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 REBUTTAL TESTIMONY OF
WILLIAM G. SAXE (PHASE III)
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JUNE 28, 2019

SDGE

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PREPARED REBUTTAL TESTIMONY OF

WILLIAM G. SAXE

I. OVERVIEW AND PURPOSE

The purpose of my Rebuttal Testimony is to respond to the Direct Testimony submitted by The Public Advocates Office ("Cal PA") witnesses Christopher Danforth and Nathan Chau[1] and The Utility Reform Network ("TURN") witness William P. Marcus[2] regarding the development of Marginal Distribution Customer and Eligible Fixed Costs to be used as the basis of fixed customer charges for residential customers.[3] Specifically, I will address recommendations raised by these witnesses and reach the following conclusions regarding those recommendations:

- The Commission should adopt Marginal Distribution Customer and Eligible Fixed Costs in this proceeding based on the Rental Method, as proposed by San Diego Gas & Electric Company ("SDG&E"), because it is the better methodology to use to calculate Marginal Distribution Customer Costs compared to the New Customer Only Method ("NCO Method") proposed by Cal PA and TURN;
- Cal PA's proposed discount to SDG&E's final line transformer costs should be rejected because it incorrectly assumes SDG&E's costs reflect costs higher than

[1] *Prepared Direct Testimony of The Public Advocates Office on 2018 Residential Rate Design Window Applications, Phase 3* (May 31, 2019) ("Cal PA 2018 RDW Phase 3 Direct Testimony").

[2] *Prepared Testimony of William Perea Marcus on behalf of The Utility Reform Network, Customer Cost Quantification for the Three Major Electric Utilities,* (May 31, 2019) ("TURN 2018 RDW Phase 3 Direct Testimony").

[3] Marginal Distribution Customer Costs reflect the average marginal distribution customer costs calculated for residential customers. Eligible Fixed Costs reflect the minimum observed marginal distribution customer costs for residential customers based on categories of fixed costs that the California Public Utilities Commission ("CPUC" or "Commission") stated can be proposed for recovery in a residential fixed charge in Decision ("D.") 17-09-035.

the 10th or 20th percentile of residential customers as suggested by the CPUC in D.17-09-035.

- Cal PA's proposed discount to SDG&E's final line transformer costs to include customer infills is not appropriate based on SDG&E's engineering estimates and costs, and thus, this proposal should be rejected;
- Cal PA's proposal to exclude replacements in the NCO Method incorrectly removes costs that SDG&E incurs to serve customers, and thus, this proposal should be rejected;
- Cal PA's proposed approach for allocating distribution Operations & Maintenance ("O&M") costs to the demand and customer functions based on work performed upstream of the final line transformer ("FLT") (demand function) versus work performed from the FLT to the customer premise (customer function) should be adopted with a few modifications, as proposed by SDG&E;
- Cal PA's proposal to frontload the O&M Costs when applied to the NCO Method is not appropriate, and thus, this proposal should be rejected;
- TURN's arguments for using SDG&E's Test Year ("TY") 2016 General Rate Case ("GRC") Phase 2 (Application ("A.") 15-04-012) marginal customer costs rather than SDG&E's TY 2019 GRC Phase 2 (A.19-03-002) marginal customer costs should be disregarded because the costs in SDG&E's 2019 GRC Phase 2 reflect the most recent estimate of SDG&E distribution customer costs to serve a customer;
- TURN's proposed adjustment to SDG&E's meter costs is not justified based on SDG&E's proposed meter costs, and thus, this proposal should be rejected;

- TURN's proposal to not base meter data on information prior to 2013 is unnecessary if SDG&E's 2019 GRC Phase 2 costs are used because these costs reflect meter data from 2013-2017, and thus, this proposal should be rejected;
- TURN's adjustment for tree trimming is not appropriate and not needed based on SDG&E's proposed adjustment to the allocation of distribution O&M costs in this 2018 RDW Phase 3 rebuttal testimony, and thus, this proposal should be rejected;
- TURN's Administrative & General ("A&G") Loader proposal is unnecessary if SDG&E's 2019 GRC Phase 2 is used, and thus, its A&G-related O&M Loader proposal should be rejected;
- TURN's adjustment to O&M costs to reflect the O&M for the smallest residential customers is not necessary because the O&M costs SDG&E proposed already reflect the O&M costs for the smallest residential customers (minimum observed costs), and thus, this proposal should be rejected;
- TURN's proposal to use the Customer Service and Minimum Revenue Adjustment proposals from SDG&E's 2016 GRC Phase 2 should be rejected because the use of these costs from SDG&E's 2019 GRC Phase 2 are more appropriate for use in this proceeding;
- TURN's proposal to use the meter labor costs for replacement meters from SDG&E's 2016 GRC Phase 2 adjusted for their 20% meter cost reduction proposal should be rejected because the meter labor costs in SDG&E 2019 GRC Phase 2 reflect the most updated SDG&E costs, and thus, SDG&E's 2019 GRC Phase 2 meter labor costs should be used to develop costs in the NCO Method in this proceeding;

- TURN's proposal to use a transformer, service drop, and meter ("TSM") replacement rate in the NCO Method of 1.5% instead of 3.03% should be adopted; and
- SDG&E's updates to the proposed Marginal Distribution Customer Costs, presented in Attachment A, and the proposed Eligible Fixed Costs, presented in Attachment B, to reflect the adjustment to the O&M costs based on the allocation approach proposed by Cal PA, and the adjustment to the TSM replacement rate used in the NCO Method proposed by TURN, should be adopted.

My Rebuttal Testimony is organized as follows:

- Rental Method versus NCO Method;
  - A. CPUC Decisions from Two Decades Ago Should Not Set the Precedent on Marginal Distribution Customer Cost Methodology
  - B. Rental Method is Based on Marginal Costs
  - C. Rental Method Sends More Accurate Price Signal
- Marginal Distribution Customer Cost Calculation Adjustments
  - A. Cal PA Proposed Adjustments to SDG&E's Proposed Marginal Distribution Customer Costs and Resulting Eligible Fixed Costs
  - B. TURN Proposed Adjustments to SDG&E's Proposed Marginal Distribution Customer Costs and Resulting Eligible Fixed Costs
- SDG&E Proposed Updated Marginal Distribution Customer and Eligible Fixed Costs Reflecting the O&M and NCO Replacement Rate Adjustments

My Rebuttal Testimony also contains:

- Attachment A – SDG&E Updated Marginal Distribution Customer Costs
- Attachment B – SDG&E Updated Eligible Fixed Costs

II. RENTAL METHOD VERSUS NCO METHOD

A. CPUC Decisions from Two Decades Ago Should Not Set the Precedent on Marginal Distribution Customer Cost Methodology

Cal PA and TURN assert that the CPUC has decided in prior decisions that the NCO Method is the better method to calculate Marginal Distribution Customer Costs. These parties imply that the CPUC should not change its position on this issue and should continue to use the NCO Method to calculate Marginal Distribution Customer Costs in this proceeding.[4]

SDG&E disagrees with Cal PA and TURN that previous CPUC decisions adopting the NCO Method, the most recent of which was issued more than two decades ago, should set the precedent for the Marginal Distribution Customer Cost methodology adopted in this proceeding. Which methodology to use in developing Marginal Distribution Customer Costs has always been a complicated and contentious issue in rate design cases. For instance, it is interesting to note that Cal PA supported the Rental Method over the NCO Method in the most recent electric decision adopting the NCO Method.[5] That decision states:

> The Office of Ratepayer Advocates (ORA) objects to PG&E's method [NCO Method] of allocating revenues for new customer hookups. This is because there is no apparent relationship between the costs imposed for access by a particular customer and the growth attributable to that customer's assigned class in earlier years. ORA raises a valid issue. Why should all of the customers in a particular class face higher or lower customer

[4] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 2, pp. 2-7 and 2-8; TURN 2018 RDW Phase 3 Direct Testimony, p. 10.

