

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company for Approval of its Residential Rate Design Window Proposals, including to Implement a Residential Default Time-Of-Use Rate along with a Menu of Residential Rate Options, followed by addition of a Fixed Charge Component to Residential Rates (U39E)

Application 17-12-011

And Related Matters.

Application 17-12-012  
Application 17-12-013

**PREPARED SUPPLEMENTAL TESTIMONY OF  
WILLIAM G. SAXE  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**MARCH 29, 2019**



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**PREPARED SUPPLEMENTAL TESTIMONY OF**  
**WILLIAM G. SAXE**

**I. OVERVIEW AND PURPOSE**

The purpose of my Supplemental Testimony is to update San Diego Gas & Electric Company's ("SDG&E") marginal distribution customer costs to reflect the costs presented in SDG&E's 2019 General Rate Case ("GRC") Phase 2 (Application ["A."] 19-03-002), which was filed on March 4, 2019. These updated marginal distribution customer costs, that reflect certain changes, including the impact from the Tax Cuts and Jobs Act ("TCJA") signed into federal law on December 22, 2017, will be used as the cost basis for the residential fixed charge and minimum bill proposals in this Application. Specifically, my supplemental testimony provides the updated marginal distribution cost basis for the proposed residential fixed charge, updated minimum bill, and higher fixed charge rate option, as described in the Supplemental Testimonies of SDG&E witnesses Jeff P. Stein and Jesse B. Emge. Marginal cost is the change in costs caused by providing one additional unit of a good or service. In the electric utility context, marginal cost is defined as the change in costs to provide electric service to customers. The California Public Utilities Commission ("CPUC") has relied on marginal costs as the basis for revenue allocation and rate design development for the different customer classes for many years.

In Decision ("D.") 17-09-035, the CPUC adopted the categories of fixed costs that can be proposed for recovery in a residential fixed charge ("Eligible Fixed Costs").<sup>1</sup> D.17-09-035 directed the California investor-owned-utilities ("IOUs") to show, in their 2018 Rate Design Window ("RDW"), the range of Eligible Fixed Cost results based on the costs and

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<sup>1</sup> D.17-09-035 (arising from Application ("A.") 16-06-013).

1 methodologies that are consistent with the marginal distribution customer costs presented in their  
2 most recent GRC Phase 2 proceeding.<sup>2</sup> In addition, this decision directed the IOUs to show in  
3 their 2018 RDW proceeding the range of Eligible Fixed Costs results based on the following four  
4 marginal distribution customer cost methodologies: (1) Rental Method; (2) New Customer Only  
5 (“NCO”) Method; (3) Adjusted Rental Method #1 (“ARM1”); and (4) Adjusted Rental Method  
6 #2 (“ARM2”).<sup>3</sup>

7 Section II of my Supplemental Testimony describes the marginal distribution customer  
8 cost methodologies used to calculate SDG&E’s Eligible Fixed Costs, namely SDG&E’s  
9 proposed Rental Method and the additional NCO, ARM1, and ARM2 methodologies. It also  
10 explains that SDG&E has continuously used the Rental Method to develop marginal distribution  
11 costs in its proceedings because the Rental Method sends a more accurate and more reasonable  
12 price signal on the cost of providing an individual customer access to the electrical system.

13 Section III of my Supplemental Testimony presents the development of marginal  
14 distribution customer costs consistent with the marginal distribution customer costs proposed in  
15 SDG&E’s 2019 GRC Phase 2 (A.19-03-002). Marginal distribution customer costs reflect the  
16 cost of adding an additional customer to the electric distribution grid. These marginal costs are  
17 composed of distribution costs associated with final-line transformers, service drops, and meters  
18 (“TSM”), and customer service costs, also referred to as revenue cycle services (“RCS”) costs.  
19 As noted in the Supplemental Testimony of SDG&E witness Mr. Stein, SDG&E proposes  
20 implementation of the residential fixed charges in March 2020. The marginal distribution cost  
21 studies submitted in its 2019 GRC Phase 2 proceeding reflect 2020 costs, which provide the  
22 distribution cost-basis for SDG&E’s higher fixed charge rate option proposal, as described in the

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<sup>2</sup> *Id.* at 42.

<sup>3</sup> *Id.* at 60, Ordering Paragraph (“OP”) 1.

1 Supplemental Testimonies of SDG&E witnesses Mr. Stein and Dr. Emge. Attachment A to my  
2 Supplemental Testimony presents SDG&E’s marginal distribution customer costs based on the  
3 Rental, NCO, ARM1, and ARM2 methodologies.

