

**TURN DATA REQUEST-010**  
**SDG&E-SOCALGAS 2019 GRC – A.17-11-007/8**  
**SDG&E\_SOCALGAS RESPONSE**  
**DATE RECEIVED: JANUARY 26, 2018**  
**DATE RESPONDED: FEBRUARY 9, 2018**

Exhibit Reference: SDG&E 37 & 38

Witnesses: Schiermeyer & Payan

Subject: SDG&E-37 and SDG&E-38 – Gas & Electric Customer Forecasts

The following questions relate to SDG&E-38, electric customer forecast, and related workpapers for this exhibit.

1. Please provide a definition of all column headers of the Excel workpapers for this exhibit that were not previously defined in the ORA Master Data Request (Chapter 29, question 3). For example, “Calc Residential” (column Y of the first tab) is not defined.

**Utility Response 01:**

SDG&E objects to this request as overly broad, unduly burdensome and exceeding the scope of permissible discovery under Rule 10.1, of the Commission’s Rules of Practice and Procedure. Subject to and without waiving the foregoing objection, SDG&E responds as follows:

While the main column headings are documented in the workpapers, it would be difficult and time consuming to document every other column heading in the entire Excel workbook. Any concerns or questions you may have regarding any column heading should be answered once you can see the Excel formula for a particular column, row or cell in the workbook. Separately attached for your convenience is a complete working version of the Excel workpapers (DR-TURN-SEU-010-Q1-Q11-Attachment-SDG&E-38-WP-WithFormulas&AnnualTab.xlsx), with all data, formulas, links, regression results, etc. The entire SDG&E electric customer forecast process and corresponding results are contained in this Excel working version.

So, using the example listed in Question 1, although "Calc Residential" or column Y of the first tab is not specifically defined, one can look at the formula and see that it is the sum of columns C-I, or rate schedules DR+ DRLI+ DM+DS+DSLII+DT+DTLI.

Also, for your ease of use, every attempt was made to keep formulas and links in black font (although sometimes highlighted/bolded when of importance or denoting a certain significance), and data in red font usually indicates a hard-coded value (such as historical customer data, Global Insight or Moody’s economic data, etc.).

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2. Regarding the Excel workpapers provided for SDG&E-38, please provide a brief explanation of the intent and purpose of each tab in the workpaper.

**Utility Response 02:**

A brief explanation of each tab, and/or its function, is provided below:

Annual: This tab summarizes the monthly customer forecast results in an average annual format. Note, the 2016-2019 values are identical to the numbers in Table KES-1 of the Electric Customer Forecast Direct Testimony.

M-Cust(HistAndFcast): For history and forecast, this tab details the 22 rate schedules that SDG&E forecasts (columns C-X) and various groupings (e.g. residential, total, etc.). Each rate schedule's forecast has a formula, so one can easily see how it is derived.

ResRegHistDataM: This tab organizes the necessary monthly customer detail for eventual use in the residential regression model. "SDG&E" denotes the entire service territory, "OC" denotes the small portion of Orange County that SDG&E serves, and "SD" denotes San Diego County.

ResRegHistDataQ: This tab converts all the data in the previous tab to quarter-ending data for eventual use in establishing a quarterly residential regression model.

RegAndNRDataQ: All quarterly data used in the residential regression model and non-residential forecast processes are found here (dependent variables, independent variables, and all concepts used to derive them, such as Moody's and Global Insight data, etc.). Again, every attempt was made to differentiate raw data (red font) versus linked/derived data (black font).

ResRegAndFcastQ: This tab develops the residential regression model and then forecasts "SD," "OC" and "SDGE" customers on a quarterly basis (beginning in row 137).

ResRegFcastM: This tab converts the quarterly forecast data in the previous tab to monthly values using a simple interpolation process.

NonResFcast: This tab presents the data used to develop a long-term relationship between non-residential customers and employment, shown in both graphic and tabular form. Also presented in this tab is the quarterly and monthly forecast of total non-residential customers.

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**Utility Response 02:-Continued**

SchAFactor: This tab presents the data used to develop the relationship between Schedule A growth and total non-residential growth, shown in both graphic and tabular form. Derived in this tab is a ratio of Schedule A growth relative to total non-residential growth. Note, there was a significant transfer in April of 2016, from rate schedules ALTOUC to A (note: both are non-residential customer rate schedules). Therefore, for purposes of establishing a consistent/useful ratio of growth rates, this period was adjusted as noted in cells C96-C104, and a shorter-term analysis (most recent 5 years) was used to reflect current rate shifting/movement/transfers, etc.

Trend%: This tab develops "trend factors" or average monthly growth rates for some of the smaller rate schedule forecasts.

TrendG5: This tab graphically presents the trend for some of the smaller rate schedules.

Notes: Some comments regarding the forecast/spreadsheet are mentioned here.

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3. Please identify which column and tab of the Excel workpapers contains untransformed historical and forecast information of residential housing starts. Please provide a definition of this column if not provided previously.

