

Date of Hearing: July 12, 2023

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Eduardo Garcia, Chair

SB 319 (McGuire) – As Amended May 3, 2023

SENATE VOTE: 40-0

SUBJECT: Electricity: transmission planning

SUMMARY: Requires the California Energy Commission (CEC), the California Public Utilities Commission (CPUC) and the California Independent System Operator (CAISO) to review the December 2022 memorandum of understanding (MOU) between the energy entities and related work plan every five years to reflect their coordinated efforts to meet the state’s energy goals.

Specifically, **this bill:**

- 1) Requires the CEC, CPUC, and CAISO to jointly develop and recommend an expedited permitting roadmap that describes timeframes and milestones for a coordinated, comprehensive, and efficient permitting process for electrical transmission infrastructure, and to provide an opportunity for stakeholder input and public comment.
- 2) Requires the CEC, CPUC, and CAISO, on or before December 31, 2024, to complete and submit the recommended framework for the expedited permitting roadmap to the Natural Resources Agency and the relevant fiscal and policy committees of the Legislature.
- 3) Requires the CPUC to require each electrical corporation to annually review its long-term transmission infrastructure needs for the subsequent 10 years, based on the interconnection requests it receives, to annually report to the CPUC on that review, and to ensure those needs incorporate each local government’s present and future needs for new service connections and capacity service upgrades that may require transmission upgrades.
- 4) Requires the electrical corporation, once it completes a transmission infrastructure project, to report the final cost of the project to the CPUC. Requires the CPUC, in consultation with California balancing authorities, on or before December 1, 2024, and annually thereafter, to submit a report to the Legislature that evaluates transmission and resource planning that has been conducted or implemented, including pursuant to the MOU and related work plan.

EXISTING LAW:

- 1) Establishes the policy that all of the state's retail electricity be supplied with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, and by December 31, 2035 for state agencies, for a total of 100% clean energy. (Public Utilities Code § 454.53)

- 2) Establishes that the Federal Energy Regulatory Commission (FERC)¹ has exclusive jurisdiction over the transmission of electric energy in interstate commerce. Also establishes the process and procedures for establishing transmission of electric energy in interstate commerce by public utilities, i.e., the rates, terms, and conditions of interstate electric transmission by public utilities. (Federal Power Act §§ 201, 205, 206 (16 USC 824, 824d, 824e))
- 3) Prohibits any construction by an electrical corporation of a line, plant, or system, or their extensions, without first obtaining from the CPUC a certificate that the present or future public convenience and necessity require or will require such construction. This is known as a CPCN. For electric transmission facilities, the CPUC shall consider cost-effective alternatives, including demand-side alternatives during their consideration of a CPCN. (Public Utilities Code §§ 1001-1103)
- 4) Requires retail sellers and publicly owned utilities to increase purchases of renewable energy such that at least 60% of retail sales are procured from eligible renewable energy resources by December 31, 2030. This is known as the Renewables Portfolio Standard (RPS). (Public Utilities Code § 399.11 et seq.)
- 5) Authorizes the CPUC to approve, in advance, the recovery through electricity rates of the costs of a transmission project proposed to meet the state's RPS goals. Provides that ultimate rate recovery is still subject to review by the CPUC to ensure that utilities incur costs reasonably and prudently. (Public Utilities Code § 399.2.5)
- 6) Establishes the CAISO as a nonprofit public benefit corporation, and requires the CAISO to ensure the efficient use and reliable operation of the electrical transmission grid consistent with the achievement of planning and operating reserve criteria, as specified. (Public Utilities Code § 345.5)

FISCAL EFFECT: According to the Senate Committee on Appropriations, this bill would result in ongoing costs of about \$230,000 annually for the CEC to develop an expedited permitting roadmap.

BACKGROUND:

California's Ambitious Goals. In 2018, the Legislature passed SB 100 (De León, Chapter 312, Statutes of 2018) which established the state policy that renewable and zero-carbon resources supply 100% of retail sales and electricity procured to serve all state agencies by 2045 (the 100% Clean Energy Policy). This policy was recently updated under SB 1020 (Laird, Chapter 361, Statutes of 2022) which accelerated the requirement on state agencies to 100% by 2035, and established interim targets to meet the sector-wide 100% goal. In March 2021, the CEC, CPUC and the California Air Resources Board (CARB) released the SB 100 report, to determine how

¹FERC is an independent agency within the Department of Energy which regulates the interstate transmission of electricity, natural gas, and oil. Among other responsibilities, FERC: Sets rates and terms and conditions for wholesale sales of power and transmission service and for oil/products and gas transportation services.

