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SoCalGas July 15, 2016 Lead Commissioner TDV Workshop Comment Letter

Additional submitted attachment is included below.

July 15, 2016 TDV Workshop Comment Letter

In Regards to CEC Docket #16-BSTD-06

July 29, 2016

Prepared by:

Sue Kristjansson, SoCalGas, with assistance by Bo White and Marc Esser, NegaWatt Consulting, Inc.

Background

The California Energy Commission (CEC) is undergoing its pre-rulemaking for the 2019 Building Energy Efficiency Standards (Standards) update of Time Dependent Value (TDV) of energy. TDV methodology encapsulates long term forecasts of hourly (or monthly) electricity, natural gas, and propane costs to building owners and is used to assess cost effectiveness in the Title 24 (T24) Building Code.

On July 15, 2016, CEC staff, along with its consultant, E3, conducted a second workshop to present updates and solicit public comments on the TDV report and updates to the TDV spreadsheets for the 2019 T24 cycle. These documents and presentations are available on-line and have been shared with the public and interested parties via a webinar ("CEC Docket #16-BSTD-06[1]" and the Workshops and Meetings webpage[2]).

SoCalGas Comments

SoCalGas is broadly supportive of CEC staff's proposal and commends the CEC staff and the involved third parties for their thoughtful proposal. Since the July 15th meeting, multiple documents have been posted on the docket. While this information is helpful, we have the following comments and request for information.

1. The natural gas retail rate forecast requires input from the 2016 Annual Energy Outlook, the 2016 Integrated Energy Policy Report (IEPR), and added information from the 2016 California Gas Report, to the greatest extent possible.

After review of the natural gas retail price forecast proposed in the 2019 TDV model, it appears the natural gas retail rates are projected to increase continually through 2040. After the July 15 Lead Commissioner's workshop, E3 asserted that Figure 18 in the TDV Methodology Report was inaccurately represented as Henry Hub and clarified that it represents average statewide burner tip price. Their calculation from 2020 to 2026 is documented in "WECC_2015_IEPR_Gas_Burnertip_Forecast.xls" which is based on two mid demand California hub price forecasts in the WECC Gas Hub Burner Tip Price Estimates spreadsheet from the 2015 IEPR workshops webpage[3]. Their calculation from 2027 to 2049 is shown in the "Base Inputs" tab of "TDV_2019 Update_model_7_13.xlsb" and is simply a linear extrapolation.

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[1] http://docketpublic.energy.ca.gov/PublicDocuments/Forms/AllItems.aspx?RootFolder=%2fPublicDocuments%2f16-BSTD-06&FolderCTID=0x012000854EBC55F6E2AC47926325FA751AA84F

[2] http://www.energy.ca.gov/title24/2019standards/prerulemaking/documents/

[3] http://www.energy.ca.gov/2015_energypolicy/documents/index.html#01272016

The 2016 IEPR update is currently in progress and a new retail gas forecast is not available yet. However, the 2016 California Gas Report (CGR)[4], which will contribute to the 2016 IEPR, is available and includes a forecast for the natural gas hub price at the Southern California border. This updated forecast contradicts the linear extrapolation that represents natural gas prices trending up. In fact, it shows that natural gas prices plateau beginning 2025. In addition, the U.S. Energy Information Administration (EIA) has pre-released their forecasts, including Henry Hub, which contribute to the soon to be published Annual Energy Outlook (AEO) 2016[5]. The Southern California border and Henry Hub price forecasts are important data inputs for California retail gas price forecasts.

Error! Reference source not found. below depicts four natural gas price forecasts: The Southern California border hub price forecast mentioned above from the 2016 CGR, Henry Hub forecast mentioned above from AEO 2016[6], the Henry Hub forecast from AEO 2015[7], and the burner tip price forecast in the TDV model. The graph shows that the burner tip price in the TDV model and Henry Hub from AEO 2015 are well correlated. The Excel spreadsheet, "WECC_2015_IEPR_Gas_Burnertip_Forecast.xls", appears to indicate that the Henry Hub forecast was determined in October 2015. While not shown, please note that the retail annual gas price forecast in the TDV model has a similar positive slope through 2050.