4 Section IV of my Supplemental Testimony presents the development of the Eligible  
5 Fixed Costs proposed for recovery in a residential fixed charge pursuant to D.17-09-035. In  
6 D.17-09-035, the CPUC adopted the categories of costs that could be included in Eligible Fixed  
7 Costs. Specifically, the CPUC determined that a residential fixed charge could include average  
8 meter and customer service costs, along with the minimum cost for service drops and final-line  
9 transformers, the cost of which are based on the “minimum observed costs” for the residential  
10 class.<sup>4</sup> These values provide the distribution cost basis for SDG&E’s residential fixed charge  
11 and minimum bill proposals, as described in the Supplemental Testimonies of SDG&E witnesses  
12 Mr. Stein and Dr. Emge. Attachment B to my Supplemental Testimony presents SDG&E’s  
13 Eligible Fixed Costs based on the Rental, NCO, ARM1, and ARM2 methodologies.

14 **II. MARGINAL DISTRIBUTION CUSTOMER COST METHODOLOGIES**

15 **A. Methodologies**

16 As noted above, pursuant to D.17-09-035, the SDG&E TSM marginal costs presented in  
17 this proceeding are calculated based on four different marginal distribution customer cost  
18 methodologies:<sup>5</sup>

19 1) Rental Method

20 The Rental Method calculates the unit TSM marginal customer access cost (\$/customer)  
21 based on the capital-related TSM costs of connecting all customers to the grid multiplied by an  
22 annualized value of such long-run costs by applying Real Economic Carrying Charge (“RECC”)

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<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

1 factors over the life of the TSM investment. The RECC Factors used to calculate the annualized  
2 TSM in the Rental Method are based on 2018 financial assumptions, including impacts from the  
3 TCJA, and thus, the annualized TSM calculations reflect the impacts from this Federal Tax  
4 Legislation.

#### 5 2) NCO Method

6 The NCO Method uses the same capital-related TSM costs per customer as the Rental  
7 Method, but these costs are multiplied by present value revenue requirement (“PVRR”) factors  
8 (for the present value of revenue requirements for the lives of the TSM equipment) and by the  
9 number of forecasted new and replacement customer connections by customer class divided by  
10 total customers in that customer class. The PVRR Factors used to calculate the present value of  
11 the TSM equipment costs are based on 2018 financial assumptions, including impacts from the  
12 TCJA, and thus, the present value of TSM used in the calculations reflect the impacts from this  
13 Federal Tax Legislation.

#### 14 3) ARM1 Method

15 The ARM1 Method takes the TSM marginal customer access cost (\$/customer)  
16 developed in the Rental Method and adjusts the results by a factor equal to TSM rate base  
17 divided by TSM incremental costs. The RECC Factors used to calculate the annualized TSM in  
18 the ARM1 Method are based on 2018 financial assumptions, including impacts from the TCJA,  
19 and thus, the annualized TSM calculations reflect the impacts from this Federal Tax Legislation.

#### 20 4) ARM2 Method

21 The ARM2 Method takes the TSM marginal customer access cost (\$/customer)  
22 developed in the Rental Method and adjusts the results by a factor equal to the sum of TSM  
23 incremental costs minus TSM accumulated depreciation divided by TSM incremental costs. The

1 RECC Factors used to calculate the annualized TSM in the ARM2 Method are based on 2018  
2 financial assumptions, including impacts from the TCJA, and thus, this annualized TSM  
3 calculation reflects the impacts from the Federal Tax Legislation.

4 **B. Support for Rental Method Adoption**

5 As stated in the Opening Comments and Joint Reply Comments provided in the  
6 proceeding addressing Eligible Fixed Cost categories, the IOUs support the Rental Method as the  
7 most appropriate methodology for calculating marginal distribution  
8 customer costs.<sup>6</sup> SDG&E has consistently proposed to use the Rental Method to calculate unit  
9 marginal distribution customer costs in GRC Phase 2 proceedings because the Rental Method  
10 sends a more accurate and more reasonable price signal on the cost of providing an individual  
11 customer access to the electrical system. In the billing of utility electricity rates, all customers  
12 pay a “rental” price for the distribution customer-related equipment or TSM costs necessary to  
13 maintain a customer account. For instance, residential customers do not pay the upfront  
14 incremental cost of the TSM assets necessary to provide them electric service but rather  
15 customers pay electric rates in their monthly utility bills to recover the cost of TSM assets.  
16 Therefore, by paying electric utility rates through monthly bills, customers are essentially paying  
17 a monthly rental price for the TSM equipment installed to allow them to receive electric service.

