

Docket	:	<u>A.17-10-007/008</u>
Exhibit Number	:	<u>ORA-07</u>
Commissioner	:	<u>L. Randolph</u>
ALJ	:	<u>R. Lirag</u>
Witness	:	<u>G. Wilson</u>



**OFFICE OF RATEPAYER ADVOCATES**  
**CALIFORNIA PUBLIC UTILITIES COMMISSION**

**Report on the Results of Operations**  
**for**  
**San Diego Gas & Electric Company**  
**Southern California Gas Company**  
**Test Year 2019**  
**General Rate Case**

**SDG&E – Electric Distribution Capital Expenditures**  
**Part 2 of 2**

San Francisco, California  
April 13, 2018

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1 **SDG&E – ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES**  
2 **(PART 2 OF 2)**

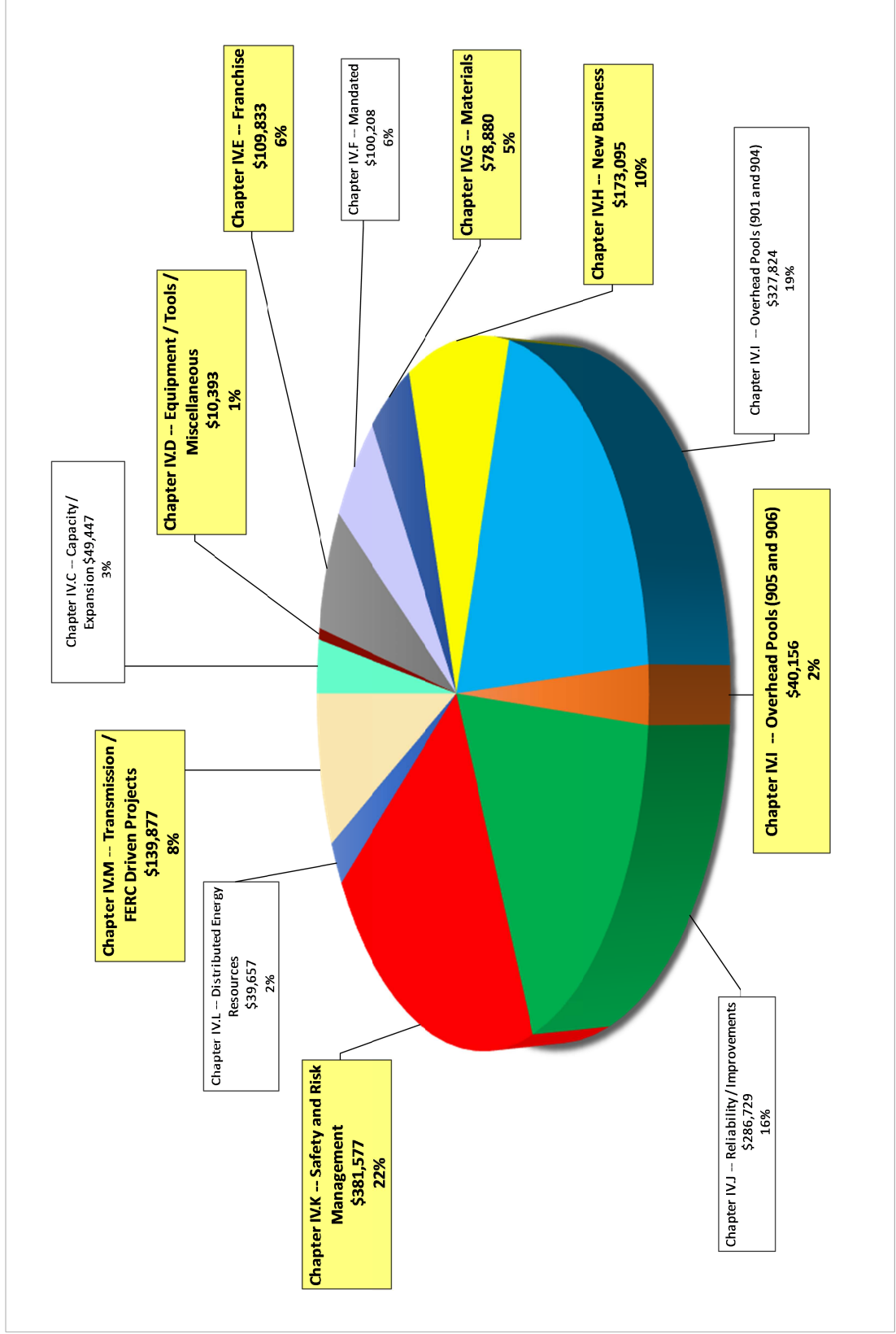
3 **I. INTRODUCTION**

4 This exhibit presents the analyses and recommendations of the Office of  
5 Ratepayer Advocates (ORA) regarding certain Electric Distribution Capital  
6 expenditure proposals of San Diego Gas & Electric Company (SDG&E) for 2017  
7 through 2019 in its Test Year (TY) 2019 General Rate Case (GRC). Specifically,  
8 this exhibit addresses SDG&E's proposals pertaining to:

- 9 • Equipment / Tools / Miscellaneous
- 10 • Franchise
- 11 • Materials
- 12 • New Business
- 13 • Overhead Pools – Other
- 14 • Safety and Risk Management
- 15 • Transmission / Federal Energy Regulatory Commission (FERC)  
16 Driven

17 The companion document, Exhibit (Ex.) ORA-06 (Part 1 of 2), addresses the  
18 remaining SDG&E's Electric Distribution Capital expenditure proposals that are not  
19 discussed here. It analyzes capital projects pertaining to: capacity/expansion;  
20 mandated; overhead pools-engineering; reliability/improvements; and projects  
21 associated with distributed energy. On the following page, ORA provides a Pie-  
22 Chart (Chart 7-1) showing how the capital categories discussed in Ex. SDG&E-14-R  
23 were divided between this exhibit and Ex. ORA-06. Capital categories discussed in  
24 this volume of ORA testimony are highlighted in yellow. The Pie-Chart also shows  
25 SDG&E's total proposed capital expenditures (over the period 2017 through 2019)  
26 for each category, as well as the percentage that each category contributes to the  
27 totality of SDG&E's proposed expenditures. The combined 3-year total of all of  
28 SDG&E's requests equals \$1.738 billion.

**Chart 7-1**  
**DIVISION OF T&D CAPITAL EXPENDITURES FOR SDG&E – CPUC JURISDICTION**  
 (Thousands of 2016 Direct Nominal Dollars)



1 Electric distribution capital expenditures include plant investment in electric  
2 meters and transformers, distribution substations, replacing/reinforcing poles,  
3 installing equipment to mitigate safety and reliability concerns, and undergrounding  
4 distribution cables. Typical Electric distribution capital projects would include  
5 expenditures to construct or modify facilities for the distribution of electricity, projects  
6 to construct or modify substations to transform transmission voltage to a lower  
7 distribution voltage, and projects to improve distribution system capacity and  
8 reliability (including aging infrastructure issues, as well as safety and reliability  
9 issues).

## 10 **II. SUMMARY OF RECOMMENDATIONS**

11 The following summarizes ORA's recommendations regarding the Electric  
12 Distribution Capital expenditures discussed in this exhibit:

- 13 • ORA's 2017 forecast is \$34.331 million lower than SDG&E's  
14 request for \$245.781 million, to reflect recorded 2017 capital  
15 expenditures.
- 16 • ORA's forecast for the Equipment / Tools / Miscellaneous capital  
17 category is lower than SDG&E's by \$1.494 million in 2018 and  
18 \$1.992 million in 2019.
- 19 • ORA's forecast for the Franchise capital category is lower than  
20 SDG&E's request by \$3.197 million in 2018; ORA agrees with  
21 SDG&E's 2019 forecast.
- 22 • ORA's forecast for the Materials capital category is lower than  
23 SDG&E's request by \$0.998 million in 2018 and \$1.378 million in  
24 2019.
- 25 • ORA's forecast for the New Business capital category is lower than  
26 SDG&E's request by \$11.179 million in 2018 and \$13.979 million in  
27 2019.
- 28 • ORA's forecast for the Overhead Pools capital category is lower  
29 than SDG&E's request by \$3.084 million in 2018 and by \$3.312  
30 million in 2019.
- 31 • ORA's forecast for the Safety and Risk Management capital  
32 category is lower than SDG&E's request by \$15.878 million in 2018  
33 and \$26.450 million in 2019.

- 1           • ORA’s forecast for the Transmission / FERC Driven capital  
2           category is lower than SDG&E’s request by \$6.882 million in 2018  
3           and \$8.566 million in 2019.

4           Table 7-1 (shown below on the next page) provides a more comprehensive  
5           overview of the above recommendations. The table shows recorded capital  
6           expenditures for the years 2012 through 2016, and compares ORA’s and SDG&E’s  
7           2017 through 2019 forecasts. As shown in Column G (shaded), ORA was able to  
8           obtain 2017 recorded expenditures for all of the capital categories, eliminating the  
9           need to derive forecasts for that year.

10           ORA’s forecasts for 2018 and 2019 represent adjustments that are based on  
11           degree of need, not outright elimination. Stated another way, where ORA disagrees  
12           with SDG&E’s forecasts, those disagreements are largely based on the levels of the  
13           requested expenditures; ORA has not concluded, nor is it recommending, that any of  
14           these projects should be rejected.

15           In Table 7-1, all of the recorded and forecast numbers shown in the table are  
16           presented in constant 2016 dollars. This presentation allows for the direct  
17           comparison of historical and future expenditures without the impact of escalation.  
18           Both ORA and SDG&E escalate these forecast amounts based on inflation forecasts  
19           that each will derive. ORA’s capital escalation rates are discussed in Ex. ORA-28.

20           ORA has provided a separate section of this testimony (Section V) that is  
21           dedicated to discussing and analyzing RAMP-driven projects.<sup>1</sup> It should be  
22           mentioned that SDG&E has identified a large number of capital projects that it has  
23           identified as being associated with RAMP risks. In Appendix C of Ex. SDG&E-14-R,  
24           SDG&E has provided a 3-page list of RAMP-driven capital projects that it has  
25           proposed for just the Electric Distribution Capital portion of this GRC. This volume of  
26           ORA’s testimony is analyzing 15 of the projects included in Appendix C, which are  
27           the ones shaded in green in Table 7-1.

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<sup>1</sup> On Table 7-1, the RAMP-driven capital projects that are discussed in this volume of ORA’s testimony have been shaded in green.





1 **III. GENERAL DISCUSSION**

2 **A. Background**

3 Capital expenditures are cumulative in nature. Expenditures made during  
4 one year are added to expenditures that were made in previous years. These  
5 cumulative expenditures become part of rate base once they are used and useful,  
6 and the utility can then begin earning a return on them. Therefore, ORA must  
7 analyze all of the proposed capital expenditures occurring from the end of the last  
8 recorded year (SDG&E included 2016 recorded data in its exhibits and workpapers)  
9 through the end of the Test Year (2019).

10 In order to eliminate estimating uncertainty, ORA endeavors to obtain  
11 additional years of recorded plant data whenever possible. In this GRC, ORA was  
12 able to obtain recorded expenditures for 2017. As will be discussed in detail later,  
13 ORA is recommending that SDG&E's recorded 2017 capital expenditures be  
14 adopted for capital areas discussed in this exhibit.

15 In its exhibits and workpapers, SDG&E has presented its capital expenditures  
16 in direct constant dollars. "Direct" dollars do not include various loadings, such as  
17 the capitalized portions of Pensions and Benefits, Payroll Taxes, Injuries and  
18 Damages, Administrative and General Expenses, etc. These various loadings are  
19 estimated separately and are allocated to the various capital projects by the Results  
20 of Operations (RO) computer model. "Constant" dollars refers to the fact that  
21 SDG&E's forecasts are presented with estimates that exclude escalation. In this  
22 GRC, SDG&E's capital forecasts are expressed in 2016 dollars. For example, a  
23 2018 capital expenditure will not use 2018 dollars for its forecast, but will present the  
24 estimate in 2016 dollars, with escalation automatically added later by the RO  
25 computer model. Because the exhibits, workpapers, and the RO computer model  
26 are all set up to use direct constant 2016 dollars, ORA is presenting its analyses and  
27 estimates in the same manner.

28 **B. Capital Expenditures versus Capital Additions**

29 This exhibit only discusses capital expenditures and does not specifically  
30 address SDG&E's capital additions. The distinction between the two is important.

