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Proceeding: A.19-04-XXX  
Application: 2020 Cost of Capital  
Exhibit: SDG&E-06

**SAN DIEGO GAS & ELECTRIC COMPANY  
PREPARED DIRECT TESTIMONY OF BRUCE MACNEIL  
CCM AND RATING AGENCIES**

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



**APRIL 2019**

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**PREPARED DIRECT TESTIMONY OF  
BRUCE MACNEIL  
CCM AND RATING AGENCIES**

**I. INTRODUCTION**

The purpose of my testimony is to: (1) address San Diego Gas & Electric Company’s (“SDG&E” or “Company”) current Cost of Capital Mechanism (“CCM”); (2) provide a recent history of SDG&E’s credit ratings; and (3) propose that the California Public Utilities Commission (“Commission” or “CPUC”) authorize the continuation of the current CCM with certain clarifications and modifications to this mechanism.

The current CCM was originally adopted by the Commission for investor-owned utilities (“IOUs”) SDG&E, Southern California Edison Company (“Edison”), and Pacific Gas and Electric Company (“PG&E”) (collectively, “California IOUs”) in Decision (“D.”) 08-05-035.

As part of the last Cost of Capital proceeding, the Commission reaffirmed and adopted the CCM for all four California IOUs, including Southern California Gas Company (“SoCalGas”).<sup>1</sup> It was subsequently continued in D.17-07-005.

The CCM automatically recalibrates SDG&E’s authorized Return on Equity (“ROE”) and overall Rate of Return (“ROR”) on SDG&E-jurisdictional operations between cost of capital (“COC”) proceedings – if the mechanism is triggered – based on movements in the bond markets. This testimony also describes the history of SDG&E’s credit ratings since the last Cost of Capital case was decided, the factors that have led to recent ratings actions, and proposed modifications to the current CCM to make the mechanism more appropriate and functional based on the changing credit ratings landscape. The current CCM, with certain clarifications and

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<sup>1</sup> See D.13-03-015.

1 modifications, should continue to be the basis for ROE and ROR adjustments between Cost of  
2 Capital proceedings.

## 3 **II. CURRENT MECHANISM**

### 4 **A. Objectives of The Cost of Capital Mechanism**

5 Unless otherwise authorized or directed, the California IOUs are generally required to file  
6 Cost of Capital applications every three years. The CCM provides a formula to adjust a utility's  
7 ROE in intervening years based on changes in utility bond rates. The mechanism was designed  
8 with several objectives:

- 9 • reduce the time and costs associated with filing and litigating Cost of Capital  
10 proposals annually;
- 11 • produce objective results through readily available historical rates that eliminate  
12 the need for interest rate forecasts (and related forecasting risk);
- 13 • represent a simple, transparent, and non-controversial adjustment mechanism (*i.e.*,  
14 automatic adjustment rather than adjustment by litigated outcome);
- 15 • limit frequent or abrupt changes, while remaining sensitive enough to trigger  
16 when fluctuations in the bond markets necessitate an adjustment; and
- 17 • provide timely ratemaking information to stakeholders and the financial markets.  
18  
19  
20  
21

22 Under the CCM, changes to SDG&E's return between COC proceedings are a function of  
23 historical rates based on actual market data. According to the Commission, the CCM effectively  
24 balances the interests of shareholders and ratepayers while simplifying and reducing COC  
25 proceedings, workload requirements and regulatory costs:  
26

27 This CCM streamlines the major energy utilities' COC process while providing  
28 greater predictability of the utilities' COC by eliminating the use of interest rate  
29 forecasts and disputes concerning interest rate levels and trends, as well as  
30 uncertainties associated with conflicting perceptions of financial markets and the  
31 return requirements of investors. Hence, shareholders and ratepayers alike share  
32 in the burden and benefit of market changes, while eliminating the burden of  
33 annual COC applications. The CCM also enables the utilities, interested parties,

1 and Commission staff to reduce and reallocate their respective workload  
2 requirements for litigating annual COC proceedings.<sup>2</sup>

3 The CCM is also viewed positively by various market participants in addition to  
4 regulatory stakeholders. Credit rating agencies and banks – who regularly evaluate the financial  
5 condition of the utilities – have indicated their preference for the automatic rate-setting  
6 mechanism, since it provides greater clarity and transparency in understanding changes to a  
7 utility’s ROE compared to the uncertainty of trying to predict litigation outcomes. This in turn  
8 promotes a degree of desired stability.

9 SDG&E agrees with these benefits and therefore supports continuing the CCM.

#### 10 **B. Current Cost of Capital Mechanism**

11 The current CCM is relatively simple in its construction. It consists of: (1) a benchmark;  
12 and (2) a deviation range or “dead band” from that benchmark. That dead band determines what  
13 bond ratings movement will trigger the mechanism. More specifically, the CCM is currently  
14 based upon:

- 15 • the most recently adopted authorized capital structure and embedded costs for  
16 long-term debt and preferred stock;
- 17
- 18 • the benchmark index as Moody’s Utilities Bond Index, based on the utility’s  
19 credit ratings (for SDG&E, an “A” rated utility, Moody’s “A” Bond Utilities  
20 Index);
- 21
- 22 • a benchmark interest rate representing either: (a) the October through September  
23 average of the applicable Moody’s Utilities Bond Index<sup>3</sup> from the Test Year  
24 (“TY”) of the most recently adopted Cost of Capital; or (b) the October through  
25 September average following a triggering event and corresponding effective date  
26 of an automatic adjustment to the authorized Cost of Capital structure;

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<sup>2</sup> *Id.* at 7.