18 The Rental Method follows this “rental” process by annualizing the cost of the TSM  
19 investments required to maintain the accounts of all customers and then converting this annual  
20 cost into a monthly amount. Conversely, the NCO Method understates the marginal distribution  
21 customer costs because this method takes the full cost per customer to hook up a new customer

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<sup>6</sup> A.16-06-013, *Opening Comments and Response to Appendix A Questions of Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company* (January 20, 2017) at 19-22; and A.16-06-013, *Joint Reply Comments of Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas and Electric Company* (February 24, 2017) at 12-14.

1 (not the annualized cost), multiplies that value only by the number of estimated new and  
2 replacement customers for the customer class, and then divides this amount by the total number  
3 of customers in that class to get the unit cost per customer. This results in inefficient price  
4 signals to customers considering new hookups because this approach assures that new customers  
5 will never pay the full costs incurred to hook up to the utility's electric system. Also, because  
6 the NCO Method calculation relies on the forecasted number of new and replacement customers,  
7 the resulting unit cost for TSM under the NCO Method varies considerably depending on the  
8 assumed customer class growth rates and not necessarily in response to changes in the TSM  
9 costs.

10       Regarding ARM1 and ARM2, these methods start with Rental Method results and thus,  
11 these methods correctly annualize the TSM costs to develop the TSM marginal costs. The  
12 CPUC Energy Division introduced ARM1 and ARM2 in the proceeding addressing Eligible  
13 Fixed Cost categories<sup>7</sup> in an attempt to reach a middle ground between the Rental and NCO  
14 methodologies by adjusting the Rental Method results by historical rate base or accumulated  
15 depreciation of TSM costs, respectively. However, applying these accounting adjustments to the  
16 Rental Method results in ARM1 and ARM2 diminishing the efficiency of the marginal price  
17 signal because these methodologies adjust the incremental TSM costs by historical cost  
18 information.

19       For the reasons stated above, SDG&E proposes the use of the Rental Method to calculate  
20 TSM marginal costs in this proceeding.

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<sup>7</sup> A.16-06-013.



1 **III. SDG&E MARGINAL DISTRIBUTION CUSTOMER COSTS**

2 In its 2019 GRC Phase 2 (A.19-03-002), SDG&E proposed marginal distribution  
3 customer costs for the purpose of distribution revenue allocation and rate design. As noted  
4 above, marginal distribution customer costs represent the cost of providing an individual  
5 customer access to electrical service. The marginal distribution customer costs proposed were  
6 composed of costs associated with capital investments in TSM, including various loaders applied  
7 to these investments, along with customer service costs.

8 The customer TSM investment costs for each customer type, customer size, and service  
9 voltage level were calculated using a detailed analysis of each individual TSM component. Cost  
10 estimates for the various customer demand and service levels were developed for: (a) final-line  
11 transformers based on transformer size and the average number of customers per transformer; (b)  
12 service drops based on wire size, number of runs, average service length, and compression lug  
13 wires; and (c) meters based on size and type (single- or three-phase). The TSM investment cost  
14 for each customer group was based on actual 2017 TSM material, labor, and overhead costs  
15 escalated into 2020 dollars, and applied to engineering estimates for the TSM equipment needs  
16 by customer size and class.

17 To determine the average TSM costs for each customer class, customers are grouped by  
18 maximum annual demand levels (in kilowatts [“kW”]). Once grouped, the TSM costs for each  
19 customer’s demand level are calculated by multiplying the number of customers per demand  
20 level by the estimated demand-specific cost for each TSM component. A weighted average is  
21 then calculated for each TSM component, which produces the average TSM cost per customer  
22 class. Once developed, the TSM costs are multiplied by the general plant (“GP”), working  
23 capital (“WC”), and operations & maintenance (“O&M”) loading factors.

1 Attachment A presents the marginal distribution customer costs based on the Rental  
2 Method that SDG&E proposed in its 2019 GRC Phase 2 proceeding (A.19-03-002). In addition,  
3 for comparison purposes, Attachment A presents the illustrative marginal distribution customer  
4 cost results based on the NCO, ARM1, and ARM2 methodologies. These marginal distribution  
5 customer cost calculations are based on the costs associated with TSM and customer service  
6 costs scaled by the applicable equal percent of marginal cost (“EPMC”) distribution allocation  
7 factor to ensure recovery of the SDG&E authorized distribution revenue requirement. My  
8 workpapers for this supplemental testimony provide the calculation of the GRC Phase 2 marginal  
9 distribution customer costs by methodology, as presented in Attachment A. As discussed above,  
10 the Rental Method is the most appropriate methodology for calculating marginal TSM costs.  
11 Accordingly, SDG&E proposes that the Rental Method be used to develop the marginal  
12 distribution customer costs adopted in this proceeding.

