

R.19-01-011 COM/DH7/nd3



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R1901011

# APPENDIX A



California Public  
Utilities Commission

# R.19-01-011 Phase 3B Staff Proposal

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CPUC ENERGY DIVISION STAFF

July 21, 2023

# Table of Contents

TABLE OF CONTENTS .....	1
ACRONYMS & ABBREVIATIONS .....	2
TABLES & FIGURES .....	4
1 EXECUTIVE SUMMARY .....	5
2 BACKGROUND .....	7
2.1 Phase 3 Overview.....	7
3 CHALLENGES .....	10
3.1 Electric Rules Continue to Encourage Mixed-Fuel New Construction .....	10
4 RECOMMENDATIONS .....	21
4.1 Eliminate Electric Line Extension Subsidies for Mixed-Fuel New Construction .....	21
5 CONCLUSION .....	31

# Acronyms & Abbreviations

A.	Application
AERCDR	Average Electric Residential Customer Distribution Revenue
AL	Advice Letter
BUILD	Building Initiative for Low-Emissions Development
CARB	California Air Resources Board
CEC	California Energy Commission
CoSF	Cost of Service Factor
CPUC	California Public Utilities Commission
D.	Decision
EBD	Equitable Building Decarbonization
EE	Energy Efficiency
FoF	Finding of Fact
FY	Fiscal Year
GHG	Greenhouse Gas
HPWH	Heat Pump Water Heater
HVAC	Heating, Ventilation, and Air Conditioning
IEPR	Integrated Energy Policy Report
IOU	Investor-Owned Utility
OP	Ordering Paragraph
PG&E	Pacific Gas & Electric Company
PU	Public Utilities
R.	Rulemaking
RASS	Residential Appliance Saturation Survey
RCSC	Revenue Cycle Services Credit
SB	Senate Bill
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SIP	State Implementation Plan
SoCalGas	Southern California Gas Company

R.19-01-011 PHASE 3B STAFF PROPOSAL

Staff	CPUC Energy Division Staff
SWG	Southwest Gas Corporation
TECH	Technology and Equipment for Clean Heating
Title 20	California Appliance Efficiency Regulations
Title 24	California Building Energy Efficiency Standards
WNDRR	Wildfire and Natural Disaster Resiliency Rebuild

# Tables & Figures

Table 1: Total Residential Electric Line Extension Allowances Provided (2018-2022) ..... 16

Table 2: Total Non-Residential Electric Line Extension Allowances Provided (2018-2022)..... 17

Table 3: Total Residential Electric Line Extension Refunds Provided (2018-2022) ..... 18

Table 4: Total Non-Residential Electric Line Extension Refunds Provided (2018-2022) ..... 18

Table 5: Total Residential Electric Line Extension Discounts Provided (2018-2022) ..... 19

Table 6: Total Non-Residential Electric Line Extension Discounts Provided (2018-2022) ..... 20

Figure 1: Electric Distribution Line Extensions and Service Line Extensions Depicted Pictorially . 12

Figure 2: Sample Allowance Calculation from SCE AL 4399-E ..... 15

# 1 Executive Summary

The California Public Utilities Commission (CPUC) opened Rulemaking (R.) 19-01-011<sup>1</sup> on January 31, 2019 with the stated intent to adopt polices “that could lead to the reduction of greenhouse gas (GHG) emissions associated with energy use in buildings.”<sup>2</sup> R.19-01-011’s initial Scoping Ruling established four broad issue areas to address in separate phases: (1) “How should the Commission implement SB 1477 (2018, Stern)?” (2) “Should the Commission implement any programs dedicated specifically to support the construction of decarbonized buildings in communities affected by wildfires?” (3) “Should the Commission make any changes to existing policies, rules, or procedures in order to facilitate better coordination with the development of Title 24 and Title 20 standards at the Energy Commission that facilitate building decarbonization?” and (4) “What policies, rules, and procedures should the Commission adopt to facilitate the decarbonization of buildings?”<sup>3</sup>

Three main decisions have been adopted in R.19-01-011 thus far: Decision (D.) 20-03-027,<sup>4</sup> D.21-11-002,<sup>5</sup> and D.22-09-026.<sup>6</sup> D.20-03-027, adopted on March 26, 2020, addressed Phase 1 considerations by creating the Building Initiative for Low-Emissions Development (BUILD) Program and the Technology and Equipment for Clean Heating (TECH) Initiative pursuant to the requirements of Senate Bill (SB) 1477. D.21-11-002, adopted on November 4, 2021, addressed Phase 2 considerations by creating the Wildfire and Natural Disaster Resiliency Rebuild (WNDRR) Program while also addressing incentive layering, data sharing, electric rate impacts from heat pump water heater (HPWH) adoption, and data collection requirements for new customers. D.22-09-026, adopted on September 15, 2022, addressed Phase 3 considerations by eliminating gas line extension subsidies<sup>7</sup> for all applicant builders not otherwise granted a special exemption. In addition to the three main decisions, a fourth decision – D.23-02-005<sup>8</sup> – was adopted on February 2, 2023 to authorize the use of additional funding made available by the California Legislature to augment the TECH Initiative budget.

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<sup>1</sup> See: [https://apps.cpuc.ca.gov/apex/?p=401:56:0::NO:RP,57,RIR:P5\\_PROCEEDING\\_SELECT:R1901011](https://apps.cpuc.ca.gov/apex/?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1901011).

<sup>2</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M264/K629/264629773.PDF> at 2.

<sup>3</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M290/K324/290324466.PDF> at 4-5.

<sup>4</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M331/K772/331772660.PDF>.

<sup>5</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M421/K107/421107786.PDF>.

<sup>6</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K987/496987290.PDF>.

<sup>7</sup> “Subsidies” means allowances, refunds, and discounts provided to applicant builders.

<sup>8</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M501/K931/501931113.PDF>.

This Staff Proposal continues Phase 3 work by building upon the line extension policy changes implemented pursuant to D.22-09-026. In order to encourage more all-electric new construction and achieve greater GHG emissions reductions in the building sector, CPUC Energy Division Staff (Staff) recommend adopting the following recommendations:

1. Eliminate electric line extension subsidies for all mixed-fuel new construction.<sup>9</sup>
2. Require all mixed-fuel new construction to pay for final *actual* costs of an electric line extension rather than initial *estimated* costs only, and require each electric investor-owned utility (IOU) to report annually on electric line extension expenditures.
3. Exempt from the recommended elimination of electric line extension subsidies all non-residential building projects that receive an exemption from the prohibition on gas line extension subsidies through the process established in Ordering Paragraph (OP) 3 of D.22-09-026.

Eliminating electric line extension subsidies for mixed-fuel new construction is anticipated to result in a modest cost increase for future mixed-fuel new construction, but would not increase costs for future all-electric new construction. Additionally, eliminating electric line extension subsidies for mixed-fuel new construction is anticipated to result in cost savings for ratepayers to the extent that mixed-fuel new construction continues, as future mixed-fuel new construction projects would no longer be entitled to the full range of subsidies that they are entitled to today. If, however, mixed-fuel new construction ends entirely, ratepayer impact would be neutral.

Adopting Staff's recommendations would amplify the signal previously sent to the builder community in D.22-09-026 that it should cease extending gas lines and instead transition to exclusively all-electric new construction. The elimination of all line extension subsidies for mixed-fuel new construction coupled with the cost savings associated with not installing gas infrastructure would provide clear financial incentives favoring all-electric new construction. Consistent with the requirement articulated in Public Utilities (PU) Code Section 783(d),<sup>10</sup> the proposed rule change, if adopted by the CPUC in 2023, would take effect on July 1, 2024 "so as to ensure that the public has at least six months to consider the new order or decision." The delayed implementation of the proposed rule change would give the builder community ample time to adjust its planning and practices.

