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**SENATE COMMITTEE ON ENERGY, UTILITIES AND  
COMMUNICATIONS**

**Senator Steven Bradford, Chair  
2023 - 2024 Regular**

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| <b>Bill No:</b>    | AB 3246          | <b>Hearing Date:</b> | 6/24/2024 |
| <b>Author:</b>     | Garcia           |                      |           |
| <b>Version:</b>    | 6/6/2024 Amended |                      |           |
| <b>Urgency:</b>    | No               | <b>Fiscal:</b>       | Yes       |
| <b>Consultant:</b> | Nidia Bautista   |                      |           |

**SUBJECT:** Electricity: permit to construct: advanced reconductoring: exemption

**DIGEST:** This bill requires the California Public Utilities Commission (CPUC), on or before January 1, 2026, to update general order to provide specified exemption from the permit to construct (PTC) process for advanced reconductoring transmission projects.

**ANALYSIS:**

Existing law:

- 1) Establishes the policy of the state that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035. (Public Utilities Code §454.53)
- 2) Provides that the CPUC may supervise and regulate every public utility in the state and may do all things, whether specifically designated or in addition, which are convenient and necessary in the exercise of such power and jurisdiction. (Public Utilities Code §701)
- 3) Prohibits an electrical corporation from beginning the construction of a line, plant, or system, or of any extension thereof, without having first obtained from the CPUC a certificate that the present or future public convenience and necessity require or will require its construction. (Public Utilities Code §1001(a))
- 4) Provides that the extension, expansion, upgrade, or other modification of an existing electrical transmission facility, including transmission lines and

substations, does not require a certificate that the present or future public convenience and necessity requires or will require its construction. (Public Utilities Code §1001(b))

- 5) Requires the CPUC, by January 1, 2024, to update General Order (GO)131-D to authorize each public utility electrical corporation to use the permit-to-construct process or claim an exemption under Section III(B) of that general order to seek approval to construct an extension, expansion, upgrade, or other modification to its existing electrical transmission facilities, including electric transmission lines and substations within existing transmission easements, rights of way, or franchise agreements, irrespective of whether the electrical transmission facility is above a 200-kilovolt voltage (kV) level. (Public Utilities Code §564)

This bill:

- 1) Makes several findings and declaration regarding the need to expand transmission capacity and opportunities to deploy advanced reconductors to expand capacity on existing infrastructure.
- 2) Requires the CPUC, on or before January 1, 2026, to update GO 131-D to provide an exemption that would instead authorize an electrical corporation to seek the CPUC's approval of advanced reconductoring, as defined, of its existing electrical transmission facilities of over 50 kV through the CPUC's informal advice letter process.
- 3) Requires an electrical corporation to seek that CPUC approval by filing a Tier 2 Advice Letter that follows existing advice letter processes and requirements.
- 4) Requires the CPUC, on or before January 1, 2026, to update its Tier 2 Advice Letter process to authorize that filing by an electrical corporation, as specified.
- 5) Defines "advanced conductors" to mean an overhead electricity conductor installed in a transmission or distribution project that has a direct current electrical resistance at least 10 percent lower than existing conductors of a similar diameter on the system.
- 6) Defines "advanced reconductoring" to replace an existing transmission or distribution line with advanced conductor.

## Background

*Transmission projects.* Electric transmission lines are generally high voltage lines that move electricity from generation resources (power plants) to distribution lines in neighborhoods. Companies, usually electric investor-owned utilities (IOUs), proposing the construction of new transmission, 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 pursuant to California Environmental Quality Act (CEQA), and (2) the review of project need and costs pursuant to Public Utilities Code §1001 and GO 131-D (Certificate of Public Convenience and Necessity (CPCN)).

*Need for expanded transmission capacity.* In order for the state to meet its clean energy goals, including achieving 100 percent clean energy by 2045, electric transmission capacity will likely need to grow significantly. The California Independent System Operator (CAISO) conducts its transmission planning process to identify potential transmission system limitations as well as opportunities for system reinforcements that improve reliability and efficiency. The annual transmission plan fulfills the CAISO's core responsibility to identify and plan the development of solutions, transmission or otherwise, to meet the future needs of the electricity grid. The CAISO identifies projects that address grid reliability requirements, identify upgrades needed to successfully meet California's policy goals, and explore projects that can bring economic benefits to consumers. In 2021, the CAISO created a 20-Year Transmission Outlook for the electric grid, 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 the state's SB 100 clean energy objectives reliably and cost-effectively. The 20-Year Transmission Outlook estimates a significant amount, and expense, to construct and expand transmission facilities, including an estimated \$10.74 billion in upgrades to existing facilities.