**Utility Response 03:**

Untransformed housing starts for San Diego County are obtained directly from Global Insight and Moody's. They are presented on tab "RegAndNRDataQ," columns V and W. Both forecasting firms provide their data on a seasonally adjusted annual basis (SAAR).

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4. Please identify the historical years used for the residential customer forecast regression analysis.

**Utility Response 04:**

Both the residential and non-residential forecasts are based on quarterly data from 1990-2016. Excel's regression package does not list dates, but it should be noted that there are 108 observations (Q, 1990-2016), as shown in cell B8 on the "ResRegAndFcastQ" tab.

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5. SDG&E-38, p. KES-2, states “economic and demographic data for this electric customer forecast are based on February 2017 information from IHS Global...and...information released from Moody’s Regional Economic Service.”

- a. Please provide these two forecasts in Excel, separately, in two separate columns, or identify exactly where they are located in the workpapers if they have already been provided.
- b. Please explain, providing any mathematical formulas if necessary, how these two forecasts are combined to create a housing start forecast. Please also identify where

**Utility Response 05:**

- a. As mentioned in SDG&E’s response to Question 3, please see columns V&W on the tab "RegAndNRDataQ."
- b. A simple 50/50 blend is used in combining Global Insight and Moody’s data. This calculation is done in column Q on the tab "RegAndNRDataQ." The Global Insight/Moody’s blend is also divided by 4 here to convert annual values to quarterly values.

This 50/50 blend is then slightly adjusted (in column R) to reflect the difference between CIRB permit data and Census permit data. CIRB data for California better reflects the number of units in multi-family dwellings, since housing starts are generally based on census data. This adjustment yields a more appropriate independent variable for use in the residential regression model, since multi-family units are individually-metered and represent a new customer.

Lastly, the final independent variable used in the residential regression model is a weighted moving average of the last 4 quarters, reflecting the fact that not all dwelling units (or new customers) are built in a quarter, etc. SDG&E uses a simple 25%/25%/25%/25% of the current adjusted housing starts (column R), lagged 1 quarter (column S), lagged 2 quarters (column T), and lagged 3 quarters (column U). This variable and calculation is presented in column K, "WGT\_HUSTS."

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6. Please provide the *forecasted* housing starts provided by Moody's and IHS, as reflected in SDG&E's TY 2012 and TY 2016 GRCs, presented separately by firm and GRC, by month or quarter for each year forecast through 2016.

**Utility Response 06:**

Data reflected in SDG&E's TY 2012 and TY 2016 GRCs are available through the testimony and workpapers associated with those applications. The TY 2016 GRC information can be found publicly on SDG&E's website at: <https://www.sdge.com/regulatory-filing/12931/sdge-grc-testimony-exhibit-list>.

Information related to the TY 2016 GRC can be found in the associated workpapers at: [https://www.sdge.com/sites/default/files/regulatory/SDGE-31\\_KSchiermeyer\\_Customers\\_WP.pdf](https://www.sdge.com/sites/default/files/regulatory/SDGE-31_KSchiermeyer_Customers_WP.pdf)

Information related to the TY 2012 GRC can also be found in the associated workpapers. Please see the separately attached document "TY 2012 GRC SDGE Electric Customer Forecast Workpaper\_TURN SEU 010 Q6.pdf."

Please note that SDG&E's electric customer forecasts in the TY 2012 and TY 2016 GRC proceedings were based on IHS Global Insight.

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7. Please provide the number of new electric customer connections *forecasted* by SDG&E in the TY 2012 and TY 2016 GRCs, presented separately by GRC, by month or quarter for each year forecast. Please segregate by customer class (e.g. residential, small commercial, etc.).

**Utility Response 07:**

SDG&E does not forecast the number of new residential electric connections.



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8. Please provide the total annual number of electric customers *forecasted* by SDG&E in the TY 2012 and TY 2016 GRCs, presented separately by GRC. Please segregate each annual forecast by customer class (e.g. residential, small commercial, etc.).

**Utility Response 08:**

Please see SDG&E's response to Question 6 for detailed electric customer information regarding SDG&E's TY 2012 and TY 2016 GRC applications.

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9. Please provide actual (recorded) residential housing starts for 2017 on a monthly basis and in total.

**Utility Response 09:**

Given that this data request is in early February 2018, it is unclear whether the below listed housing starts are 'actuals.' SDG&E's source for this data is Global Insight and Moody's. Data (as of January 22, 2018) from these two forecasting firms is as follows (only available quarterly):

Time Period	Moody's (SA)	IHS Global Insight (SA)
2017Q1	1,465	1,788
2017Q2	2,119	1,937
2017Q3	2,330	2,514
2017Q4	2,088	2,491
<b>2017Annual</b>	<b>8,003</b>	<b>8,730</b>

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10. Please provide actual (recorded) number of new residential electric connections for 2017 and the total number of electric residential customers as of year-end 2017.

**Utility Response 10:**

SDG&E does not track the number of new residential electric connections. The total number of electric residential customers as of year-end 2017 was 1,285,666. This count includes DR+ DRLI+ DM+DS+DT.