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<sup>9</sup> "Mixed-fuel new construction" means building projects that use gas and/or propane in addition to electricity.

<sup>10</sup> See: [https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=783&lawCode=PUC](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=783&lawCode=PUC).



## 2 Background

### 2.1 Phase 3 Overview

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Phase 3 of R.19-01-011 commits the CPUC to “developing guidelines for Commission rules, policies, and procedures to support the development of current and future Title 24 building standards and Title 20 appliance standards at least cost, maximizing their decarbonization benefits.”<sup>11</sup> As stated in R.19-01-011’s preliminary Scoping Ruling with regard to Phase 3, “In this portion of the proceeding, we will examine additional policies or frameworks that the Commission can use to support transformation of portions of the building market to support faster penetration of more stringent building codes related to building decarbonization.”<sup>12</sup> The Scoping Ruling continues, “Once a technology or approach becomes more commonplace and costs are reduced, it becomes easier to justify a building code change to make the technology or practice a requirement for new or existing buildings in the future.”<sup>13</sup>

The CPUC opened Phase 3 in a Scoping Ruling issued on November 16, 2021.<sup>14</sup> The Phase 3 Scoping Ruling identified three main issues to be considered: (1) “Whether the Commission should modify or eliminate gas line extension allowances for some or all customer classes (residential and non-residential);” (2) “Whether the Commission should modify or eliminate gas line extension refunds for some or all customer classes (residential and non-residential);” and (3) “Whether the Commission should modify or eliminate gas line extension discounts for some or all customer classes (residential and non-residential).”<sup>15</sup> Accompanying the Phase 3 Scoping Ruling was a Staff Proposal that recommended eliminating all forms of gas line extension subsidies (i.e., allowances, refunds, and discounts) for residential and non-residential customers alike. According to the Staff Proposal, the goal of Phase 3 should be “to encourage builders to take concrete steps now that will help the building industry more easily decarbonize moving into the future,”<sup>16</sup> and the CPUC should “incent builders to choose Title 24 compliance pathways that maximize GHG reductions and facilitate the adoption of highly efficient electric heat pump appliances.”<sup>17</sup>

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<sup>11</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M264/K629/264629773.PDF> at 9.

<sup>12</sup> *ibid* at 16.

<sup>13</sup> *ibid* at 15-16.

<sup>14</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M423/K516/423516230.PDF>.

<sup>15</sup> *ibid* at 5.

<sup>16</sup> Phase 3 Staff Proposal at 1.

<sup>17</sup> *ibid* at 2.

After receiving stakeholder comments in response to the Phase 3 Scoping Ruling and accompanying Staff Proposal, the CPUC ultimately adopted D.22-09-026 on September 15, 2022. D.22-09-026 eliminated all forms of gas line extension subsidies for all customer classes while allowing each gas IOU to request exemptions for building projects that meet three specific criteria: (1) “The project shows a demonstrable reduction in greenhouse gas emissions;” (2) “The project’s gas line extension is consistent with California’s climate goals, including those articulated in Senate Bill 32 (Pavley, 2016);” and (3) “The project demonstrates that it has no feasible alternatives to the use of natural gas, including electrification.”<sup>18</sup> Pursuant to the requirements of PU Code Section 783(d), “Any new order or decision issued pursuant to an investigation or proceeding conducted pursuant to subdivision (b) shall become effective on July 1 of the year that follows the year when the new order or decision is adopted by the commission, so as to ensure that the public has at least six months to consider the new order or decision.” As such, implementation of D.22-09-026’s changes were delayed to July 1, 2023.

D.22-09-026 ordered the gas IOUs to implement all necessary tariff changes via submittal of a Tier 2 advice letter (AL) within 30 days.<sup>19</sup> Those ALs were filed by Southern California Gas Company (SoCalGas), Pacific Gas & Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southwest Gas Corporation (SWG) on October 20, 2022<sup>20</sup> and approved by Staff on November 16, 2022. However, a discrepancy in tariff modifications was later identified in which the single-fuel gas IOUs (i.e., SoCalGas and SWG) required applicants for a gas line extension to pay *actual* line extension costs while the dual-fuel<sup>21</sup> utilities (i.e., PG&E and SDG&E) required applicants for a gas line extension to pay *estimated* costs even if those estimated costs ended up being below actual costs. SoCalGas filed AL 6108-G on March 13, 2023 to bring their tariff rules into alignment with PG&E’s and SDG&E’s tariff rules. However, because SoCalGas’s request involved more than mere ministerial action, Staff was obligated per the requirement of Rule 7.6.1 of General Order 96-B to address the disposition of AL 6108-G by CPUC resolution. On June 8, 2023, the CPUC adopted Resolution G-3598,<sup>22</sup> rejecting SoCalGas’s request and instead ordering PG&E and SDG&E to revise their tariff rules to require applicants for a gas line extension to pay actual line extension costs instead of estimated line extension costs.

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<sup>18</sup> D.22-09-026, OP 2.

<sup>19</sup> *ibid*, OP 4.

<sup>20</sup> SoCalGas AL 6048-G, PG&E AL 4669-G/6742-E, SDG&E AL 3130-G, and SWG AL 1231-G.

<sup>21</sup> “Dual-fuel utilities” means IOUs that provide both gas service and electricity service.

<sup>22</sup> See: <https://docs.cpubc.ca.gov/PublishedDocs/Published/G000/M511/K423/511423138.PDF>.

Possible next steps for the continuation of Phase 3 policy development are articulated in the Phase 3 Scoping Ruling. According to the Phase 3 Scoping Ruling, “Successor proceedings or future phases and/or tracks of this proceeding may consider further issues, as needed.”<sup>23</sup> It continued, “In particular, the Commission may consider modifications to current electric line extension rules and/or treatment of costs associated with electric distribution system upgrades triggered by residential and/or non-residential building decarbonization projects, consistent with existing tariff rules, Pub. Util. Code §783, and any other relevant regulations or state statutes.”<sup>24</sup> As such, Phase 3 considerations need not be limited solely to gas line extension rules, and consideration of electric line extension rule changes are appropriate and within scope.

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<sup>23</sup> Phase 3 Scoping Ruling at 5.

<sup>24</sup> *ibid.*

## 3 Challenges

### 3.1 Electric Rules Continue to Encourage Mixed-Fuel New Construction

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D.22-09-026 eliminated gas line extension subsidies, but it did not end all incentives available for building projects that extend gas lines. Current electric rules still direct IOUs to provide electric line extension subsidies in the form of allowances, refunds, and discounts to mixed-fuel new construction projects. These subsidies help to cover the cost of extending electric service to a new building, even if the building will receive gas service moving forward. Offering electric line extension subsidies for mixed-fuel new construction continues to incentivize developers to construct mixed-fuel buildings instead of incentivizing them to build all-electric. This continuing incentive stands in direct opposition to the direction of state policy, which puts California on a trajectory to decarbonize its building stock through electrification measures that will result in a dramatic reduction in gas use overall.