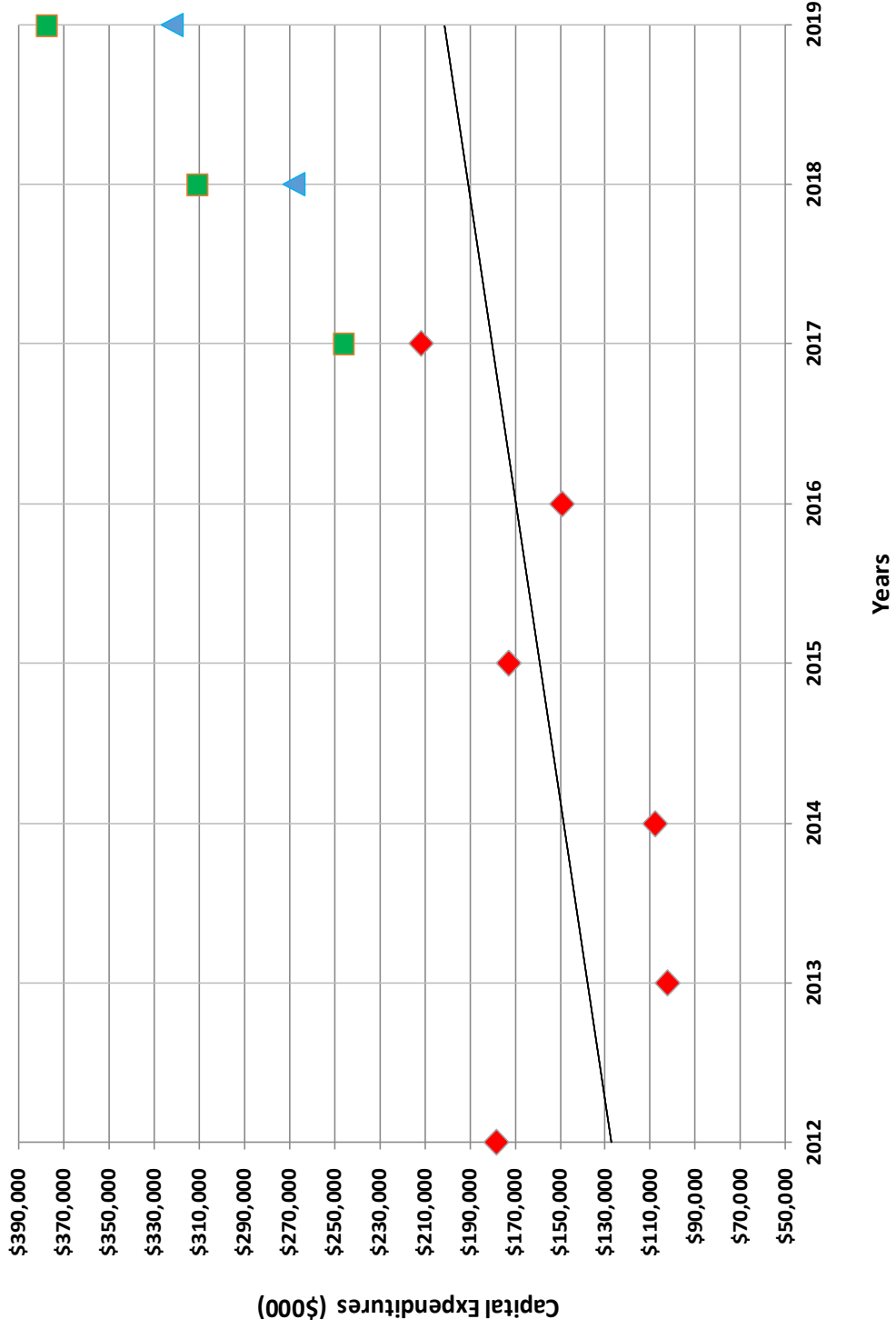
1 Capital expenditures, as the term implies, reflect the capital dollars that SDG&E  
2 spends in a given year. No consideration is given as to whether or not those  
3 expenditures result in projects that are actually completed (and considered to be  
4 “used and useful”) during the year. In contrast, capital additions reflect the dollar  
5 amount of projects that are completed during a given year, regardless of when the  
6 expenditures actually took place. SDG&E has presented its testimony and  
7 workpapers using the “expenditure” format. SDG&E’s (and ORA’s) RO computer  
8 model takes these expenditures and converts them to capital additions using project  
9 completion dates that are loaded into the model. To be consistent, ORA also  
10 presented its discussions and recommendations using capital expenditures. Capital  
11 expenditures that occur after TY 2019 are not discussed in this exhibit.

12 When analyzing data in this format, the revenue requirement impact of  
13 recommended adjustments to capital expenditures may not show up in the year in  
14 which the adjustments are made. For example, assume a capital project is planned  
15 to begin construction in 2018, but is not scheduled to be completed until 2019. If  
16 ORA recommends an adjustment to the 2018 expenditures, there would not be a  
17 revenue requirement impact until 2019, when the project is completed, is booked to  
18 plant-in-service, and begins earning a return.

### 19 **C. Overview of Capital Expenditures**

20 Table 7-1 presents a detailed overview of the capital expenditures being  
21 forecast by SDG&E and ORA for the years 2017, 2018, and 2019. Given the level of  
22 detail contained in that table, ORA has prepared a graph to visually show how the  
23 proposed expenditures compare to recorded data. The following graph (see Graph  
24 7-1 below) compares the overall forecasts for 2017, 2018, and 2019 with the pattern  
25 of past recorded expenditures.

**Graph 7-1**  
**HISTORICAL AND FORECAST ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES**  
**CPUC Jurisdiction -- 2016 Constant Dollars (\$000)**



1           Several aspects of Graph 7-1 need to be discussed. First, the trend line  
2 shown on the graph was derived by utilizing recorded data for 2012 through 2017  
3 (the red diamond shapes). Note that ORA uses 2017 recorded information in lieu of  
4 an independently derived forecast for that year. The graph shows that SDG&E's  
5 forecast for 2017 (the green square) was higher than the actual recorded  
6 expenditure. As the line shows, the trend of recorded capital expenditures indicates  
7 an expectation that future expenditures (in 2018 and 2019) will be steadily  
8 increasing, and would be expected to slightly exceed \$200 million by 2019.

9           The second aspect of the graph that is of interest involves SDG&E's  
10 proposed expenditures for 2018 and 2019 (the green squares). They are much  
11 higher than past historical expenditures, and exceed the forecasts that might be  
12 expected by using expenditures extrapolated from the trend line. Not only are  
13 SDG&E's 2018 and 2019 forecasts higher than expected, the graph shows dramatic  
14 increases in proposed capital expenditures that increasingly deviate from the trend  
15 line.

16           The third aspect of Graph 7-1 is that ORA is recommending increases that  
17 are larger than what has occurred previously. This acknowledges that some level of  
18 capital expenditure increases are warranted. As shown on the graph (the blue  
19 triangles), ORA's recommended capital expenditures in 2018 and 2019 are higher  
20 than what would be expected by simply looking at the trend line, and are much  
21 higher than past recorded years.

22           Lastly, it is important to point out that ORA did not rely on this trend to derive  
23 its forecasts. Graph 7-1 simply provides a visual representation of how the  
24 proposed expenditures compare with what would be expected given recent historical  
25 experience.

1 **IV. ADJUSTMENT TO REFLECT 2017 RECORDED DATA**

2 ORA was able to obtain recorded 2017 capital expenditures from SDG&E.<sup>2</sup>  
3 As seen on Table 7-1, Line 63, Column H, actual recorded 2017 capital expenditures  
4 for the seven capital categories that are the subject of this exhibit are \$34.331 million  
5 less than what SDG&E had forecast for that year. Since capital expenditures are  
6 cumulative in nature (i.e., one year's capital additions are added to the next), in  
7 order to develop a test year rate base, capital expenditures must be developed for  
8 all estimated years. In this GRC, SDG&E's last recorded year was 2016, meaning it  
9 had to develop forecasts for 2017, 2018, and 2019. Since ORA was able to obtain  
10 2017 recorded data, it proposes to use this as its 2017 forecast, and therefore only  
11 had to develop independent forecasts for 2018 and 2019.

12 In its RO computer model, SDG&E includes well over 400 lines of in-depth  
13 capital project details. These line items include data for all of the capital projects (for  
14 both the gas and electric system) that SDG&E is proposing for this GRC. In the RO  
15 model, SDG&E has reflected 2017 estimated data for its capital programs. ORA has  
16 incorporated recorded 2017 capital expenditures into the RO computer model for the  
17 projects being analyzed in this exhibit. While many of the 2017 recorded costs of  
18 individual capital projects are actually higher than what SDG&E had originally  
19 forecast, most are lower. The net impact on the RO computer model of replacing  
20 the estimated data with the recorded information is a lowering of the 2017 capital  
21 expenditures by a total of \$34.331 million.

22 On March 12, 2018, SDG&E sent ORA an email that contained recorded  
23 2017 capital expenditure data. ORA has incorporated the recorded data into this  
24 exhibit. However, when ORA compared the capital projects that were listed in the  
25 recorded data to the capital projects that were contained in all of Ex. SDG&E-14-R,  
26 ORA noted that the recorded data contained 54 new capital projects that had not  
27 been present in SDG&E's testimony. SDG&E did not discuss, explain, or justify  
28 these projects, nor did it provide calculations showing how the costs for these new

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<sup>2</sup> SDG&E provided ORA with 2017 recorded capital in an email dated March 12, 2018.

1 projects were derived. Forecasts for expenditures beyond 2017 were not provided.  
2 The 2017 expenditure total for these 54 new capital projects amounts to \$20.908  
3 million (in 2016 dollars).

4 When utilities file their GRC applications, they always have the burden of  
5 justifying their capital forecasts and requests. It is not a trivial endeavor to put  
6 together the testimony necessary to meet that burden. Utilities must explain why a  
7 particular project is necessary, show how the costs were derived, and discuss what  
8 other options were considered. In short, utilities must provide sufficient information  
9 to enable ORA, and other intervenors, to determine whether or not a capital project  
10 is justified. SDG&E has not provided any of the information necessary to determine  
11 the reasonableness of these 54 new projects. SDG&E's RO computer model does  
12 not include these 54 projects. If ORA was to recognize these new projects in this  
13 GRC, it could send a signal that utilities need not justify their capital requests.  
14 Therefore, ORA has excluded these 54 unsubstantiated projects from its 2017  
15 capital expenditure forecast in this GRC.

## 16 **V. ANALYSIS OF RAMP-DRIVEN PROJECTS**

17 As part of its showing, SDG&E provided testimony regarding the Risk  
18 Assessment Mitigation Phase (RAMP) proceeding of this GRC. In its November 30,  
19 2016 RAMP report, SDG&E identified a number of risk-mitigation projects. SDG&E  
20 has included numerous RAMP-driven projects in its Electric Distribution Capital  
21 testimony (Ex. SDG&E-14-R). In Table 7-1, ORA has identified (by shading in  
22 green) the 15 RAMP-driven projects that are included in the capital categories that  
23 are analyzed by this volume of ORA's testimony. While SDG&E has identified many  
24 different RAMP-driven capital projects in various areas of this GRC, ultimately 44 of  
25 those projects ended up being included in Ex. SDG&E-14-R (they are listed in  
26 Appendix C of SDG&E's testimony). Of those 44, only the 15 projects shaded in  
27 green are discussed and analyzed in this portion of ORA's testimony. As seen in  
28 Table 7-1, all but one of those RAMP-driven projects are included as part of either  
29 the Safety and Risk Management capital category or the Transmission / FERC-  
30 Driven capital category.

1           ORA is aware of the heightened emphasis on increased reliability and safety.  
2   In order to get a better understanding of the magnitude of these proposed RAMP-  
3   driven expenditures, ORA prepared Graph 7-2, which is shown on the next page.  
4   The initial portion of Graph 7-2 (for the years 2012 through 2016 – in red) shows the  
5   total amount of recorded capital expenditures that occurred each year (for the same  
6   capital categories that are being analyzed here in this exhibit). The second portion  
7   of the graph (for the years 2017 through 2019 – in blue) shows only the forecasts for  
8   the 15 RAMP-related project expenditures that SDG&E has requested for the years  
9   2017 through 2019 (for the capital categories that are being analyzed in this portion  
10   of electric distribution capital). As the bar-graph shows, SDG&E's forecasts, for only  
11   these 15 RAMP-driven expenditures, are larger than many of the total recorded  
12   expenditures in prior years. In fact, for 2019, SDG&E's proposed RAMP-driven  
13   forecast of \$222.988 million is, by itself, much larger than any of the five yearly total  
14   expenditures in 2012 through 2016.