best to implement the 100% Clean Energy Policy, and found that in order to meet our goals, California will need to roughly triple its current electricity power capacity.² Additionally, a recent study by the Clean Air Task Force and the Environmental Defense Fund reported meeting these ambitious goals requires significant upgrades and expansion of the state's transmission system.³ Most of California's electric transmission network was built four decades ago to deliver electricity from fossil, nuclear, and hydroelectric generation; so updates and advancement are needed to meet our renewable energy future. Unfortunately, the current transmission development process is lengthy and complex and can take, on average, a decade to build.⁴

Phases of Transmission Development Process. The transmission development process is marked by three key phases summarized as i) Planning Phase, ii) Permitting Phase, and iii) Construction Phase. Each step of this process may introduce delays that are unique to the various transmission projects. Furthermore, once a transmission project is built new generation resources seeking to utilize the transmission infrastructure must engage in the interconnection process—also at the CAISO—to physically connect to the transmission line. The resource interconnection process informs subsequent rounds of CAISO transmission planning, and the cycle of transmission development replicates.

Transmission Planning Phase. The transmission planning process (TPP), occurs annually and begins with CAISO identifying potential system limitations as well as transmission projects in need of upgrades or new infrastructure in need of construction to chiefly meet reliability, state policy goals, and economic or other needs⁵ for the state.⁶ First, CAISO receives demand forecast of electricity and natural gas sales, consumption, and peak and hourly electricity demand from the CEC's integrated energy policy report (IEPR).⁷ Parallel to this effort, the CPUC's

² Pg. 10, CEC, CPUC, & CARB; "Achieving 100% Clean Electricity in California," *2021 SB 100 Joint Agency Report Summary: An Initial Assessment*, March 2021.

³ Pg. 1, Clean Air Task Force, "Transmission Development in California- What's the Slowdown?" January, 2023.

⁴ Nelson Falkenburg, Clean Air Task Force, "California's transmission permitting: Slowest in the West?" May 2023; <https://www.catf.us/2023/05/californias-transmission-permitting-slowest-in-the-west/>

⁵Maintain the feasibility of long-term congestion revenue rights, provide a funding mechanism for location-constrained generation projects. Pg 3. CAISO; "2017-2018 TRANSMISSION PLAN." March 22, 2018

⁶ See Slide 2, "CAISO Presentation: The CAISO assesses transmission needs annually with intensive coordination with California state agencies;" Assembly Committee on Utilities and Energy. May 18, 2023

⁷ The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. To carry out these assessments, "the Commission may require submission of demand forecasts, resource plans, market assessments, and related outlooks from electric, natural gas utilities, transportation fuel and technology suppliers, and other market participants." The CEC is also required to publish a strategic plan for California's transmission grid and include it in the IEPR.

IRP process⁸ then works to identify the optimal mix of system-wide resources capable of meeting greenhouse gas planning targets for the electric sector.⁹ CAISO receives the IRP results as inputs into its TPP. The transmission plan is updated annually, and culminates in a CAISO Board of Governors approved transmission plan that identifies the needed transmission solutions and authorizes cost recovery through CAISO transmission rates, subject to FERC approval.

2022 Memorandum of Understanding. As California’s electric grid rapidly evolves to accommodate new and distributed clean energy resources to meet energy and climate goals and reliability needs, it is becoming increasingly clear that new approaches are fundamental in planning and managing the transmission infrastructure. In December 2022, the CPUC, CAISO, and the CEC signed an updated MOU to enhance coordination of their shared responsibilities in transmission planning, resource development, interconnection process, and resource procurement.¹⁰

CAISO’s 2022-2023 Transmission Plan. The CAISO’s TPP released in May 2023 reflects a more coordinated and strategic approach in studying and recommending new infrastructure as stipulated in the recent joint-entity MOU. The 2022-20233 TPP is centered on state projections.¹¹ that call for more than 40 GW of new resources in the next decade and a study projection of 70 GW by 2032. This evaluation reflects the potential of increased electrification occurring notably in the building and transportation sectors.¹²To meet this target requires 45 new transmission

⁸ Called for under SB 350 (De León, Chapter 547, Statutes of 2015). The legislation establishes targets to increase retail sales of qualified renewable electricity to at least 50 percent by 2030.

⁹ Via the Reference System Plan (RSP) and Preferred System Plan (PSP). The CPUC creates the Reference System Plan (RSP) to meet the electric sector target informed by the California Air Resources Board Climate Change Scoping Plan. The CPUC uses this RSP to establish filing requirements for the load-serving entities. The second year considers the procurement each load-serving entity proposes to meet these GHG targets. As each load-serving entity has its own local constraints to consider, each files its own plan. The CPUC reviews, modifies, and aggregates these individual load-serving entities’ plans into a preferred system plan (PSP). Based on the approved PSP, the CPUC considers authorizing load-serving entities to procure resources within the next 1-3 years to meet GHG planning targets.