[5] D. 97-12-044.

> costs just because a certain number of new customers might be expected to join that class in the future? There is no causative relationship between the existing members of a particular rate class and the cost of a new hookup. Of course, the most efficient way to assign new hookup costs would be to charge each new customer the full cost of its new hookup. For several reasons, the Commission has not historically done that.[6]

This decision goes on to state that "[f]or now, we will adopt PG&E's approach [NCO Method]. However, in future proceedings, we will ask parties to help the CPUC to respond more effectively to the equity concerns raised by this issue."[7]

It is notable that Cal PA and other parties are trying to claim that these prior decisions in non-SDG&E electric proceedings should be used as the basis for adopting the NCO Method here, especially given the fact that the CPUC clearly stated that it expects parties to present more information in future proceedings to ensure the Marginal Distribution Customer Cost methodology fairly allocates distribution customer costs to customers. SDG&E recommends that the CPUC determine its preferred Marginal Distribution Customer Cost methodology in this proceeding using present arguments and facts and not rely heavily on CPUC decisions dating back at least two decades. As discussed below, SDG&E believes that the Rental Method is the appropriate methodology to use in the development of Marginal Distribution Customer Costs in this proceeding because this methodology is based on marginal costs and provides more accurate price signals regarding distribution customer costs.

[6] D.97-12-044, p. 7.

[7] *Id.*, pp. 7-8.

B. Rental Method is Based on Marginal Costs

TURN suggests that the Rental Method is not based on marginal costs but is more of an embedded cost approach because it calculates the costs for all existing customer hookup equipment.[8]

TURN appears to misunderstand the difference between marginal and embedded costs. Marginal customer costs reflect the incremental costs to serve the next customer whereas embedded customer costs reflect the historical costs incurred to serve customers. As explained in my supplemental testimony, the Rental Method is based on the incremental TSM costs (not historical costs) to serve the next customer and thus, the Rental Method is based on marginal costs.[9] In fact, the NCO and Rental methods use the same incremental TSM costs in the development of Marginal Distribution Customer Costs.

The difference in these two marginal distribution customer cost methodologies is the conversion of the incremental TSM costs into a cost per customer amount. The Rental Method, using the Real Economic Carrying Charge ("RECC") factors to annualize the cost of TSM assets, correctly reflects the marginal distribution customer cost of providing service to the next customer and correctly applies these marginal costs to all customers taking electric service from SDG&E. Applying marginal costs to all customers to calculate a rental price for TSM assets does not result in the conversion of the incremental TSM costs into embedded costs as TURN seems to imply. Conversely, the NCO Method does not calculate the marginal distribution customer costs to provide service to the next customer but rather calculates the incremental

[8] TURN 2018 RDW Phase 3 Direct Testimony, p. 7.

[9] *Prepared Supplemental Testimony of William G. Saxe* (March 29, 2019) ("SDG&E 2018 RDW Phase 3 Saxe Supplement Testimony"), pp. WS-7 and WS-8.

change in total customer costs due to the expected customer growth rate of each customer class. The NCO Method applies the Present Value Revenue Requirement ("PVRR") factors to the TSM costs to determine the present value of the revenue requirements for the life of the TSM assets, multiplies that value by the forecasted growth rate in the customer class to calculate the TSM marginal costs for new customers in that class, and then divides that amount by all customers in that customer class. Given the NCO Method's dependency on the customer growth rate by customer class, a growth rate that has no relationship to the cost of TSM assets, the NCO Method does not accurately reflect marginal costs.

The NCO Method's dependency on customer growth rate by customer class in its calculation demonstrates one of the flaws in this methodology. For example, assume you have two customers taking service using the same TSM assets, but the customers are in different customers classes, with one class having a higher forecasted customer growth rate than the other class. The customer class having the higher customer growth rate would have a higher marginal TSM cost under the NCO Method because of the differences in the customer class growth rates. This demonstrates one of the flaws in the NCO Method since the TSM marginal costs for both customers would be different because of differences in the customer class growth rates of the two customers and not because of any differences in the TSM costs needed to serve the customers. If we instead use the Rental Method, the TSM marginal costs for both customers would be identical, as they should be since the TSM costs to serve the two customers are exactly the same.

For these reasons, contrary to what TURN claims, the Rental Method properly calculates TSM marginal costs and the NCO Method is the marginal distribution customer cost

methodology that does not calculate the marginal costs of the TSM assets for the next customer requiring service.

C. Rental Method Sends More Accurate Price Signal

TURN argues that the Rental Method does not reflect a competitive market price because it prohibits customers from purchasing TSM equipment, or paying for it up front in hookup charges, and, thus, simulates a market with extreme barriers to entry by relevant participants in that market. TURN compares the TSM equipment market to the housing market to argue that the Rental Method does not reflect economic reality because it requires everyone to be renters and thus, does not describe a competitive market.[10]

TURN is mistaken when it claims that the Rental Method does not provide an accurate price for TSM equipment and ends up overcharging customers for this equipment. As explained above, both the Rental and NCO methods use the same incremental cost per TSM assets in their calculation of marginal costs. The Rental Method takes the cost of the TSM assets and converts it into a rental price based on the cost of the TSM assets. Conversely, the NCO Method takes that same cost of the TSM assets, multiplies it by the number of forecasted new customers and assumed TSM replacements in the customer class, and then divides this dollar amount by the number of total customers in the class to get a cost per customer that neither reflects a rental price or a purchase price of the TSM assets. By dividing the TSM costs calculated for just forecasted new customers in a customer class by the total number of customers in that class, the NCO Method understates the TSM price and assures customers will be undercharged for the TSM costs incurred to serve them.

[10] TURN 2018 RDW Phase 3 Direct Testimony, pp. 8-9.

As TURN acknowledges, neither the NCO Method or Rental Method send the perfect price signal to customers on the cost of TSM equipment.[11] The perfect price signal is only achieved if the customer is required to pay the upfront costs of the TSM equipment at the time of hookup for electric utility service. Under current California utility regulation customers do not pay for the TSM equipment upfront but instead pay for it over time in monthly utility bills. For this reason, SDG&E believes the Rental Method should be adopted because it reflects a price (in the form of rental payments over time) that is most likely to fully recover TSM costs from the customer whereas the NCO Method reflects an understated price that does not represent the full cost of the TSM equipment.

III. MARGINAL DISTRIBUTION CUSTOMER COST CALCULATION ADJUSTMENTS

A. Cal PA Proposed Adjustments to SDG&E's Proposed Marginal Distribution Customer Costs and Resulting Eligible Fixed Costs

1. Proposed Discount to FLT Costs to Reflect Costs at the 15th Percentile of Residential Class

Cal PA argues that SDG&E's FLT costs are too high to be consistent with the CPUC's guidance in D.17-09-035 on using the minimum observed costs of residential customers to quantify FLT costs for use in calculating the Eligible Fixed Costs. Cal PA states that the CPUC expected that the minimum observed FLT costs would be in the 10th or 20th percentile of the FLT costs but SDG&E's proposed minimum observed FLT costs fall into the 37th percentile of SDG&E's residential FLT costs, which clearly shows that these costs are overstated. For this reason, Cal PA proposes a 70% discount factor to apply to SDG&E's FLT costs calculated by dividing PG&E's FLT costs at the 15th percentile by PG&E's FLT costs at the 37th percentile.[12]

[11] *Id*., pp. 6-7.

[12] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 5, pp. 5-2 and 5-3.

