APPLICATION OF SOUTHERN CALIFORNIA GAS COMPANY & SAN DIEGO GAS & ELECTRIC COMPANY FOR AUTHORITY TO REVISE THEIR NATURAL GAS RATES AND IMPLEMENT STORAGE PROPOSALS EFFECTIVE JANUARY 1, 2020 IN THE TRIENNIAL COST ALLOCATION PROCEEDING

(A.18-07-024)

(DATA REQUEST ORA-SEMPRA-2020TCAP-003)

DATA RECEIVED: 8-24-18

DATE RESPONDED: 9-6-18

QUESTION 1:

On page 99 of his workpapers Mr. Wei Bin Guo presents a regression result and notes that "The parameters of this equation were estimated from monthly data for Feb-1997 through Dec-2017." Please provide any and all historic and forecast data that were used to estimate this regression. Please provide this data in an Excel spreadsheet.

RESPONSE 1:

SoCalGas' monthly historical and forecast data used for the regression are provided in the attached Excel file for Jan-1997 through Dec-2017. Note that data of Jan-1997 are not used in the regression model because the 2-month average burner-tip natural gas rates and propane price are not available for Jan-1997.

ORA-DR-03.xlsx

The Excel file contains two spreadsheet tabs:

1. Sheet "Historical Data" provides historical consumption data, as well as burner tip natural gas price and propane price of the forecasted period used for regression. The variables are:

Days_per_month	Total days in a month
Ref_G30_Mdth	Refinery Industrial G-30 monthly consumption in Mdth
Ref_G50_Mdth	Refinery Cogen G-50 monthly consumption in Mdth
Ref_Mdth	Total Refinery monthly consumption in Mdth
Mdth_Day	Average daily consumption in a month
ln_mdtd_day	= ln(Mdth_Day); natural logarithm of Mdth_Day
ln_G_P	natural logarithm of the monthly ratio of 2-month average burner-tip natural gas rates (e.g., transportation rate + commodity price) relative to the 2-month average of propane prices
ln_G_P_before_2011	= ln_G_P before 2011; = 0 otherwise
New_Cust_DD	= 1 before Nov. 1999; = 0 otherwise
Year_2010_11_12	= 1 when year is 2010, 2011 or 2012; = 0 otherwise

Year_before_2010 = 1 before 2010; = 0 otherwise

2. Sheet "Regression" shows the linear regression results with the basic regression equation:

   ln_mdtd_day = a + b * ln_G_P + c * ln_G_P_before_2011 + d * New_Cust_DD +
   e * Year_2010_11_12 + f * Year_before_2010

   where a = 5.682067 and b = -0.086939. The P-values of variables "ln_G_P_before_2011", "New_Cust_DD", "Year_2010_11_12" and "Year_before_2010" are < 0.001, indicating they are statistically significant. However, the values of these 4 variables are 0 in forecasted period 2018-2023 (in fact, they are 0 after 2012). As a result, the final equation used for the forecast is:

   ln_mdtd_day = 5.682067 + (-0.086939) * ln_G_P

   as shown on p-99 of Mr. Guo's workpapers.