15           Graph 7-2 graphically shows that in sheer size alone, the proposed RAMP-  
16   driven expenditures are equivalent to adding an additional GRC's-worth of  
17   expenditures each year. SDG&E bears the burden of justifying these levels of  
18   capital expenditures. While ORA realizes the importance of reducing risk, it is  
19   incumbent on SDG&E to similarly realize that it must not only show that the  
20   proposed RAMP-driven projects are necessary, but that it also has the staffing,  
21   permits, and resources to complete these projects in the time schedules being  
22   proposed in this GRC. After evaluating the testimony and workpapers provided in  
23   support of the RAMP-related projects, ORA has concluded that SDG&E has not met  
24   its burden of proof in many instances.

25           As an initial start to its analysis of the proposed RAMP-driven capital projects,  
26   ORA analyzed the description of each projects that SDG&E included in Ex. SDG&E-  
27   14-R. Because of the extent of the costs for projects associated with RAMP-  
28   identified risks, ORA expected to find clearly defined, fully justified, and completely

**Graph 7-2**  
**TOTAL RECORDED EXPENDITURES VS. SDG&E'S RAMP-DRIVEN FORECASTS**  
**CPUC Jurisdiction -- 000s of 2016 Dollars**





1 detailed descriptions for each of the 15 projects. SDG&E did not provide this level of  
2 detail. An example of this lack of specificity occurred in SDG&E's description of the  
3 Electric Integrity RAMP project (line 35 in Table 7-1). This RAMP-driven project is  
4 described as being a series of ongoing programs that are intended to mitigate safety  
5 risks in non-Fire Threat Zone (FTZ) areas.<sup>3</sup> Many of these programs are expected  
6 to span a period of ten or more years. SDG&E states that it continues to assess  
7 these programs, and will implement new programs in addition to, or in place of, the  
8 currently planned programs. SDG&E further states that it is continuing to refine its  
9 comprehensive risk quantification methodologies.<sup>4</sup> In short, some of these projects  
10 have not yet been definitively selected, and will likely change during the 10 or more  
11 years required for completion. ORA concludes that SDG&E has not met its burden  
12 to adequately define and justify this project.

13 The Pole Risk Mitigation and Engineering (PRiME) project, found on Line 40  
14 of Table 7-1, is also of concern. As Line 40 shows, SDG&E has forecast spending  
15 \$0.270 million in 2017, \$4.582 million in 2018, and \$40.430 million in 2019.  
16 SDG&E's proposed 2018 forecast is nearly 17 times larger than 2017, while its 2019  
17 forecast is nearly nine times larger than 2018. SDG&E has not thoroughly explained  
18 how it intends to scale-up its resources to meet its ambitious expenditure forecasts  
19 in 2018 and 2019. A 2019 forecast that is nearly 150 times greater<sup>5</sup> than the 2017  
20 forecast has a high probability of not reaching its expenditure goals, especially when  
21 recorded 2017 data show that zero expenditures actually occurred.

22 On the following page, Graph 7-3 shows the trend of recorded RAMP-driven  
23 capital expenditures, and presents forecasts for ORA and SDG&E for 2017, 2018,  
24 and 2019.

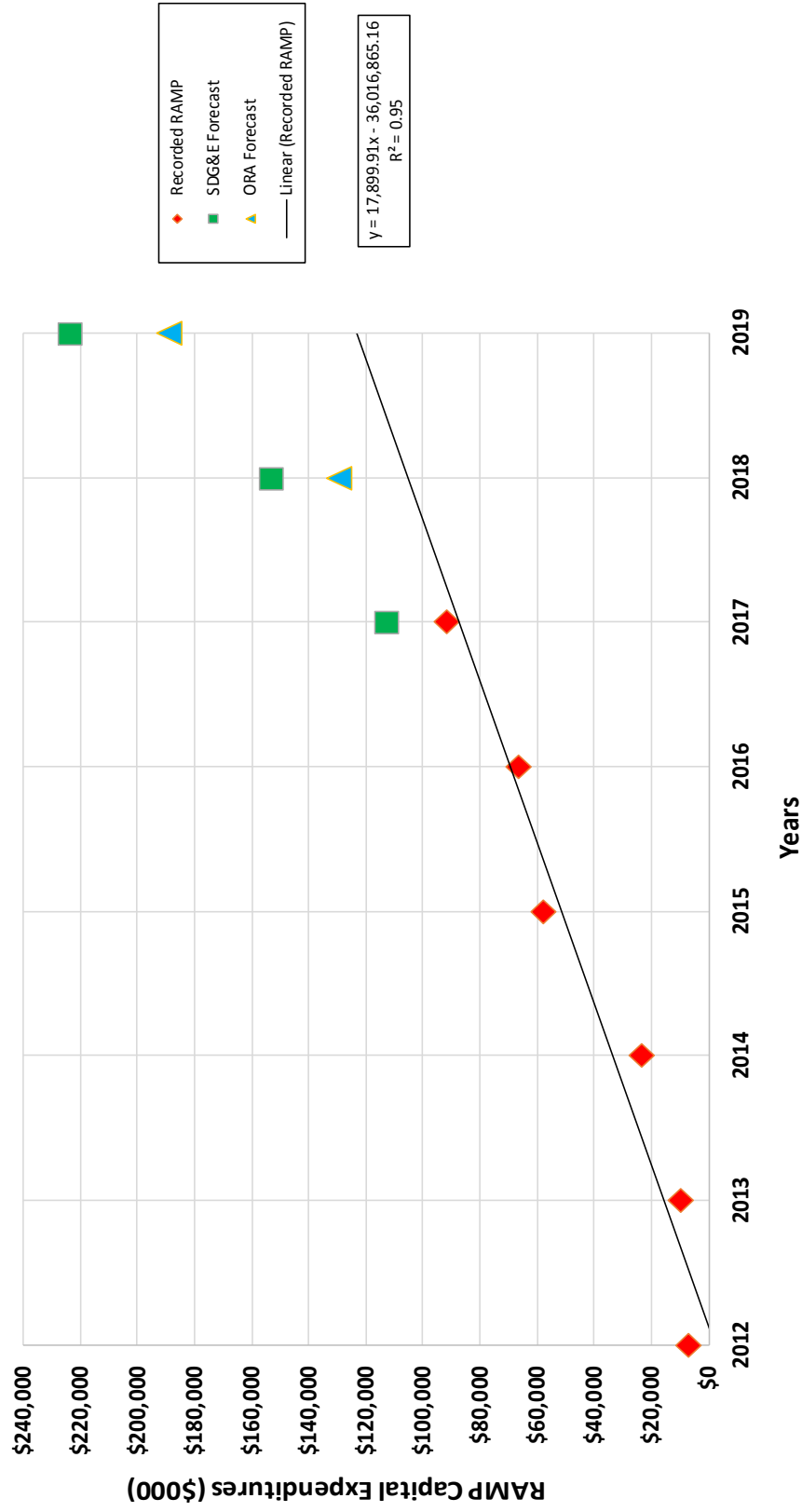
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<sup>3</sup> Ex. SDG&E-14-R, page AFC-118, lines 17 and 18.

<sup>4</sup> Ex. SDG&E-14-R, page AFC-118, lines 21 through 25.

<sup>5</sup> \$40.430 million (in 2019) divided by \$0.270 million (in 2017) equals 149.74.

**Graph 7-3**  
**HISTORICAL AND FORECAST ELECTRIC DISTRIBUTION EXPENDITURES FOR RAMP-DRIVEN PROJECTS**  
**CPUC Jurisdiction -- 2016 Constant Dollars (\$'000)**



1 Graph 7-3 provides a graphical representation of RAMP-driven expenditures  
2 over the years. As clearly seen by the green squares in Graph 7-3, SDG&E's 2018  
3 and 2019 forecasts for RAMP-driven projects are dramatically higher than those that  
4 have occurred in the past. Prior to 2017, SDG&E did not specifically classify capital  
5 projects into a category that was associated with RAMP risks. In this GRC showing,  
6 SDG&E's testimony did not discuss capital projects that were completed prior to  
7 2017, as those projects would already be in rate base, and no additional analyses  
8 would be needed. However, in response to data request ORA-SDGE-096-GAW,  
9 SDG&E provided a list, for each of the recorded years 2012 through 2016, of all its  
10 capital projects, regardless of their completion dates. At ORA's request, SDG&E  
11 itemized these capital projects into the categories shown on Table 7-1. ORA went  
12 through this list, and sorted the projects into the categories of "Safety and Risk  
13 Management" and "Transmission / FERC-Driven," the two capital categories that  
14 contain virtually all of the RAMP-related projects that have been included in this  
15 volume of ORA's testimony. ORA then went through these projects, and determined  
16 which ones would have fallen into the RAMP-driven category (had they been  
17 undertaken in 2017 or later). These pre-2017 projects are reflected in Graph 7-3.

18 ORA created Table 7-2, shown on the next page, to help develop reasonable  
19 forecasts for RAMP-related expenditures. That table consolidates all of the capital  
20 projects associated with RAMP risks that appear in this volume of ORA's testimony,  
21 and shows recorded and forecast expenditures. Recorded 2017 data are  
22 highlighted in yellow. Using the data included in Table 7-2, it can be seen that  
23 SDG&E's proposed 2019 RAMP-driven expenditures exceed the recorded 2017  
24 RAMP-driven expenditures by over \$130 million.<sup>6</sup>

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<sup>6</sup> As shown in Table 7-2 on line 21, recorded 2017 RAMP-driven expenditures total \$91.296 million. SDG&E's 2019 forecast for RAMP-driven expenditures is \$222.988 million. The difference is \$131.692 million.

Table 7-2

T&D CAPITAL EXPENDITURES FOR SDG&E RAMP-DRIVEN PROJECTS -- CPUC JURISDICTION  
(Thousands of Direct 2016 Dollars)

Line #	Budget Code	RAMP-Driven Capital Projects	Recorded -- 000s of Constant 2016 \$						Forecast -- 000s of Constant 2016 \$												
			2012		2013		2014		2015		2016		2017		2018		2019				
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)					
1	906	Overhead Pools - Partial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,872	\$6,629		\$7,392	\$5,569	\$1,823	\$9,370	7,402	\$1,968	
2		Contract Administration Pool	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,872	\$6,629		\$7,392	\$5,569	\$1,823	\$9,370	7,402	\$1,968	
		Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,872	\$6,629		\$7,392	\$5,569	\$1,823	\$9,370	7,402	\$1,968	
		Safety and Risk Management																			
3	13247	FRM GRC Blanket Budget	\$0	\$3,451	\$8,876	\$8,880	\$47,282	\$5,780	\$5,129	\$57,760	\$48,752	\$57,760	\$5,129	\$5,129	\$57,760	\$48,752	\$9,028	\$57,760	48,976	\$8,804	
4	14249	SF6 Switch Replacement	\$0	\$0	\$0	\$0	\$459	\$3,509	\$3,103	\$0	\$0	\$3,509	\$3,103	\$406	\$14,088	\$11,887	\$2,201	\$14,088	11,941	\$2,147	
5	15259	FTZ Advanced Protection and SCADA Upgrades	\$0	\$0	\$0	\$0	\$1,668	\$1,337	\$3,495	\$0	\$0	\$1,337	\$3,495	(\$2,158)	\$1,337	\$1,128	\$209	\$1,337	1,133	\$204	
6	16252	Electric Integrity RAMP	\$0	\$0	\$0	\$0	\$0	\$788	\$0	\$0	\$0	\$788	\$0	\$788	\$14,858	\$12,537	\$2,321	\$14,858	44,421	\$7,985	
7	16255	RTU Modernization	\$0	\$0	\$0	\$0	\$0	\$5,969	\$0	\$0	\$0	\$5,969	\$0	\$5,969	\$8,977	\$7,574	\$1,403	\$8,977	3,136	\$564	
8	16259	TP - C261, C262, C263, and C266 Re-Route	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3,257	\$665	
9	17242	Twin Engine Helicopter	\$0	\$0	\$0	\$0	\$0	\$10,000	\$7,464	\$0	\$0	\$10,000	\$7,464	\$2,536	\$0	\$0	\$0	\$0	0	\$0	
10	17254	Pole Risk Mitigation and Engineering (PRIME)	\$0	\$0	\$0	\$0	\$0	\$270	\$0	\$0	\$0	\$270	\$0	\$270	\$4,582	\$3,866	\$716	\$4,582	34,269	\$6,161	
11		RAMP-Type Projects Completed Prior to 2017	\$5,479	\$4,413	\$9,785	\$44,490	\$6,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0
12		Total	\$5,479	\$7,864	\$18,661	\$53,330	\$56,259	\$79,653	\$66,713	\$12,940	\$101,622	\$85,744	\$15,878	\$15,878	\$173,583	147,133	\$26,450	\$173,583			\$26,450
		Transmission / FERC Driven Projects																			
13	8165	Cleveland National Forest Power Line Replacements	\$0	\$0	\$100	\$368	\$7,176	\$26,155	\$17,953	\$8,202	\$39,209	\$33,083	\$6,126	\$6,126	\$40,035	33,935	\$6,100	\$40,035	33,935	\$6,100	
14	9137	TL649 Oley - San Ysidro - Border SW Pole Rep	\$0	\$0	\$0	\$0	\$0	\$412	\$0	\$412	\$684	\$721	\$133	\$133	\$0	0	\$0	\$0	0	\$0	
15	10144	TL691 Avo - Mon Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$68	\$0	\$68	\$162	\$137	\$25	\$25	\$0	0	\$0	\$0	0	\$0	
16	10146	TL695/6971 Reconductor and Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$123	\$1	\$122	\$1,140	\$962	\$178	\$178	\$0	0	\$0	\$0	0	\$0	
17	10147	TL697 San Luis Rey Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$196	\$0	\$196	\$2,324	\$1,961	\$363	\$363	\$0	0	\$0	\$0	0	\$0	
18	10149	Wood to Steel Pole - Replace - TL691/2	\$0	\$0	\$0	\$0	\$0	\$66	\$0	\$66	\$245	\$207	\$38	\$38	\$0	0	\$0	\$0	0	\$0	
19		RAMP-Type Projects Completed Prior to 2017	\$1,555	\$1,609	\$4,537	\$3,758	\$3,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0
20		Total	\$1,555	\$1,609	\$4,637	\$4,126	\$10,207	\$27,020	\$17,954	\$9,066	\$43,934	\$37,070	\$6,864	\$6,864	\$40,035	33,935	\$6,100	\$40,035	33,935	\$6,100	
21		Grand Total	\$7,034	\$9,473	\$23,298	\$57,506	\$66,466	\$112,545	\$91,296	\$21,249	\$152,948	\$128,383	\$24,565	\$24,565	\$222,988	188,470	\$34,518	\$222,988	188,470	\$34,518	