*Advanced reconductoring.* Reconductoring is the replacement of a transmission line's existing conductors with advanced conductors, essentially swapping out the Aluminum Conductor Steel Reinforced (ACSR) for smaller composite core conductors that enable higher operating temperatures. According to a November 2023 Energy Institute at Haas paper, "*Accelerating Transmission Expansion by Using Advanced Conductors in Existing Right-of-Way*" by Emilia Chojkiewicz, et. al (Energy Institute WP 343), reconductoring holds significant potential for rapid transmission expansion. The advanced conductors can carry approximately twice as much power as conventional conductors. Yet, advanced conductors use existing transmission towers and rights of way, thereby circumventing the land acquisition

and permitting processes that can impede construction of new transmission lines. However, replacing conventional conductors with advanced conductors requires taking circuits out of service during the replacement or conducting live-line work, which carries additional safety risks. Either approach can be challenging, and in some cases infeasible, when transmission constraints exist. CAISO considers advanced reconductoring among several grid enhancing technologies that can be used to expand existing transmission capacity.

*The Transmission Permitting Process.* Usually, utilities proposing the construction of new transmission 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. To prepare for the environmental review, the utility first conducts and submits a Proponents Environmental Assessment (PEA). The PEA is a preliminary assessment of the project's potential environmental impacts and alternatives. 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 GO 131-D, also known as a CPCN, or — depending on project size — a PTC.

*Permit/Certificate Review.* Parallel to environmental review under CEQA, the CPUC reviews the utility's application for a CPCN or a PTC, depending on the size of the project. The CPUC's decision on the CPCN or PTC cannot be issued until the environmental review is complete, if one is required. But most transmission projects are categorically exempt from CEQA. Most of the CPCN/PTC process is outlined in GO 131-D.

*CPUC's GO 131-D.* GO 131-D was first adopted in 1970 and before a recent update late in 2023, it had not been updated since 1995. It establishes the criteria to be followed to trigger the need for a PTC or renovate electrical facilities, including transmission lines and substations, and also sets out public notice requirements for proposed transmission projects. The level of analysis performed by the CPUC pursuant to GO 131-D varies with the size (measured in voltage) of the transmission project.

- Projects below 50 kV are considered distribution line projects and in general, do not require CPUC approval.

- Projects between 50 kV and 200 kV generally require a PTC, which includes an environmental review pursuant to CEQA, if applicable. The CPUC process generally does not require a detailed analysis of the need for or economics of these projects. An application for a PTC must be filed at least nine months before a decision is required.
- Projects over 200 kV generally require a CPCN and are subject to CEQA review, as applicable.

The CPCN process analyzes the need for the project and the economics of the project, as well as, the environmental impacts of the project if CEQA applies. An application for a CPCN must be filed at least 12 months before a decision is required.

*GO 131-D Reforms.* SB 529 (Hertzberg, Chapter 357, Statutes of 2022) required the CPUC to revise the permitting process for specified transmission projects. The bill directed the CPUC to revise GO 131-D to authorize a utility to use the PTC process or claim an exemption to seek approval to construct an extension, expansion, upgrade, or other modification to its existing transmission facilities regardless of the voltage level by January 1, 2024. However, CEQA still applies. In May 2023, the CPUC opened a rulemaking to solicit comments that would revise the GO 131-D rules. Based on the feedback, the assigned commissioner determined the issues to be considered in the proceeding should be separated into two phases. Phase 1 includes consideration of changes to GO 131-D necessary to conform it to the requirements of SB 529 and updates to outdated references. Phase 1 decision was approved on December 14, 2023.

*Phase 2 Staff Proposal.* Currently, the CPUC is in Phase 2 of the rulemaking proceeding, which includes consideration of changes to GO 131-D not addressed in the Phase 1. Last month, the CPUC issued a Phase 2 Staff Proposal with recommendations for various approaches to the changes sought in GO 131-D, including consideration of comments submitted in the rulemaking. While still a proposal, not policy adopted by the CPUC, it's important to note that the rulemaking is actively considering related issues to this bill, including reconducting an existing transmission line.