<sup>3</sup> Applicable Moody’s utilities index would be adjusted for a change in utility’s credit rating, index selection matrix provided in Appendix A.

- a 100 basis point dead band whereby within plus or minus 100 basis points from the benchmark interest rate, the mechanism will not trigger; and
- an adjustment ratio of 50 percent (*i.e.*, if there is a triggering event and corresponding adjustment to ROE, the ROE will be adjusted by half of the difference between Moody’s Utility Bond Index and the benchmark interest rate.).<sup>4</sup>

If the CCM does trigger in a given year, the adjustment to the authorized ROE – and updating of the embedded costs of long-term debt and preferred stock – will result in a revised authorized Rate of Return to be effective January 1 of the following year. SDG&E would make this change through the advice letter process. The CCM would continue to operate, but with a revised benchmark interest rate, which would be the 12-month (October to September) average interest rate that caused the CCM to trigger.

A utility’s authorized capital structure itself (*i.e.*, the ratios) is not adjusted if the CCM triggers. But the utility can file a COC application outside of the CCM process if an extraordinary or catastrophic event occurs that has a material impact on a utility’s cost of capital and/or capital structure and affects the utility differently than the overall financial markets.<sup>5</sup>

### **C. SDG&E Experience With Cost of Capital Trigger Mechanisms**

Excluding some short interruptions related to certain procedural matters, SDG&E has successfully had a COC trigger mechanism in place for almost 20 years.<sup>6</sup> The current CCM has

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<sup>4</sup> See D.13-03-015, Appendix A at 3-4.

<sup>5</sup> D.08-05-035 at 16 and Conclusion of Law 6.

<sup>6</sup> Conceptually speaking, CCMs would not be applicable the year preceding a COC test year. The Commission decision authorizing the cost of capital for a particular test year would supersede a change associated with a trigger event from the preceding year (that would normally be implemented the following January). For SDG&E, shortly after the mechanism became operational, it was deferred for a year by SDG&E’s mandated participation in the TY 1999 “unbundling” proceeding (Application (“A.”) 98-05-019). Three years later, the Market Indexed Capital Adjustment Mechanism (“MICAM”) was not applicable due to SDG&E’s participation in the TY 2003 COC proceeding (A.02-05-026). The mechanism also would not have been applicable in 2005 and 2007

1 been operational since the TY 2008 COC Decision.<sup>7</sup>

2 As previously discussed, the Commission has correctly determined that the COC trigger  
3 has historically worked according to design and has achieved its objectives. SDG&E's CCM has  
4 not triggered since D.13-03-015 was issued. During that time, each 12-month (October through  
5 September) average was within 25 basis points of the benchmark interest rate, well within the  
6 100 basis point dead band (and well within a 50 basis point dead band).

7 **Figure 1**



due to TY 2006 and 2008 COC applications (A.05-05-012 and A.07-05-007, respectively). The CCM was temporarily suspended by the Commission in for 2017 in D.16-02-019 and made operational for 2018 in D.17-07-005.

<sup>7</sup> In D.96-06-055, the Commission authorized the MICAM for SDG&E's COC ratemaking. The Commission's 2008 decision replaced the MICAM with the CCM.

1 **III. CCM PROPOSAL**

2 **A. Summary**

3 SDG&E proposes the continuation of the currently authorized CCM, with four  
4 modifications based primarily on the bond markets and changing credit rating environment.

5 SDG&E requests the following CCM attributes be retained:

- 6 • a three-year application cycle, providing balance between not having a full  
7 proceeding every year and having one often enough to review for significant  
8 changes or impacts;
- 9
- 10 • utilize Moody's Utilities Bond Index (for SDG&E, Baa) based on the current  
11 company credit ratings as the appropriate benchmark;
- 12 • measure a 12-month average of Moody's Utilities bond yields for the period  
13 of October 1 through September 30;
- 14
- 15 • the 50% adjustment to ROE of total change to utility bond index when CCM  
16 is triggered;
- 17
- 18 • updating of the embedded costs of long-term debt and preferred stock when  
19 a trigger occurs, to reflect actual August month-end embedded costs in the  
20 trigger year and forecasted interest rates for variable long-term debt, new  
21 long-term debt, and preferred stock<sup>8</sup> to be issued;
- 22
- 23 • the current advice letter process to implement trigger provisions, effective  
24 January 1 of the following year; and
- 25
- 26 • allow SDG&E to file a Cost of Capital application outside of the CCM  
27 process if an extraordinary or catastrophic event materially impacts COC or  
28 capital structure and affects the company differently than the overall  
29 financial markets.

30 As noted, for SDG&E the initial benchmark would now represent the October 2018  
31 through September 2019 average of Moody's Baa Utilities Bond Index, given the Company's

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<sup>8</sup> As explained in the Prepared Direct Testimony of Maritza Mekitarian, Capital Structure (April 2019) ("Ex. SDG&E-02 (Mekitarian)") at 6, SDG&E does not expect to issue any new preferred stock in the upcoming COC cycle.