= Capital projects proposed as part of the Risk Assessment Mitigation Phase (RAMP)  
= 2017 recorded data provided by SDG&E in response to Data Request # ORA-SDGE-086-GAW, Question 4.

1 Table 7-2 shows the number of RAMP-driven projects in 2017 for which no  
2 expenditures were made (see Column G), even though SDG&E had forecast that  
3 dollars would be spent (see Column F). There were eight instances where actual  
4 recorded expenditures were zero (or \$1) in spite of the fact that SDG&E had forecast  
5 that expenditures would occur. The last line of Column H indicates that, in total,  
6 SDG&E's recorded RAMP-related expenditures were \$21.249 million less than  
7 forecast. These observations, combined with the lack of specificity for the proposed  
8 RAMP-driven projects, the proposed rapid acceleration of expenditures in 2018 and  
9 2019, and the lack of any discussion that indicates that SDG&E has the resources to  
10 complete these projects on time, all lead ORA to conclude that SDG&E's forecast  
11 expenditures, in total, are excessive and likely not achievable in 2018 and 2019.

12 ORA analyzed the proposed RAMP-driven projects, but did not conclude that  
13 any specific project should be cancelled. ORA understood SDG&E's rationale for  
14 each of its proposed projects. However, because the specific sub-projects that  
15 make up certain RAMP-driven projects have not yet even been firmly established,  
16 ORA did not attempt to derive its own individual forecasts for each of the 15 RAMP-  
17 driven projects. Such an attempt would also likely be pointless, given the fact that  
18 RAMP-driven projects are still in a state of flux, as shown by the number of 2017  
19 recorded projects that did not incur any expenditures. This indicates a high  
20 probability that SDG&E would not be able to spend as much as forecast (see the  
21 2017 recorded column in Table 7-2), and/or complete these projects as quickly as  
22 SDG&E had forecast. ORA concluded that the most efficient way to proceed with its  
23 forecast derivation was to independently develop a reasonable estimate for the  
24 totality of the RAMP-driven projects, and allocate that total among the various  
25 projects.<sup>7</sup>

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<sup>7</sup> The independent derivation of RAMP-driven forecasts is discussed by ORA in Ex. ORA-03. In that exhibit, ORA reviews and analyzes the RAMP program, as well as the RAMP integration into this GRC. As discussed in that exhibit, ORA concludes that the data produced by the RAMP and integrated into this GRC should be used to inform funding decisions, but not to dictate these decisions or bypass a traditional review of proposals and their alternatives.

1 To develop its totals, ORA turned to Graph 7-3. The trend line shown on that  
2 graph provides a reasonable baseline for developing forecasts; it is reasonable to  
3 expect RAMP-driven expenditures to continue to increase at the rate indicated.  
4 ORA agrees that RAMP-driven expenditures will accelerate, but at a slower pace  
5 than proposed by SDG&E. This is confirmed by the fact that SDG&E could not  
6 successfully complete the comparatively modest RAMP-driven expenditures that it  
7 forecast for 2017.

8 Over time, SDG&E should become more proficient at completing these  
9 projects as it gains experience, but ORA judges that planning and allocating  
10 resources will take longer than SDG&E originally forecast. ORA has concluded that  
11 for 2018, it is reasonable to develop a forecast that evenly splits the difference  
12 between the baseline estimate (derived from the trend line shown on Graph 7-3) and  
13 SDG&E's forecast. With an additional year of experience, and an additional year to  
14 develop more specificity, SDG&E should be able to successfully undertake RAMP-  
15 related expenditures that equal 66% of the difference between the trend line amount  
16 and SDG&E's 2019 forecast. This results in forecasts for all 15 RAMP-related  
17 projects discussed in this ORA testimony of \$128.383 million in 2018 and \$188.470  
18 million in 2019. These ORA forecasts are \$24.565 million lower than SDG&E's  
19 estimate in 2018, and \$34.518 million lower in 2019. The most reasonable method  
20 to allocate these adjustments among the RAMP-driven projects is to use the ratio of  
21 each project's cost to the total RAMP-related costs; that ratio is then applied to the  
22 total proposed reduction to determine the reduction amount attributable to that  
23 project. The individual project forecasts shown in Columns J and M in Table 7-2  
24 reflect this adjustment methodology.<sup>8</sup>

25 In subsequent sections of this testimony, ORA will discuss a variety of capital  
26 categories, and analyze the individual projects contained within those categories.  
27 The RAMP-driven projects contained within these categories are not discussed

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<sup>8</sup> As will be discussed later, the 2018 and 2019 ORA forecasts in Line 1 of Table 7-2 are actually derived using an Excel model, which was obtained from SDG&E, that independently calculates all four of the Overhead Pool capital projects.

1 further, and the reader will be referred back to this section for the basis of any  
2 adjustment.

### 3 **VI. CHANGES TO COMPLETION DATES**

4 The RO computer model utilizes so-called “completion dates” to determine  
5 the correct time a project is considered to be used and useful, and then adds that  
6 project to the plant balance so that SDG&E can begin earning a return on its  
7 investment. As the term suggests, completion dates are simply estimates of when  
8 the utility has calculated that a given project will be completed. As work on a project  
9 progresses, it is often the case that estimates for completion dates will change. In  
10 response to discovery, SDG&E provided updates to the completion dates for a  
11 number of the capital projects that are being reviewed in this exhibit.<sup>9</sup>

12 ORA created Table 7-3, shown on the next page, based on the updated  
13 information contained in these data responses. This table lists all of the capital  
14 projects that are being reviewed in this testimony, along with the original completion  
15 dates (which were coded into the RO model by SDG&E) and the updated completion  
16 dates that were provided by SDG&E. As seen in Column B, many completion dates  
17 remain the same. This designation indicates that either the original date forecast  
18 remained unchanged, or more likely, that ORA did not receive any updated  
19 information for that particular project.

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<sup>9</sup> Completion updates were included in responses to data requests ORA-SDGE-018-TCR and ORA-SDGE-088-GAW.

**Table 7-3  
T&D CAPITAL EXPENDITURES FOR SDG&E -- COMPLETION DATES**

Line #	Budget Code	Category	Project Type or Completion Date	
			Original	Revised
		<b>Equipment / Tools / Miscellaneous</b>	(A)	(B)
1	206	Electric Distribution Tools / Equipment	Routine / Blanket	Same
		<b>Franchise</b>		
2	105	Electric Transmission: Street / Hwy Relocations	Routine / Blanket	Same
3	205	Electric Distribution: Street / Hwy Relocations	Routine / Blanket	Same
4	210	Conversion from OH to UG Rule 20A	Routine / Blanket	Same
5	213	City of San Diego Surcharge (20SD)	Routine / Blanket	Same
6	17250	Pacific Ave. 20B Conversion Phase 2	6/30/2018	11/30/2018
7	17251	Espola Road 20B Conversion	6/30/2018	12/31/2018
8	17252	South Santa Fe Dr. 20B Conversion Phase 2	4/30/2018	1/31/2019
		<b>Materials</b>		
9	202	Electric Meters and Regulators	Routine / Blanket	Same
10	214	Transformers	Routine / Blanket	Same
		<b>New Business</b>		
11	204	Electric Distribution Easements	Routine / Blanket	Same
12	211	Conversion from OH-UG Rule 20B, 20C	Routine / Blanket	Same
13	215	OH Residential New Business	Routine / Blanket	Same
14	216	OH Non-Residential New Business	Routine / Blanket	Same
15	217	UG Residential New Business	Routine / Blanket	Same
16	218	UG Non-Residential New Business	Routine / Blanket	Same
17	219	New Business Infrastructure	Routine / Blanket	Same
18	224	New Service Installations	Routine / Blanket	Same
19	225	Customer Requested Upgrades and Services	Routine / Blanket	Same
20	235	Transformer and Meter Installations	Routine / Blanket	Same
21	15258	Midcoast Trolley Extension Project	Multiple 2017 & 2018 Dates	Same
		<b>Overhead Pools -- Partial</b>		
22	905	Department Overhead Pool	Routine / Blanket	Same
23	906	Contract Administration Pool	Routine / Blanket	Same
		<b>Safety and Risk Management</b>		
24	13247	FIRM GRC Blanket Budget	Routine / Blanket	Same
25	14249	SF6 Switch Replacement	Routine / Blanket	Same
26	15246	Rancho Santa Fe Sub Hardening	12/31/2018	Same
27	15257	Large Scale Communications Infrastr Provider (CIP)	Routine / Blanket	Same
28	15259	FTZ Advanced Protection and SCADA Upgrades	Routine / Blanket	Same
29	16252	Electric Integrity RAMP	Routine / Blanket	Same
30	16255	RTU Modernization	8/31/2019	Same
31	16259	TP: C261, C262, C263, and C266 Re-Route	9/30/2019	Same
32	17242	Twin Engine Helicopter	9/30/2017	3/31/2018
33	17249	Tee Modernization Program	Routine / Blanket	Same
34	17254	Pole Risk Mitigation and Engineering (PRime)	10/31/2019	Same
		<b>Transmission / FERC Driven Projects</b>		
35	100	Electric Transmission Line Reliability Projects	Routine / Blanket	Same
36	103	Transmission Substation Reliability	Routine / Blanket	Same
37	6129	South Orange County Reliability Enhancement (SOCRE)	11/30/2019	Same
38	7144	Fiber Optic for Relay Protect and Telecom	Routine / Blanket	Same
39	8165	Cleveland National Forest Power Line Replacements	Multiple 2017, 2018, & 2019 Dates	Same
40	9137	TL649 Otay - San Ysidro - Border SW Pole Rep	11/30/2018	8/23/2019
41	9153	TL676 Mission to Mesa Heights Reconductor	11/30/2018	12/31/2018
42	10135	Los Coches Sub Rebuild 138/69 kV	12/31/2017	Same
43	10144	TL691 Avo - Mon Wood to Steel	12/31/2018	3/24/2020
44	10146	TL695/6971 Reconductor and Wood to Steel	9/30/2018	9/23/2019
45	10147	TL697 San Luis Rey Wood to Steel	3/31/2018	12/9/2017
46	10149	Wood to Steel Pole - Replace - TL6912	12/31/2018	5/14/2019
47	11126	TL663 Mission to Kearny Mesa Reconductor	6/30/2018	1/31/2019
48	11133	TL664 - Wood to Steel	1/31/2017	12/31/2017
49	12137	TL6916 - Wood to Steel	1/31/2019	8/31/2019
50	12149	TL694 - Wood to Steel	1/31/2019	5/31/2019
51	13130	TL674A Del Mar Reconfigure/TL666D RFS	12/31/2019	6/30/2020
52	14140	TL698 Wood to Steel Project	1/31/2019	Same

= Capital projects proposed as part of the Risk Assessment Mitigation Phase (RAMP)



1 Most of these date changes will not impact the forecast expenditures that  
2 SDG&E originally developed for these capital projects; they only impact when the  
3 computer model adds the project to the plant balance, which can have an effect on  
4 the revenue requirement. The one capital forecast that was impacted by a date  
5 change was Budget Code project 13130, which is shown on Line 51 above. In that  
6 instance, the completion date was pushed out to the year 2020. Since SDG&E had  
7 originally expected this project to be completed in 2019, and since virtually all of the  
8 forecast expenditures were initially planned for 2019, ORA concluded that the  
9 expenditures originally planned for 2019 would now occur in 2020. The impact of  
10 that change will be discussed more fully in the upcoming discussion of the projects  
11 included in the Transmission / FERC-Driven capital category.