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11. Please provide the regression formula for the residential customer forecast and all regression results (coefficients, statistical significance, etc.).

**Utility Response 11:**

Please see tab "ResRegAndFcastQ." The regression output and model statistics are presented at the top of the page, specifically, cells A1:I22.

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The following questions relate to SDG&E-37, Gas Customer Forecast, and related workpapers for this exhibit. A few questions relate to both SDG&E-37 and SDG&E-38.

12. Please explain why SDG&E utilized the IHS Global housing start forecast (p. RMP-2, line 16) and not a blend of Moody's and IHS as performed for the electric customer forecast (SDG&E-38).

**Utility Response 12:**

The gas model for SDG&E relied on housing starts from IHS Global Insight because this is the best available data the gas forecasting group has for tracking activity in the housing market. Based on past experience and expert opinion, SDG&E's gas customer forecasting witness believes it is a good predictor of future meter hookups. The gas forecasting group does not subscribe to Moody's services.

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13. Please explain why the gas customer forecast utilizes historical data from 1990 while the electric customer forecast utilizes data from 2012.

**Utility Response 13:**

The SDG&E electric meter forecast and the SDG&E gas meter forecast were done independently, in different departments by different witnesses.

Please note that over 99% of electric customers are forecasted utilizing data from 1990 through 2016. The only electric customers that are forecasted utilizing 2012-2016 data are DM, DS, OL1R, AD, OL1C, LS1 and LS3, which account for 0.6% of total customers.

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14. Please provide the actual (recorded) number of new gas connections for 2017.

**Utility Response 14:**

The actual number of gas customers for 2017 is 880,394. As shown in Table RMP-1 of Ms. Payan's Direct Testimony, the gas customer forecast for 2017 was 880,289. The difference is 105 meters under forecast.

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15. Regarding the Tables on pages 7-8 of SDG&E-37-WP RPayan, please indicate and explain how these figures relate to the Excel workpapers. For example, the column labeled “ResUnit” in the Excel workpapers does not match the residential data shown in these Tables. Please explain.

**Utility Response 15:**

Residential dwelling units, or ResUnits, show the volume of gas-serviced customers in the SDG&E service territory. Because some residential gas meters (GM Customers) have multiple residential units connected to them, the total residential customer forecasted is slightly different than the resunit volume. To convert forecasted gas– service for residential GM units to residential GM customers (meters), that portion of residential units is divided by 14, which is the approximate average number of residential GM units connected to each GM multi-unit gas meter.



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16. Please provide SDG&E's TY 2012 GRC and TY 2016 GRC *forecasted* total number of residential dwelling units, separately by GRC, by month or quarter for each year forecast through 2016.

**Utility Response 16:**

The requested information is included in the workpapers for the respective prior GRC proceedings. The TY 2016 GRC gas customer forecast workpapers are available on SDG&E's website, <https://www.sdge.com/regulatory-filing/12931/sdge-grc-testimony-exhibit-list>. Please visit the section labeled "Original Workpapers – November 14, 2014" and see "SDG&E-32 – Workpapers to Prepared Direct Testimony of Rose-Marie Payan – (Gas) Customers" at page 6. The workpapers for the TY 2012 GRC are not available on SDG&E's website and are, therefore, being provided with this response in a separately attached PDF. Please see "TY 2012 SDGE Workpaper\_TURN SEU 010 Q6.pdf" at pages SRW-WP-4 and SRW-WP-5.

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17. Please explain if there are a different number of electric and gas residential customers in SDG&E's territory and whether this difference is increasing, decreasing, or staying constant over time. As part of your response, please address the following:

- a. What percentage of your residential customers receive only electric service?
- b. What percentage of new housing starts were all-electric in 2017 versus 2012-2016?
- c. Do you expect more all-electric new housing starts in 2019-2022 than in 2017? Please explain and quantify where possible.

**Utility Response 17:**

There is a different number of electric and gas residential customers in SDG&E's territory because some residential customers receive both gas and electric service while others receive only electric service. As shown on page RMP-3 of the Direct Testimony of Gas Customer Forecast witness Rose-Marie Payan (Exhibit SDG&E-37), total residential gas customers were 845,289 in 2016. Similarly, page KES-1, Table KES-1, of the Direct Testimony of Electric Customer Forecast witness Kenneth Schiermeyer (Exhibit SDG&E-38) shows the annual average residential electric customers were 1,271,638 in 2016. Please see the Gas Customer Forecast witness Rose-Marie Payan (Exhibit SDG&E-37) workpapers and Electric Customer Forecast witness Kenneth Schiermeyer (Exhibit SDG&E-38) workpapers in order to calculate the ratio over any specified period of time.

- a. As stated above, 1,271,638 SDG&E residential customers received electric service and 845,289 SDG&E residential customers received gas service in 2016. This equates to an estimated annual average of 34% (i.e.,  $426,349/1,271,638$ ) of residential electric customers who did not also receive gas service in 2016.
- b. The requested information is unavailable. SDG&E's sources of housing starts do not break-out the information by all-electric.
- c. Please see SDG&E's response to Question 17.b above.