1 recent credit ratings downgrades.<sup>9</sup> Yet as explained further below, given the recent bond market  
2 history and credit rating downgrades at SDG&E and other California IOUs, and future  
3 uncertainties around the Company’s credit ratings going forward, SDG&E believes the following  
4 four modifications the CCM are appropriate:

- 5 1) change the dead band trigger to 50 basis points from the currently  
6 authorized 100 basis points;
- 7  
8 2) clarify the selection of a CCM benchmark index when the utility has split  
9 ratings;
- 10  
11 3) clarify the approach when SDG&E’s credit ratings change during CCM  
12 years; and
- 13  
14 4) provide guidance for utilities with non-investment grade ratings.

15 I discuss the reasons for these modifications below.

## 16 **B. Modified Dead Band**

### 17 **1. Overview**

18 The size of the dead band, combined with the measurement period, influences how often  
19 the adjustment mechanism will be activated. It is therefore important to strike a reasonable  
20 balance between triggering too often and not triggering enough. Choosing a dead band and/or  
21 measurement period that is too sensitive to interest rates would be disruptive, while having a  
22 dead band and/or measurement period that is too wide could potentially prevent a trigger when it  
23 would be appropriate for one to occur. As shown above in Figure 1, the prior six years have  
24 demonstrated that a 50 basis point dead band would have provided the same stability that a 100  
25 basis point dead band would. However, it would have also made the CCM more attuned to

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<sup>9</sup> Moody’s “Baa”-rated utility bond interest rate is currently used, given SDG&E’s Standard & Poor’s (“S&P”) Global credit rating of “BBB+,” Moody’s credit rating of “Baa1,” and Fitch’s credit rating of “BBB+.”

1 material fluctuations in the bond interest rates and therefore would have set an appropriate level  
2 of allowable variance from the benchmark interest rate.

3 A 50 basis point dead band on the Moody's A Utilities Bond Index would have triggered  
4 a total of five times since 2001. All triggers would have been downward, benefitting ratepayers.  
5 The Moody's Baa Utilities bonds index would have triggered eight total times since 2001,  
6 including seven downward triggers. The only upward trigger during that time would have been  
7 from a period of extreme interest rate volatility during the 2008-2009 financial crisis.

8 By comparison, the current 100 basis point dead band would have triggered three times  
9 for the Moody's A Utilities Bond index, and three times for the Moody's Baa Utilities Bond  
10 index during that time period. In other words, all additional triggers using a 50 basis point dead  
11 band (two for the Moody's A Utilities Bond index and five for the Moody's Baa Utilities Bond  
12 index) were downward triggers that would have led to a timelier reduction in ROE benefitting  
13 ratepayers.

14 SDG&E believes that the combination of a 12-month measurement period and a 50-basis  
15 point dead band between full COC proceedings provides a level of stability that strikes a balance  
16 between triggering too often and triggering too infrequently; given the Company's recent credit  
17 rating agency downgrades, as described below.

## 18 **2. SDG&E's Credit Ratings Since 2013<sup>10</sup>**

19 Credit rating agencies routinely evaluate SDG&E and its long-term and short-term debt  
20 ratings. These ratings are based on numerous factors, including the perceived supportiveness of  
21 the regulatory environment affecting utility operations, ability to generate cash flows, level of

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<sup>10</sup> See Appendix A, attached hereto, for additional credit ratings data and information. See also D.17-07-005 at 12, Q.7.

1 indebtedness, overall financial strength and the status of certain capital projects – as well as  
2 factors beyond its control, such as political changes, the state of the economy, and the industry  
3 generally.

4 Investment grade companies are generally considered lower risk and have access to  
5 adequate liquidity at reasonable costs. Sub-investment grade companies (colloquially referred to  
6 as “junk status”) have limited access to capital markets because they are considered high risk  
7 investments. Any capital that is accessible comes at significantly higher costs than what is  
8 available to investment grade borrowers, and companies with sub-investment grade ratings may  
9 have to post collateral to access debt markets. Given the capital-intensive nature of its business  
10 and the best interest of both ratepayers and shareholders, it is important for SDG&E to maintain  
11 the highest investment grade ratings possible. As credit rating agency S&P notes “because  
12 utilities have negative discretionary cash flow their creditworthiness is linked to reliable access  
13 to the capital markets to operate their businesses.”<sup>11</sup> Dr. Morin similarly notes that an A credit  
14 rating results in the lowest overall cost of capital to ratepayers.<sup>12</sup>

15 The credit rating agencies have historically viewed SDG&E’s risk and credit ratings  
16 favorably due to its largely low-risk regulated transmission and distribution operations, the  
17 supportive nature of the California regulatory environment, track-record of supportive rate cases,  
18 and predictable cost recovery mechanisms.

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<sup>11</sup> See S&P Global Ratings, *Credit FAQ: Will California Still Have an Investment-Grade Investor-Owned Electric Utility?* (February 19, 2019), available at [https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=2168627&SctArtId=467165&from=CM&nsI\\_code=LIME&sourceObjectId=10866063&sourceRevId=14&fee\\_ind=N&exp\\_date=20290218-21:25:39](https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=2168627&SctArtId=467165&from=CM&nsI_code=LIME&sourceObjectId=10866063&sourceRevId=14&fee_ind=N&exp_date=20290218-21:25:39).

<sup>12</sup> See Prepared Direct Testimony of Roger A. Morin, Ph.D., Return on Equity (“Ex. SDG&E-04 (Morin)”) at 64-65.