## 12 **VII. EQUIPMENT / TOOLS / MISCELLANEOUS PROJECTS**

13 In order to operate and maintain its electric infrastructure, SDG&E's workers  
14 need a variety of tools and equipment. Costs for procuring these tools and  
15 equipment are charged to the Equipment / Tools / Miscellaneous capital category.  
16 During this rate case cycle, SDG&E is also purchasing new fire retardant garments  
17 and safety gear to comply with new Cal-OSHA and Fed-OSHA requirements. This  
18 required a complete turnover of the uniforms and safety gear in order to meet the  
19 new requirements.

### 20 **A. Overview of SDG&E's Request**

21 This project category consists of only a single capital project. Table 7-4,  
22 presented on the next page, shows the entirety of this category. The yellow  
23 highlighting in Column G indicates that ORA was able to obtain recorded 2017 data,  
24 and proposes to use that figure as its 2017 forecast.

**TABLE 74**

**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**

Recorded and Forecast Expenditures For Equipment / Tools / Miscellaneous Capital Projects

Line #	Budget Code	Equipment/ Tools / Miscellaneous	Recorded -- 000s of Constant 2016 \$					Forecast -- 000s of Constant 2016 \$								
			2017		2018			2019								
			2012 (A)	2013 (B)	2014 (C)	2015 (D)	2016 (E)	SDG&E (F)	ORA = Recorded (G)	SDG&E > ORA (H)	SDG&E (I)	ORA (J)	SDG&E > ORA (K)	SDG&E (L)	ORA (M)	SDG&E > ORA (N)
			\$2,633	\$1,149	\$382	\$1,357	\$1,376	\$4,833	\$8,130	(\$3,297)	\$2,631	\$1,037	\$1,494	\$3,029	\$1,037	\$1,992
1	206	Electric Distribution Tools / Equipment	\$2,633	\$1,149	\$382	\$1,357	\$1,376	\$4,833	\$8,130	(\$3,297)	\$2,631	\$1,037	\$1,494	\$3,029	\$1,037	\$1,992
2		Total	\$2,633	\$1,149	\$382	\$1,357	\$1,376	\$4,833	\$8,130	(\$3,297)	\$2,631	\$1,037	\$1,494	\$3,029	\$1,037	\$1,992

2017 recorded data provided by SDG&E in response to Data Request # ORA-SDG&E-086-GAW, Question 4.

1           **B. Analysis**

2           SDG&E’s testimony indicates that it had intended to use a simple 3-year  
3 average of recorded expenditures (2014 through 2016) to derive its forecasts.<sup>10</sup>  
4 When ORA examined the workpapers for this project, they showed that SDG&E had  
5 instead used a 3-year trend. In response to data request ORA-SDGE-045-GAW,  
6 Question 1, SDG&E confirmed that a 3-year average should have been used. In  
7 deriving its forecasts for 2018 and 2019, ORA used a 3-year average, resulting in  
8 lower forecasts for those years.

9           ORA was able to obtain a recorded figure for 2017 expenditures, so no  
10 independent forecasts were necessary. In response to data request ORA-SDGE-  
11 045-GAW, Question 3, SDG&E confirmed that the one time upgrade for fire  
12 retardant garments and safety equipment occurred in 2017, accounting for the large  
13 increase in expenditures for that year.

14           **C. Conclusions**

15           The only adjustments ORA recommends for this project category are to  
16 incorporate recorded data for 2017, and to correct the methodology used to derive  
17 the 2018 and 2019 forecasts by using SDG&E’s intended 3-year average. As shown  
18 in Table 7-4, ORA is recommending Tools / Equipment / Miscellaneous capital  
19 expenditures of \$8.130 million in 2017, \$1.037 million in 2018, and \$1.037 million in  
20 2019. ORA’s recommended expenditures are \$3.297 million higher than SDG&E’s  
21 in 2017, \$1.494 million lower in 2018, and \$1.992 million lower in 2019.

22           **VIII. FRANCHISE PROJECTS**

23           The Franchise category consists of seven separate capital projects. These  
24 projects generally involve either the conversion of overhead distribution systems to  
25 underground systems, or the relocation of facilities due to improvements (usually

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<sup>10</sup> Ex. SDG&E-14-R, page AFC-33, line 27.

1 street widenings) by governmental agencies.<sup>11</sup> SDG&E is required to undertake  
2 both of these types of projects by either franchise agreements (hence the name of  
3 this category) or by Commission Rules.

#### 4 **A. Overview of SDG&E’s Request**

5 Table 7-5, shown on the next page, lists the seven capital projects that  
6 constitute this category; it also shows SDG&E’s and ORA’s capital forecasts for the  
7 years 2017, 2018, and 2019. Column G is highlighted in yellow to indicate that it  
8 contains recorded expenditures.

#### 9 **B. Analysis**

10 Table 7-5 reveals that ORA’s proposed 2018 forecasts differed from  
11 SDG&E’s forecasts in only three instances. For 2019, ORA did not take issue with  
12 any of SDG&E’s forecasts. As discussed below, ORA did not dispute SDG&E’s  
13 forecasts for the two largest projects in Table 7-5, which are the Rule 20A  
14 Undergrounding (Budget Code 210) and the City of San Diego Surcharge (Budget  
15 Code 213).

##### 16 **1. Rule 20A Undergrounding**

17 The Commission is currently conducting an Order Instituting Rulemaking  
18 (OIR) to investigate the entire Rule 20A process.<sup>12</sup> In this current GRC, SDG&E  
19 proposed to use a simple 5-year average to develop its Rule 20A forecasts. SDG&E  
20 put forth no proposals to “catch up” with undergrounding backlogs, or to accelerate  
21 undergrounding expenditures. ORA does not take issue with SDG&E’s capital  
22 expenditure forecasts for 2018 and 2019.

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<sup>11</sup> Ex. SDG&E-14-R, page AFC-35, lines 4 through 7.

<sup>12</sup> Rulemaking 17-05-010

**TABLE 7-5**  
**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**  
 Recorded and Forecast Expenditures For Franchise Capital Projects

Line #	Budget Code	Franchise Capital Projects	Recorded --000s of Constant 2016 \$						Forecast --000s of Constant 2016 \$									
			2012		2013		2014		2015		2016		2017		2018		2019	
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)		
1	105	Electric Transmission: Street / Hwy Relocations	(\$3)	(\$162)	\$0	\$0	\$462	\$154	\$175	(\$21)	\$154	\$154	\$0	\$154	\$154	\$0	\$0	
2	205	Electric Distribution: Street / Hwy Relocations	\$8,714	\$3,944	\$4,498	\$3,798	\$5,253	\$5,241	\$2,919	\$2,322	\$5,241	\$5,241	\$0	\$5,241	\$5,241	\$0	\$0	
3	210	Conversion from OH to UG Rule 20A	\$13,650	\$13,422	\$8,411	\$10,449	\$8,715	\$10,929	\$16,716	(\$5,787)	\$10,929	\$10,929	\$0	\$10,929	\$10,929	\$0	\$0	
4	213	City of San Diego Surcharge (20SD)	\$19,502	\$16,792	\$17,971	\$18,872	\$6,232	\$18,139	\$11,523	\$6,616	\$18,499	\$18,499	\$0	\$18,499	\$18,866	\$0	\$0	
5	17250	Pacific Ave. 20B Conversion Phase 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,226	\$1,200	\$1,026	\$0	\$0	\$0	\$0	
6	17251	Espola Road 20B Conversion	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,121	\$360	\$1,761	\$0	\$0	\$0	\$0	
7	17252	South Santa Fe Dr. 20B Conversion Phase 2	\$0	\$0	\$0	\$0	\$0	\$0	\$41	(\$41)	\$1,010	\$600	\$410	\$0	\$0	\$0	\$0	
8		Total	\$41,863	\$33,996	\$30,880	\$33,119	\$20,662	\$34,463	\$31,374	\$3,089	\$40,180	\$36,983	\$3,197	\$35,190	\$35,190	\$0	\$0	

=2017 recorded data provided by SDG&E in response to Data Request # ORA-SDGE-086-GAW, Question 4.

1                                   **2. City of San Diego Surcharge**

2                   This project provides funding in order to facilitate the undergrounding of  
3 overhead power lines. This program is separate from the Rule 20A program. All  
4 expenses associated with this undergrounding are reimbursed by the City (from a  
5 surcharge collected from each meter), and no net capital expenditures are  
6 anticipated. Therefore, from a revenue requirement perspective, SDG&E's  
7 ratepayers are unaffected by this project. Since SDG&E's forecasts were of a  
8 magnitude that had been seen in the past, and since ratepayers would not be  
9 financially impacted, ORA accepted SDG&E's 2018 and 2019 forecasts.

10                   The following discussions cover the three capital projects for which ORA had  
11 forecasts that differed from SDG&E's.

12                                   **3. Pacific Avenue 20B Conversion**

13                   In response to data request ORA-SDGE-018-TCR, SDG&E provided  
14 information that stated that ratepayers would be responsible for \$1.2 million of the  
15 \$4.0 million total cost of this project. This new forecast was significantly lower than  
16 SDG&E's original estimate of \$2.226 million. ORA has reflected this in its 2018  
17 forecast in Column J of Table 7-5.

18                                   **4. Espola Road 20B Conversion**

19                   ORA was provided updated information for this project in SDG&E's response  
20 to data request ORA-SDGE-018-TCR. In this instance, the new information  
21 indicated that ratepayers would be responsible for \$0.360 million of the \$1.2 million  
22 total cost. ORA has reflected this in its 2018 forecast in Column J of Table 7-5.

23                                   **5. South Santa Fe Drive 20B Conversion**

24                   ORA received updated cost information in the response to data request ORA-  
25 SDGE-018-TCR. The response states that ratepayers will be responsible for \$0.600  
26 million of the \$2.0 million total cost. ORA has reflected this in its 2018 forecast in  
27 Column J of Table 7-5.

28                                   **C. Conclusions**

29                   All of ORA's adjustments (in 2018) originated from the revised forecasts and  
30 information that were provided by SDG&E in response to discovery. ORA utilized

1 recorded data for 2017, and made no adjustments in 2019. As shown in Table 7-5,  
2 ORA is recommending total Franchise capital expenditures of \$31.374 million in  
3 2017, \$36.983 million in 2018, and \$35.190 million in 2019. ORA's recommended  
4 expenditures are \$3.089 million lower than SDG&E's in 2017, \$3.197 million lower in  
5 2018, and the same as SDG&E's in 2019.

## 6 **IX. MATERIALS PROJECTS**

7 The Materials capital category consists of only two projects. Electric  
8 Meters and Regulators (Budget Code 202) funds the installation of new  
9 equipment necessary to operate and maintain the electric system. SDG&E  
10 states that the primary driver of this project is new business that requires the  
11 installation of meters and regulators.<sup>13</sup> Transformers (Budget Code 214)  
12 funds the installation of new distribution transformers.

### 13 **A. Overview of SDG&E's Request**

14 Table 7-6, shown on the next page, lists the capital projects that constitute  
15 this category; it also shows SDG&E's and ORA's capital forecasts for the years  
16 2017, 2018, and 2019. Column G is highlighted in yellow to indicate that it contains  
17 recorded expenditures.

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<sup>13</sup> Ex. SDG&E-14-R, page AFC-55, lines 10 and 11.

TABLE 7-6

**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**

Recorded and Forecast Expenditures For Materials Capital Projects

Line #	Budget Code	Materials	Recorded --000s of Constant 2016 \$					Forecast --000s of Constant 2016 \$								
								2017			2018			2019		
			2012 (A)	2013 (B)	2014 (C)	2015 (D)	2016 (E)	SDG&E (F)	ORA = Recorded (G)	SDG&E > ORA (H)	SDG&E (I)	ORA (J)	SDG&E > ORA (K)	SDG&E (L)	ORA (M)	SDG&E > ORA (N)
		<b>Materials</b>														
1	202	Electric Meters and Regulators	\$2,831	\$1,280	\$1,573	\$7,976	(\$2,973)	\$4,156	\$2,965	\$1,191	\$5,106	\$4,108	\$898	\$5,974	\$4,596	\$1,378
2	214	Transformers	\$19,749	\$16,704	\$13,475	\$20,920	\$16,739	\$20,715	\$15,338	\$5,377	\$21,209	\$21,209	\$0	\$21,720	\$21,720	\$0
3		Total	\$22,580	\$17,983	\$15,048	\$28,896	\$12,766	\$24,871	\$18,303	\$6,568	\$26,315	\$25,317	\$898	\$27,694	\$26,316	\$1,378

= 2017 recorded data provided by SDG&E in response to Data Request # ORA-SDGE-086-GAW, Question 4.



