



Overhead to Underground Conversion Programs



Grid Planning & Reliability Section
Energy Division, California Public Utilities Commission





What is Undergrounding?

Convert Overhead Electric, Communication, and Cable Facilities to Underground.





History of the Undergrounding Program

- D.73078 established Electric Tariff Rule 20 in September 1967
- \$3.4 Billion Spent from 1968 to 2015
- Utilities Submit Annual Allocation Letters in December and Project Completion Reports in March for Review and Approval





Electric Tariff Rule 20 (Replacement of Overhead with Underground Electric Facilities)

Electric Rule 20: Part A, B, C, and D

Contribution Thresholds Per Rule	Ratepayer Contribution Through Utility Rates	Customers Contribution	Criteria
20A	100%	Max 20%: cost from street to meter	Public Interest - Remove closely-packed lines, or be on a high traffic way, or be in a scenic area
		Min: zero if use mainline funds	
20B	20%	80% ¹	Don't meet Rule 20A criteria, but still involve undergrounding both sides of the street for at least 600 feet.
20C	De minimus	100% ²	Typically small projects, where a business or individual pays everything
20D ³	~80%	Max 20%: cost from street to meter	Facilities within SDG&E Fire Threat Zone and undergrounding is a preferred method to reduce fire risk and enhance reliability
		Min: zero if use mainline funds	

¹ Rule 20B customers pay a nonrefundable sum equal to the excess, if any, of the estimated costs, of completing the underground system and building a new equivalent overhead system.

² Rule 20C customers pay a nonrefundable sum equal to the estimated cost of the underground facilities less the estimated net salvage value and depreciation of the replaced overhead facilities.

³ Rule 20D is a new program approved by D14-01-002 in January 2014 only for San Diego Gas & Electric Company.





2016 Rule 20A and 20D Allocations

Allocations are work credits to the
Communities

- Liberty Utilities – \$1.4M
- PacifiCorp - \$501K
- PG&E – \$41.3M
- SCE – \$28.4M
- SDG&E
 - 20A – \$26M
 - 20D – \$1.5M





Funding of Rule 20A¹

- The amount allocated to a city or a county in 1990 as the base and adjusted for the following²:
 - 50% of the change from the 1990 total budgeted amount is allocated in the same ratio as the number of overhead meters in any city or unincorporated area to the total system overhead meters; and
 - 50% of the change from the 1990 total budgeted amount is allocated in the same ratio as the total number of meters in any city or the unincorporated area to the total system meters.
- City may mortgage a maximum of five years of allocation at then-current levels.

¹ No allocation formula for funding of Rules 20B and C.

² In accordance with D.82-01-18





Funding of Rule 20D

- The amount allocated to each city and county annually is the ratio of the number of miles of overhead electric high voltage distribution lines located in the SDG&E Fire Threat Zone in a city or unincorporated portion of a county bears to the total miles of SDG&E overhead electric high voltage distribution lines located in the SDG&E Fire Threat Zone.
- City may mortgage a maximum of five years of allocation at then-current levels.





Benefits of Undergrounding

- Improve Aesthetics
- Increase Property Values
- Improve Reliability
 - Fewer Outages, but
 - Longer and more Expensive to Restore
- Doesn't Reduce EMF
 - Exposure to EMF Increases When Lines are Close
 - Earth not a Barrier





High Costs of Undergrounding

- \$400 to \$600 per Trenched Foot of Distribution Line
- \$2.1M to 3.2M per Mile of Distribution Line.
- Each Ratepayer pays ~\$11/year or ~\$1/month
- Approximately 2,500 miles of conversion over 47 years.
- California current has ~180K Miles of Overhead Distribution and ~72K of Underground Distribution (including Existing, New Construction, and Conversion).





Many Stakeholders

- Citizen Groups
- Business/Individuals
- City Council and Planning/Street Departments
- Electric, Phone, and Cable Utilities





Citizen Groups and Business/Individuals Responsibilities

- Rally the Stakeholders
- Influence Local Government to Pass Ordinance to identify Underground Areas
- Grant Right-of-Way at no Cost
- All trenching and backfilling from the property line to the point of termination on the customer's premises
- Installing rigid conduits
- Converting their electric service panels





City Council and Planning/Street Departments Responsibilities

- Discuss with Utilities to decide on the scope of a conversion project
 - Coordinate conversion project schedule with other public works projects.
- Establish a general enabling ordinance
 - Call public hearings
 - Designate Underground Utility Districts (UUD) by Resolution.
 - Designate individual underground utilities districts (UUD) Joint Trench Requirements, Schedules, and Deadlines





City Council and Planning/Street Departments Responsibilities (Cont.)

- Make it unlawful for utility companies to maintain overhead facilities in an UDD, unless specifically exempted.
- Require property owner in an UDD to install underground electric service lateral and convert electric service panel to receive underground utility service. However, City may also pay these conversions from Rule 20A fund.
- State the responsibility of the City & utility companies.
- City adopt a resolution to create an underground utilities district.





Utility Responsibilities

- Submit Annual Allocation Report to the Commission.
- Discuss with Local Government to Decide on the Scope of a Conversion Project
- Approve project and verify project funding.
- Obtain approval from the Commission for Tariff Rule Deviation.
- Establish a Trenching agent.
- Obtain Encroachment Permits and Rights-of-Way
- Develop Bid Specification
- Develop Composite Trench Drawings
- Select Contractors
- Remove Overhead Poles
- Submit Annual Conversion Completion Report to the Commission.
- Recover project expenses thru rate case.





CPUC Objectives

- Balance Benefits with Costs
 - Protect Ratepayer Interests
 - Improve Communication between Utilities and Residents
 - Monitor Allocations and Project Completion
 - Review Requests from Utilities for Tariff Rule Deviations
 - General Rate Case (GRC) Process is Important





Thank You!

For further information related to the Electric Tariff Rule 20 program, please visit:
<http://www.cpuc.ca.gov/General.aspx?id=4401>

Also, please contact:

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