1           SDG&E’s current credit rating for its long-term debt is considered investment grade,  
2 which reflects a lower investment risk and provides adequate liquidity at reasonable costs to the  
3 Company. Yet since September 2018, SDG&E’s bond rating has been downgraded from A1 to  
4 Baa1 by Moody’s and A to BBB+ by S&P (two notches each). This is based solely, as discussed  
5 in the testimony of Don Widjaja,<sup>13</sup> on the increasing risks of California wildfires and the current  
6 California legal regulatory regime that may prevent California utilities from recovering  
7 uninsured wildfire costs even when an IOU is not at fault.

8           While Moody’s emphasized SDG&E’s history of effective wildfire mitigation and  
9 prevention programs in its March 5, 2019 commentary, the rating agency said its downgrade of  
10 SDG&E’s credit ratings reflected the company’s exposure to sizeable potential liabilities in  
11 connection with California wildfires, which results in higher business and financial risks  
12 compared to non-California utilities.<sup>14</sup> Moody’s and S&P currently have SDG&E on a negative  
13 outlook for further downgrades absent further wildfire liability legislative or regulatory reform.<sup>15</sup>  
14 S&P has added that all of California’s investor-owned regulated electric utilities could be below  
15 investment grade before the start of the 2019 wildfire season.<sup>16</sup>

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<sup>13</sup> See Prepared Direct Testimony of Don Widjaja, Company Risk (“Ex. SDG&E-03 (Widjaja)”) at 12-17.

<sup>14</sup> Moody’s Investors Service, Ratings Action: Moody’s downgrades San Diego Gas & Electric to Baa1 from A2; outlook negative (March 5, 2019) at 1.

<sup>15</sup> See, e.g., *id.*

<sup>16</sup> See S&P Global Ratings, Credit FAQ: Will California Still Have An Investment-Grade Investor-Owned Electric Utility? (February 19, 2019), *available at* [https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=2168627&SctArtId=467165&from=CM&nsl\\_code=LIME&sourceObjectId=10866063&sourceRevId=14&fee\\_ind=N&exp\\_date=20290218-21:25:39](https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=2168627&SctArtId=467165&from=CM&nsl_code=LIME&sourceObjectId=10866063&sourceRevId=14&fee_ind=N&exp_date=20290218-21:25:39).

1 If SDG&E were to be further downgraded, or its credit ratings remain on a negative  
 2 outlook, SDG&E may be adversely affected. For example, this could make it costlier for  
 3 SDG&E to issue debt securities or commercial paper, to borrow under its credit facilities, and to  
 4 raise certain other types of financing. Such amounts could materially and adversely affect cash  
 5 flows, results of operations, and financial condition.

6 Table 1 summarizes the credit agency ratings for SDG&E over the past three years:

7 **Table 1 – SDG&E Credit Ratings 2017-Present**

<b>Current</b>	S&P	Moody's	Fitch
Long Term Issuer	BBB+	Baa1	BBB+
Unsecured Debt	BBB+	Baa1	A-
Secured Debt	A	A2	A
Preferred Stock	BBB-	Baa3	
Outlook	Negative	Negative	Negative
<b>2018</b>	S&P	Moody's	Fitch
Long Term Issuer	A-	A2	A-
Unsecured Debt	A-	A2	A
Secured Debt	A	Aa3	A+
Preferred Stock	BBB	Baa1	
Outlook	Negative	Stable	Stable
<b>2017</b>	S&P	Moody's	Fitch
Long Term Issuer	A	A1	A
Unsecured Debt	A	A1	A+
Secured Debt	A+	Aa2	AA-
Preferred Stock	BBB+	A3	
Outlook	Stable	Stable	Stable

8  
 9 Given this current credit rating environment, a narrowing of the dead band is appropriate  
 10 to account for the decrease in market stability relative to when the last Cost of Capital was  
 11 adopted. Yet, as shown in Figure 1 above, a 50 basis point dead band would not cause the CCM  
 12 to become overly sensitive such that it would trigger too frequently. A refresh of the dead band

1 will continue to achieve a balanced result and provide the same benefits that the Commission has  
2 articulated.

3 **C. Clarification on Split Credit Ratings Index Selection**

4 The applicable CCM index should be based on the credit ratings of the utility. In the  
5 event of split ratings where not all agencies' ratings are at the same level, the lowest rating  
6 should be used in determining the applicable index for the CCM. SDG&E believes this is  
7 appropriate because the lowest credit rating of the three credit rating agencies is known by the  
8 financial markets and is therefore reflected in competitive pricing of financial instruments.<sup>17</sup>

9 **D. Clarification on Ratings Change During CCM Years**

10 In D.08-05-035, the Commission noted that the CCM should include a provision  
11 involving the filing of a capital structure adjustment application to address the ratepayer impacts  
12 of a credit rating change between full Cost of Capital applications.<sup>18</sup> SDG&E recommends that  
13 the CCM be clarified to allow for this regulatory relief. The process would be consistent with  
14 the existing CCM as follows:

- 15 • A ratings change (upgrade or downgrade) that occurs over the October  
16 through September CCM measurement period of any year that affects the  
17 applicable Moody's Utilities Bond Index for the CCM would allow for the  
18 utility to update the applicable Moody's Utilities Bond Index for the  
19 following year;
- 20 • The applicable Moody's Utilities Bond Index is based on the company's  
21 ratings as of September 30 of that ratings change year;
- 22 • The benchmark rate resets based on the 12-month average of the Moody's  
23 Utilities Bond Index for the period of October 1 through September 30  
24 preceding the change; and

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<sup>17</sup> See Appendix A, attached hereto, for an illustration of split ratings.