Numerous state agencies have articulated why building electrification is imperative for achieving California’s climate goals. The 2021 Integrated Energy Policy Report (IEPR) issued by the California Energy Commission (CEC) recommends building electrification as a key strategy in decarbonizing buildings, and sets a target of 6 million heat pumps being installed in new and existing buildings by 2030.<sup>25</sup> The 2022 State Implementation Plan (SIP) Strategy issued by the California Air Resources Board (CARB) states that beginning in 2030, “100 percent of new space and water heaters (for either new construction or replacement of burned-out equipment in existing buildings) sold in California would need to meet the zero-emission standard. It is expected that this regulation would rely heavily on heat pump technologies currently being sold to electrify new and existing homes.”<sup>26</sup> Appendix F of CARB’s 2022 Scoping Plan update highlights anticipated cost savings of building electrification in new construction: “Statewide actions focused on strengthening California’s state standards and local building requirements to support all-electric new construction provide an important opportunity because it is less costly to build, avoids new pipeline costs to ratepayers, and avoids expensive retrofits later.”<sup>27</sup>

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<sup>25</sup> See: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241599> at 40.

<sup>26</sup> See: [https://ww2.arb.ca.gov/sites/default/files/2022-08/2022\\_State\\_SIP\\_Strategy.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf) at 102-103.

<sup>27</sup> See: <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp-appendix-f-building-decarbonization.pdf> at 15.

The CPUC continues to emphasize the importance of building electrification through its own actions, as well. On April 6, 2023, the CPUC voted out D.23-04-035,<sup>28</sup> which, beginning in 2024, eliminates ratepayer-funded incentives for non-cost-effective gas combustion appliances in both residential and commercial new construction for the Resource Acquisition and Market Support segments of the energy efficiency (EE) portfolio.<sup>29</sup> According to the July 2022 Staff Proposal that informed this decision, approximately 8.4 percent of the gas EE portfolio budget is going towards natural gas appliances that are not cost effective per the EE evaluation metrics.<sup>30</sup> Consistent with the April decision, PG&E announced to stakeholders on September 23, 2022 that the statewide program it administers, “California Energy-Smart Homes,” will request to no longer offer incentives for mixed-fuel new construction.<sup>31</sup> In AL 4680-G/6760-E, approved on December 14, 2022, the CPUC granted PG&E permission to stop accepting applications for its California Energy-Smart Homes Mixed-Fuel Residential New Construction Program by December 31, 2022.<sup>32</sup>

Electrification of existing buildings is also a major priority of the California Legislature. In AB 209 (Committee on Budget, 2022), the Legislature directed the CEC to administer a new Equitable Building Decarbonization (EBD) Program that includes two primary components: (1) a direct install program focused on low-to-moderate income residents and (2) a statewide incentive program to accelerate deployment of low-carbon building technologies.<sup>33</sup> The state intends to allocate up to \$922 million for the EBD Program for Fiscal Year (FY) 2022-23 through FY 2025-26.<sup>34</sup> The Legislature has thus far approved a combined \$494 million for FY 2022-23 and FY 2023-24.<sup>35</sup> The CEC released draft guidelines for the direct install portion of the EBD Program on May 4, 2023.<sup>36</sup> The draft guidelines focus on existing residential buildings in under-resourced communities, with a special focus on tribal and manufactured homes, and anticipate allocating \$643.7 million to replace gas-fired appliances with electric appliances, conduct necessary

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<sup>28</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M505/K808/505808197.PDF>, OP 3.

<sup>29</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M505/K562/505562548.PDF>.

<sup>30</sup> EE Natural Gas Incentive Phase Out Proposal, Page 7. Available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-efficiency/rolling-portfolio-program-guidance/ng-staff-prop-81622.pdf>.

<sup>31</sup> E-mail sent to stakeholders of EE programs on September 24, 2022.

<sup>32</sup> See: [https://www.pge.com/tariffs/assets/pdf/adviceletter/GAS\\_4680-G.pdf](https://www.pge.com/tariffs/assets/pdf/adviceletter/GAS_4680-G.pdf).

<sup>33</sup> See Assembly Bill 209, Chapter 251, Statutes of 2022.

<sup>34</sup> See: <https://ebudget.ca.gov/2022-BudgetAddendum.pdf> at 6.

<sup>35</sup> See: <https://ebudget.ca.gov/2023-24/pdf/Enacted/GovernorsBudget/3000/3360.pdf> at 3.

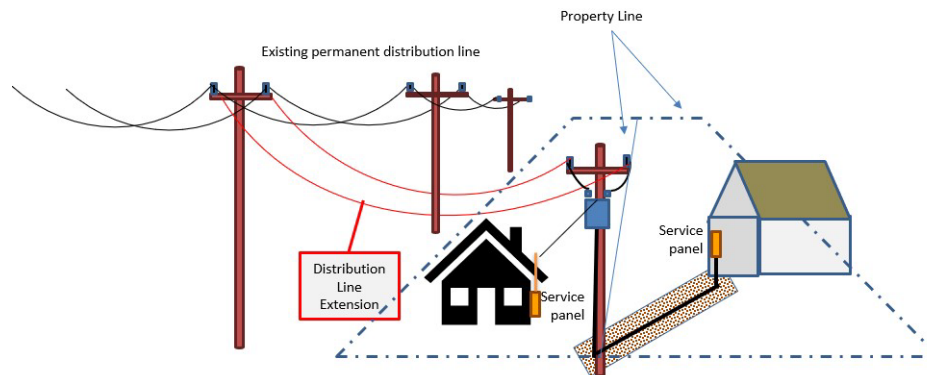
<sup>36</sup> See: <https://www.energy.ca.gov/publications/2023/equitable-building-decarbonization-direct-install-program-draft-guidelines>.

related remediation, and install other efficiency measures.<sup>37</sup> Draft guidelines for the statewide incentive portion of the EBD Program are forthcoming.

### Electric Line Extensions Explained

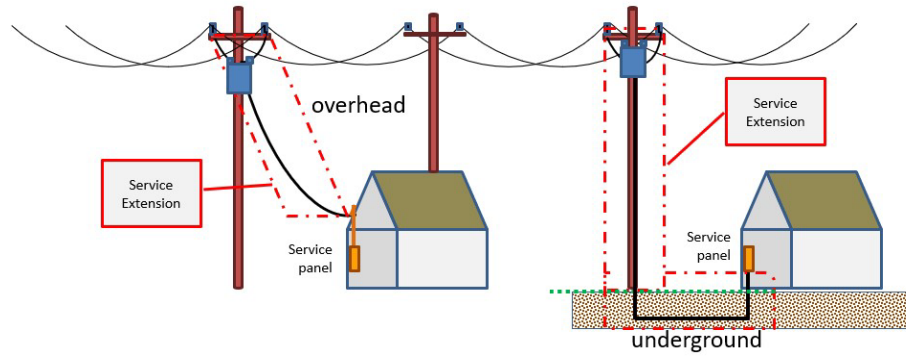
An “electric line extension” refers to all the components that bring electrical service from an IOU’s electrical distribution system to the electric meter of a new building, and comprises both service line extensions and distribution line extensions. When a new building is built, a new overhead or underground electric service line must be installed to connect the building’s electric meter to a utility’s electric distribution line; this is called a “service line extension.” The utility’s existing distribution infrastructure may also need to be extended or rearranged to facilitate the new service line extension; this is called a “distribution line extension.” Electric Rule 15 governs distribution line extensions and Electric Rule 16 governs service line extensions. Figure 1 depicts these types of extensions.

Figure 1: Electric Distribution Line Extensions and Service Line Extensions Depicted Pictorially<sup>38</sup>



<sup>37</sup> *ibid.*

<sup>38</sup> Source: [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/rule21/past-idf/idf-05152018\\_rules\\_2-15-16-21.pptx](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/rule21/past-idf/idf-05152018_rules_2-15-16-21.pptx).



