that can meet environmental permitting and site control requirements, CAISO should reinstate a "balance sheet financing" option to support these projects qualifying for a deliverability allocation. Projects that demonstrate permitting and site control are far more likely to proceed to commercial operation, and a long-term PPA is not needed for a project to secure financing. Reinstating the balance sheet financing option will improve the number of viable projects that can compete to sell energy and capacity in the more differentiated market that exists today.

Fast track interconnection

CAISO should create a new fast track interconnection process to take advantage of projects that are able to expedite development compared to the typical development timeline. This additional track provides the benefit of alleviating some of the pressure on the queue by diverting projects into a separate interconnection process while giving priority to projects that can achieve near-term commercial operation. This would support the Governor's desire to avoid further summers like this one where the state relied on flex alerts and emergency declarations to survive the latest heatwave.

Requirements for this new fast track process should include:

- Site control;
- Programmatic environmental permitting for a multi-project master plan;
- Development on lands promoted in the SB 100 Report process; and
- An early financial commitment to major equipment or interconnection facilities.

For developers that are adding new facilities within master planned, pre-permitted development areas, CAISO should create an interconnection pathway that recognizes the accelerated pace at which these projects can come online. Developing new projects on fully permitted land de-risks a project to a significant extent. Having site control at the time the interconnect request is submitted gives CAISO more assurance that development timelines can be met. In addition, other elements, like having access to existing interconnection facilities, also de-risks a project and accelerates the development timeline. Overall, this new fast track model would recognize projects capable of achieving near-term commercial operation and provide an important tool for California to meet its policy and reliability goals.

Interaction between transmission planning and the queue

No matter what improvements are made to the interconnection process, without approval of least-regrets policy-driven transmission lines in the transmission planning process, developers will continue to face low success rates and high barriers to getting through the interconnection process. There are solutions to the disconnect between interconnection rules and planning, and one is a focus on transmission planning to support master planned and zonal development. The Tehachapi Renewable Transmission Project is an example of zonal planning where least-regrets transmission planning drove, and continues to drive, successful development of multiple technologies of clean energy resources.

CAISO has expressed a concern that the queue is driving transmission planning but that the reverse should be true to ensure proper selection of and prudent investment in new transmission. GSCE strongly agrees. We see potential for transmission to guide future interconnections through more proactive transmission planning that seeks to advance and complement multiple state policy aims.

Currently, the queue drives transmission planning through the CPUC's IRP busbar mapping process. Busbar mapping, in part, involves looking to the queue to assess commercial interest that informs where portfolio resources are located. But with the queue being loaded with projects that will never be developed, it is a poor driver for intelligent transmission planning and instead is misleading policy makers and transmission planners regarding the path for successfully meeting California's policy objectives.

More proactive transmission planning and development that seeks to push policies forward are needed to improve the interaction between transmission planning and the interconnection processes, particularly around policy-driven transmission. The connection between the two processes can be further strengthened by increasing the focus on zonal planning and land requirements for projects to access the queue. Land requirements earlier in the interconnection process will in turn help drive greater success rates for projects in the queue and ensure the most deserving projects are allocated deliverability created by new transmission development.

CAISO must approve new least-regrets transmission in the next cycle of CAISO's transmission planning process to support the level of renewable development required to meet policy and reliability goals. This also informs developers where to locate the most viable projects that can move quickly and efficiently through the queue to timely commercial operation.

Conclusion

Based on the queue's historical rate of development and other real-world results like CAISO's Cluster 14 "supercluster" procedures that delayed future interconnections, CAISO cannot maintain the status quo of its interconnection process and expect development to occur at the rate California requires to reliably meet its policy goals. While some changes to the interconnection process are being examined, none of the current proposals will address the issues that confront California to the degree needed.

Meaningful queue reform is possible and can be implemented now during phase 2 of CAISO's Interconnection Process Enhancements initiative without delaying the schedule significantly. It is critical to consider the approaches in this white paper (as also reflected in GSCE's prior comments in CAISO's initiative) to bring about more meaningful reforms that are imperative for California now rather than pursuing minor adjustments that will not significantly improve the success rate of projects in the queue or discourage future speculative superclusters. Thus, in addition to ensuring the queue study process manages applications timely and efficiently by bolstering the standards for entering the queue, CAISO must do more to promote the most ready and commercially viable projects that are capable of coming online soon to support both policy and reliability needs.

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[i] This queue data is current as of July 14, 2022, as provided in CAISO's Public Generator Interconnection Queue information. All references to our own analysis or current queue data are net at the point of interconnection and based on the public data we pulled on July 14, 2022, unless specifically stated otherwise or other sources are cited.
[ii] Our analysis of the queue's historical success rate excludes Cluster 14, as Cluster 14 has not completed the study process yet and does not fairly inform this data.
[iii] *Comments of the United States Department of Energy to Notice of Proposed Rulemaking*, RM21-17, at 25, August 16, 2022.
[iv] *Decision Requiring Procurement To Address Mid-Term Reliability (2023-2026)* (D.21-06-035), R.20-05-003, at ordering ¶ 1, June 30, 2022, *available at*: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603637.PDF.
[v] Transcript of Joint-Agency Diablo Canyon extension workshop, at 33:44-34:18, Aug. 12, 2022, *available at*: https://energy.zoom.us/rec/play/wCPbVCLfUgVHqeCD2acMmQg1nSgrehI1eLg8xCek7_vvdA4_K_3UpARvG4gqsxSOw_b2HkPnTRRIWhyA.9nhyHeS3WyoWbA4N.
[vi] 2022-2023 Transmission planning process, *Draft Study Plan*, at 24, Feb. 18, 2022, *available at*: http://www.caiso.com/InitiativeDocuments/DraftStudyPlan-2022-2023TransmissionPlanningProcess.pdf.
[vii] *SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future*, Docket 19-SB-100, at 12, March 2021 [hereafter 2021 SB 100 Report].
[viii] CAISO, Briefing on renewable and energy storage in the ISO generator interconnection queue, at 5, July 21, 2022, *available at*: http://www.caiso.com/Documents/BriefingonRenewablesandEnergyStorageintheGeneratorInterconnectionQueue-Presentation-Jul2022.pdf (2030 is a projection based on the 2020 IRP portfolio studied in the 2021-2022 TPP).
[ix] 2021 SB 100 Joint Agency Report Summary, at 10, March 2021.
[x] 2021 SB 100 Report, at 11.
[xi] *See* Cal. Energy Comm'n, Electricity From Wind Energy Statistics and Data webpage, *available at*: https://ww2.energy.ca.gov/almanac/renewables_data/wind/index_cms.php.
[xii] 2021 SB 100 Report, at 11 (Figure 5).
[xiii] Rand et al, Lawrence Berkeley National Laboratory, *Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2021*, at 11, April 2022, *available at*: https://emp.lbl.gov/sites/default/files/queued_up_2021_04-13-2022.pdf. The study is further discussed in *Comments of the United States Department of Energy to Notice of Proposed Rulemaking*, RM21-17, August 16, 2022.
[xiv] This information is based on CAISO's Public Generator Interconnection Queue information on July 14, 2022.
[xv] *See* CAISO, 2022-2023 Transmission Planning Process, *Draft Study Plan*, at 24, Feb. 18, 2022, *available at*: http://www.caiso.com/InitiativeDocuments/DraftStudyPlan-2022-2023TransmissionPlanningProcess.pdf.