<sup>18</sup> See D.08-05-035 at 8.

- Any rating change update will be made through filing an advice letter in October of the ratings change year to implement the revised index and benchmark rate for the CCM, to be effective in the following CCM measurement period.

This index adjustment does not cause a CCM trigger. Only a CCM trigger event would adjust the Cost of Capital.

#### **E. Guidance for Non-Investment Grade Rating**

Given that credit ratings agencies have expressed the potential to downgrade SDG&E and other California IOUs to non-investment grade status, SDG&E also proposes that the CCM should be clarified for the actions to be taken in the event of a downgrade to below investment grade. Such a downgrade event would trigger the use of a “Modified CCM”<sup>19</sup> where:

- The traditional CCM utility bond index trigger is suspended;
- The authorized ROE remains in place;
- The authorized capital structure is not adjusted. But a utility would retain the currently authorized option to adjust its capital structure via a separate application related to the change in credit rating;
- The costs of long-term debt and preferred stock would be updated to reflect the actual August month-end embedded costs, forecasted interest rates for variable long-term debt and new long-term debt and preferred stock schedule to be issued;
- A Tier 2 advice letter would be filed in October of the downgrade year, to be effective January 1 of the following year;
- Beginning the year immediately following the initial downgrade year, the costs of long-term debt and preferred stock would continue to be trued up annually in the same manner as in the downgrade year, until the first of: (1) the next full Cost of Capital proceeding; or (2) an upgrade of credit ratings back to investment grade;

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<sup>19</sup> See Appendix D, attached hereto, for additional analysis of the Modified CCM, as proposed.

- 1 • An upgrade from non-investment grade to investment grade would trigger  
2 the re-instatement of the traditional CCM. The annual cost of debt and  
3 preferred stock true up would cease; and
- 4 • Such an upgrade would not trigger an automated ROE adjustment.  
5 Instead, it would set the applicable CCM index and benchmark rate, with  
6 the 12-month October through September average Moody's utility bond  
7 rates of that upgrade year becoming the new benchmark.

#### 8 **IV. SUMMARY AND CONCLUSION**

9 As my foregoing testimony explains, SDG&E has been operating successfully under a  
10 COC trigger mechanism for almost 20 years. The features inherent in the CCM strike the  
11 appropriate balance of ROE stability against significant changes in the utility industry and  
12 financial markets between COC proceedings. There have been recent developments with  
13 SDG&E's ratings that have negatively impacted its cost of capital. Consequently, SDG&E  
14 proposes to continue the CCM, with the four clarifications and modifications described in this  
15 testimony.

16 This concludes my prepared direct testimony.



1 **V. STATEMENT OF QUALIFICATIONS**

2 My name is Bruce E. MacNeil, and my business address is 488 8th Avenue, San Diego,  
3 California 92101. I am currently employed by Sempra Energy as Vice President (“VP”) &  
4 Treasurer. My responsibilities include oversight of capital markets activities, credit ratings and  
5 rating agencies, cash management and pension and trust investments. I assumed my current  
6 position in April 2019. Prior to this, I served in a related capacity as Assistant Treasurer of  
7 Sempra Energy from 2017 until 2019. From 2005 until 2017, I served in a variety of roles at the  
8 National Rural Utilities Cooperative Finance Corporation in Dulles, Virginia. From 2013 to  
9 2017, I was Vice President, Capital Markets Funding where my responsibilities included all  
10 aspects of capital markets, corporate finance, loan product pricing and interest rate risk  
11 management for the organization. Previously from 2011 until 2013, I was Director, Long-Term  
12 Funding & Risk Management responsible for long-term financing and interest rate risk. From  
13 2009 to 2011, I served as Director, Short-Term Funding responsible for cash management  
14 operations, short-term debt and corporate liquidity. From 2005 until 2009, I worked as Associate  
15 Vice President responsible for relationship and credit management of a portfolio of electric  
16 cooperative utility borrowers. Prior to this, I worked for the Canadian Imperial Bank of  
17 Commerce and the TD Bank in Canada.

18 I received a Bachelor of Arts degree in Economics from McGill University in 1997. I  
19 also received a Master’s in Business Administration from the University of Maryland, Robert H.  
20 Smith School of Business in 2008. Since 2010 I have been a licensed Certified Public  
21 Accountant (“CPA”) in the state of Virginia and in 2013 I obtained the Certified Treasury  
22 Professional (“CTP”) credential from the Association of Finance Professionals (“AFP”).

23 I have not previously testified before this Commission.

**APPENDIX A**

**RATINGS TABLE FOR THE CCM AND MODIFIED CCM INCLUDING INDEX SELECTION**

The following table provides the applicable Moody’s Bond Index for each ratings level and the ratings bands for the Modified Cost of Capital Mechanism (“CCM”).