### Electric Line Extension Allowances

Analogous to the gas line extension allowances discussed in the Phase 3 Staff Proposal that preceded the adoption of D.22-09-026, electric line extension allowances are ratepayer funds provided by an electric IOU to an applicant builder to help cover the cost of an electric line extension.<sup>39</sup> One major difference between gas line extension allowances and electric line extension allowances is that electric line extension allowances consist of a single lump sum for each new meter associated with a building project. As such, there are no separate allowances for each appliance type and there is no reliance on data from the Residential Appliance Saturation Survey (RASS), thus making the allowance formula a much simpler calculation. Section C.4 of Electric Rule 15 requires electric line extension allowances for non-residential buildings to adhere to the same basic formula as used for residential buildings, but non-residential buildings are subject to a “net revenue multiplier” that factors the net revenues expected from non-residential loads into the non-residential allowance.

Section 2.c of Electric Rule 15 states that electric line extension allowances must be calculated by dividing “Net Revenue” by “Cost of Service Factor” (CoSF). In a residential context, “Net Revenue” is calculated by first dividing the IOU’s total residential distribution revenue requirement by the total number of residential customers, resulting in the “Average Electric Residential Customer Distribution Revenue” (AERCDR). The AERCDR is then reduced by a “Revenue Cycle Service Credit” (RCSC) to provide the final Net Revenue figure. RCSCs are credits provided by the electric IOUs to customers who receive certain

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<sup>39</sup> Per Electric Rule 15, the allowance is first applied to the service extension cost, with any excess allowance subsequently applied to the distribution line extension cost.

services (i.e., metering, billing, and related services) from third-party electric service providers instead of the electric IOU.

Once “Net Revenue” is derived using the above steps, it is divided by the CoSF. The CoSF, as described in the Phase 3 Staff Proposal, “represents the annual cost of servicing one dollar’s worth of capital investment that ratepayers must pay for.”<sup>40</sup> The CoSF varies across the electric IOUs: PG&E’s annual CoSF is currently 14.76 percent,<sup>41</sup> SCE’s is 13.2 percent<sup>42</sup> and SDG&E’s is 14.11 percent.<sup>43</sup> Figure 2 provides a sample calculation for a previous iteration of SCE’s residential allowance that provides an easy-to-understand breakdown of all the inputs used to determine a residential allowance value.

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<sup>40</sup> Phase 3 Staff Proposal at 41.

<sup>41</sup> PG&E Electric Rule 15 states that its “Cost of Service Factor is the annualized utility-financed Cost of Ownership as stated in Electric Rule 2.” PG&E’s Electric Rule 2, states that its monthly Cost of Ownership for distribution facilities is 1.23 percent. Annually, this equates to 14.76 percent (1.23 percent multiplied by 12).

<sup>42</sup> Staff note that there is currently a discrepancy between the CoSF stated in SCE’s Electric Rule 15 (13.8 percent) and the CoSF used to actually calculate its current allowance (13.2 percent). In a data request response sent to CPUC Staff on June 30, 2023, SCE confirmed that this discrepancy is due to the fact that SCE updated its “Additional Cost Added Facilities Rate,” which is used to calculate the CoSF, in its 2021 General Rate Case. The updated Additional Cost Added Facilities Rate resulted in a change of the CoSF to 13.2 percent, however, SCE has not yet updated its Electric Rule 15 to reflect this change. SCE informed staff that it will submit a periodic review AL in summer of 2023, which will formally update its CoSF to 13.2 percent.

<sup>43</sup> SDG&E Electric Rule 15 at 13. The CPUC approved this CoSF in October 2022 via AL 4070-E. See: [https://tariff.sdge.com/tm2/pdf/submittals/ELEC\\_4070-E.pdf](https://tariff.sdge.com/tm2/pdf/submittals/ELEC_4070-E.pdf) at 20.



Figure 2: Sample Allowance Calculation from SCE AL 4399-E

**SOUTHERN CALIFORNIA EDISON  
RULE 15, DISTRIBUTION LINE EXTENSIONS  
RESIDENTIAL DISTRIBUTION-BASED ALLOWANCE**

Formula:

$$\frac{\text{NET REVENUE}}{\text{COST OF SERVICE FACTOR}} = \text{ALLOWANCE}$$

**Calculation of Net Revenue:<sup>1</sup>**

- $\frac{\$ 2,859,286.2}{4,502,646.2}$  Revenue Allocation (\$000) = \$635.02 Average Distribution Revenue/Customer<sup>2</sup>  
Number of Customers
- Less: \$25 Revenue Cycle Services (RCS) credits for Meter Services, Metering Reading, and Billing Services<sup>3</sup>  
\$635.02 - \$25 = **\$610.02** Average Distribution Revenue per Customer

**Calculation of Cost of Service Factor with Replacement at 60 Years at No Additional Cost:<sup>4</sup>**

**Assumptions<sup>5</sup>**

Company Financed Life	(n)	45.38
Interest Rate	(i)	2.97%
Discount Rate	(d)	7.68%

**Company Financed**

1 + i	(a)	102.97%
1 + d	(b)	107.68%
(a/b) <sup>n</sup>	(c)	0.1314
(60-n)/n	(d)	0.32
1 + c * d	(e)	1.04
COS Factor (Single Life)	(f)	1.10
60 Years Replacement		1.15
		(1.10*1.04) = 1.15
		1.15*12/100 = <b>.1380</b>

$\frac{\text{Net Revenue}}{\text{Cost of Service Factor}}$	or	$\frac{\$610.02}{0.1380}$	=	<b>\$4,420 allowance per residential unit</b>
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<sup>1</sup> Source: D.07-07-019, Ordering Paragraph 2

<sup>2</sup> Source: SCE's Implementation of Southern California Edison Company's Consolidated Revenue Requirement and Rate Change on February 1, 2021, Advice 4377-E and 4377-E-A

<sup>3</sup> Source: Schedule DA-RCSC, Direct Access Revenue Cycle Services [12 x (Schedule D's Meter Services Credits (\$0.01) + Meter Reading Services Credits (\$0.65) + Billing Services (\$1.40)) = \$25 rounded].

<sup>4</sup> Source: D.07-07-019, Ordering Paragraph 7.

<sup>5</sup> Source for Company Financed Life and Interest Rate: 2018 General Rate Case – Workpapers – Exhibit No. SCE-09 / Results of Operation / Vol. 1 / Ch. VIII. Source for Discount Rate: D.19-12-056

Residential electric line extension allowance values vary across California’s three large electric IOUs. PG&E’s residential allowance is currently \$3,255,<sup>44</sup> while SCE’s is \$5,718<sup>45</sup> and SDG&E’s is \$3,981.<sup>46</sup> Annual residential allowance expenditures have increased 72.51 percent between 2018 and 2022, with a slight dip at the height of the COVID-19 pandemic and an aggressive rebound since. Table 1 displays total residential electric line extension allowance expenditures for the last five full calendar years, as reported to Staff via data request response.