The CPUC's most recent guidance on how to calculate FLT costs in this proceeding is provided in D.17-09-035. Among other things, D.17-09-035 provides that any FLT and service drop costs included in the Eligible Fixed Costs should be based on the utilities' minimum observed costs for residential customers.[13] As stated in my supplemental testimony, the FLT and service drop costs that SDG&E included in the calculation of the proposed Eligible Fixed Costs are based on the minimum observed costs for SDG&E's residential customers, which reflect costs to serve approximately 28%[14] of SDG&E's residential customers that have demand between 0-2 kW.[15] Because SDG&E's minimum observed FLT costs cover more than the 10th or 20th percentile of SDG&E's residential customers, Cal PA incorrectly interprets this to mean that SDG&E's proposed minimum observed FLT costs are overstated. Actually, what SDG&E's costs show is that customers up to the 28th percentile of SDG&E's residential customers will have the same FLT costs because the smallest FLT installed to serve SDG&E's residential customers serves customers with demand up to 2 kW. For this reason, SDG&E recommends that the CPUC reject Cal PA's FLT discount based on PG&E's costs because SDG&E's FLT costs, based on SDG&E's costs, are in compliance with the D.17-09-035 guidance to base FLT costs on the minimum observed SDG&E FLT cost to serve residential customers.

[13] D.17-09-035, Ordering Paragraph ("OP") 2.

[14] SDG&E 2018 RDW Phase 3 Saxe Supplement Testimony, p. WS-9. The 37th percentile that Cal PA is referencing is from SDG&E's 2018 RDW Chapter 5, *Prepared Direct Testimony of William G. Saxe* (December 20, 2017) ("SDG&E 2018 RDW Chapter 5 Saxe Direct Testimony"), p. WS-9. Based on the updated costs proposed in SDG&E's 2018 RDW Phase 3 Supplemental Testimony, the FLT and service drop costs reflect costs at the 28th percentile of SDG&E's residential customers.

[15] SDG&E 2018 RDW Phase 3 Saxe Supplement Testimony, p. WS-9.

2. Proposed Discount to FLT Costs to Include Customer Infills

Cal PA proposes a discount to SDG&E's FLT costs to include customer infills, which reflect customers being added to an existing FLT if the FLT has surplus capacity. Cal PA proposes a FLT discount factor of 85.64% to SDG&E's FLT costs based on PG&E's cost data.[16]

SDG&E disagrees with applying a discount to SDG&E's FLT costs to try to account for cost reductions assuming somehow that customers could be added to a FLT. As described in SDG&E's 2019 GRC Phase 2 testimony, the FLT costs are developed based on the transformer size and the average number of customers that can be served on the transformer based on engineering estimates for a typical customer by size and customer class.[17] Based on the engineering estimates, the minimum observed costs for FLT assumes that 22 customers in the 0-2 kW demand range can be served on the smallest FLT that SDG&E installs to serve residential customers, which means there are no additional customers that could be added since the FLT calculations assume there is no surplus capacity. For this reason, SDG&E recommends that the CPUC reject Cal PA's FLT discount to address customer infills based on PG&E's costs because SDG&E's proposed minimum observed FLT costs, based on SDG&E's costs, reflect the appropriate number of customers served on the minimum sized FLT based on SDG&E's engineering estimates and costs.

3. Proposed Exclusion of Replacement Costs from the New Customer Only ("NCO") Method

Cal PA proposes the exclusion of replacement costs in the Marginal Distribution Customer Costs calculated in the NCO Method because it believes replacement costs are not

[16] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 5, p. 5-4.

[17] A.19-03-002, SDG&E TY 2019 GRC Phase 2 Revised Prepared Direct Testimony of William G. Saxe, Chapter 5, pp. WS-7 and WS-8.

technically marginal costs.[18] To account for replacements, Cal PA proposes to scale up the present value of the revenue requirements for new hookups to account for replacements.[19]

SDG&E disagrees with Cal PA's proposal. Replacement costs need to be included in the NCO Method because replacement of TSM equipment results in a real cost that should be included in the calculation of marginal customer costs based on the NCO Method. Thus, if the CPUC ultimately adopts the use of the NCO Method to calculate Marginal Distribution Customer and Eligible Fixed Costs in this proceeding, then SDG&E recommends that the CPUC reject Cal PA's proposal to exclude replacement costs from the calculation and adopt the 1.5% replacement rate proposed by TURN in their 2018 RDW Phase 3 direct testimony.[20]

4. Proposed Adjustment to O&M Costs

Cal PA proposes adjustments to the allocation of distribution O&M costs between distribution demand and customer functions that results in a higher percentage of the costs being allocated to the demand function. SDG&E proposed allocating the distribution O&M costs that cannot be directly assigned to the demand or customer functions based on the percentage of SDG&E's distribution asset costs that is either distribution demand-related or customer-related. Cal PA states that SDG&E's proration approach over-assigned the O&M costs not directly assigned to demand or customer functions to the customer function. In response to a data request, Cal PA received a detailed breakdown of the 2017 SDG&E data for FERC Accounts 580, 583, 584, 588, 593, 594, and 598 to account for what portion of these costs are associated with work performed upstream of the FLT (demand function) versus work performed from the

[18] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 2, pp. 2-13 and 2-14.

[19] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 5, pp. 5-4 and 5-5.

[20] TURN 2018 RDW Phase 3 Direct Testimony, pp. 1 and 32-33.

FLT to the customer premise (customer function).[21] Based on this breakdown of unassigned costs, Cal PA proposes a reduction in the minimum observed annual O&M costs allocated to the customer function from $14.15 to $2.46 per customer.[22]

SDG&E accepts Cal PA's revised approach to allocate O&M costs between the demand and customer functions. SDG&E agrees that this approach is reasonable for allocating unassigned O&M costs to the demand and customer functions. While the SDG&E GRC Phase 1 team had to make assumptions in breaking out costs between the demand function (work performed upstream of the FLT) and customer function (work performed from the FLT to the customer premise), SDG&E believes the assumptions made to respond to this data request were reasonable.

For these reasons, SDG&E agrees with the adoption of the O&M allocation approach proposed by Cal PA, with the following adjustments. First, SDG&E also proposes using this approach to allocate FERC Accounts 589 (Rents) and 590 (Maintenance Supervision and Engineering) costs, which were the only other FERC 580-590 O&M costs that are not directly assigned to the demand and customer functions. Second, SDG&E believes that it is appropriate for the allocations based on this proration approach to be based on a five-year average of cost data rather than just 2017 cost data. SDG&E proposes that an average of 2013-2017 cost data based on the Cal PA proration approach be used to allocate the costs in FERC Accounts 580, 583, 584, 588, 589, 590, 593, 594, and 598 between the demand and customer functions. Making these adjustments to the Cal PA approach for allocating these costs results in proposed minimum observed annual O&M costs for residential customers of $2.48 per customer ($0.21

[21] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 5, Appendix 5-C-2.

[22] *Id*., pp. 5-6 and 5-7.

per customer on a monthly bases), as presented in Attachment B. SDG&E recommends that the CPUC adopt the inclusion of the $2.48 per customer minimum observed annual O&M costs in the calculation of the Eligible Fixed Costs based on the O&M allocation approach proposed by Cal PA.[23]

5. Proposal to Frontload O&M Costs in NCO Method

Cal PA also proposes frontloading the O&M costs when the hookup equipment is first installed to yield a lifetime O&M cost amount for use in the NCO Method. Using a new connection rate of 0.79% based on SDG&E's forecasted new connections for residential customers, Cal PA proposed a lifetime O&M adder for minimum observed customers of $0.43 per customer[24] to be used in the NCO Method.[25]

SDG&E disagrees with Cal PA's suggestion to frontload the O&M costs since, consistent with all costs in the calculation of Marginal Distribution Customer Costs, the O&M costs should be annual costs based on the most current cost estimates, as presented in SDG&E's 2019 GRC Phase 2 proceeding. Cal PA provides little explanation for why O&M costs should be treated differently in the NCO Method than in the other Marginal Distribution Customer Cost methods.

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[23] Attachment A presents SDG&E's proposed average residential Marginal Distribution Customer Costs. Applying the revised O&M allocation approach to SDG&E's average residential costs results in the O&M costs assigned to the customer function on an average basis being reduced from $25.06 per customer to $5.98 per customer.