*Advice Letter.* An advice letter is a request by a utility for CPUC approval, authorization, or other relief, including a request for approval to change rates, charges, terms or conditions contained in the utility's tariffs currently in effect. An advice letter is an informal request made to the CPUC outside a formal proceeding such as an application, complaint, investigation, or rulemaking at the CPUC. The advice letter process provides a faster and simplified review of the types of utility requests that are expected neither to be controversial nor to raise important policy

questions. CPUC GO 96-B governs the various rules on advice letters. There are three tiers of advice letters as follows:

- Tier 1 advice letter is effective upon publication by the utility.
- Tier 2 advice letter needs to be approved by CPUC staff.
- Tier 3 advice letter needs to be approved by a vote of the CPUC Commissioners.

## Comments

*Current use of advanced conductors.* The UC Energy Institute paper noted above, along with others, including an April 2023 Brattle Group white paper, *Building a Better Grid: How Grid-enhancing Technologies Complement Transmission Buildouts*, discusses how Grid-enhancing Technologies (GETs), including advanced conductors, can help improve transmission capacity and efficiency. These papers generally state that the use of these technologies have not been as quickly embraced in the United States, whereas their use has been more prevalent in other countries, particularly in European countries and India. In California, advanced conductors have been deployed, particularly by Southern California Edison (SCE) who has deployed reconductoring projects, including the Big Creek-Ventura 220-kV network. In its most recent transmission plan, the CAISO listed out 17 approved transmission projects since 2013-14 transmission plan to deploy GETs, particularly flow controllers, advanced conductors, and dynamic voltage controls.

*Federal efforts to encourage use of GETs and advanced conductors.* At the federal level, the Federal Energy Regulatory Commission (FERC) recently adopted (May 13, 2024) a transmission and cost allocation rule, Order No. 1920, “Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection” (RM21-17-000) which among its provisions requires public utility transmission providers to more fully consider the use of GETs, such as dynamic line ratings, advanced power flow control devices, advanced conductors and transmission switching, in their transmission planning. The CPUC has also shared that they, along with the CEC, CAISO, Pacific Gas & Electric (PG&E), SCE, and Energy Institute at Haas are currently pursuing a Department of Energy Grid Resilience and Innovation Partnership program (GRIP) grant (eight years long) to deploy advanced conductors and two other GETs technologies: dynamic line rating and real-time short circuit duty monitoring. More recently, on May 28<sup>th</sup>, the White House announced the launch of a Federal-State Modern Grid Deployment Initiative to accelerate improvements to the electric transmission and distribution network to help meet “the country’s objectives for affordable, clean, reliable, and resilient power.” The Initiative involves a commitment from the Federal government and 21 states, including California, to

work together to increase cooperation on transmission planning, including specific commitments to expand the use of GETs and advanced conductors. This Initiative is intended to build up a recent Department of Energy announcement to expand a categorical exclusion under the NEPA for upgrading and rebuilding transmission lines, including for reconductoring.

*Impacts to ratepayers.* The actual savings benefits for the use of advanced conductors will vary by transmission line. Both the Brattle Group and Energy Institute papers cite opportunities for savings and efficiency benefits from the use of GETs and advanced conductors. Advanced conductors have a higher up-front cost as compared to conventional aluminum conductors – roughly two to three times the costs – though they have the potential for long-term savings given the potential to double the capacity of conventional conductors. However, one of the main hurdles of deploying advanced conductors is the need to remove the line from service or attempt in-service work. As stated in the Energy Institute paper, “Transmission networks are complex, and the actual increase in power transfer capacity offered by reconductoring is determined by a multitude of factors beyond the scope of this analysis. We recommend that transmission owners, ISOs, and RTOs perform more detailed studies...to evaluate the wide-scale deployment of advanced conductors in their networks.”