<b>Ratings Based Index Selection Table for Cost of Capital Mechanism (CCM) <sup>(i)</sup></b>				
<b>Credit Worthiness</b>	<b>Moody’s</b>	<b>Standard &amp; Poor’s</b>	<b>Fitch</b>	<b>Applicable Index to be Used for Cost of Capital Mechanism (CCM)</b>
<b>Investment Grade</b>	Aaa	AAA	AAA	Moody’s AA Utilities Bond Index (MOODUAA Index) <sup>(ii)</sup>
	Aa1	AA+	AA+	
	Aa2	AA	AA	
	Aa3	AA-	AA-	
	A1	A+	A+	Moody’s A Utilities Bond Index (MOODUA Index) <sup>(ii)</sup>
	A2	A	A	
	A3	A-	A-	
	Baa1	BBB+	BBB+	Moody’s Baa Utilities Bond Index (MOODUBAA Index) <sup>(ii)</sup>
	Baa2	BBB	BBB	
Baa3	BBB-	BBB-		
<b>Non-investment-grade</b>	Ba1	BB+	BB+	Suspend use of the CCM and replace with Annual Cost of Debt and Preferred Stock True Up <sup>(iii)</sup>
	Ba2	BB	BB	
	Ba3	BB-	BB-	
	B1	B+	B+	
	B2	B	B	
	B3	B-	B-	
	Caa1	CCC+	CCC+	
	Caa2	CCC	CCC	
	Caa3	CCC-	CCC-	
	Ca	CC	CC	
	C	C	C	
	/	D	DDD DD D	

<sup>(i)</sup> - Index determined based on lowest long term issuer rating, based on precedent set by decisions D.08-05-035 and D.13-03-015.  
<sup>(ii)</sup> - D.08-05-035 pg 19, "Moody's Aa utility bond interest rates should be used for those utilities having an AA credit rating or higher, Moody's A utility bond interest rates should be used for those utilities having an A credit rating, and Moody's Baa utility bond interest rates for utilities having a BBB credit rating".  
<sup>(iii)</sup> - See Guidance for Non-Investment Grade Rating in Section III.E. of this testimony.

**Example of selecting the Moody’s Utilities Bond Index for a utility with split credit ratings:**

For illustrative purposes, suppose SDG&E was rated A3 by Moody’s, BBB+ by S&P and A- by Fitch as of September 30 of a given year. To select the applicable Moody’s Utilities Bond Index for the CCM, SDG&E would use the lowest of the three ratings, or BBB+ by S&P in this example. BBB+ falls in Moody’s Baa Utilities Bond Index range in the table above, and that would be the applicable index in the CCM for SDG&E with these hypothetical split ratings.

## APPENDIX B

### DETAILED CCM HISTORY

In Decision (“D.”) 96-06-055, the Commission authorized the MICAM for SDG&E’s ratemaking, effective January 1, 1998. SDG&E used its authorized return on equity (“ROE”), rate of return (“ROR”), and capital structure for test year (“TY”) 1997 following the cost of capital (“COC”) decision, D.96-11-060.

The original MICAM decision scheduled a mid-course review and SDG&E submitted Application (“A.”) 00-03-062 on March 29, 2000, supporting the MICAM’s continuation and seeking Commission clarification regarding benchmarking and capital-structure treatment. D.03-09-008 adopted an all-party Settlement which continued the MICAM but (1) modified the “off-ramp” provision;<sup>1</sup> (2) required SDG&E to file a full COC application every five years absent a significant change in interest rates that would trigger an “off-ramp;” (3) changed the mechanism’s benchmark; and (4) authorized a one-time change to SDG&E’s embedded debt cost if certain events occurred.

The MICAM triggered in 2004, with notification to the Commission pursuant to Advice Letter (“AL”) 1630-E /1479-G, approved December 6, 2004, changing the COC effective on January 1, 2005. On March 17, 2005, the Commission issued D.05-03-023 regarding the post-test years associated with SDG&E’s 2004 Cost of Service (“COS”) proceeding.

Ordering Paragraph 4 of D.05-12-043, establishing SDG&E’s authorized rate of return for TY 2006, provided SDG&E an option to file a TY 2007 COC application. Subsequently in

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<sup>1</sup> D.03-09-008 at 5. The “off-ramp” provision, which suspended the MICAM if triggered, would occur if the difference between the current six-month average “Aa” bond rate and SDG&E’s benchmark exceeded an off-ramp of 260 basis points. SDG&E would file a complete COC application in the May following the off-ramp event.

D.06-10-031 in October 2006, the Commission granted SDG&E's Petition for Modification ("PFM") of D.05-12-043, authorizing SDG&E to defer its option to file its next application to May 2007 for TY 2008. SDG&E filed its TY 2008 Application and the Commission subsequently consolidated two other California IOUs into one proceeding, bifurcated into two phases. The second phase addressed the IOUs' COC mechanisms. In May 2008, the CPUC issued D.08-05-035, which established a uniform, multi-year COC mechanism for SCE, PG&E, and SDG&E, and replaced SDG&E's MICAM.

In March 2013, the CPUC issued D.13-03-015 approved the continuation of the CCM as established in D.08-05-035 and replaced Southern California Gas Company's ("SoCalGas") Market-Indexed Capital Adjustment Mechanism ("MICAM") with the CCM. In July 2017, the CPUC issued D.17-07-005 which extended the date for the next Cost of Capital application filing from April 22, 2017 to April 22, 2019 and continued the CCM.<sup>2</sup>

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<sup>2</sup> D.17-07-005 at 5 ("The CCM would not operate in 2017 but could operate in 2018 to change the adopted cost of capital effective for 2019.").