[24] Cal PA's response to SDGE-CALPA-01 provided a revision to the proposed lifetime O&M adder from $0.43 to $0.55 per customer. The response to this data request states:

> "The new connection rate equals the number of forecasted new connections divided by the number of total customers. SDG&E forecasts a new connection rate of 13,322 and total number of customers of 1,311,990. Dividing 13,322 by 1,311,990 gives 1.02%. The 0.79% figure is therefore incorrect and should be revised. With this modification, the lifetime O&M costs employed under the NCO fixed charge calculation increases from $0.43 per year to $0.55 per year."

[25] Cal PA 2018 RDW Phase 3 Direct Testimony, Chapter 5, pp. 5-7 and 5-8.

For this reason, SDG&E recommends that the CPUC reject Cal PA's proposal to frontload the O&M costs in the NCO Method.

B. TURN Proposed Adjustments to SDG&E's Proposed Marginal Distribution Customer Costs and Resulting Eligible Fixed Costs

1. Proposal to use SDG&E's 2016 GRC Phase 2 Marginal Distribution Customer Costs rather than its 2019 GRC Phase 2 Marginal Distribution Customer Costs in this proceeding

TURN disagrees with SDG&E's proposal to use its 2019 GRC Phase 2 Marginal Distribution Customer Costs in this proceeding because it claims that this will force parties to litigate these costs twice – once in this proceeding and the second time in SDG&E's 2019 GRC Phase 2 proceeding. TURN proposes that this proceeding should be based on SDG&E's 2016 GRC Phase 2 (A.15-04-012) costs. TURN states that SDG&E's 2016 GRC Phase 2 costs should be updated for the real fixed charge rate and present value of revenue requirements for the changes in rate of return and the tax law.[26]

SDG&E disagrees with TURN's recommendation. As directed by the CPUC, SDG&E, like Pacific Gas and Electric Company ("PG&E") and Southern California Edison Company ("SCE"), based its Marginal Distribution Customer and Eligible Fixed Costs on its most recent GRC Phase 2 filing (A.19-03-002). D.17-09-035 stated that fixed costs calculations should be "based on costs and methodologies that are consistent with their most recent or concurrent GRC Phase 2 marginal customer cost showings."[27] Consistent with this decision, in SDG&E's 2018 RDW direct testimony, the Marginal Distribution Customers and Eligible Fixed Costs were based on the SDG&E's most recent GRC Phase 2 showing, which at that time was the costs presented in SDG&E's 2016 GRC Phase 2 proceeding.[28] However, since submitting SDG&E's

[26] TURN 2018 RDW Phase 3 Direct Testimony, p. 28.

[27] D.17-09-35, p. 42.

[28] SDG&E 2018 RDW Chapter 5 Saxe Direct Testimony, p. WS-2.

2018 RDW direct testimony on December 20, 2017, SDG&E filed its 2019 GRC Phase 2 Application on March 4, 2019 which reflects the most current showing of SDG&E's marginal distribution costs, including SDG&E's current rate of return and the impact from the Tax Cuts and Jobs Act ("TCJA") signed into federal law on December 22, 2017. Under these circumstances it remains unclear why TURN would suggest the use of outdated costs submitted in SDG&E's 2016 GRC Phase 2 to develop fixed charges that would not be implemented until 2020 at the earliest.

Although SDG&E does not believe it is appropriate to use its 2016 GRC Phase 2 costs (which are based on 2013 cost data) instead of its 2019 GRC Phase 2 costs (which are based on 2017 cost data) to develop the Marginal Distribution Customer and Eligible Fixed Costs in this proceeding, if the CPUC agrees with TURN, the table below provides a comparison of the Eligible Fixed Costs under each Marginal Distribution Customer Cost methodology based on SDG&E's 2019 GRC Phase 2 costs with the adjustments agreed to by SDG&E in this 2018 RDW Phase 3 rebuttal testimony and based on SDG&E's 2016 GRC Phase 2 costs adjusted for SDG&E's current rate of return and the impact of TCJA since no other adjustments are needed since TURN claims these costs have been fully litigated. As shown in Table WGS-1 below, the use of 2019 GRC Phase 2 costs incorporating the O&M and NCO replacement rate adjustments results in lower Eligible Fixed Costs, even lower than the $4.69 per customer annual costs TURN proposed based on the NCO Method.[29] For these reasons, SDG&E recommends that the CPUC disregard TURN's proposal to use SDG&E's 2016 GRC Phase 2 costs to develop fixed costs in this proceeding.

[29] TURN 2018 RDW Phase 3 Direct Testimony, p. 5 and 34 (Table 8).

TABLE WGS-1
Comparison of SDG&E's Eligible Fixed Costs

Customer Class (A)	SDG&E Proposed with with Accepted Adjustments[2] (B)	Based on 2016 GRC Phase 2 Costs with Adjustment for TCJA (C)
Residential Eligible Fixed Costs ($/Customer-Month):		
Rental Method	**$7.87**	**$9.46**
New Customer Only ("NCO") Method	**$4.24**	**$6.39**
Adjusted Rental Method #1 ("ARM1") Method	**$4.18**	**$5.97**
Adjusted Rental Method #2 ("ARM2") Method	**$6.31**	**$8.39**

Notes:
(1) Reflects 2019 GRC Phase 2 costs with accepted O&M adjustment proposed by Cal PA and NCO replacement rate adjustment proposed by TURN
(2) Reflects 2016 GRC Phase 2 costs adjusted for SDG&E's current rate of return and the impact of the TCJA (federal tax rate change) through the updates to the Real Economic Carrying Charge ("RECC") and Present Value Revenue Requirement ("PVRR") factors applied to the TSM costs.

2. Adjustment to Meter Costs

Because SDG&E's proposed residential meter costs are higher than the meter proposed by both SCE and PG&E, TURN is proposing a 20% reduction in SDG&E's residential meter costs resulting in meter costs of $225.[30]

SDG&E disagrees with TURN's proposal to adjust meter costs for a few reasons. First, contrary to what TURN presents in its 2018 RDW Phase 3 direct testimony, SDG&E's residential meter costs presented in its 2019 GRC Phase 2 actually show a significant decrease over the meter costs presented in its 2016 GRC Phase 2. TURN mistakenly compares meter costs in different GRC Phase 2 proceedings that are in presented different nominal dollars. The SDG&E 2016 GRC Phase 2 meter costs of $207 that TURN references are meter costs in 2013

[30] *Id*., p. 28.

dollars. Because the TSM costs should be in 2020 dollars, the earliest date SDG&E will implement a residential fixed charge, the SDG&E 2016 GRC Phase 2 meter costs that TURN should be comparing to are the $335.83 meter costs presented in SDG&E's 2018 RDW direct testimony, which reflect SDG&E's 2016 GRC Phase 2 meter costs escalated into 2020 dollars.[31] A 20% reduction in SDG&E's 2016 GRC Phase 2 meter costs in 2020 dollars would result in a meter costs of approximately $269, which is very close to the $267 in meter costs SDG&E proposed in this proceeding. Second, TURN is making an adjustment to SDG&E's meter costs based on the costs specific to PG&E and SCE. Consistent with the CPUC's direction given in D.17-09-035, costs used to develop SDG&E's proposed Eligible Fixed Costs should be based on SDG&E's costs and not the costs of PG&E or SCE. Based on these facts, the CPUC should reject TURN's proposal to reduce SDG&E's meter costs to $225 and adopt the use of the $267 in meter costs proposed by SDG&E.

3. Removing Unrepresentative Data from Period of Smart Meter Installation[32]

Because TURN is proposing to base the Marginal Distribution Customer Costs in this proceeding on SDG&E's 2016 GRC Phase 2 proceeding that used five years of cost information from 2009-2013 to develop the allocated O&M costs, it is proposing that the O&M meter costs (FERC Account 586 and 587) adopted in this proceeding should only be based on 2013 costs because O&M meter costs substantially declined after smart meter installation.[33]

[31] SDG&E 2018 RDW Chapter 5 Saxe Direct Testimony, Attachment B.

