
SENATE COMMITTEE ON APPROPRIATIONS

Senator Anthony Portantino, Chair
2021 - 2022 Regular Session

SB 884 (McGuire) - Electricity: expedited utility distribution infrastructure undergrounding program

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Policy Vote: E., U., & C. 10 - 0, GOV. & F.
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Urgency: No

Mandate: Yes

Hearing Date: May 9, 2022

Consultant: Ashley Ames

Bill Summary: This bill would require the California Public Utilities Commission (CPUC) to establish an expedited utility distribution infrastructure undergrounding program.

Fiscal Impact:

- CPUC estimates ongoing costs in the low millions of dollars annually (ratepayer funds) to establish an expedited utility distribution infrastructure undergrounding program as would be required by this bill.
- To the extent that this bill results in increased undergrounding of utility infrastructure that reduces the risk of catastrophic wildfire from what it otherwise would be, this bill would result in unknown but potentially significant cost savings for reduced fire suppression (General Fund).

Background:

California wildfire and electric utility infrastructure. Electrical equipment, including downed power lines, arcing, and conductor contact with trees and grass, can act as an ignition source. Risks for wildfires also increased with extended drought conditions, bark beetle infestation that has increased tree mortalities, extreme heat and high wind events, along with increased encroachment of development into forested and high-fire threat areas. In recent years, California has experienced a number of catastrophic wildfires, including several that were ignited by electrical utility infrastructure. As a result, the state has adopted numerous policies to reduce the risk of future fires, including additional requirements on electric utilities to reduce the risk of fires caused by their equipment. Per statute, the state is requiring bolstered, more comprehensive, and specific wildfire mitigation plans from electric utilities, which include a requirement to detail whether and where to underground electric utility infrastructure in order to prevent igniting future fires.

Undergrounding of electric utility lines. Undergrounding is the process of replacing overhead utility lines (including poles, wires, and related equipment) that provide services such as electricity or communications to underground facilities (consisting of trenching of conduit that houses the wires, underground vaults and/or surface mounted structures). The undergrounding of electrical and communications lines is typically done for aesthetic or safety purposes in order to remove the visible overhead lines and poles or to reduce the risk of damage or fire from being exposed to the elements (including high winds and winter storms that can topple lines and poles). Undergrounding is generally much more expensive relative to installing overhead infrastructure – on the

order of anywhere between 2.5 to 10 times or more expensive. While operating costs for undergrounded infrastructure can be less, assuming the undergrounding of the infrastructure results in a reduced need to repair damaged lines, restoration of service after an outage can take longer and there are still safety issues related to potential explosions and fires in underground vaults. The costs for undergrounding utility lines can vary depending on the location of the lines, the topography, geology, population density served by the lines, labor costs, terrain, and other issues. Undergrounding is typically more expensive than overhead lines to build and maintain, so most existing overhead systems remain above ground.

California Overhead Conversion Program, Electric Tariff Rule 20. The CPUC requires electric investor-owned utilities (IOUs) to allocate a certain amount of ratepayer funds each year for undergrounding conversion projects. The electric utility annually allocates funds via credits under Electric Tariff Rule 20 to communities, either cities or unincorporated areas of counties, to convert overhead electric lines to underground facilities. Since ratepayers contribute the bulk of the costs of Rule 20A programs through utility rates, the projects must be in the public interest, meeting specified criteria. The CPUC instituted the current undergrounding program in 1967 and has made mostly slight adjustments to the program over the 50 years. In 2014, the CPUC authorized San Diego Gas and Electric (SDG&E) the ability to consider wildfires when converting electric facilities to underground. The CPUC agreed with SDG&E that undergrounding could mitigate the risks of wildfires in the more fire-prone areas of SDG&E's service territory. The CPUC approved a SDG&E specific version of Rule 20D that is modeled on Rule 20A, but targeted to the most fire-prone areas. However, SDG&E has not funded a project through the program and the CPUC is expected to determine whether to continue Rule 20D in Phase 2 of a current proceeding.