Table 1: Total Residential Electric Line Extension Allowances Provided (2018-2022)

	PG&E		SCE		SDG&E		Statewide Total	
	#	\$	#	\$	#	\$	#	\$
<b>2018</b>	3,822	\$15,429,971	29,461	\$22,183,636	944	\$22,928,311	34,227	\$60,541,918
<b>2019</b>	4,125	\$16,633,801	30,504	\$23,578,081	881	\$31,087,182	35,510	\$71,299,064
<b>2020</b>	4,431	\$16,148,767	29,138	\$21,473,034	719	\$20,078,252	34,288	\$57,700,053
<b>2021</b>	5,173	\$23,852,654	29,229	\$20,155,093	1,061	\$34,157,739	35,463	\$78,165,486
<b>2022</b>	6,158	\$29,310,971	26,102	\$18,982,292	1,049	\$56,147,724	33,309	\$104,440,987

The electric IOUs expend comparatively larger amounts annually on non-residential electric line allowances. Non-residential allowance expenditures have increased a more modest 22.53 percent between 2018 and 2022. However, non-residential allowance expenditures (\$1,004,449,971) were greater than residential allowance expenditures (\$372,147,508) and represented 72.97 percent of total allowance

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<sup>44</sup> PG&E Electric Rule 15 at 8.

<sup>45</sup> SCE Electric Rule 15 at 7.

<sup>46</sup> SDG&E Electric Rule 15 at 5.

expenditures in the same time five-year period. Table 2 displays total non-residential electric line extension allowance expenditures for the last five full calendar years, as reported to Staff via data request response.

Table 2: Total Non-Residential Electric Line Extension Allowances Provided (2018-2022)

	PG&E		SCE		SDG&E		Statewide Total	
	#	\$	#	\$	#	\$	#	\$
<b>2018</b>	3,361	\$107,429,622	4,460	\$52,024,935	357	\$26,336,051	8,178	\$185,790,608
<b>2019</b>	3,501	\$114,542,088	5,193	\$53,981,101	391	\$21,375,607	9,085	\$189,898,796
<b>2020</b>	3,720	\$111,828,629	4,084	\$51,196,909	323	\$24,771,785	8,127	\$187,797,323
<b>2021</b>	3,604	\$121,919,791	5,287	\$44,824,248	411	\$46,565,421	9,302	\$213,309,460
<b>2022</b>	3,280	\$112,919,940	5,450	\$47,667,436	402	\$67,066,408	9,132	\$227,653,784

**Electric Line Extension Refunds**

In addition to allowances, builders also receive electric line extension refunds and discounts, which are analogous to the gas line extension refunds and discounts, the rules for which were discussed in detail in the Phase 3 Staff Proposal.<sup>47</sup> In short, if the costs of extending electrical service and distribution lines exceed the provided allowance, then the builder can choose two pathways to cover the excess costs. The first is the “10-year refundable payment option,” which requires a builder to advance all the project costs above the allowance to the electric IOU. Project costs fall into “refundable” and “non-refundable” costs, which are outlined in Electric Rule 15. For refundable costs, the electric IOU will refund the builder over the course of 10 years if new electrical load is added beyond the portion of the newly extended distribution line. This pathway incentivizes builders to add more development to this segment of electric distribution line. Table 3 displays total residential electric line extension refund expenditures over the last full five calendar years, as reported to Staff via data request response.

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<sup>47</sup> Phase 3 Staff Proposal at 25-30.

Table 3: Total Residential Electric Line Extension Refunds Provided (2018-2022)

	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Statewide Total</b>
<b>2018</b>	\$280,480	\$29,321,535	\$11,539,828	\$41,141,843
<b>2019</b>	\$366,759	\$39,149,463	\$7,669,744	\$47,185,966
<b>2020</b>	\$510,113	\$32,770,530	\$6,328,664	\$39,609,307
<b>2021</b>	\$303,052	\$26,654,549	\$3,322,486	\$30,280,087
<b>2022</b>	\$1,628,536	\$26,080,385	\$6,675,608	\$34,384,529

Unlike allowances, refund expenditures in the residential sector exceed those in the non-residential sector. Between 2018 and 2022, total residential refund expenditures amounted to \$192,601,732 while total non-residential refund expenditures amounted to \$48,293,170. As such, residential refund expenditures were greater than non-residential refund expenditures and represented 79.95 percent of total refund expenditures in the same time five-year period. Table 4 displays total non-residential electric line extension refund expenditures over the last full five calendar years, as reported to Staff via data request response.

Table 4: Total Non-Residential Electric Line Extension Refunds Provided (2018-2022)

	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Statewide Total</b>
<b>2018</b>	\$2,046,382	\$1,459,157	\$4,620,170	\$8,125,709
<b>2019</b>	\$2,978,008	\$1,066,688	\$6,379,084	\$10,423,780
<b>2020</b>	\$4,485,220	\$2,793,599	\$2,871,472	\$10,150,291
<b>2021</b>	\$4,822,285	\$2,267,495	\$3,307,638	\$10,397,418
<b>2022</b>	\$2,437,157	\$4,575,989	\$2,182,826	\$9,195,972

**Electric Line Extension Discounts**

As with gas line extensions, builders extending electric lines who wish to forgo the 10-year refund option can select an alternate “50 percent discount payment option” in which the builder pays only half of the project costs that would otherwise be considered refundable. A builder would still be fully responsible for all non-refundable costs, however. By choosing this option, a builder would not receive any future refunds if further development were to occur along the newly added electric distribution line. As noted in the Phase 3 Staff Proposal, this may be more desirable for builders who are unsure if additional development will occur within the subsequent 10 years that will rely on the newly added electric distribution infrastructure that the building project in question is responsible for extending.

Table 5: Total Residential Electric Line Extension Discounts Provided (2018-2022)

	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Statewide Total</b>
<b>2018</b>	\$11,090,633	\$6,990,066	\$357,282	\$18,437,981
<b>2019</b>	\$13,546,071	\$7,545,057	\$793,571	\$21,884,699
<b>2020</b>	\$10,787,909	\$6,341,383	\$560,343	\$17,689,635
<b>2021</b>	\$19,051,160	\$5,435,848	\$939,224	\$25,426,232
<b>2022</b>	\$14,816,284	\$6,712,416	\$4,681,612	\$26,210,312

Expenditures over the last full five calendar years for both residential and non-residential discount expenditures, as reported to Staff via data request response, are displayed in Table 5 and Table 6, respectively. Between 2018 and 2022, total residential discount expenditures amounted to \$109,648,859 while total non-residential discount expenditures amounted to \$384,541,821. As such, non-residential discount expenditures were greater than residential discount expenditures and represented 77.81 percent of total discount expenditures in the same time five-year period.

Table 6: Total Non-Residential Electric Line Extension Discounts Provided (2018-2022)

	<b>PG&amp;E</b>	<b>SCE</b>	<b>SDG&amp;E</b>	<b>Statewide Total</b>
<b>2018</b>	\$63,442,228	\$5,183,250	\$105,443	\$68,730,921
<b>2019</b>	\$64,302,475	\$5,970,217	\$127,481	\$70,400,173
<b>2020</b>	\$68,490,208	\$4,794,270	\$310,742	\$73,595,220
<b>2021</b>	\$82,708,865	\$3,980,019	\$487,764	\$87,176,648
<b>2022</b>	\$78,335,256	\$5,481,406	\$822,197	\$84,638,859

## 4 Recommendations

### 4.1 Eliminate Electric Line Extension Subsidies for Mixed-Fuel New Construction

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Staff recommend eliminating electric line extension subsidies for both residential and non-residential mixed-fuel new construction in order to encourage more all-electric new construction and prospectively reduce GHG emissions in the building sector even further. More specifically, Staff recommend adding a new Section C.2.d and a new Section E.12 to Electric Rule 15 specifying that applicants for an electric line extension will be ineligible for an allowance, refund, or discount if the building project will also be extending a gas line. Section C.2.d should be added to say, “Applicant demonstrates that a new extension of service project does not include the extension of a gas distribution main in addition to the extension of an electric distribution line.” Similarly, Section E.12 should be added to say, “ELIGIBILITY. Applicant shall be ineligible to receive any refundable amount specified in either Section D.5.a or Section D.5.b, or to utilize the non-refundable discount option specified in Section D.5.c, if a new extension of service project includes the extension of a gas distribution main in addition to the extension of an electric distribution line.”