[32] A smart meter is an advanced meter installed that records consumption of electric energy and communicates the information to SDG&E for billing and customer communication purposes.

[33] TURN 2018 RDW Phase 3 Direct Testimony, pp. 29-30.

SDG&E does not dispute TURN's claim that O&M meter costs decreased significantly after smart meter installation but SDG&E disagrees with the need for TURN's meter cost adjustment for two reasons. First, as discussed above the Marginal Distribution Customer Costs used to develop costs in this proceeding should be based on SDG&E's 2019 GRC Phase 2 costs, which reflect costs from 2013-2017. Using these costs will not require the meter cost adjustment that TURN proposes since the O&M costs do not reflect meter costs prior to 2013. Second, the adjustment TURN proposes goes against its own argument for using 2016 GRC Phase 2 costs, and that is that the 2016 costs have been "…tested through litigation and settlement processes."[34] The settlement that TURN agreed to in the 2016 GRC Phase 2 proceeding was based on SDG&E's O&M costs in that proceeding, which were costs based on 2009-2013 O&M meter costs. If TURN's recommendation of using SDG&E's 2016 GRC Phase 2 costs in this proceeding is adopted, then no adjustment to these costs seems warranted because these costs have been agreed to by parties in settlement, at least for revenue allocation purposes. For these reasons, SDG&E recommends that the CPUC adopt SDG&E's proposed adjusted O&M costs discussed in Section III.A.4., which actually results in lower O&M meter costs (FERC Accounts 586 and 587) than proposed by TURN.

4. Proposed Adjustment for Tree Trimming

TURN proposes changes to distribution O&M costs assigned to customer-related and demand-related functions based on the percentage of tree trimming and pole brushing costs (within Account 593) assumed to be customer-related. TURN states that based on the 2013 costs, tree trimming reflected 55.9% and pole brushing reflected 9.1% of Account 593 costs.

[34] *Id.*, pp. 2-3.

Allocating tree trimming costs this way reduces the allocation of Account 593 costs assigned to customer-related costs from about 12% to 5.3%.[35]

SDG&E does not agree with TURN's approach to decrease the tree-trimming costs allocated to the customers function. The issue that SDG&E has with TURN's adjustment approach is that it would separate tree trimming and pole brushing costs from the other distribution O&M costs being allocated to the demand and customer functions, which as proposed by SDG&E are assigned based on a single allocation factor. This type of cost separation, however, is not appropriate because SDG&E does not have customer-related and demand-related splits for all distribution O&M costs. This is the reason that SDG&E proposed the development of a single allocation factor for total distribution O&M costs between customer-related and demand-related functions based on the percentage of SDG&E distribution plant assets that is customer-related versus demand related. However, as described above in Section III.A.4., SDG&E does agree that its proposed approach to allocate distribution O&M costs based on plant assets was allocating too much of the distribution O&M costs to the customer function. For this reason, SDG&E agrees with the O&M allocation approach proposed by Cal PA that results in a reduction in the allocation of Account 593 costs to the customer function from 11.36% to 6.17%. For the reasons discussed above, SDG&E recommends that the CPUC reject TURN's proposal to allocate 5.3% of FERC Account 593 costs to the customer function and adopt SDG&E's proposal to allocate 6.17% of FERC Account 593 costs to the customer function.

[35] *Id*., p. 30.

5. Proposal to Exclude Fire Damage Claims in the A&G Loader

TURN proposes to use the A&G loading factor in SDG&E's 2016 GRC Phase 2 of 29.71% because this factor excludes fire damage claims.[36]

As SDG&E agreed to in the 2016 GRC Phase 2 proceeding, the A&G loading factor should not include the costs of fire damage claims. For this reason, the A&G loading factor proposed in its 2019 GRC Phase 2 proceeding of 31.46% does not include fire damage claims, as TURN proposes. But for the same reasons SDG&E provided above for the use of its 2019 GRC Phase 2 costs instead of its 2016 GRC Phase 2 costs, SDG&E recommends that the CPUC reject TURN proposal to use the 29.71% A&G loading factor and instead adopt the use of the 31.46% A&G loading factor proposed by SDG&E.

6. Proposed Adjustment to O&M Costs to Reflect O&M Costs for Smallest Residential Customers

TURN recommends that the O&M costs used to calculate the Eligible Fixed Costs should reflect the costs for the smallest customers because these customers have the lowest TSM costs. TURN suggests that because over 20 smaller customers share a transfer under SDG&E's transformer cost model, the average SDG&E O&M costs for residential customers should be multiplied by a factor of 65.3% to yield TSM O&M costs for smaller customers of $18.02.[37]

SDG&E agrees with TURN that the O&M costs for SDG&E's smallest residential customers (demand of 0-2 kW) should be lower than the average costs for the residential class because these customers take service on the smallest, least expensive transformer, and the engineering estimate is that 22 customers with demand of 0-2 kW could share this transformer. TURN appears to have misunderstood SDG&E's workpaper because SDG&E's proposed O&M

[36] *Id*., p. 30.

[37] *Id*., p. 31.

costs for the Eligible Fixed Costs already reflects lower O&M annual costs of $14.15 per customer for the smallest residential customers. After including the O&M adjustment discussed above in Section III.A.4., the annual O&M costs for the smallest residential customers included in the Eligible Fixed Costs is reduced to $2.48 per customer. For this reason, the CPUC should disregard TURN's proposal on reducing the O&M costs for the smallest SDG&E residential customer because the O&M costs that SDG&E is proposing for these customers already reflect O&M costs for the smallest residential customers and in fact reflect costs that are significantly lower than the O&M costs TURN proposed.

7. Proposed Customer Accounting and Service Costs, including Miscellaneous Revenue Adjustment

TURN is proposing using the Customer Account and Service ("Customer Service") costs from SDG&E's 2016 GRC Phase 2, including the O&M adjustment to account for expenses associated with miscellaneous revenues. TURN proposes that the $26.93 Customer Service annual cost used in the 2016 GRC Phase 2 proceeding, along with the $2.10 per customer annual minimum revenue adjustment, also be used in this proceeding, resulting in a net annual cost of $24.83 per customer.[38]

As explained above, use of the 2016 GRC Phase 2 costs when the more current costs from SDG&E's 2019 GRC Phase 2 showing are available is inappropriate. However, if the 2016 GRC Phase 2 costs are to be used, then the costs should be escalated into 2020 dollars, which is when the fixed charge is proposed to be implemented. In SDG&E's 2018 RDW direct testimony, I performed this escalation on the 2016 GRC Phase 2 costs, which resulted in Customer Service costs of $30.37 and a Minimum Revenue Adjustment of $2.27 on an annual

[38] *Id.*, p. 31.

basis, resulting in a net annual cost of $28.10 per customer.[39] However, again, SDG&E believes it is more appropriate to use the Customer Service and the Minimum Revenue Adjustment proposed in its 2019 GRC Phase 2, which are $28.48 for Customer Service annual costs and $3.03 for the annual Minimum Revenue Adjustment, resulting in a net annual cost of $25.45 per customer.[40] For the reasons stated above, SDG&E recommends that the CPUC reject TURN's proposal and adopt the use of the Customer Service and Minimum Revenue Adjustment proposed by SDG&E based on it 2019 GRC Phase 2, costs that are actually lower than the annual costs proposed by TURN after these costs are correctly escalated into 2020 dollars.