¹⁰ California ISO; “Memorandum of Understanding between the California Public Utilities Commission (CPUC), the California Energy Commission (CEC) and the California Independent System Operator (ISO) regarding Transmission and Resource Planning and Implementation,”

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>, December 2022

¹¹Via CAISO 2022-2023 Transmission Plan. In planning for the new resources required to meet system-wide resource needs, CPUC portfolios also took into account the announced retirements of approximately 3700 MW of gas-fired generation to comply with state requirements for thermal generation relying on coastal water for once-through cooling, and the planned retirement of the Diablo Canyon Power Plant. The ISO is not relying on the gas fired generation or Diablo Canyon Power Plant to meet any local capacity or grid support purposes beyond the planned retirement dates. However, the ISO must continue to ensure that they are reliably interconnected and can continue to operate through any potential extension period, so the resources are modeled in the ISO’s studies for those purposes only.

¹² Pg. 2, CAISO; “2022-2023 Transmission Plan, “May 2023

¹³ Pg. 3, CAISO; “2022-2023 Transmission Plan, “May 2023

projects for a total infrastructure investment of about \$7.3 billion with a vast majority of them being located in California.¹³

Permitting Phase: CPUC Reviews Transmission Projects. Usually, utilities proposing the construction of new transmission projects are required to obtain a permit from the CPUC for construction of certain specified infrastructure listed under Public Utilities Code §1001, including transmission projects. The CPUC reviews permit applications under two concurrent processes:

(1) An environmental review of applicable projects pursuant to CEQA and CPUC environmental rules. However, some projects may trigger a federal National Environmental Policy Act (NEPA) review if they cross federal land or use federal funds.

(2) The review of project needs and costs according to Public Utilities Code §1001 and General Order (GO) 131-D, also known as a Certificate of Public Convenience and Necessity (CPCN), or—depending on project size—a Permit to Construct (PTC).

Additional Challenges: The CAISO Interconnection Process. For projects to be financed, new generators (power producers) usually need clear sight of when their projects can be connected to the electrical grid and whether the power they produce can be reliably delivered to customers. As illustrated in Figure 1, interconnection projects are split into two queues: the distribution interconnection queue, which is operated by the individual utilities, or the transmission interconnection queue, which is operated by the CAISO but also involves the utilities. Which of the two queues a project enters is determined by the desired interconnection voltage level of the project. Projects exceeding a specific voltage threshold, set by whichever utility covers the territory that the project is sited in, are routed into the transmission queue and shepherded through the process by CAISO.

Figure 1: The Parallel Interconnection Queues for Transmission and Distribution-level Projects¹⁴



The interconnection process begins with an interconnection request which includes several components such as the selection by the developer of a specific point of interconnection and

¹⁴Pg. 3, CAISO; “2022-2023 Transmission Plan, “May 2023

¹⁵ California ISO; “Getting started - exploring interconnection to the grid”; <http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx>

CAISO's determination of whether there is sufficient transmission capacity to deliver power reliably from that location. When completed, the interconnection request is entered into the interconnection queue for interconnection studies which are performed based on the CAISO tariff (describes the interconnection, operating, and metering requirements for generation facilities to be connected to an electrical utility's electrical system) and with the application transmission owners. These interconnection studies include resource adequacy deliverability studies, impacts on affected (neighboring) systems, and the relationship between generation interconnection and the CAISO's TPP.¹⁵ After a resource has completed the study phases of the interconnection process, contracts must be signed, the resource must be modeled in the CAISO's market systems, and metering and telemetry equipment needs to be installed before participation in the wholesale power market is allowed.¹⁶ The in-service date of a project can be affected by a variety of factors including permitting, engineering, procurement, and construction of generation and transmission.