The elimination of electric line extension subsidies for mixed-fuel new construction should be implemented consistent with both Resolution G-3598 and D.22-09-026. Resolution G-3598 ordered California’s gas IOUs to ensure that their tariffs reflect “that the applicant extending the gas pipelines is required to pay for the final actual costs of the extension and not the initial estimated costs only” and that the applicant “shall be reimbursed by the utility when the estimated cost is higher than the final actual cost, or, be required to pay the additional amount when the final actual cost is higher than the estimated cost.”<sup>48</sup> OP 3 of D.22-09-026 established an application process by which California’s gas IOUs can request an exemption from the elimination of all gas line extension subsidies for non-residential building projects that meet the three criteria established in Conclusion of Law 3 of the same decision. As such, Staff recommend requiring mixed-fuel new construction projects to pay final actual costs for any *electric* line extension in addition to any *gas* line extension, and to exempt any mixed-fuel new construction project from the recommended electric line subsidy elimination if granted an exemption from the gas line subsidy

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<sup>48</sup> Resolution G-3598 at 14.

elimination. To better track how the market is responding to Staff’s recommendations, the electric IOUs should further be required to report in May of each year – starting May 1, 2024 – on electric line extension expenditures broken down separately by customer class for both mixed-fuel new construction and all-electric new construction, including (1) total electric line extension requests from applicant builders, (2) total electric line extension estimated costs (refundable and non-refundable amounts), (3) total electric line extension actual costs (refundable and non-refundable amounts), and (4) total subsidies (allowances, refunds, and discounts). This data will be of further help in future General Rate Case filings so that future revenue requests from the IOUs can be more easily scrutinized.

To allow ratepayer funding to be used to help subsidize a building project that would further extend gas infrastructure is contrary to the direction that state policy is moving in to meet California’s climate goals. New gas infrastructure is likely to quickly become a stranded asset that will only add to the future cost burden of gas customers who are unable or unwilling to electrify their homes and workplaces. Finding of Fact (FoF) 16 of D.22-09-026 found that eliminating gas line extension subsidies for all customer classes “is a logical step toward building decarbonization, consistent with state objectives and the Commission’s policy frameworks”<sup>49</sup> that will “further the state’s climate goals of reducing GHG emissions 40 percent by 2030 and achieving carbon neutrality by 2045 or sooner”<sup>50</sup> and FoF 17 of D.22-09-026 found that eliminating gas line extension subsidies for all customer classes “will improve overall quality of life (GHG emissions reductions, ratepayer savings, benefits to low income customers), and provide greater certainty for the builder community and the contractor community.”<sup>51</sup> Eliminating all remaining subsidies that encourage the use of gas is consistent with these findings.

As was the case with the elimination of gas line extension subsidies effectuated by D.22-09-026, eliminating electric line extension subsidies for mixed-fuel new construction will force builders to shoulder greater expense if they choose to construct a building that uses gas. The elimination of electric line extension subsidies for mixed-fuel new construction will not eliminate the ability of a builder to extend gas service to a new building, but it will make mixed-fuel new construction projects less financially appealing and will remove the last remaining ratepayer incentives encouraging such construction. As such, the builder community will be more likely to gravitate toward all-electric new construction, which, in turn, will help ease adoption of an all-electric California Energy Code in a future code update cycle, after which all discussion of

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<sup>49</sup> D.22-09-026 at 76.

<sup>50</sup> *ibid.*

<sup>51</sup> *ibid.*



increased costs associated with mixed-fuel new construction would become moot. An increase in all-electric new construction will, in turn, achieve immediate GHG emissions reductions that will only grow as California’s electricity becomes cleaner over time.

All-electric new construction is expected to be generally less expensive than mixed-fuel development due to the elimination of any expense associated with installing gas infrastructure. According to CARB’s 2022 Scoping Plan update, “Several studies estimate that the costs of constructing all-electric homes are lower than constructing mixed-fuel new homes, primarily due to the avoided costs of fossil gas infrastructure at the building site, with cost-savings in the range of \$2,000 to \$10,000 per unit.”<sup>52</sup> CARB adds, “Statewide actions focused on strengthening California’s State standards and local building measures to support all-electric new construction provide an important opportunity because it is less costly to build, avoids new pipeline costs to ratepayers, and avoids expensive retrofits later.”<sup>53</sup>

### **Potential Cost Impact to Residential New Construction**

The adoption of Staff’s recommendation to eliminate electric line extension subsidies for mixed-fuel residential new construction will have no cost impact to builders if future homes are built all-electric, as intended. If, however, a builder opts to still build mixed-fuel, Staff anticipate increased costs as a result of having to shoulder the full expense of an electric line extension rather than receive a partial subsidy. That greater expense, in turn, will likely be passed on at the point of sale for a new building or simply absorbed if the builder intends to own and/or occupy the building.

Any mixed-fuel residential property price increase resulting from increased costs to builders should be small but appreciable. As of June 2023, the median sale price of a residential building in California was \$798,600.<sup>54</sup> Electric line extension allowances currently stand at \$5,718 for SCE, \$3,255 for PG&E, and \$3,241 for SDG&E, and those allowances represent 0.716 percent, 0.408 percent, and 0.406 percent of the June 2023 statewide median residential building sale price, respectively. Thus, if a newly constructed residential building sells at the June 2023 statewide median sale price, eliminating electric line extension allowances for mixed-fuel new construction will increase a home’s cost by an average of \$4,071.33 or 0.510 percent across the service territories of the large electric IOUs. As of June 2023, the cost of building a new home in California is roughly comparable to the median home sale price, with construction costs in major

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<sup>52</sup> See: <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-appendix-f-building-decarbonization.pdf> at 15-16.

<sup>53</sup> *ibid* at 16.

<sup>54</sup> See: <https://www.redfin.com/state/California/housing-market>.

metropolitan areas ranging from as low as \$300 per square foot in Sacramento<sup>55</sup> and San Jose (i.e., \$600,000 for a 2,000 square foot home) to as high as \$800 per square foot in San Francisco and San Diego (i.e., \$1,600,000 for a 2,000 square foot home).<sup>56</sup>

A larger mixed-fuel residential property price impact can be expected from eliminating electric line extension refunds vis-à-vis eliminating electric line extension allowances. Using the same basic logic outlined in the prior Phase 3 Staff Proposal, total residential electric line extension refunds for 2018-2022 were \$153,976,462 for SCE, \$3,088,940 for PG&E, and \$35,536,330 for SDG&E, which totals to \$192,601,732, averages to \$38,520,346 annually over the five-year period, and represents 51.75 percent of the \$74,429,502 annual average for total residential electric line extension allowance expenditures for all three large electric IOUs over the same time period. If the previously computed average residential property price impact associated with eliminating the electric line extension allowance (i.e., \$4,071.33) is reduced to 51.75 percent of that figure, the resulting number is \$2,106.91. Because refunds are currently dispensed over 10 years whereas property sales are a single transaction, Staff find it reasonable to multiply \$2,106.91 by 10 (i.e., \$21,069.10). That \$21,069.10 represents 2.638 percent of \$798,600 (i.e., the June 2023 median sale price of a residential building in California), which is the estimated residential property price impact from eliminating electric line extension refunds for mixed-fuel new construction.