Wildfire mitigation plans (WMPs). After numerous wildfires, including several catastrophic and deadly wildfires the state has passed numerous statutes to require mitigation of wildfire risks by electric utilities. As a result of SB 1028 (Hill, Chapter 598, Statutes of 2016), and further expanded by SB 901 (Dodd, Chapter 626, Statutes of 2018) and AB 1054 (Holden, Chapter 79, Statutes of 2019), electric IOUs are required to file WMPs with guidance by the CPUC and now-Office of Energy Infrastructure Safety (OEIS) at the Natural Resources Agency, specifically the Wildfire Safety Division (WSD). The WSD reviews and determines whether to approve these plans and ensures compliance with guidance and statute. The electric IOUs' WMPs detail, describe, and summarize electric IOU responsibilities, actions, and resources to mitigate wildfires. These actions include plans to harden their system to prevent wildfire ignitions caused by utility infrastructure, such as widespread electric line replacement with covered conductors designed to lower wildfire ignition, pole replacement, and other actions. The plans also includes information regarding the electric IOUs' efforts to conduct extensive vegetation management to reduce the risk of tree branches, grasses, and other vegetation from coming into contact with utility infrastructure. The WMPs also require electric utilities to incorporate their protocols and procedures for proactive power shutoffs intended to be used as a last-resort to prevent wildfire ignitions. Per statute, electric utilities must include information regarding whether and where undergrounding of electric facilities is being considered. While the electric utilities incorporate undergrounding efforts in their wildfire mitigation plans, it is a strategy only utilized for very few of their electric circuit lines, largely due to costs in comparison to other mitigation options, and the long lead time for undergrounding projects. In general, the

electric utilities are incorporating other wildfire mitigation efforts that are more cost-effective, including conductor covers, replacing wooden poles with poles made of more fire-resistant materials, and other mitigation actions. According to data gathered from California's investor-owned electric utilities and analyzed by the CPUC shows that converting overhead distribution infrastructure to underground is up to 10 times more expensive than installing new distribution overhead lines and undergrounding of electric distribution lines is 8 times more expensive than insulating (covering) the conductors (wires) to prevent them from igniting when contacting vegetation and other foreign objects.

As noted on the CPUC's website regarding undergrounding efforts:

According to PG&E, SCE and SDG&E, the costs for undergrounding existing overhead distribution infrastructure can range anywhere from \$350 per foot to \$1150 per foot, or \$1.85 million to \$6.072 million per mile.

The ranges for the IOUs are shown below:

- PG&E: \$650-\$1,150 per foot (\$3.4 M-\$6.1M per mile)
- SDG&E: \$500-\$700 per foot (\$2.64M-\$3.696M per mile)
- SCE: \$351-\$990 per foot (\$1.85M-\$5.23M per mile)

These costs above (in 2019 US dollars) represent all costs associated with the undergrounding effort: trenching, conduit, substructures, cabling and connections, meter panel modifications, cutover work, and finally removal from service of poles and wires.

Installing new overhead distribution infrastructure is much less expensive. On average, installing new overhead distribution infrastructure costs between \$634,000-\$760,000 per mile (\$120-\$144 per foot) according to the electric utilities' Rule 21 interconnection unit cost guides.

For transmission, the cost for constructing new overhead transmission ranges from \$1 million to \$11 million per mile and \$6 million to \$100 million per mile to convert existing overhead transmission to underground for the IOUs.

Absence of utility poles may impact certain plans for expanding telecommunications services. This bill may require the removal of electric utility poles across large geographic regions. While telecommunications providers already operating in these areas may be able to underground facilities when the electric utility relocates its infrastructure, providers seeking to deploy new telecommunications infrastructure after poles are removed will need to integrate underground installations into their plans for deployment. Undergrounding may increase costs for wireline deployment proposals, and the absence of poles may limit the locations where wireless infrastructure can be installed.

Proposed Law: This bill would require the CPUC to establish an expedited utility distribution infrastructure undergrounding program. Specifically, this bill would:

1. Require the CPUC to establish an expedited utility distribution infrastructure undergrounding program, and would authorize a large electrical corporation, as

defined, to participate in the program by submitting to the CPUC, on or before July 1, 2023, a plan that identifies the eligible undergrounding projects that it will construct as part of the program, including timelines for the completion of those undergrounding projects, as specified.

2. Require a telecommunications provider, if the CPUC approves the electrical corporation's plan, to cooperate with the electrical corporation to underground any of its infrastructure on utility poles that will be removed as part of an undergrounding project, except as specified.
3. Require each undergrounding project to fully exhaust all available federal, state, and other nonratepayer moneys before any costs are recovered from ratepayers, and deem each undergrounding project to be an environmental leadership development project for purposes of the Jobs and Economic Improvement Through Environmental Leadership Act of 2021 and a development project for purposes of the Permit Streamlining Act, as specified.
4. Require that an electrical corporation earn a rate of return on its investments or expenditures made pursuant to the program, subject to a performance metric developed by the CPUC that would, at a minimum, require the withholding of those earnings until 60 consecutive months have elapsed without either the undergrounding project's infrastructure causing a deenergization event or a wildfire resulting from the undergrounding project's infrastructure.
5. Impose new duties on local agencies by expanding the applicability of the Permit Streamlining Act to undergrounding projects. Provide that no reimbursement to local agencies is required by this act because a local agency has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act or because costs incurred may be incurred because this act creates a new crime or changes the definition of a new crime.