*Impacts to existing rulemaking and review process.* The dates by when the CPUC must make changes to the GO order and advice letter filing proposed in this bill, January 1, 2026, could affect the existing CPUC rulemaking proceeding. As this bill moves forward the author may wish to consider whether a change in the timing is warranted. Additionally, the opposition to this bill notes concerns about the review process proposed in this bill, authorizing a Tier 2 advice letter process for approval of advanced reconductoring transmission projects. A Tier 2 advice letter process would help expedite the deployment of transmission projects, many which are needed to support the state’s efforts to achieve its climate goals. However, the need for a robust review of costs and impacts will vary by the projects. As such, a Tier 2 advice letter process may not be sufficient in instances where transmission projects could be more complicated and costly and where less expensive alternatives exist.

### **Prior/Related Legislation**

AB 2779 (Petrie-Norris, 2024) requires the CAISO, upon approval of the annual transmission plan, to report on any new use of any grid enhancing technology and its associated cost or efficiency savings. The bill is pending on the Senate Floor.

SB 1006 (Padilla, 2024) requires electrical transmission utilities, by January 1, 2026, to develop a strategic plan for GETs to cost-effectively increase transmission

capacity and to complete an evaluation to identify which of its transmission and distribution lines can be reconducted with advanced reconductors. Requires these plans and evaluations are submitted to the CPUC and made publicly available. The bill is pending in the Assembly.

SB 319 (McGuire, Chapter 390, Statutes of 2023) required the CEC and the CPUC, in coordination with the CAISO, to better and regularly coordinate planning and permitting of energy transmission infrastructure to ensure the state meets its clean energy goals and to evaluate and report on that planning and related infrastructure development.

SB 529 (Hertzberg, Chapter 357, Statutes of 2022) exempted an extension, expansion, upgrade, or other modification of an existing transmission line or substations from the requirement of a CPCN and directed the CPUC to revise its GO, by January 1, 2024, to instead use its PTC process for these approvals.

SB 887 (Becker, Chapter 358, Statutes of 2022) required 15-year projections of energy resource portfolios and energy demand to inform transmission planning to achieve the state's clean energy goals, and required the CAISO to consider approval for specified transmission projects as part of the 2022-23 transmission planning process.

**FISCAL EFFECT:** Appropriation: No Fiscal Com.: Yes Local: Yes

**SUPPORT:**

Clean Power Campaign, Sponsor  
350 Humboldt  
350 Sacramento  
Advanced Energy United  
California Energy Storage Alliance  
California Environmental Voters  
California Wind Energy Association  
Climate Action California  
Environment California  
Environmental Defense Fund  
Independent Energy Producers Association  
Large-scale Solar Association  
Santa Cruz Climate Action Network  
Solar Energy Industries Association  
The Climate Reality Project, CA Coalition  
Union of Concerned Scientists



**OPPOSITION:**

California Solar & Storage Association

**ARGUMENTS IN SUPPORT:** In support of this bill, the Clean Power Campaign states:

While California needs to get a move-on with new transmission lines that take about a decade to complete, there is a more timely need to harden and increase capacity on the existing grid in the nearer term—a modern suite of advanced transmission technologies can offer a solution, as long as we design the policy to enable their deployment. Advanced conductors feature materials like carbon fiber or composite cores, which offer superior conductivity and strength compared to traditional aluminum core lines. These upgraded conductors can offer increased transmission capacity along existing rights-of-way when used to replace aging lines. Their increased structural integrity also means reductions in grid failures and wildfire risk, and cost savings in maintenance and grid efficiency that get passed down to ratepayers. AB 3246 offers an incentive for utilities to use advanced conductors when upgrading their transmission infrastructure. ...This greatly reduces the timeline and hurdles around approving these simple but efficient upgrade projects.

**ARGUMENTS IN OPPOSITION:** In opposition to this bill, the California Solar and Storage Association (CALSSA) states:

AB 3246 would change the approval process for advanced reconductoring to a Tier 2 advice letter. Advanced reconductoring is a process of replacing existing transmission lines with wires using more advanced materials that can carry more electricity. It is an important solution for increasing California's capacity to transmit power from large-scale renewable energy facilities to population centers. However, advanced conductors cost 2-4 times as much as traditional conductors. Given that utilities have a profit motive to spend more money on transmission, there is a risk that they will undertake projects that are not in the best interests of ratepayers.

CALSSA understands the utilities' interest in reducing the review process for proposed advanced reconductoring, but a Tier 2 advice letter is not sufficient scrutiny for projects that can cost hundreds of millions of dollars. At a minimum, these projects should receive the level of review and public visibility involved with Commission votes.

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