The anticipated mixed-fuel residential property price impact from eliminating electric line extension discounts is minimal. In the case of residential electric line extension discounts, total expenditures for 2018-2022 were \$33,024,770 for SCE, \$69,292,057 for PG&E, and \$7,332,032 for SDG&E, which totals to \$109,648,859, averages to \$21,929,772 annually, and represents 29.46 percent of the \$74,429,502 annual average for total residential electric line extension allowance expenditures for all three large electric IOUs over the same time period. If the previously computed residential property price impact associated with eliminating the electric line extension allowance (i.e., \$4,071.33) is reduced to 29.46 percent of that figure, the resulting number is \$1,199.41. That \$1,199.41 represents 0.150 percent of \$798,600 (i.e., the June 2023 median sale price of a residential building in California), which is the estimated property price impact from eliminating electric line extension discounts for mixed-fuel new construction.

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<sup>55</sup> Staff note that Sacramento residents are not served electricity by an IOU, thus making Sacramento new construction costs less relevant to Staff's analysis here.

<sup>56</sup> See: <https://www.homelight.com/blog/buyer-cost-to-build-a-house-in-california>.

The total anticipated rise in average mixed-fuel residential property prices resulting from adoption of Staff's recommendations is approximately \$26,339.84 (or 3.298 percent) overall: \$4,071.33 (or 0.510 percent) from eliminated electric line extension allowances, \$21,069.10 (or 2.638) percent from eliminated electric line extension refunds, and \$1,199.41 (or 0.150) percent from eliminated electric line extension discounts. Staff expect that eliminating electric line extension subsidies for residential mixed-fuel building projects will initially save ratepayers significant amounts of money due to the persistence of mixed-fuel new construction before eventually seeing those savings dissipate as the builder industry transitions to all-electric new construction. While it is impossible to estimate precisely what percentage of residential buildings will be built all-electric moving forward without an all-electric new construction mandate, if 50 percent of homes are built mixed-fuel following adoption of Staff's recommendations, that 50 percent reduction in electric line extension subsidies would – if based on 2022 residential expenditure figures – amount to an annual savings of \$52,220,494 in allowances, \$17,192,265 in refunds, and \$13,105,156 in discounts, or \$82,517,915 overall.

### **Potential Cost Impact to Non-Residential New Construction**

Non-residential electric line extension allowances are computed using the same formula as for residential electric line extensions. However, because of the net revenue multiplier used for non-residential new construction electric line extension allowance computation, the ultimate allowance provided for a non-residential building is ultimately dependent on that building's anticipated electricity consumption. As such, it is difficult to accurately estimate how eliminating electric line extension subsidies for mixed-fuel non-residential new construction may ultimately impact builder costs. Nevertheless, it is still possible to derive an estimate.

Staff estimate an average non-residential new building cost by using the percentage share of non-residential electric line extension allowance expenditures (72.97 percent) vis-à-vis the percentage share of residential electric line extension allowance expenditures (27.03 percent) as a proxy for building cost. If the June 2023 median sale price of a residential building in California (\$798,600) represents 27.03 percent of both the representative residential cost and the representative non-residential cost combined, then the estimated representative non-residential cost is \$2,155,895. Data submitted by the IOUs indicates that the average annual non-residential electric line extension provided for 2018-2022 was \$10,202 for SCE, \$32,557 for PG&E, and \$98,787 for SDG&E, and those allowances represent 0.473 percent, 1.510 percent, and 4.582 percent of the estimated representative non-residential building cost, respectively. Thus, if a newly constructed residential building sells at the estimated representative non-residential building cost, eliminating

electric line extension allowances for mixed-fuel new construction will increase non-residential building cost by an average of \$47,182 or 2.188 percent across the service territories of the large electric IOUs.

A smaller mixed-fuel non-residential building cost impact can be expected from eliminating electric line extension refunds vis-à-vis eliminating electric line extension allowances. Using the same basic logic outlined in the prior Phase 3 Staff Proposal, total non-residential electric line extension refunds for 2018-2022 were \$12,162,928 for SCE, \$16,769,052 for PG&E, and \$19,361,190 for SDG&E, which totals to \$48,293,170, averages to \$9,658,634 annually over the five-year period, and represents 4.81 percent of the \$200,889,994 annual average for total non-residential electric line extension allowance expenditures for all three large electric IOUs over the same time period. If the previously computed average non-residential building cost impact associated with eliminating the electric line extension allowance (i.e., \$47,182) is reduced to 4.81 percent of that figure, the resulting number is \$2,269.45. Because refunds are currently dispensed over 10 years whereas property sales are a single transaction, Staff find it reasonable to multiply \$2,269.45 by 10 (i.e., \$22,694.50). That \$22,694.50 represents 1.053 percent of \$2,155,895 (i.e., the estimated representative non-residential building cost), which is the estimated non-residential building cost impact from eliminating electric line extension refunds for mixed-fuel new construction.

The anticipated mixed-fuel non-residential building cost impact from eliminating electric line extension discounts is similarly to the estimated cost impact from eliminating refunds. In the case of non-residential electric line extension discounts, total expenditures for 2018-2022 were \$25,409,162 for SCE, \$357,279,032 for PG&E, and \$1,853,627 for SDG&E, which totals to \$384,541,821, averages to \$76,908,364 annually, and represents 38.28 percent of the \$200,889,994 annual average for total non-residential electric line extension allowance expenditures for all three large electric IOUs over the same time period. If the previously computed average non-residential building cost impact associated with eliminating the electric line extension allowance (i.e., \$47,182) is reduced to 38.28 percent of that figure, the resulting number is \$18,061.27. That \$18,061.27 represents 0.838 percent of \$2,155,895 (i.e., the estimated representative non-residential building cost), which is the estimated non-residential building cost impact from eliminating electric line extension discounts for mixed-fuel new construction.

The total anticipated rise in average mixed-fuel non-residential building costs resulting from adoption of Staff's recommendations is approximately \$87,937.77 (or 4.079 percent) overall: \$47,182 (or 2.188 percent) from eliminated electric line extension allowances, \$22,694.50 (or 1.053 percent) from eliminated electric line extension refunds, and \$18,061.27 (or 0.838 percent) from eliminated electric line extension discounts. Staff expect that eliminating electric line extension subsidies for non-residential mixed-

fuel building projects will initially save ratepayers significant amounts of money due to the persistence of mixed-fuel new construction before eventually seeing those savings dissipate as the builder industry transitions to all-electric new construction. While it is impossible to estimate precisely what percentage of non-residential buildings will be built all-electric moving forward without an all-electric new construction mandate, if 50 percent of those buildings are built mixed-fuel following adoption of Staff's recommendations, that 50 percent reduction in electric line extension subsidies would – if based on 2022 non-residential expenditure figures – amount to an annual savings of \$113,826,892 in allowances, \$4,597,986 in refunds, and \$42,319,430 in discounts, or \$160,744,308 overall.