1           **B. Analysis**

2           These two projects are both considered “blanket” projects, meaning that the  
3 meters and transformers are purchased on a regular basis throughout the year.  
4 Table 7-6, on Line 2, shows that ORA did not adjust SDG&E’s forecasts for  
5 transformers. Even though SDG&E’s forecasts are higher than in the recorded  
6 years, ORA concluded that since SDG&E is placing increased emphasis on  
7 replacing poles, there would also be an increase in the need for new transformers to  
8 be installed on those poles.

9           Conversely, ORA concluded that adjustments to SDG&E’s forecasts for  
10 meters and regulators were warranted. As noted above, SDG&E has stated that  
11 new business is the primary driver for meters and regulators. The connection  
12 between the two is logical – as the number of new electric installations increases,  
13 the number of meters to serve those installations should also increase. As will be  
14 discussed in the next section of this testimony, ORA has recommended forecasts for  
15 the New Business category that are lower than SDG&E’s forecasts. Therefore, ORA  
16 has adjusted the 2018 and 2019 forecasts for Electric Meters and Regulators by the  
17 same overall percentage change in the New Business category.

18           **C. Conclusions**

19           ORA utilized recorded data for 2017, and recommends adjustments (in 2018  
20 and 2019) to the Electric Meters and Regulators project. As shown in Table 7-6,  
21 ORA is recommending total Materials capital expenditures of \$18.303 million in  
22 2017, \$25.317 million in 2018, and \$26.316 million in 2019. ORA’s recommended  
23 expenditures are \$6.568 million lower than SDG&E’s in 2017, \$0.998 million lower in  
24 2018, and \$1.378 million lower in 2019.

25           **X. NEW BUSINESS PROJECTS**

26           Most of the capital expenditures associated with the New Business  
27 capital projects are a direct result of customer requests. Those requests  
28 encompass new services, upgraded services, new distribution systems for

1 commercial and residential developments, system modifications to  
2 accommodate new load, customer requested relocations, rearrangements,  
3 removals, and the conversion of overhead lines to underground.<sup>14</sup>

#### 4 **A. Overview of SDG&E's Request**

5 The New Business capital category comprises 11 individual capital projects.  
6 Table 7-7, on the next page, provides a listing of these 11 projects, and also shows  
7 SDG&E's and ORA's forecasts for each of them. Column G is highlighted in yellow  
8 to indicate that 2017 recorded data are being shown.

#### 9 **B. SDG&E's Use of Construction Units**

10 In deriving its forecasts for most of the projects listed in Table 7-7, SDG&E  
11 relies on a concept it calls a Construction Unit (CU). The use of CUs for forecasting  
12 purposes has been controversial in the past, and remains so today, as discussed  
13 below.

14 SDG&E states that its New Business budgeting process relies heavily on the  
15 use of CU forecasts, an in-depth assessment that combines data on building permit  
16 activity and the most current outlook on housing and land development presented by  
17 a variety of economic forecasting entities. The CU forecast is produced by SDG&E  
18 and typically updated twice a year. SDG&E states that CUs are a concept that are  
19 unique to SDG&E.<sup>15</sup>

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<sup>14</sup> Ex. SDG&E-14-R, page AFC-57, lines 1 through 7.

<sup>15</sup> Ex. SDG&E-14-R, page AFC-57, lines 15 through 19.

**TABLE 7-7**  
**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**  
 Recorded and Forecast Expenditures For New Business Capital Projects

Line #	Budget Code	New Business Capital Projects	Recorded – 000s of Constant 2016 \$						Forecast – 000s of Constant 2016 \$									
			2012		2013		2014		2015		2016		2017		2018		2019	
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)		
1	204	Electric Distribution Easements	\$1,455	\$1,224	\$1,528	\$1,134	\$1,323	\$871	\$1,435	(\$594)	\$1,037	\$1,037	\$0	\$1,087	\$1,087	\$0		
2	211	Conversion from OH-UG Rule 20B, 20C	\$1,399	\$820	\$1,973	\$2,167	\$1,932	\$2,557	\$2,730	(\$173)	\$2,828	\$2,006	\$822	\$3,101	\$2,207	\$894		
3	215	OH Residential New Business	\$399	\$384	\$484	\$500	\$373	\$747	\$626	\$121	\$906	\$632	\$274	\$961	\$638	\$323		
4	216	OH Non-Residential New Business	\$782	\$792	\$464	\$445	\$513	\$809	\$635	\$174	\$950	\$641	\$309	\$988	\$647	\$351		
5	217	UG Residential New Business	\$3,514	\$3,774	\$4,035	\$5,943	\$6,798	\$12,658	\$8,693	\$3,965	\$16,055	\$8,777	\$7,278	\$16,983	\$8,861	\$8,132		
6	218	UG Non-Residential New Business	\$2,854	\$2,557	\$3,151	\$3,815	\$3,604	\$6,251	\$4,165	\$2,086	\$7,502	\$4,205	\$3,297	\$7,877	\$4,246	\$3,631		
7	219	New Business Infrastructure	\$4,233	\$4,571	\$4,119	\$6,908	\$6,296	\$7,414	\$7,953	(\$539)	\$6,944	\$8,000	\$914	\$9,437	\$6,107	\$1,330		
8	224	New Service Installations	\$3,711	\$3,848	\$3,989	\$4,412	\$4,746	\$4,951	\$5,093	(\$142)	\$6,007	\$5,142	\$865	\$6,336	\$5,191	\$1,145		
9	225	Customer Requested Upgrades and Services	\$7,711	\$8,482	\$9,655	\$12,637	\$11,868	\$8,637	\$12,358	(\$3,721)	\$9,387	\$12,477	(\$3,090)	\$10,288	\$12,597	(\$2,309)		
10	235	Transformer and Meter Installations	\$5,625	\$4,129	\$4,223	\$4,578	\$3,527	\$3,504	\$2,964	\$540	\$3,504	\$2,983	\$511	\$3,504	\$3,021	\$483		
11	15238	Milcoast Trolley Extension Project	\$0	\$0	\$0	\$0	\$0	\$6,918	\$7,430	(\$512)	\$96	\$66	\$0	\$0	\$0	\$0		
12	--	Projects Not in Testimony – Completed Before 2017	\$9,519	\$2,907	\$1,040	(\$180)	\$118	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
13		Total	\$41,102	\$33,488	\$34,661	\$42,339	\$41,098	\$55,317	\$54,082	\$1,235	\$57,186	\$46,007	\$11,179	\$60,592	\$46,613	\$13,979		

= 2017 recorded data provided by SDG&E in response to Data Request # ORA-SDG&E-086-GAW, Question 4.

1 According to SDG&E's testimony, forecasting residential electric construction  
2 units is the primary forecasting effort for SDG&E. Gas units are derived by applying  
3 a set of historical ratios of completed gas units to completed electric units, to a  
4 forecast of residential electric units. The forecast of residential electric units is  
5 driven by a forecast of San Diego county residential building permits. The forecast  
6 of residential permits is usually permit information gathered locally, combined with  
7 permit information provided by a nationally recognized data service provider, such  
8 as Global Insight, Inc. The information gathered locally is used to develop a current-  
9 year and a one-year-out forecast of permits. The permit series provided by the  
10 national data service provider is merged with the front end of the permit forecast to  
11 create a five-year set of residential permits to use as a model driver.<sup>16</sup>

12 ORA has spent considerable time trying to analyze the derivation of the CUs.  
13 Unfortunately much of the information that goes into these derivations is either  
14 proprietary (such as Global Insight data) or is not available to ORA (such as locally  
15 gathered permits). In short, ORA does not independently forecast and develop CUs,  
16 and is not able to verify the CU estimates that form the backbone of SDG&E's  
17 forecasts.

18 ORA also spent time analyzing how effective SDG&E had been at accurately  
19 forecasting CUs. Because the use of CUs was an issue in the last GRC (Test Year  
20 2016), ORA was able to compare and contrast forecast CU levels prepared in the  
21 last GRC with the recorded CU levels that were provided in this current GRC. ORA  
22 was able to compare recorded versus actual CUs (which involved the years 2014  
23 through 2016), and compare the 2017 through 2019 CU forecasts from the last case,  
24 to the 2017 through 2019 CU forecasts in this current case. ORA made these  
25 comparisons in order to judge the volatility (i.e., how dramatically forecasts for the  
26 same period will change) from one case to another. The following chart shows  
27 these comparisons.

28

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<sup>16</sup> Ex. SDG&E-14-R, page AFC-58, lines 2 through 11.

1

Year	TY 2016 GRC	TY 2019 GRC		TY 2016 GRC Exceeds TY 2019 GRC	
	Forecast # of CUs	Recorded # of CUs	Forecast # of CUs	# of CUs	%
2014	10,035	6,499		3,536	54.41%
2015	13,271	8,115		5,156	63.54%
2016	16,039	9,726		6,313	64.91%
2017	16,832		11,023	5,809	52.70%
2018	16,836		12,464	4,372	35.08%
2019	16,983		13,288	3,695	27.81%

2

3 As shown in the last column, the forecast of CUs has been a poor predictor of  
4 the actual number of CUs that occur. For the years 2014, 2015, and 2016, ORA can  
5 directly compare forecast and recorded results. For those three years, the forecasts  
6 for CUs overstated the actual number of CUs by at least 54.41%, and as much as  
7 64.91%. The above chart also shows the volatility of the estimates. In the last GRC,  
8 SDG&E forecast CU levels for 2017 through 2019. Comparing the old forecasts to  
9 the new CU forecasts (provided in this current GRC) for the same 2017 through  
10 2019 period, shows (in the last column) that old forecasts are between 27.81% and  
11 52.70% higher than the new forecasts.

12 There is a continuing issue in relying on forecasts of CUs to derive New  
13 Business capital forecasts. There appears to be a problem in gathering accurate  
14 data on building permits, and/or a problem in translating that data into CUs that  
15 accurately reflect the building activity that will take place in SDG&E's service  
16 territory. In its experience with other energy utilities, forecasts for this type of  
17 customer-driven capital category are largely based on gross meter sets.

18 In the most recent Southern California Edison (SCE) GRC, SCE analyzed  
19 historical gross meter sets and found that there were strong correlations between  
20 those meter sets and the various units of work that make up the capital areas. This  
21 strong correlation would be expected, since forecasts for customer-driven capital  
22 projects should be related to the number of new customers being hooked up in a  
23 following year. ORA has the expertise and the raw data to derive its own  
24 independent forecasts for gross meter sets. ORA requested that SDG&E provide  
25 some sort of quantitative mechanism whereby forecasts for electric customer growth

1 could be translated into forecasts for CUs. Unfortunately, SDG&E was not able to  
2 accommodate ORA’s request.<sup>17</sup>

3 It is also important to note that SDG&E does not use CUs to forecast New  
4 Business capital expenditures for its gas distribution system. On page GOM-vi of  
5 Ex. SDG&E-04-R, SDG&E discusses the activities in the New Business category.  
6 SDG&E states:

7 *“These costs are incurred as a result of SDG&E’s obligation to serve a*  
8 *growing customer base. SDG&E anticipates this work will increase as*  
9 *the number of new meter set installations increases due to growth in*  
10 *housing starts and local employment.”*

11 In the same exhibit, SDG&E states that a zero-based forecast for New  
12 Business expenditures was developed using the projected number of new meter  
13 sets added to the Gas Distribution system.<sup>18</sup> In fact, on page GOM-72, SDG&E  
14 states that its New Business forecasts are simply derived by multiplying a 5-year  
15 average of meter installation costs by the meter forecasts. Nowhere in that SDG&E  
16 gas distribution exhibit is the term “Construction Unit” or the acronym “CU” ever  
17 mentioned.

### 18 **C. Analysis**

19 ORA developed its own forecasting methodology for New Business capital  
20 expenditures that did not utilize CUs. Using SDG&E’s stated premise that customer-  
21 driven projects precede gross meter set additions,<sup>19</sup> ORA investigated the principle  
22 that SDG&E’s 2017 recorded customer-driven expenditures would be linked to the  
23 number of new meters that were predicted to be installed in 2018.<sup>20</sup> For subsequent

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<sup>17</sup> See SDG&E’s response to data request ORA-SDGE-087-GAW, Question 5.