8. Proposal to Eliminate Labor Costs for Replacement Meters in NCO Method

TURN proposes removing meter-replacement labor costs in the NCO Method because the labor costs for replacement of meters is already included in the O&M costs used in the Marginal Distribution Customer Costs calculation. TURN also states that the labor costs being eliminated should be the costs proposed in SDG&E's 2016 GRC Phase 2 of $105 per meter reduced by an additional 20% to $84 per meter (consistent with TURN's recommendation that meter costs need to be reduced by 20%).[41]

SDG&E agrees with TURN that meter-replacement costs should not reflect the meter labor costs in the NCO Method calculation, which is why SDG&E excluded the meter-replacement labor costs in the NCO Method as presented in SDG&E's 2018 RDW Phase 3

[39] SDG&E 2018 RDW Chapter 5 Saxe Direct Testimony, Attachment A.

[40] SDG&E 2018 RDW Phase 3 Prepared Supplement Testimony of William G. Saxe, Attachment A.

[41] TURN 2018 RDW Phase 3 Direct Testimony, p. 32.

supplemental testimony.[42] But for the same reasons discussed above, SDG&E does not agree with the use of the 2016 GRC Phase 2 meter labor costs or with the 20% reduction to these labor costs. The residential meter labor costs in its 2019 GRC Phase 2 proceeding of approximately $47 reflect a better estimate of the current costs for SDG&E to install meters than the costs in its 2016 GRC Phase 2 proceeding. For this reason, the CPUC should reject the meter labor costs TURN proposes because the costs that SDG&E proposed are more appropriate since these costs are based on more resent SDG&E cost information.

9. Proposal to use a 1.5% versus 3.03% TSM Replacement Rate in NCO Method

TURN proposes a TSM replacement rate of 1.5% instead of the 3.03% proposed by SDG&E. The 3.03% is based on the inverse of the depreciable life of transformers (33 years). TURN refers to the 3.03% as a "long-run" replacement rate and argues this rate greatly exceeds the current TSM replacement rate, as discussed in TURN's 2018 RDW Phase 3 direct testimony regarding SCE. TURN goes on to state that without actual replacement rate information for SDG&E it recommends using SDG&E's original 1.5% replacement rate estimate used in prior proceedings.[43]

TURN's proposal to use the 1.5% replacement rate is problematic because it is not based on current information about the life of TSM, which at least for meters has changed significantly since the installation of smart meters. The current book lives of TSM assets seem to be a reasonable approach to develop the TSM replacement estimate for use in the NCO Method calculation. However, because actual SDG&E replacement data is unavailable, SDG&E agrees

[42] SDG&E 2018 RDW Phase 3 Prepared Supplement Testimony of William G. Saxe, Attachments A.3 and B.3.

[43] TURN 2018 RDW Phase 3 Direct Testimony, pp. 32-33.

with TURN's proposal to use the 1.5% replacement rate for the NCO Method in this proceeding. Attachments A and B of this 2018 RDW Phase 3 rebuttal testimony reflect NCO calculations using the 1.5% replacement rate proposed by TURN.

IV. SDG&E PROPOSED UPDATED MARIGNAL DISTRIBUTION CUSTOMER AND ELIGIBLE FIXED COSTS REFLECTING THE O&M AND NCO REPLACEMENT RATE ADJUSTMENTS

SDG&E is proposing two adjustments to the Marginal Distribution Customer and Eligible Fixed Costs proposed in this proceeding. First, as explained in Section III.A.4. of this 2018 RDW Phase 3 rebuttal testimony SDG&E agrees with the adoption of the O&M allocation approach proposed by Cal PA, adjusted to also allocate FERC Accounts 589 and 590 costs using this approach and adjusted to be based on 2013-2017 cost data instead of just 2017 cost data. This O&M cost adjustment results in average annual O&M costs of $5.98 per customer for residential customers that is reflected in the updated Marginal Distribution Customer Costs presented in Attachment A for all Marginal Distribution Customer Cost methodologies. This O&M cost adjustment also results in minimum observed annual O&M costs of $2.48 per customer for residential customers that is reflected in the updated Eligible Fixed Costs presented Attachment B for all Marginal Distribution Customer cost methodologies. Second, as explained in Section III.B.9. SDG&E agrees with TURN's proposal to apply a 1.5% TSM replacement rate instead of the 3.03% TSM replacement rate proposed by SDG&E in the NCO Method. The updated Marginal Distribution Customer Costs presented in Attachment A and the updated Eligible Fixed Costs presented in Attachment B reflect the use of the 1.5% TSM replacement rate in the NCO Method calculations.

This concludes my prepared rebuttal testimony.

ATTACHMENT A

SDG&E UPDATED MARGINAL DISRIBUTION CUSTOMER COSTS

ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - REBUTTAL WORKPAPERS

SDG&E's Residential Marginal Distribution Customer Costs

Line No.	Customer Class (A)	Marginal Distribution Customer Costs[1] (B)	Equal Percent of Marginal Costs ("EPMC") Distribution Customer Costs[2] (C)	Line No.
1	Residential Marginal Customer Cost ($/Customer-Month):			1
2	Rental Method[3]	$11.17	$22.06	2
3	New Customer Only ("NCO") Method[4]	$5.72	$13.67	3
4	Adjusted Rental Method #1 ("ARM1") Method[5]	$5.38	$13.12	4
5	Adjusted Rental Method #2 ("ARM2") Method[6]	$8.72	$18.72	5

Notes:

(1) **Marginal Distribution Customer Costs**: the marginal distribution customer costs for the residential class.
(2) **EPMC Distribution Customer Costs**: equals the Marginal Distribution Customer Cost multiplied by the EPMC Distribution Allocation Factor based on SDG&E's current authorized distribution revenue requirement in rates effective January 1, 2019, per Advice Letter 3130-E/E-A/E-B/E-C.
(3) **Rental Method**: proposed by SDG&E in its 2019 General Rate Case ("GRC") Phase 2 (A.19-03-002), Chapter 5 Direct Testimony.
(4) **NCO Method**: proposed by other parties in SDG&E's GRC Phase 2 proceedings is presented for illustrative purposes by SDG&E in SDG&E's 2019 GRC Phase 2 (A.19-03-002), Chapter 5 Direct Testimony, Attachment C.
(5) **ARM1 Method**: proposed by the Energy Division in Pacific Gas & Electric Company's ("PG&E's") 2017 GRC Phase 2 (A.16-06013) on residential fixed costs, that adjusts the Rental Method results for SDG&E's rate base.
(6) **ARM2 Method**: proposed by the Energy Division in PG&E's 2017 GRC Phase 2 (A.16-06-013) on residential fixed costs, that adjusts the Rental Method results for SDG&E's accumulated depreciation.

ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - REBUTTAL WORKPAPERS

SDG&E's Residential Marginal Distribution Customer Costs Based on Rental Method

Distribution Cost Component	Marginal Distribution Customer Costs Based on Rental Method Residential Average (2020$)
Transformer, Service and Meter ("TSM") Costs[1]	
Transformers	**$680.52**
Services	**$167.42**
Meters	**$267.48**
Subtotal	**$1,115.43**
General Plant Loading at[2] **2.77%** **Working Capital Loading at[2]** **1.50%**	
Transformers	**$709.90**
Services	**$174.65**
Meters	**$279.03**
Subtotal	**$1,163.57**
Annualized Transformer Costs at 8.05% Real Economic Carrying Charges ("RECC")[3]	**$57.13**
Annualized Services Costs at 7.08% RECC[3]	**$12.36**
Annualized Meter Costs at 10.78% RECC[3]	**$30.07**
Annualized TSM Costs	**$99.56**
Operations & Maintenance ("O&M") Expenses[4]	**$5.98**
Customer Service Expenses[5]	**$28.48**
Total ($/Customer/Year)	**$134.02**

Notes:
(1) TSM costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 General Rate Case ("GRC") Phase 2 (A.19-03-002).
(2) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(6) Input data in blue font comes from a separate source file.

ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - REBUTTAL WORKPAPERS

SDG&E's Residential Marginal Distribution Customer Costs Based on New Customer Only ("NCO") Method

Distribution Cost Component	Marginal Distribution Customer Costs Based NCO Method Residential Average (2020$)
Transformer, Service and Meter ("TSM") Costs[1]	
Transformers	$680.52
Services	$167.42
Meters	$267.48
Replacement Meters (w/o meter labor costs)	$212.47
Subtotal	$1,115.43
Subtotal for Replacements (w/o meter labor costs)	$1,060.41
General Plant Loading at[2] 2.77%	
Working Capital Loading at[2] 1.50%	
Transformers (line)	$709.90
Services (UG)	$174.65
Meters	$279.03
Replacement Meters (w/o meter labor costs)	$221.64
Subtotal	$1,163.57
Subtotal for Replacements (w/o meter labor costs)	$1,106.18
Present Value Revenue Requirement ("PVRR") of TSM Costs	
Transformers (368.1) at 123.76%	$878.57
Services (369.2) at 123.27%	$215.29
Meters (Average 370.11 & 370.21) at 107.68%	$300.45
Replacement Meters (Average 370.11 & 370.21) at 107.68%	$238.65
Subtotal	$1,394.31
Subtotal for Replacements (w/o meter labor costs)	$1,332.51
2020 Beginning Of Year[4]	1,311,990
New Customers[4]	13,322
Replacement Customers[4]	19,680
NCO TSM Component per 2020 Customer	$34.15
O&M Expenses[5]	$5.98
Customer Accounts/Services[6]	$28.48
Subtotal per 2020 Customer	$34.46
Annual NCO per 2020 Customer	**$68.60**

Notes:
(1) TSM costs are the average residential costs presented in Chapter 5 Direct Testimony. Attachment C, Workpapers in SDG&E's 2019 General Rate Case ("GRC") Phase 2 (A.19-03-002).
(2) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony, Attachments C, Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) PVRR of TSM Costs based on the PVRR factors presented in Chapter 5 Direct Testimony, Attachment C, Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) 2020 Beginning of Year, New, and Replacement Customers presented in Chapter 5 Direct Testimony, Attachment C, Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) O&M Expenses presented in Chapter 5 Direct Testimony, Attachment C, Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(6) Customer Service Expenses presented in Chapter 5 Direct Testimony, Attachment C, Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(7) Input data in blue font comes from a separate source file.

ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - REBUTTAL WORKPAPERS

SDG&E's Residential Marginal Distribution Customer Costs Based on Adjusted Rental Method #1 ("ARM1")

Distribution Cost Component	Marginal Distribution Customer Costs Based on ARM1 Method Residential Average (2020$)
Transformer, Service and Meter ("TSM") Costs[1]	
Transformers	**$680.52**
Services	**$167.42**
Meters	**$267.48**
Subtotal	**$1,115.43**
General Plant Loading at[2] **2.77%**	
Working Capital Loading at[2] **1.50%**	
Transformers	**$709.90**
Services	**$174.65**
Meters	**$279.03**
Subtotal	**$1,163.57**
Annualized Transformer Costs at 8.05% Real Economic Carrying Charges ("RECC")[3]	**$57.13**
Annualized Services Costs at 7.08% RECC[3]	**$12.36**
Annualized Meter Costs at 10.78% RECC[3]	**$30.07**
Annualized TSM Costs	**$99.56**
ARM1 Adjustment of Annualized TSM Costs at 30%[4]	**$30.13**
Operations & Maintenance ("O&M") Expenses[5]	**$5.98**
Customer Service Expenses[6]	**$28.48**
Total ($/Customer/Year)	**$64.59**

Notes:
(1) TSM costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 General Rate Case ("GRC") Phase 2 (A.19-03-002).
(2) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) ARM1 Adjustment of Annualized TSM Costs at 30%.
(5) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(6) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(7) Input data in blue font comes from a separate source file.

ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - REBUTTAL WORKPAPERS

SDG&E's Residential Marginal Distribution Customer Costs Based on Adjusted Rental Method #2 ("ARM2")

Distribution Cost Component	Marginal Distribution Customer Costs Based on ARM1 Method Residential Average (2020$)
Transformer, Service and Meter ("TSM") Costs[1]	
Transformers	**$680.52**
Services	**$167.42**
Meters	**$267.48**
Subtotal	**$1,115.43**
General Plant Loading at[2] **2.77%**	
Working Capital Loading at[2] **1.50%**	
Transformers	**$709.90**
Services	**$174.65**
Meters	**$279.03**
Subtotal	**$1,163.57**
Annualized Transformer Costs at 8.05% Real Economic Carrying Charges ("RECC")[3]	**$57.13**
Annualized Services Costs at 7.08% RECC[3]	**$12.36**
Annualized Meter Costs at 10.78% RECC[3]	**$30.07**
Annualized TSM Costs	**$99.56**
ARM2 Adjustment of Annualized TSM Costs at 70%[4]	**$70.14**
Operations & Maintenance ("O&M") Expenses[5]	**$5.98**
Customer Service Expenses[6]	**$28.48**
Total ($/Customer/Year)	**$104.60**

Notes:
(1) TSM costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 General Rate Case ("GRC") Phase 2 (A.19-03-002).
(2) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) ARM2 Adjustment of Annualized TSM Costs at 70%.
(5) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(6) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(7) Input data in blue font comes from a separate source file.

ATTACHMENT B

SDG&E UPDATED ELIGIBLE FIXED COSTS

ATTACHMENT B

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - SUPPLEMENTAL WORKPAPERS

SDG&E's Residential Eligible Fixed Costs

Line No.	Customer Class (A)	Eligible Fixed Costs ($/Customer/Month)[1] (B)	Line No.
1	Residential Eligible Fixed Costs ($/Customer-Month)		1
2	Rental Method[2]	$7.87	2
3	New Customer Only ("NCO") Method[3]	$4.24	3
4	Adjusted Rental Method #1 ("ARM1") Method[4]	$4.18	4
5	Adjusted Rental Method #2 ("ARM2") Method[5]	$6.31	5

Notes:

(1) **Eligible Fixed Costs**: the residential costs eligible to be included in a fixed cost proposal, pursuant to Decision ("D.") 17-09-035.
(2) **Rental Method**: Eligible Fixed Costs calculated based on the Rental Method.
(3) **NCO Method**: Eligible Fixed Costs calculated based on the NCO Method.
(4) **ARM1 Method**: Eligible Fixed Costs calculated based on the ARM1 Method.
(5) **ARM2 Method**: Eligible Fixed Costs calculated based on the ARM2 Method.

ATTACHMENT B

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - SUPPLEMENTAL WORKPAPERS

SDG&E's Residential Eligible Fixed Costs Based on Rental Method

Line No.	Distribution Cost Components	Marginal Eligible Fixed Costs Based on Rental Method (2020$)	Line No.
1	Transformer, Service and Meter (TSM) Costs		1
2			2
3	Transformers (0-2 kW)[1]	$266.28	3
4	Services (0-2 kW)[1]	$150.52	4
5	Meters[2]	$267.21	5
6			6
7	Subtotal	$684.02	7
8			8
9	General Plant Loading at[3]		9
10	2.77%		10
11	Working Capital Loading at[3]		11
12	1.50%		12
13			13
14	Transformers	$277.78	14
15	Services	$157.02	15
16	Meters	$278.74	16
17			17
18	Subtotal	$713.54	18
19			19
20	Annualized Transformer Costs at 8.05% Real Economic Carrying Charges (RECC)[4]	$22.36	20
21	Annualized Services Costs at 7.08%[4]	$11.11	21
22	Annualized Meter Costs at 10.78%[4]	$30.04	22
23	Annualized TSM Costs	$63.51	23
24			24
25	Operations & Maintenance (O&M) Expenses[5]	$2.48	25
26			26
27	Customer Accounts/Services[6]	$28.48	27
28			28
29	Eligible Fixed Costs ($/Customer/Year) - Based on Rental	$94.47	29

Notes:
(1) Transformer and Service Costs are the costs for 0-2 kW residential customers presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(2) Meters Costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's GRC Phase 2 (A.19-03-002), including an adjustment for Miscellaneous Revenues. The O&M Expenses are developed based on applying an O&M loader to 0-2 kW Transformer and Service and total Meter residential costs.
(6) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(7) Input data in blue font comes from a separate source file.