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PU Code Section 783(b)<sup>57</sup> states that whenever the CPUC “institutes an investigation into the terms and conditions for the extension of services provided by gas and electrical corporations to new or existing customers, or considers issuing an order or decision amending those terms or conditions, the commission shall make written findings” on seven distinct issues. To aid the CPUC in making such written findings, Staff address those seven issues as follows:

***(1) The economic effect of the line and service extension terms and conditions upon agriculture, residential housing, mobile home parks, rural customers, urban customers, employment, and commercial and industrial building and development.***

- a. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will make any new residential building that uses gas approximately 3.298 percent more expensive to develop, will make any new non-residential building that uses gas approximately 4.079 percent more expensive to develop, and that the increased expense would be either passed on at the point of sale or simply absorbed if the builder is to own and/or occupy the building. The increased cost of mixed-fuel new construction would impact all customer classes across all regions of California. All-electric new construction, however, would generally be more affordable and positive in terms of economic effect. While a comprehensive analysis of residential and non-residential bill impacts from heat pump Heating, Ventilation, and Air Conditioning (HVAC) adoption has not yet been done by the CPUC, Resolution E-5233<sup>58</sup> analyzed residential bill impacts from HPWH adoption and found that the vast majority of

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<sup>57</sup> See: [https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=783&lawCode=PUC](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=783&lawCode=PUC).

<sup>58</sup> See: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K779/499779180.docx>.

California customers will see bill savings from HPWH adoption if they select a tariff that best suits their needs. Customers in certain climate regions, however, may see modest bill increases, including PG&E Region Y (58,300 customers), SCE Region 16 (99,868 customers), and SDG&E Mountain Region (14,375 customers). These three rural regions are mountainous and experience colder winters, suggesting that the CPUC may need to tailor solutions specifically for customers of these regions such that building electrification becomes a more economically advantageous solution.

***(2) The effect of requiring new or existing customers applying for a service line extension to an electrical or gas corporation to provide transmission or distribution facilities for other customers who will apply to receive line and service extensions in the future.***

- b. Staff do not recommend any changes that would require applicant builders to provide transmission or distribution facilities beyond what they would normally be expected to under existing rules. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will result in builders increasing their rate of all-electric new construction. As such, builders of future mixed-fuel new construction that is further away from a point of gas pipeline interconnection can expect to pay more than they otherwise would be expected to if they must pay for additional trenching and infrastructure that neighboring all-electric buildings did not need and thus did not help pay to extend from its current cut-off location.

***(3) The effect of requiring a new or existing customer applying for an extension to an electrical or gas corporation to be responsible for the distribution of, reinforcements of, relocations of, or additions to that gas or electrical corporation.***

- a. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will result in increased costs for all new building projects anticipated to use gas. Depending on what infrastructure upgrades are necessary to extend gas and electric service to the mixed-fuel new construction, the increased costs would vary.

***(4) The economic effect of the terms and conditions upon projects, including redevelopment projects, funded or sponsored by cities, counties, or districts.***

- a. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will not result in changes specific to projects sponsored by cities, counties, or districts, as Staff are not proposing any such changes. Should those projects be constructed all-electric, they will likely be less expensive than they are today, and should

those projects be constructed mixed-fuel, they will likely be only slightly more expensive than they are today.

***(5) The effect of the line and service extension regulations, and any modifications to them, on existing ratepayers.***

- a. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will result in an initial net savings to electric ratepayers due to the IOUs no longer providing electric line extension subsidies for a portion of future building projects. The extent to which ratepayers can expect to continue seeing net savings, however, is ultimately dependent on the extent to which builders continue to build mixed-fuel. If all new construction were to be all-electric, there would be a net neutral impact to existing customers, as any savings will derive exclusively from mixed-fuel new construction projects.

***(6) The effect of the line and service extension regulations, and any modifications to them, on the consumption and conservation of energy.***

- a. Staff expect that eliminating electric line extension subsidies for mixed-fuel new construction will result in less gas consumption and more electricity consumption. Because gas consumed in California is overwhelmingly non-renewable and electricity is increasingly carbon-free, the adoption of Staff's recommendations would result in fewer GHG emissions. However, additional electrical load will gradually result in the need for additional electricity procurement and distribution system upgrades, and could pose challenges to managing winter peak electric demand if not properly planned for. Inversely, decreasing gas demand will result in fewer customers paying to maintain the existing gas system, which could lead to gas bill increases. However, the CPUC opened R.20-01-007 in 2020 to help perform long-term gas system planning that could help avert negative gas ratepayer impact resulting from increased energy efficiency, fuel substitution (e.g., building electrification), and fuel switching (e.g., using hydrogen<sup>59</sup> instead of gas to power operations).

***(7) The extent to which there is cost-justification for a special line and service extension allowance for agriculture.***

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<sup>59</sup> This assumes that the provision of hydrogen would not be an IOU activity, which is still to be determined.



- a. Staff do not recommend any special allowance for agricultural customers and do not find there to be cost-justification for such an allowance. Agricultural operations typically limit their use of pipeline gas to activities such as greenhouse heating and grain drying, which can be done using electricity and should not continue to rely on gas moving forward. Additionally, the anticipated property price increase anticipated for mixed-fuel new construction that can be expected if Staff's recommendations are adopted is insufficiently high to merit a special allowance for any customer class.

PU Code Section 783(d) requires that any new amendment to the terms and conditions governing the extension of services provided by gas and electrical corporations to new or existing customers “shall become effective on July 1 of the year that follows the year when the new order or decision is adopted by the commission, so as to ensure that the public has at least six months to consider the new order or decision.”<sup>60</sup> Based on this provision, if the CPUC adopts Staff's recommendation to eliminate electric line extension subsidies for mixed-fuel new construction in 2023, the change will take effect on July 1, 2024.

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<sup>60</sup> See: [https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=783&lawCode=PUC](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=783&lawCode=PUC).



## 5 Conclusion

California must accelerate its efforts to electrify homes and businesses if it is to succeed in meeting its ambitious climate goals. According to the International Energy Agency, 2022 marked the first year on record in which heat pump HVAC sales in the United States exceeded gas furnace sales, with heat pump HVAC now accounting for 53 percent market share.<sup>61</sup> Part of this trend is being driven by new interest in California.<sup>62</sup> However, many more heat pumps will need to be installed in order to meet Governor Gavin Newsom’s directive to install six million heat pumps and have three million climate-ready homes by 2030.<sup>63</sup> Certain California builders like KB Home have begun embracing all-electric new construction by developing all-electric neighborhoods like the Durango at Shadow Mountain development in Menifee,<sup>64</sup> but the builder community will need a stronger price signal in order to stop extending gas lines for good. Adoption of this Staff Proposal will make an important contribution toward furthering the goal of building decarbonization and will complement ongoing efforts at the CEC, CARB, and elsewhere to achieve a sustained reduction in GHG emissions from buildings across California.

The CPUC should use its broad regulatory authority to act decisively in support of building decarbonization. Staff’s recommendations are consistent with the direction of California climate policy and would meaningfully accelerate the pace of building decarbonization statewide while helping position California to meet its long-term goal of becoming carbon-neutral by 2045. Adoption of Staff’s recommendations would likely have a small but appreciable impact on California building costs that would help reduce GHG emissions and save ratepayers money without limiting any builder from seeking a gas line extension if one is still desired. Additionally, because the proposed changes would not take effect until July 1, 2024 if adopted in 2023, the builder community would have adequate time to transition their business practices. As such, Staff’s recommendations are prudent, reasonable, and should be adopted as proposed.

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<sup>61</sup> See: <https://www.iea.org/commentaries/global-heat-pump-sales-continue-double-digit-growth>.

<sup>62</sup> See: <https://www.canarymedia.com/articles/heat-pumps/chart-americans-bought-more-heat-pumps-than-gas-furnaces-last-year>.

<sup>63</sup> See: <https://www.gov.ca.gov/wp-content/uploads/2022/07/07.22.2022-Governors-Letter-to-CARB.pdf>.

<sup>64</sup> See: <https://www.kqed.org/science/1982984/californias-first-all-electric-neighborhood-may-be-future-of-green-living>.

**(END OF APPENDIX A)**