CAISO's Interconnection Challenges. The CAISO's interconnection process has recently slowed in part because of the lack of available transmission capacity for new generators to reliably deliver power to load centers. As transmission has become limited, there has also been an enormous increase in the number of interconnection applications, particularly for battery storage projects. Over the past decade, CAISO received an annual average of 113 interconnection proposals. However, last year, as the state accelerated the pace of procurement authorized for renewable and storage resources, the annual window for new project applications more than tripled to 373 projects.¹⁷ The flood of interconnection applications from energy providers wanting to connect to the grid has required the CAISO to consider process reforms to keep pace and improve efficiency. In September 2022, CAISO sought approval from FERC to delay the completion of the necessary interconnection technical studies for a year. In an attempt to resolve more upcoming delays, CAISO released a proposal in March 2023 to modify its interconnection procedures that will adjust the schedule for current interconnections requests and prioritize the processing of interconnection requests located in zones that have available transmission capacity. These efforts run parallel with interconnection reforms proposed by FERC.¹⁸

Executive Order N-8-23 (the "EO"). In May 2023, Governor Newsom released Executive Order N-8-23 (the "EO"), directing the creation of an Infrastructure Strike Team (Strike Team), made up of the heads of various government agencies and requesting the participation of the President of the CPUC, to, among other things, identify projects on which to focus streamlining efforts. Under the EO, the Strike Team would be required to: (1) identify projects on which to focus streamlining efforts; (2) support coordination between federal, state, tribal, and local government, as well as among state agencies; (3) support infrastructure in a particular sector by

¹⁶ CAISO; "CAISO Interconnection Study";

<http://www.caiso.com/planning/Pages/GeneratorInterconnection/InterconnectionStudy/Default.aspx>

¹⁷ California ISO; "Getting started - exploring interconnection to the grid";

<http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx>

¹⁸ CAISO, "Interconnection queue reforms going to ISO Board";

<http://www.caiso.com/about/Pages/Blog/Posts/Interconnection-queue-reforms-going-to-ISO-Board.aspx>

¹⁹ Federal Register, "Improvements to Generator Interconnection Procedures and Agreements";

<https://www.federalregister.gov/documents/2022/07/05/2022-13470/improvements-to-generator-interconnection-procedures-and-agreements>

prioritizing complementary investments in adjacent sectors; (4) share challenges and best practices across agencies, and identify opportunities for improvement.

COMMENTS:

- 1) *Author's Statement.* According to the author, "The Golden State is staring down some extraordinary deadlines to meet our climate goals, and electricity transmission – the backbone of our power system – is the key to clean, cost-effective, and reliable electricity delivery to all Californians. We know there are concerns related to the lack of reliability in our power grid. We have capacity and distribution issues, and a transmission system that is struggling to keep up with current capacity needs. Several of our towns on the North Coast were literally told they would not be able to hook up new homes to electricity for the next several years. In another instance this fall, a newly built hospital was told there was no way it would be hooked up to power. It's become abundantly clear that PG&E has some pretty significant constraints surrounding capacity and an antiquated transmission system. The state is also about to do two large offshore wind projects and the energy harnessed by those projects has to get into the grid, but our current transmission infrastructure doesn't support that. SB 319 will ensure the Golden State and our IOUs are coordinating to better meet our transmission needs in the future."
- 2) *Transmission Development in California.* There is broad consensus that transmission is needed in California to build the grid of the future, but uncertainty remains on how best to solve present challenges of transmission development. As discussed in the background, there are many steps along the process of building a new—or upgrading an existing—transmission project within the state. Each step of the process presents its unique set of challenges and introduces opportunities for potential delays. Many reforms are underway as eluded; either through better coordination amongst the energy entities to streamline planning, or through efforts to expedite permitting, including much focus on environmental review, or through reforms to the interconnection process to ensure new resources can be delivered.
- 3) *Provisions in the bill.* As previously mentioned, the transmission development process in California is lengthy and complex. Without adjustments to current planning and permitting processes, it will be difficult for California to connect new generations to the electric grid in time to meet its clean energy and climate goals. However, it is uncertain how some provisions in the bill would impact current transmission development efforts.
 - This bill could be duplicative of some of the coordinating efforts already occurring between the CEC, CPUC, and CAISO. The CPUC is currently implementing several pieces of legislation from 2022 related to transmission planning, interconnection, and resource planning, including SB 1020 (Laird), SB 887 (Becker), and SB 1174 (Hertzberg).
 - Section 1 – Adds Section 25308 to Public Resources Code. It requires the CEC, CPUC, and CAISO to review and update the MOU and workplan every five years to reflect the coordinated efforts of these energy entities. It is unclear if this

requirement may be complementary or duplicative to current processes given that the MOU calls for CEC, CPUC, and CAISO staff to develop and update their coordinated process documentation. It is worth noting that there has been growing frustration from Members in the Legislature given the uncertainty on solutions to quickly scale up transmission capacity among energy entities.