Related Legislation:

SB 70 (Nielsen, Chapter 400, Statutes of 2019) required each electrical corporation's WMP to additionally include a description of where and how the electrical corporation considered undergrounding electrical distribution lines within those areas of its service territory identified to have the highest wildfire risk in a specified fire threat map.

AB 1054 (Holden, Chapter 79, Statutes of 2019) included numerous provisions related to addressing wildfires caused by electric utility infrastructure, including: bolstering safety oversight and processes, such as required updates to each electric corporation's wildfire mitigation plans, recasting recovery of costs from damages to third-parties, including the authorization for an electrical corporation and ratepayer jointly funded Wildfire Fund to address future damages, and changes to provisions concerning the workforce of a change of ownership of a full or portion of an electrical or gas corporation.

SB 901 (Dodd, Chapter 626, Statutes of 2018) addressed numerous issues concerning wildfire prevention, response and recovery, including funding for mutual aid, fuel

reduction and forestry policies, WMPs by electric utilities, and cost recovery by electric corporations of wildfire-related damages.

SB 1028 (Hill, Chapter 598, Statutes of 2016) required electric CPUC-regulated utilities to file annual wildfire mitigation plans and requires the CPUC to review and comment on those plans.

Staff Comments: To the extent that this bill reduces the number or severity of wildfires caused by utilities due to increased undergrounding of infrastructure, the state could realize significant savings from reduced spending on emergency fire suppression.

The Department of Forestry and Fire Protection (CalFire) spends roughly \$1 billion annually (General Fund) on “emergency fire suppression” – additional fire suppression resources needed when a fire continues to spread after the “initial attack” or about the first 24 hours. The vast majority of fires are contained during initial attack – the ones that are not usually grow to be the largest and most expensive wildfires.

Other examples of the costs and negative effects that a reduction in catastrophic wildfire risk could potentially mitigate include the following:

- *Property.* Property losses from the October 2017 “wine country” fires in Sonoma, Napa, Solano, Lake, and Mendocino Counties—which included the Tubbs Fire—are expected to add up to between \$6 billion and \$8 billion. According to the California Department of Insurance, more than 14,000 homes were damaged or totally destroyed, along with nearly 4,000 commercial buildings, 3,200 cars, and 111 boats. These totals understate the total damage, as they do not include uninsured properties or vehicles.
- *Other State Costs.* Recovery costs for debris removal and cleanup, social services (such as shelters and social services), and local assistance (including rebuilding public infrastructure and backfilling property tax losses) can also be significant. For example, the administration estimates that state expenditures on wildfire and recovery activities for the 2017 wine country fires have totaled about \$1.5 billion. While costs associated with these fires are eligible for federal reimbursement, the administration estimates that the state General Fund share of these costs will be roughly \$400 million.
- *Air Quality.* Smoke from the multiple wildfires that burned in the northern part of the state in October 2017 affected air quality and closed schools, airports, and businesses in cities at least 100 miles away from the fires. At its worst, fine particulate matter air pollution in San Francisco—located over 40 miles away from the fires—was measured at 190 micrograms per cubic meter, more than five times the federal health standard of 35 micrograms per cubic meter.
- *Greenhouse Gas (GHG) Emissions.* The Sierra Nevada Conservancy estimates that the 2013 Rim Fire—the fourth largest in California history—released 11.4 metric tons of GHG emissions, equivalent to what 2.6 million cars would release in a year. Moreover, burned trees left on the landscape will continue to release additional emissions as they decay over time.
- *Water Supply and Quality.* Initial estimates suggest the 2012 Bagley Fire resulted in an estimated 330,000 metric tons of fine sediment and 170,000 metric tons of

sand, gravel, and cobbles deposited into Lake Shasta—which stores drinking and agricultural water supplies for millions of customers.

- *Habitat for Fish and Wildlife.* One study found that the 2013 King Fire destroyed 30 out of 45 known habitat sites in the El Dorado National Forest for the California Spotted Owl, and that those sites remained unsuitable even a year after the fire.

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