<sup>18</sup> Ex. SDG&E-04-R, page GOM-71.

<sup>19</sup> In response to data request ORA-SDGE-087-GAW, Question 2, SDG&E states that the capital work always precedes the installation of electric meters

<sup>20</sup> As a simple example, suppose SDG&E spent \$100 in 2017 installing customer-driven projects for one additional person that will become a customer 2018. If SDG&E forecasts that two new

(continued on next page)

1 years, ORA assumed that the percentage increase in new meters (as compared to  
2 2018) would also cause a similar increase to the forecast for capital expenditures.  
3 To develop these calculations, ORA created Table 7-8 (shown below).

4 ORA's customer witness analyzed and ultimately did not oppose SDG&E's  
5 customer forecasts. Therefore, ORA incorporated SDG&E's 2018 and 2019  
6 forecasts into Table 7-8. Because ORA is assuming that New Business customer-  
7 driven projects precede the arrival of new customers by one year, ORA needed a  
8 forecast for customer levels for 2020, and requested that information from SDG&E.  
9 In response to data request ORA-SDGE-136-MRK, SDG&E objected to this  
10 question, and simply stated that it had not made forecasts for that year. Therefore,  
11 ORA forecasts that the growth in customers from 2019 to 2020 would be the same  
12 as the growth from 2018 to 2019.

13 As shown on Table 7-8, customer increases for 2019 are predicted to be  
14 14,060 higher than the 2018 level, an increase of 0.97%. ORA assumes that  
15 customer increases for 2020 are forecast to again be 14,060 higher than 2019,  
16 which is 1.93% higher than the 2018 level. Using the recorded 2017 capital  
17 expenditures as a base, ORA increased the 2017 customer-driven capital project  
18 costs by 0.97% to derive its 2018 forecasts, and then increased the 2017 customer-  
19 driven costs by 1.93% to derive its 2019 forecasts.

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(continued from previous page)

customers will arrive in 2019, the customer-driven expenditures for the preceding year (2018) would be expected to be \$200, twice the amount that was spent in 2017 to provide service to the single customer in 2018.

**TABLE 7-8**  
**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**  
**Forecast of Average Annual Electric Customers**

Line #	Customer Classifications	Comparison of Average Annual Electric Customers to 2018 Totals										
		2018			2019			2020				
		SDG&E (A)	ORA (B)	(C)	SDG&E (D)	ORA (E)	Increase Over 2018 (F)	2018 Δ % (G)	SDG&E (H)	ORA (I)	Increase Over 2019 (J)	2018 Δ % (K)
1	Residential	1,292,468	1,292,468	1,304,891	1,304,891	1,304,891		--	1,317,314			
2	Small Commercial	132,227	132,227	133,240	133,240	133,240		--	134,253			
3	Medium / Large Commercial / Industrial	20,068	20,068	20,746	20,746	20,746		--	21,424			
4	Agriculture	3,938	3,938	3,938	3,938	3,938		--	3,938			
5	Lighting	5,630	5,630	5,576	5,576	5,576		--	5,522			
6	TOTAL	1,454,331	1,454,331	1,468,391	1,468,391	1,468,391	14,060	0.97%	1,482,451	14,060	1.93%	



1 Out of the 11 capital projects listed in the New Business capital category,  
2 SDG&E identified eight of those projects as having cost drivers that are driven by  
3 customer growth. In Table 7-7, those eight projects are located on lines 3 through  
4 10, and include Budget Code projects 215, 216, 217, 218, 219, 224, 225, and 235.  
5 For those eight projects, ORA's 2018 and 2019 forecasts were derived using the  
6 methodology described in the previous paragraphs.

7 Table 7-7 reveals that one additional project, not included among the eight  
8 customer-driven projects discussed above, was also adjusted by ORA. On Line 2 of  
9 that table, ORA has adjusted the 2018 and 2019 forecasts for the Rule 20B, 20C  
10 Conversion project.

11 ORA sought to obtain further details surrounding the derivation of SDG&E's  
12 forecast. Based on its testimony, it appeared that SDG&E was using a simple 5-  
13 year average to derive its forecasts. Its workpapers suggested that the average was  
14 modified by 10% yearly increases. To get a clearer picture of how the forecasts  
15 were actually calculated, ORA issued data request ORA-SDGE-087-GAW. In  
16 response to Question 4.a of that request, SDG&E confirmed that its methodology for  
17 deriving its forecasts was "a 5-year average that is then escalated by 10% each  
18 year." ORA has used this same calculation approach, but its results do not equal  
19 the forecasts obtained by SDG&E. In Table 7-7, Line 2, ORA's forecasts for 2018  
20 and 2019 are 5-year averages that have been escalated by 10% each year.

#### 21 **D. Conclusions**

22 ORA utilized recorded data for 2017, and its recommended adjustments (in  
23 2018 and 2019) to the eight customer-driven projects that make up the New  
24 Business capital categories stem from ORA's development of its own methodology  
25 to derive customer-driven project costs. ORA did not develop its own independent  
26 calculations for CUs, and had little confidence that the CU forecasts derived by  
27 SDG&E would be accurate. In addition, ORA adjusted one additional project by  
28 using the calculation methodology that SDG&E provided in response to an ORA  
29 data request. As shown in Table 7-7, ORA is recommending total New Business  
30 capital expenditures of \$54.082 million in 2017, \$46.007 million in 2018, and  
31 \$46.613 million in 2019. ORA's recommended expenditures are \$1.235 million

1 lower than SDG&E's in 2017, \$11.179 million lower in 2018, and \$13.979 million  
2 lower in 2019.

### 3 **XI. OVERHEAD POOLS – OTHER (NON-ENGINEERING)**

4 Capital projects incur costs that originate from central activities, and are  
5 subsequently distributed to those projects based on numerous factors. Examples of  
6 these costs include engineering, reliability analysis, and preliminary design work.  
7 Many of these costs cannot be attributed to a single capital project. Instead, they  
8 are aggregated into “pools,” and are eventually allocated.<sup>21</sup> The capital projects  
9 described in this volume of ORA testimony are all forecast in “Direct” dollars, so they  
10 do not include any pooled costs. SDG&E has created four Overhead Pool accounts  
11 to “hold” those pooled costs that will eventually be distributed. In this testimony,  
12 ORA is analyzing two of those four accounts – the Department Overhead Pool and  
13 the Contract Administration Pool.

#### 14 **A. Overview of SDG&E's Request**

15 This portion of the Overhead Pool capital category comprises two individual  
16 capital projects. Table 7-9, on the next page, lists those two projects, and also  
17 shows SDG&E's and ORA's forecasts for each of them. Column G is highlighted in  
18 yellow to indicate that 2017 recorded data are being shown.

#### 19 **B. Analysis**

20 To better understand how SDG&E calculated its forecasts for the two  
21 Overhead Pool projects, ORA issued data request ORA-SDGE-090-GAW, seeking  
22 the tables and algorithms that SDG&E used to derive its estimates. In its response,  
23 SDG&E provided an Excel workbook that contained numerous interlinked  
24 spreadsheets. One of the spreadsheets consisted of a large database, where every  
25 capital project was broken down into its labor, non-labor, and non-escalated  
26 components.

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<sup>21</sup> Ex. SDG&E-14-R, page AFC-68, lines 1 through 9.

**TABLE 7-9**

**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**

Recorded and Forecast Expenditures For Overhead Pools – Other Capital Projects

Line #	Budget Code	Overhead Pools – Other	Recorded – 000s of Constant 2016 \$					Forecast – 000s of Constant 2016 \$								
			2012-2016					2017-2019								
			2012 (A)	2013 (B)	2014 (C)	2015 (D)	2016 (E)	2017 (G)	2018 (I)	2019 (M)	SDG&E > ORA (K)	SDG&E > ORA (N)				
		<b>Overhead Pools – Partial</b>														
1	905	Department Overhead Pool	\$1,769	\$2,402	\$2,499	\$4,326	\$3,755	\$4,495	\$1,657	\$2,838	\$5,870	\$4,609	\$1,261	\$7,157	\$5,813	\$1,344
2	906	Contract Administration Pool	\$0	\$0	\$0	\$0	\$0	\$5,872	\$6,629	(\$757)	\$7,392	\$5,569	\$1,823	\$9,370	\$7,402	\$1,968
3		Total	\$1,769	\$2,402	\$2,499	\$4,326	\$3,755	\$10,367	\$8,286	\$2,081	\$13,262	\$10,178	\$3,084	\$16,527	\$13,215	\$3,312

= Capital projects proposed as part of the Risk Assessment Mitigation Phase (RAMP)

= 2017 recorded data provided by SDG&E in response to Data Request #ORA-SDGE-086-GAW, Question 4.

1           The first step in running this Excel workbook was to update the large  
2 database so as to include ORA's forecasts for the capital projects contained in this  
3 exhibit, as well as the forecasts in Ex. ORA-06 (the companion volume to this  
4 exhibit). Once this updating process was completed, the pivot tables integrated into  
5 the workbook could be run, which would then recalculate all four of the Overhead  
6 Pool forecasts. ORA's 2018 and 2019 forecasts in Table 7-9 were obtained in this  
7 manner.

8           As can be seen in Table 7-9, the Contract Administration Pool project (Budget  
9 Code 906) is shaded green, indicating that it is one of the capital projects that is  
10 included in the RAMP-related category. Previously, in Section V of this testimony,  
11 ORA provided Table 7-2, which listed all of the RAMP-driven projects. In that  
12 section, ORA described how it developed its RAMP-related estimates, which  
13 included the estimate for the Contract Administration Pool project. The forecast for  
14 Budget Code 906 that is shown in Table 7-2 is derived using the methodology that is  
15 described here.

### 16           **C. Conclusions**

17           As shown in Column G on Table 7-9, ORA utilized recorded data for 2017.  
18 ORA's adjustments (in 2018 and 2019) to the two projects that make up the  
19 Overhead Pool capital category stem from running an updated version of the  
20 complex Excel workbook that was provided to ORA by SDG&E. As shown in Table  
21 7-9, ORA is recommending total Overhead Pool capital expenditures of \$8.286  
22 million in 2017, \$10.178 million in 2018, and \$13.215 million in 2019. ORA's  
23 recommended expenditures are \$2.081 million lower than SDG&E's in 2017, \$3.084  
24 million lower in 2018, and \$3.312 million lower in 2019.

1 **XII. SAFETY AND RISK MANAGEMENT**

2 The 11 capital projects contained in the Safety and Risk Management capital  
3 category are designed to address the mitigation of safety and security risks. Eight of  
4 these 11 capital projects are shaded in green to indicate that SDG&E has  
5 categorized them as being RAMP-driven.

6 **A. Overview of SDG&E's Request**

7 Table 7-10, shown on the next page, provides a list of the 11 projects that  
8 make up this category. The eight projects shaded in green make up over half of the  
9 15 RAMP-driven capital projects that SDG&E has included in this portion of its  
10 Electric Distribution Capital testimony. Table 7-10 shows SDG&E's and ORA's  
11 forecasts for each of the 11 projects. Column G is highlighted in yellow to indicate  
12 that 2017 recorded data are being shown.

13 **B. Analysis**

14 Eight of the 11 projects that constitute the Safety and Risk Management  
15 category are themselves associated with RAMP risks. As detailed in Section V of  
16 this testimony, ORA carefully reviewed various aspects of the RAMP-driven  
17 program, and developed a methodology to allocate a reduction among the various  
18 projects. For more details regarding ORA's analysis and recommendations, please  
19 review Section V of this exhibit.

20 Lines 3, 4, and 10 in Table 7-10 are not shaded in green, and are therefore  
21 not included among the RAMP-driven programs that have been identified by  
22 SDG&E. ORA has analyzed these three projects, and has not recommended any  
23 adjustments in 2018 or 2019.