ATTACHMENT B

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - SUPPLEMENTAL WORKPAPERS

SDG&E's Residential Eligible Fixed Costs Based on New Customer Only ("NCO") Method

Line No.	Distribution Cost Components	Marginal Eligible Fixed Costs Based on NCO Method (2020$)	Line No.
1	Transformer, Service and Meter (TSM) Costs		1
2			2
3	Transformers (0-2 kW)[1]	$266.28	3
4	Services (0-2 kW)[1]	$150.52	4
5	Meters[2]	$267.21	5
6	Meter Replacements (w/o meter labor costs)[2]	$212.42	6
7			7
8	Subtotal	$684.02	8
9	Subtotal for Replacements (w/o meter labor costs)	$629.23	9
10			10
11	General Plant Loading at[3]		11
12	2.77%		12
13	Working Capital Loading at[3]		13
14	1.50%		14
15			15
16	Transformers	$274.62	16
17	Services	$154.70	17
18	Meters	$274.62	18
19	Replacement Meters (w/o meter labor costs)	$218.31	19
20			20
21	Subtotal	$703.93	21
22	Subtotal for Replacements (w/o meter labor costs)	$647.62	22
23			23
24	Present Value Revenue Requirement (PVRR) of TSM Costs		24
25	Transformers (368.1) at 123.76%	$339.87	25
26	Services (369.2) at 123.27%	$190.70	26
27	Meters (Average 370.11 & 370.21) at 107.68%	$295.70	27
28	Replacement Meters (Average 370.11 & 370.21) at 107.68%	$235.06	28
29			29
30	Subtotal	$826.27	30
31	Subtotal for Replacements (w/o meter labor costs)	$765.63	31
32			32
33	2020 Beginning Of Year Customers[5]	1,311,990	33
34	New Customers[5]	13,322	34
35	Replacement Customers[5]	19,680	35
36			36
37	NCO TSM Component per 2019 Customer	$19.87	37
38			38
39	Operations & Maintenance (O&M) Expenses[6]	$2.48	39
40			40
41	Customer Accounts/Services[7]	$28.48	41
42			42
43	Eligible Fixed Costs ($/Customer/Year) - Based on NCO	$50.83	43

Notes:
(1) Transformer and Service Costs are the costs for 0-2 kW residential customers presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(2) Meters Costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) Transformer, Service, and Meter present value revenue requirement (PVRR) costs based on the PVRR factors presented in Chapter 5 Direct Testimony, NCO Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) 2020 Beginning of Year, New, and Replacement Customers based on the total residential class customers presented in Chapter 5 Direct Testimony, NCO Workpapers, in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(6) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's GRC Phase 2 (A.19-03-002), including an adjustment for Miscellaneous Revenues. The O&M Expenses are developed based on applying an O&M loader to 0-2 kW Transformer and Service and total Meter residential costs.
(7) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(8) Input data in blue font comes from a separate source file.

ATTACHMENT B

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - SUPPLEMENTAL WORKPAPERS

SDG&E's Residential Eligible Fixed Costs Based on Adjusted Rental Method #1 (ARM1)

Line No.	Distribution Cost Components	Marginal Eligible Fixed Costs Based on ARM1 Method (2020$)	Line No.
1	Transformer, Service and Meter (TSM) Costs		1
2			2
3	Transformers (0-2 kW)[1]	$266.28	3
4	Services (0-2 kW)[1]	$150.52	4
5	Meters[2]	$267.21	5
6			6
7	Subtotal	$684.02	7
8			8
9	General Plant Loading at[3]		9
10	2.77%		10
	Working Capital Loading at[3]		
	1.50%		
11			11
12	Transformers	$277.78	12
13	Services	$157.02	13
14	Meters	$278.74	14
15			15
16	Subtotal	$713.54	16
17			17
18	Annualized Transformer Costs at 8.05% Real Economic Carrying Charges (RECC)[4]	$22.36	18
19	Annualized Services Costs at 7.08%[4]	$11.11	19
20	Annualized Meter Costs at 10.78%[4]	$30.04	20
21	Annualized TSM Costs	$63.51	21
22	ARM1 Adjusted Annualized TSM Costs at 30%[5]	$19.22	22
23			23
24	Operations & Maintenance (O&M) Expenses[6]	$2.48	24
25			25
26	Customer Accounts/Services[7]	$28.48	26
27			27
28	Eligible Fixed Costs ($/Customer/Year) - Based on ARM1	$50.18	28

Notes:
(1) Transformer and Service Costs are the costs for 0-2 kW residential customers presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(2) Meters Costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) ARM1 Adjusted Annualized TSM Costs at 30% is a TSM cost adjustment percentage equal to TSM rate base divided by TSM incremental costs.
(6) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's GRC Phase 2 (A.19-03-002), including an adjustment for Miscellaneous Revenues. The O&M Expenses are developed based on applying an O&M loader to 0-2 kW Transformer and Service and total Meter residential costs.
(7) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(8) Input data in blue font comes from a separate source file.

ATTACHMENT B

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E")
2018 RATE DESIGN WINDOW ("RDW"), APPLICATION ("A.") 17-12-013 - SUPPLEMENTAL WORKPAPERS

SDG&E's Residential Eligible Fixed Costs Based on Adjusted Rental Method #2 (ARM2)

Line No.	Distribution Cost Components	Marginal Eligible Fixed Costs Based on ARM2 Method (2020$)	Line No.
1	Transformer, Service and Meter (TSM) Costs		1
2			2
3	Transformers (0-2 kW)[1]	$266.28	3
4	Services (0-2 kW)[1]	$150.52	4
5	Meters[2]	$267.21	5
6			6
7	Subtotal	$684.02	7
8			8
9	General Plant Loading at[3]		9
10	2.77%		10
11	Working Capital Loading at[3]		11
12	1.50%		12
13			13
14	Transformers	$277.78	14
15	Services	$157.02	15
16	Meters	$278.74	16
17			17
18	Subtotal	$713.54	18
19			19
20	Annualized Transformer Costs at 8.05% Real Economic Carrying Charges (RECC)[4]	$22.36	20
21	Annualized Services Costs at 7.08%[4]	$11.11	21
22	Annualized Meter Costs at 10.78%[4]	$30.04	22
23	Annualized TSM Costs	$63.51	23
24	ARM2 Adjusted Annualized TSM Costs at 70%[7]	$44.74	24
25			25
26	Operations & Maintenance (O&M) Expenses[6]	$2.48	26
27			27
28	Customer Accounts/Services[7]	$28.48	28
29			29
30	Eligible Fixed Costs ($/Customer/Year) - Based on ARM2	$75.70	30

Notes:
(1) Transformer and Service Costs are the costs for 0-2 kW residential customers presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(2) Meters Costs are the average residential costs presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(3) General Plant and Working Capital Loading factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(4) Annualized TSM Costs based on the RECC factors presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(5) ARM2 Adjusted Annualized TSM Costs at 70% is a TSM cost adjustment percentage equal to the product of TSM incremental costs minus accumulated TSM depreciation divided by TSM incremental costs.
(6) O&M Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's GRC Phase 2 (A.19-03-002), including an adjustment for Miscellaneous Revenues. The O&M Expenses are developed based on applying an O&M loader to 0-2 kW Transformer and Service and total Meter residential costs.
(7) Customer Service Expenses presented in Chapter 5 Direct Testimony Workpapers in SDG&E's 2019 GRC Phase 2 (A.19-03-002).
(8) Input data in blue font comes from a separate source file.