- Section 2 – Adds Section 454.58 9 (c) to Public Resources Code. When an electrical corporation completes a transmission infrastructure project, the electrical corporation shall report the final cost of the transmission project to the CPUC. There is a general lack of clarity in cost drivers of transmission projects, therefore this provision may be useful in examining cost drivers, as well as potential cost mitigation efforts. As such the author should consider specifying cost data reporting requirements allocated to ratepayers and to interconnection customers. In addition, while final reporting of costs could be important, a more holistic cost management approach throughout transmission planning, permitting, and implementation is needed.
- Section 2 – Adds Section 25308.5 to Public Resources Code. The actions listed in this section are already occurring between the CEC, CPUC and CAISO. For instance, the offshore wind permitting road map is being led by the CEC with input from the CPUC and CAISO describes timeframes and milestones for a coordinated, comprehensive, and efficient permitting process for electrical transmission infrastructure for offshore wind projects. These energy entities are already coordinating on load forecasting, resource planning and transmission planning. Codifying this coordination could inhibit the flexibility required to respond to changes and new needs of the electrical grid. Instead the author could enhance this section to include minor language requiring stakeholder input in the service of cost savings throughout the planning process.

4) *Related Legislation*

SB 420 (Becker) - allows transmission projects, identified by an agency chosen by the governor to be necessary for reliability and to meet the state's clean energy goals, to become environmental leadership development projects eligible for the California Environmental Quality Act streamlining, among other changes. Status: *set for hearing* in this committee on July 12, 2023.

SB 619 (Padilla) - requires facilities eligible to be certified by the CEC to include electrical transmission lines carrying electricity from certain generation facilities regardless of whether the electricity is carried to a point of junction with any interconnected electrical transmission system. This bill also gives priority to applications for eligible electrical transmission facilities applying for the opt-in permit streamlining, if the applicant certifies that a capital investment of at least \$250 million will be made over a period of five years. Status: *set for hearing* in this committee on July 12, 2023.

AB 914 (Friedman) - Establishes a two-year time limit, from the date the application is submitted, for a lead state agency to complete California Environmental Quality Act (CEQA) review and approve or deny an application for an electrical infrastructure project. Status: Passed the Senate Environmental Quality Committee with 7-0 votes on July 5th, 2023. Set for hearing at the Senate Energy, Utilities and Communications Committee on July 10, 2023.

AB 538 (Holden) - Delegates to the CEC the ability to authorize the transformation of the CAISO into a multistate regional transmission system, if specified requirements are satisfied. This bill would prohibit a California electrical transmission facility owner, a retail seller of electricity, or a local publicly owned electric utility from joining a multistate regional transmission system organization if specified requirements are not met. Status: *Held* –Assembly Committee on Appropriations.

5) *Prior Legislation*

SB 887 (Becker) adjusts the planning horizon for the annual electricity transmission plan from 10 years to 15 years and requires approval of at least two transmission projects as part of the CAISO 2022-23 transmission planning process. Status: Chapter 358, Statutes of 2022.

SB 1032 (Becker, 2022) creates the Clean Energy Infrastructure Authority as a public instrumentality of the state for the purpose of leading the state's efforts to build critical electrical transmission infrastructure necessary to enable the state to transition to 100 percent clean energy, as specified. Status: Died in Assembly Committee on Appropriations

SB 1174 (Hertzberg) requires specified reporting related to electric transmission projects and also requires the CPUC in coordination with other state agencies to identify and advance all interconnections or transmission approvals necessary, as specified. Status: Chapter, 229, Statutes of 2022.

SB 1274 (McGuire, 2022) would include, as a project eligible for streamlining benefits related to CEQA certification, a clean energy transmission project that upgrades existing transmission infrastructure to bring renewable energy from an offshore wind project located within or adjacent to the County of Humboldt that meets specified requirements. Status: Died Senate Environmental Quality

SB 100 (De León) established the 100 Percent Clean Energy Act of 2018 which increases the RPS requirement from 50 percent by 2030 to 60 percent, and created the policy of planning to meet all of the state's retail electricity supply with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, for a total of 100 percent clean energy. Status: Chapter 312, Statutes of 2018.

AB 1954 (Skinner) authorizes the CPUC to approve in advance the recovery through electricity rates of the costs of a transmission project proposed to meet the state's RPS

goals. The bill provides that ultimate rate recovery is still subject to review by the CPUC to ensure that the utility incurred the costs reasonably and prudently. Status: Chapter 460, Statutes of 2010.

REGISTERED SUPPORT / OPPOSITION:

Support

Clean Air Task Force
County of Humboldt
Sonoma Clean Power
The Climate Center

Other

Large Scale Solar Association
Sempra Energy and Its Affiliates: San Diego Gas & Electric Company and Southern California Gas Company

Opposition

None on file.

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