**TABLE 7-10**  
**ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E**  
 Recorded and Forecast Expenditures For Safety and Risk Management Capital Projects

Line #	Budget Code	Safety and Risk Management Capital Projects	Recorded -- 000s of Constant 2016 \$						Forecast -- 000s of Constant 2016 \$									
			2012		2013		2014		2015		2016		2017		2018		2019	
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)		
1	13247	FIRM GRC Blanket Budget	\$0	\$3,451	\$8,876	\$8,880	\$47,282	\$57,780	\$52,651	\$5,129	\$57,780	\$48,752	\$9,028	\$57,780	\$48,976	\$8,804		
2	14249	SF6 Switch Replacement	\$0	\$0	\$0	\$0	\$459	\$3,509	\$3,103	\$406	\$14,088	\$11,887	\$2,201	\$14,088	\$11,941	\$2,147		
3	15246	Rencho Santa Fe Sub Hardening	\$0	\$0	\$0	\$0	\$381	\$3,144	\$2,921	\$223	\$3,035	\$3,035	\$0	\$0	\$0	\$0		
4	15257	Large Scale Communications Infastr Provider (CIP)	\$0	\$0	\$0	\$0	\$21	\$0	\$0	\$0	\$5,020	\$5,020	\$0	\$5,020	\$5,020	\$0		
5	15259	FTZ Advanced Protection and SCADA Upgrades	\$0	\$0	\$0	\$0	\$1,688	\$1,337	\$3,495	(\$2,168)	\$1,337	\$1,128	\$209	\$1,337	\$1,133	\$204		
6	16252	Electric Integrity RAMP	\$0	\$0	\$0	\$0	\$0	\$788	\$0	\$788	\$14,858	\$12,537	\$2,321	\$14,858	\$12,537	\$2,321		
7	16255	RTU Modernization	\$0	\$0	\$0	\$0	\$0	\$5,969	\$0	\$5,969	\$9,977	\$7,574	\$1,403	\$9,977	\$7,574	\$2,403		
8	16259	TP, C261, C262, C263, and C266 Re-Route	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
9	17242	Twin Engine Helicopter	\$0	\$0	\$0	\$0	\$0	\$10,000	\$7,484	\$2,516	\$0	\$0	\$0	\$0	\$0	\$0		
10	17249	Tea Modernization Program	\$0	\$0	\$0	\$0	\$0	\$850	\$0	\$850	\$3,820	\$3,820	\$0	\$3,820	\$5,730	\$0		
11	17254	Pole Risk Mitigation and Engineering (PRIME)	\$0	\$0	\$0	\$0	\$0	\$270	\$0	\$270	\$4,532	\$3,866	\$716	\$4,532	\$3,866	\$6,611		
12	-	Projects Not in Testimony -- Completed Before 2017	\$5,479	\$4,413	\$9,785	\$44,490	\$6,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
13	-	Total	\$5,479	\$7,864	\$18,661	\$53,380	\$66,661	\$83,747	\$69,634	\$14,113	\$113,497	\$97,619	\$15,878	\$184,333	\$157,883	\$26,450		

= Capital projects proposed as part of the Risk Assessment Mitigation Phase (RAMP)

= 2017 recorded data provided by SDG&E in response to Data Request # ORA-SDGE-086-GAW, Question 4.

1           **C. Conclusions**

2           As shown in Column G on Table 7-10, ORA utilized recorded data for 2017.  
3           ORA’s adjustments (in 2018 and 2019) to the eight RAMP-driven projects that make  
4           up the Safety and Risk Management capital category stem from its previously  
5           described RAMP-driven investigation and analysis, which is discussed in more detail  
6           in Section V of this testimony. The three non-RAMP projects were not adjusted by  
7           ORA. As shown in Table 7-10, ORA is recommending total Safety and Risk  
8           Management capital expenditures of \$69.634 million in 2017, \$97.619 million in  
9           2018, and \$157.883 million in 2019. ORA’s recommended expenditures are  
10          \$14.113 million lower than SDG&E’s in 2017, \$15.878 million lower in 2018, and  
11          \$26.450 million lower in 2019.

12          **XIII. TRANSMISSION / FERC-DRIVEN PROJECTS**

13          Transmission work is not usually included in GRCs, as expenditures of that  
14          type are typically analyzed by the Federal Energy Regulatory Commission (FERC).  
15          However, when work is done on a transmission line, the distribution facilities  
16          associated with that line (and which fall into the CPUC’s jurisdiction) often need to  
17          be modified or replaced. The same scenario applies to substations containing  
18          distribution facilities. In short, work on FERC projects often contain a distribution  
19          component.<sup>22</sup>

20                 **A. Overview of SDG&E’s Request**

21          Table 7-11, shown on the next page, provides a list of the 18 projects that  
22          make up this Transmission / FERC-Driven category. As can be seen on that table,  
23          six of the projects have been shaded green, indicating that they are associated with  
24          RAMP risks. Table 7-11 shows SDG&E’s and ORA’s forecasts for each of the 18  
25          projects. Column G is highlighted in yellow to indicate that 2017 recorded data are  
26          being shown.

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<sup>22</sup> Ex. SDG&E-14-R, page AFC-138, lines 6 through 10.

TABLE 7-11

ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES FOR SDG&E

Recorded and Forecast Expenditures For Transmission / FERC Capital Projects

Line #	Budget Code	Transmission / FERC Capital Projects	Recorded -- 000s of Constant 2016 \$					Forecast -- 000s of Constant 2016 \$								
			2012	2013	2014	2015	2016	2017	2018	2019	SDG&E > ORA	SDG&E > ORA				
			(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)
1	100	Electric Transmission Line Reliability Projects	\$724	\$364	\$182	\$766	\$674	\$1,000	\$1,890	(\$890)	\$1,000	\$1,000	\$0	\$1,000	\$1,000	\$0
2	103	Transmission Substation Reliability	\$90	\$8	\$7	\$6	\$0	\$99	\$0	\$99	\$99	\$0	\$99	\$99	\$99	\$0
3	6129	South Orange County Reliability Enhancement (SOORE)	\$2,637	\$0	(\$12)	\$0	\$0	\$932	\$273	\$659	\$7,645	\$0	\$4,345	\$4,345	\$0	
4	7144	Fiber Optic for Relay Project and Telecom	\$520	\$69	\$31	\$364	\$71	\$391	\$264	\$127	\$391	\$0	\$391	\$391	\$0	
5	8165	Cleveland National Forest (Power Line Replacements	\$0	\$0	\$100	\$368	\$7,176	\$26,155	\$17,953	\$8,202	\$33,083	\$6,106	\$40,035	\$33,935	\$6,100	
6	9137	TL649 Olay - San Ysidro - Border SW Pole Rep	\$0	\$0	\$0	\$0	\$0	\$412	\$0	\$412	\$133	\$0	\$0	\$0	\$0	
7	9153	TL676 Mission to Mesa Heights Reconstructor	\$0	\$0	\$0	\$0	\$0	\$1,015	\$0	\$1,015	\$3,554	\$0	\$0	\$0	\$0	
8	10135	Los Coches Sub Rebuild 13869 KV	\$0	\$0	\$125	\$4,314	\$2,060	\$1,403	\$891	\$512	\$0	\$0	\$0	\$0	\$0	
9	10144	TL691 Avo - Mon Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$68	\$0	\$68	\$137	\$25	\$0	\$0	\$0	
10	10146	TL695/6971 Reconstructor and Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$123	\$1	\$122	\$1,140	\$178	\$0	\$0	\$0	
11	10147	TL697 San Luis Rey Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$196	\$0	\$196	\$2,324	\$1,961	\$363	\$0	\$0	
12	10149	Wood to Steel Pole - Replace - TL6912	\$0	\$0	\$0	\$0	\$0	\$66	\$0	\$66	\$246	\$207	\$38	\$0	\$0	
13	11126	TL663 Mission to Kearny Mesa Reconstructor	\$0	\$0	\$0	\$0	\$0	\$0	\$29	(\$29)	\$173	\$173	\$0	\$0	\$0	
14	11133	TL664 - Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$305	\$340	(\$35)	\$0	\$0	\$0	\$0	\$0	
15	12137	TL6916 - Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$258	\$258	\$0	
16	12149	TL694 - Wood to Steel	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$762	\$762	\$0	
17	13130	TL674A Del Mar Reconfigure/TL6680 RFS	\$0	\$0	\$0	\$0	\$0	\$18	\$0	\$18	\$18	\$0	\$18	\$2,466	\$0	
18	14140	TL688 Wood to Steel Project	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$762	\$0	\$762	\$762	\$0	
19	--	Projects Not in Testimony -- Completed Before 2017	\$59,790	\$5,324	\$5,131	\$3,814	\$3,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20		Total	\$62,761	\$5,765	\$5,564	\$9,632	\$13,012	\$32,183	\$21,641	\$10,542	\$57,576	\$50,694	\$6,882	\$50,118	\$41,552	\$8,566

= Capital projects proposed as part of the Risk Assessment Mitigation Phase (RAMF)

= 2017 recorded data provided by SDG&E in response to Data Request # ORA-SDGE-086-GAW, Question 4.



1           **B. Analysis**

2           Six of the 18 projects that constitute the Transmission / FERC-Driven  
3 category are themselves included in SDG&E’s RAMP-driven capital project program.  
4 As detailed in Section V of this testimony, ORA carefully reviewed various aspects of  
5 the 15 projects that constitute the RAMP-driven capital program, and developed a  
6 methodology to allocate a reasonable reduction among these various projects. For  
7 more details regarding ORA’s analysis and recommendations, please review Section  
8 V of this exhibit.

9           Many of the proposed capital projects shown in Table 7-11 are not included in  
10 the RAMP-driven category. On Line 17 of Table 7-11, ORA has reflected an  
11 adjustment to the Del Mar Reconfigure project, one of the non-RAMP-driven  
12 projects. Since many transmission projects require some type of approval or permit  
13 from various regulatory agencies, ORA sought to determine whether these projects  
14 were on schedule to receive their approvals/permits. ORA issued data request  
15 ORA-SDGE-088-GAW in order to determine the status of these transmission-driven  
16 projects. According to SDG&E’s response to this request, permits for the Del Mar  
17 project were yet to be filed before the California Coastal Commission, and the  
18 estimated completion date for those permits were yet to be determined. Since  
19 permits have not yet been filed as of February 2018, and the completion dates for  
20 those permits are still unknown, ORA concludes that this project will likely not be  
21 finished until 2020. This conclusion was further supported by SDG&E’s response to  
22 data request ORA-SDGE-018-TCR, in which SDG&E stated that even after it obtains  
23 approval from the California Coastal Commission, construction may be further  
24 delayed until the end of the bird nesting season. Therefore, ORA has concluded  
25 that the bulk of the capital expenditures will not occur until 2020 at the earliest, with  
26 SDG&E’s proposed 2018 and 2019 expenditures being delayed until after the 2019  
27 test year. For all of the other non-RAMP-driven projects, ORA has not  
28 recommended any adjustments to SDG&E’s 2018 or 2019 forecasts.

29           In data request ORA-SDGE-088-GAW, Question 5, ORA requested that  
30 SDG&E provide the total costs (CPUC-jurisdictional plus FERC) for these  
31 Transmission / FERC-Driven capital projects. This information was necessary, as

1 ORA discovered that the RO model did not incorporate data that showed the  
2 jurisdictional split between CPUC and FERC costs. In its response to this request,  
3 SDG&E provided the total cost data that ORA sought. However, ORA cannot use  
4 the RO computer model to verify the accuracy of this information, or to confirm that  
5 the allocations between the CPUC and FERC are being handled correctly.

6 **C. Conclusions**

7 As shown in Column G on Table 7-11, ORA utilized recorded data for 2017.  
8 ORA's adjustments (in 2018 and 2019) to the six RAMP-driven projects that make  
9 up the Transmission / FERC-Driven capital category stem from ORA's detailed  
10 investigation and analysis of the 15 RAMP-driven projects that is described in  
11 Section V of this testimony. Of the 12 non-RAMP-driven projects, one was adjusted  
12 due to new information that revealed that required permits had not yet been filed,  
13 and completion dates for those permits were unknown. None of the other non-  
14 RAMP-driven capital projects were adjusted by ORA. As shown in Table 7-11, ORA  
15 is recommending total Transmission / FERC-Driven capital expenditures of \$21.641  
16 million in 2017, \$50.694 million in 2018, and \$41.552 million in 2019. ORA's  
17 recommended expenditures are \$10.542 million lower than SDG&E's in 2017,  
18 \$6.882 million lower in 2018, and \$8.566 million lower in 2019.

1

## WITNESS QUALIFICATIONS

2           My name is Gregory A. Wilson. My business address is 505 Van Ness  
3 Avenue, San Francisco, California. I am employed by the Office of Ratepayer  
4 Advocates (ORA) as a Retired Annuitant in the Energy Cost of Service and Natural  
5 Gas Branch.

6           I received a Bachelor of Science degree in Mathematics from California State  
7 University, Hayward. I then received a Bachelor of Science degree in Civil  
8 Engineering from the University of California, Berkeley. I am a registered  
9 Professional Engineer in Civil Engineering in the State of California.

10           I have been employed by the Commission since 1977. Until 1984, I worked in  
11 the Water Branch of the former Operations Office. In June 1984, I was transferred  
12 to what was then called the Energy/Water Operational Costs Branch of the Office of  
13 Ratepayer Advocates. From 1997 until 2015, I worked in the Energy Division. I  
14 have been a capital expenditure, rate base, and expense witness on numerous  
15 energy cases.

16           This completes my prepared testimony.