#### 13 **IV. SDG&E ELIGIBLE FIXED COSTS**

14 As noted above, D.17-09-035 adopted the Eligible Fixed Costs categories for recovery in  
15 a residential fixed charge in this RDW proceeding. Specifically, the CPUC determined that  
16 Eligible Fixed Costs could include average meter and customer service costs, along with the  
17 minimum cost for service drops and final-line transformers, based on the “minimum observed  
18 costs” for the residential class.<sup>8</sup>

19 Pursuant to D.17-09-035, the Eligible Fixed Costs calculated by SDG&E are based on the  
20 costs and methodologies presented in SDG&E’s most recent GRC Phase 2 proceeding (SDG&E  
21 2019 GRC Phase 2, A.19-03-002). My Prepared Direct Testimony (Chapter 5) in that  
22 proceeding presented the forecasted average marginal distribution customer costs for the

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<sup>8</sup> D.17-09-035 at 60, OP 1.

1 residential customer class that includes TSM costs that vary by customer size, voltage level, and  
2 equipment type.<sup>9</sup> Consistent with D.17-09-035, the meter and customer service costs included in  
3 the Eligible Fixed Costs are based on the average costs presented in SDG&E’s 2019 GRC Phase  
4 2. Also, consistent with D.17-09-035, SDG&E included the “minimum observed costs” for  
5 service drops and final-line transformers based on the cost data provided in my 2019 GRC Phase  
6 2 Direct Testimony (Chapter 5) workpapers.<sup>10</sup> As directed in D.17-09-035, the three California  
7 IOUs jointly proposed that the “minimum observed costs” for service drops and final-line  
8 transformers be based on the 20<sup>th</sup> percentile of each IOU’s service drops and final-line  
9 transformers cost distribution.<sup>11</sup> For SDG&E, the 20<sup>th</sup> percentile of service drops and final-line  
10 transformers costs reflect the costs for the smallest service drops and final-line transformers  
11 equipment needed to serve SDG&E’s smallest residential customers that have demand between  
12 0-2 kW, which represent approximately 28% of SDG&E’s residential customers.

13 Attachment B presents SDG&E’s proposed Eligible Fixed Costs based on the Rental  
14 Method, which consist of the average meter and customer service costs, and minimum observed  
15 service drops and final-line transformers costs from SDG&E’s 2019 GRC Phase 2. In addition,  
16 for comparison purposes, Attachment B presents illustrative Eligible Fixed Costs based on the  
17 NCO, ARM1, and ARM2 methodologies. My workpapers for this supplemental testimony  
18 provide the calculation of the Eligible Fixed Costs by methodology, as presented in Attachment  
19 B. As discussed above, the Rental Method is the most appropriate methodology for calculating  
20 marginal TSM costs. For this reason, SDG&E proposes that the Rental Method be used to

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<sup>9</sup> A.19-03-002, Prepared Direct Testimony of William G. Saxe, Chapter 5, at WGS-6 through WGS-11, and Attachment A.

<sup>10</sup> *Id.* at 60, OP 2.

<sup>11</sup> *Id.* at 44.

1 develop the Eligible Fixed Costs adopted in this proceeding, which is \$8.84 as presented in  
2 Attachment B.

3 This concludes my prepared supplemental testimony.

1 **V. STATEMENT OF QUALIFICATIONS**

2 My name is William G. Saxe. My business address is 8330 Century Park Court, San  
3 Diego, California 92123. I am employed as the Rates & Cost Studies Project Manager in the  
4 Customer Pricing Department of SDG&E. I have worked for SDG&E since February 2001.  
5 Prior to joining SDG&E, I was employed by Sempra Energy, the parent company of SDG&E,  
6 from April 1999 through January 2001. In addition, I was employed by the Illinois Commerce  
7 Commission (“ICC”) from September 1990 through April 1999.

8 I received a Bachelor of Science degree in Economics from the University of Wisconsin-  
9 Madison in 1985. I received a Master of Business Administration degree, with a concentration  
10 in Finance, from the University of Wisconsin-Madison in 1990.

11 I have previously testified before the CPUC on rate design, marginal cost and other  
12 issues. In addition, I have previously submitted testimony before the Federal Energy Regulatory  
13 Commission (“FERC”) and the ICC.

**ATTACHMENT A**

**SDG&E MARGINAL DISTRIBUTION CUSTOMER COSTS**

**ATTACHMENT B**

**SDG&E ELIGIBLE FIXED COSTS**