## APPENDIX C

### CCM BENCHMARK AND AUTOMATIC TRIGGER EXAMPLE

For illustrative purposes, the benchmark interest rate proposed using 2017-2018 data is shown in Table 1 below (this will be replaced with updated rates at the time of the final Commission decision in this proceeding). The benchmark for 2017-2018 would equal 4.48% (October 2017 through September 2018 average of Moody's Baa Utilities Bond Index). This benchmark would remain in effect until the earlier of a trigger event or the conclusion of the proposed three-year COC period. If the average Moody's Baa Utilities Bond Index in a future October through September period moves below 3.98% or above 4.98%, an automatic adjustment would be triggered.

Monthly average Moody's Baa Utilities Bond Index	
October	4.26%
November	4.16%
December	4.14%
January	4.18%
February	4.42%
March	4.52%
April	4.58%
May	4.71%
June	4.71%
July	4.67%
August	4.64%
September	4.74%
Average	4.48%
Upper Bound	4.98%
Lower Bound	3.98%

To illustrate the process of reflecting a CCM trigger event, first assume SDG&E's authorized ROE is 14.3%. Suppose a trigger event occurs in October 2020, where the 12-month

October 2019 through September 2020 average of Moody's Baa Utilities Bond Index is 5.08% (a 60 basis point increase from the benchmark). The upward trigger event would cause a 30 basis point adjustment to SDG&E's authorized ROE from 14.3% to 14.6%. The October 2019 through September 2020 average of 5.08% would become the new benchmark level. The resulting ROR would be based on the newly set ROE and updated actual August month-end embedded costs of long-term debt and preferred stock. But there would be no change to the authorized capital structure.

Now suppose the inverse: a trigger event occurs where the 12-month average is 3.88% (a 60 basis point decrease from the benchmark). The downward trigger event would cause a 30 basis point decrease to SDG&E's authorized ROE from 14.3% to 14.0%. The October 2019 through September 2020 average of 3.88% would become the new benchmark level. The resulting ROR would be based on this newly set ROE and updated actual August month-end embedded costs of long-term debt and preferred stock. But, again, there would be no change to the authorized capital structure.

In each of the examples discussed, SDG&E would file a Tier 2 AL informing the Commission of the CCM trigger event, including all necessary calculations to determine the trigger, adjusted cost of capital levels, and associated rate-impacts. Customer rates would reflect the new cost of capital levels the following January, January 2021 in these illustrative examples, consistent with current practices.

## APPENDIX D

### MODIFIED CCM AUTOMATIC TRIGGER EXAMPLE

Two scenarios are provided in this example to illustrate the use of the Modified CCM.

#### **Scenario 1:**

Trigger of the modified CCM – Downgrade from investment grade to non-investment grade:

For illustrative purposes, assume SDG&E is rated by all agencies at a BBB S&P equivalent level (Baa2 for Moody's and BBB for Fitch). S&P then imposes a two-notch downgrade to SDG&E. This downgrade moves SDG&E to a rating of BB+ from the current BBB level, moving the company to a non-investment grade level. This event triggers the suspension of the traditional CCM ROE adjustment mechanism and implements the Modified CCM.

An advice letter would be filed in October, including the cost of debt true up to be effective January 1 of the following year. ROE and capital structure would not be adjusted through this mechanism. Each year following, the cost of debt would continue to true up automatically through an October advice letter until the earlier of the next full Cost of Capital filing or a ratings upgrade from non-investment grade to investment grade.

#### **Scenario 2:**

Upgrade from non-investment grade to investment grade:

For illustrative purposes, and as a continuation from scenario 1, assume SDG&E is non-investment grade rated at S&P BB+. SDG&E is then upgraded from BB+ to BBB. SDG&E is again now rated in the investment grade level. This triggers the re-instatement of the traditional CCM, and the end of the Modified CCM annual debt true up. The CCM index would be set based Moody's Baa Utility Bond Index, given the BBB rating. The benchmark would be set based on the 12-month average rate between October and September preceding the upgrade.

SDG&E would file a Tier 2 Advice Letter informing the Commission of the re-instatement of the CCM, including all necessary calculations to determine the benchmark. The CCM would then continue as normal, until the earlier of the filing of the next full Cost of Capital or a CCM trigger event.



## APPENDIX E

### DETAILED RATINGS HISTORY, RATINGS ACTIONS, AND RATINGS AGENCY COMMENTARY

#### 1. *History of Credit Ratings 2012-2019*

Table 1 summarizes the credit agency ratings for SDG&E over the past seven years:

<b>Table 1 – SDG&amp;E Credit Ratings 2012-Present</b>							
<b>Current</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>	<b>2015</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>
Long Term Issuer	BBB+	Baa1	BBB+	Long Term Issuer	A	A1	A
Unsecured Debt	BBB+	Baa1	A-	Unsecured Debt	A	A1	A+
Secured Debt	A	A2	A	Secured Debt	A+	Aa2	AA-
Preferred Stock	BBB-	Baa3		Preferred Stock	BBB+	A3	
Outlook	Negative	Negative	Negative	Outlook	Stable	Stable	Stable
<b>2018</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>	<b>2014</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>
Long Term Issuer	A-	A2	A-	Long Term Issuer	A	A1	A
Unsecured Debt	A-	A2	A	Unsecured Debt	A	A1	A+
Secured Debt	A	Aa3	A+	Secured Debt	A+	Aa2	AA-
Preferred Stock	BBB	Baa1		Preferred Stock	BBB+	A3	
Outlook	Negative	Stable	Stable	Outlook	Stable	Stable	Stable
<b>2017</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>	<b>2013</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>
Long Term Issuer	A	A1	A	Long Term Issuer	A	A2	A
Unsecured Debt	A	A1	A+	Unsecured Debt	A	A2	A+
Secured Debt	A+	Aa2	AA-	Secured Debt	A+	Aa3	AA-
Preferred Stock	BBB+	A3		Preferred Stock	BBB+	Baa1	A-
Outlook	Stable	Stable	Stable	Outlook	Stable	RUR - Up	Stable
<b>2016</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>	<b>2012</b>	<b>S&amp;P</b>	<b>Moody's</b>	<b>Fitch</b>
Long Term Issuer	A	A1	A	Long Term Issuer	A	A2	A
Unsecured Debt	A	A1	A+	Unsecured Debt	A	A2	A+
Secured Debt	A+	Aa2	AA-	Secured Debt	A+	Aa3	AA-
Preferred Stock	BBB+	A3		Preferred Stock	BBB+	Baa1	A-
Outlook	Stable	Stable	Stable	Outlook	Stable	Stable	Stable

#### 2. *History of Credit Rating Changes Since 2012*

November 8, 2013: Moody's places SDG&E on watch for possible upgrade to reflect a more favorable view of the relative credit supportiveness of the US regulatory environment.

January 30, 2014: Moody's upgrades SDG&E to reflect more favorable view of the relative credit supportiveness of the US regulatory environment, outlook stable. Affected ratings include:

- Long-term Issuer Rating -- A1 from A2
- Senior Secured Rating -- Aa2 from Aa3

April 11, 2018: Moody's changes SDG&E's rating outlook to Negative from Stable due to the potentially large contingent exposure created by the application of strict liability standard in California in the case of wildfires.

July 9, 2018: S&P revises SDG&E's outlook to Negative on wildfire risks, ratings affirmed.

September 5, 2018: S&P downgrades SDG&E on unaddressed longer-term wildfire risks; outlook negative. Affected ratings include:

- Issuer Credit Rating from A to A-
- Senior Secured from A+ to A
- Preferred Stock from BBB+ to BBB
- Commercial Paper from A-1 to A-2

September 8, 2018: Moody's downgrades SDG&E as SB 901 did not repeal or change inverse condemnation and the application of inverse condemnation is a unique risk factor affecting all California investor owned utilities that has weakened its assessment of the credit supportiveness of the California legislative and regulatory framework.

Affected ratings include:

- Issuer Rating, Downgraded to A2 from A1
- Senior Unsecured Shelf, Downgraded to (P)A2 from (P)A1
- Preferred Stock Shelf, Downgraded to (P)Baa1 from (P)A3
- Non-Cumulative Preferred Stock Shelf, Downgraded to (P)Baa1 from (P)A3
- Senior Secured Shelf, Downgraded to (P)Aa3 from (P)Aa2
- Senior Secured First Mortgage Bonds, Downgraded to Aa3 from Aa2
- Outlook Actions: Changed from Negative to Stable

September 13, 2018: Fitch downgrades SDG&E's ratings with stable outlook, due to the continuation of inverse condemnation, execution risk associated with the implementation of the proposed SB 901, pressure on customer bills if cost recovery is approved in event of a major wildfire and diminishing access to insurance will permanently overshadow SDG&E's credit profile. Fitch viewed SB 901 and SDG&E's fire prevention and mitigation programs as only providing partial mitigation in the face of rising regulatory risks for electric utilities operating in California. Affected ratings include:

- Long-Term IDR to 'A-' from 'A'
- Senior secured to 'A+' from 'AA-'
- Senior secured pollution control and industrial revenue bonds to 'A+' from 'AA-'
- Senior unsecured to 'A' from 'A+'
- Senior unsecured pollution control and industrial revenue bonds to 'A' from 'A+'
- Short-Term IDR and CP to 'F2' from 'F1'

January 21, 2019: S&P downgrades SDG&E, outlook remained negative. Affected ratings include:

- Issuer Credit Rating from A- to BBB+
- Preferred Stock from BBB to BBB-
- Senior Unsecured from A- to BBB+

January 22, 2019: Fitch affirms SDG&E's ratings, outlook revises to negative.

January 24, 2019: Moody's places SDG&E under review for downgrade.

March 5, 2019: Moody's downgrades SDG&E, outlook negative. Affected ratings include:

- Issuer Rating, Downgraded from A2 to Baa1
- Senior Secured Shelf, Downgraded from (P)A2 to (P)Aa3
- Senior Unsecured Shelf, Downgraded from (P)A2 to (P)Baa1
- Preferred Stock Shelf, Downgraded from (P)Baa1 to (P)Baa3
- Non-Cumulative Preferred Stock Shelf, Downgraded from (P)Baa1 to (P)Baa3
- Senior Secured First Mortgage Bonds, Downgraded from Aa3 to A2
- Senior Unsecured Commercial Paper, Downgraded from P-1 to P-2
- Outlook Actions: Changed from Rating Under Review to Negative

March 11, 2019: Fitch downgraded SDG&E, outlook remained negative. Affected ratings include:

- Long-Term IDR from A- to BBB+
- Senior Secured from A+ to A
- Senior Secured pollution control and industrial revenue bonds from A+ to A
- Senior Unsecured from A to A-