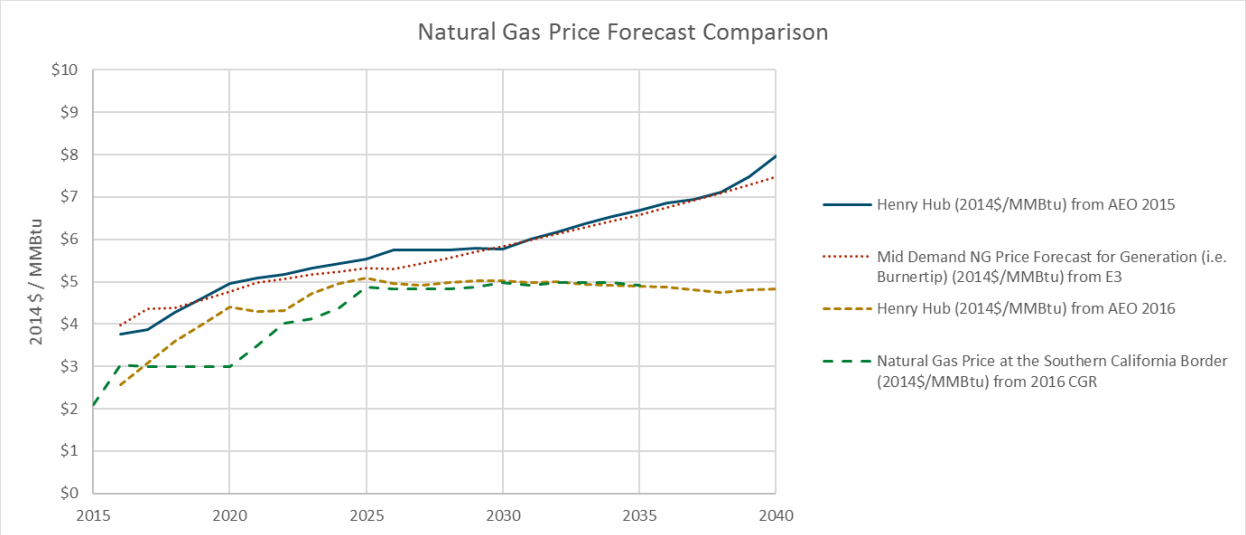

FIGURE 1: NATURAL GAS PRICE FORECAST COMPARISON

[4] http://docketpublic.energy.ca.gov/PublicDocuments/16-BSTD-06/TN212364_20160720T111050_2016_California_Gas_Report.pdf

[5] http://www.eia.gov/forecasts/aeo/

[6] http://www.eia.gov/forecasts/aeo/data/browser/#/?id=14-AEO2016&region=0-0&cases=ref2016~ref_no_cpp&start=2013&end=2040&f=A&linechart=~~~ref2016-d032416a.31-14-AEO2016&ctype=linechart&sourcekey=0

[7] https://www.eia.gov/forecasts/aeo/excel/fig-6_data.xls and http://www.eia.gov/forecasts/aeo/pdf/0383(2015).pdf

The other two newer data series (bottom two dotted lines), Henry Hub from AEO 2016 and the Southern California border price from 2016 CGR, are also correlated, especially beyond 2025. This similarly makes sense since the border price forecast is highly dependent on Henry Hub and these forecasts are from 2016.

These two pairs of data, on the other hand, are significantly different in that their trends begin to diverge starting 2025, but particularly in 2030 through 2040. By 2040, there is more than $3/MMBtu difference from what is forecasted using 2015 data versus 2016 data. A linear extrapolation beyond 2026 of the 2015 IEPR retail gas forecast is no longer appropriate and unduly disadvantages natural gas projects. Recognizing that the source information inputs for 2016 are from reputable trusted sources which will contribute to the final 2016 IEPR, it is recommended that the TDV model be updated with this newer 2016 input data.

2. Provide detailed documentation for the electricity and gas annual retail rate projections

The TDV Report and the rate forecast spreadsheets state that the electricity and gas annual retail rate projections for years 2020-2026 are based upon calculations in the 2015 IEPR. However, those 2015 IEPR calculations are not cited in great detail, and could not be verified. Also, in some cases, it is not transparent as to how the output values in the rate forecast spreadsheets line up with the data in the "Base Inputs" tab of the TDV model spreadsheet. Since the retail price forecasts are a critical component of TDV, additional detailed documentation and an increased level of transparency is requested.

3. Update the CBECC climate zone typical weather files

The weather files in 2019 CBECC appear to be based on weather data from 1997-2008[8] (the same as those used for the 2013 CBECC). By 2020, the input weather data and integrated forecasts for years beyond 2008 will be over 10 years old, making it outdated and inconsistent with the continual, above average warming trend in California. This will have an impact on both electric and gas consuming equipment demands and consumption, and in turn on cost/benefit analyses conducted using the TDV methodology.

As a spot check of the warming trend, Figure 2 below shows a comparison between 2014 NOAA QCLCD hourly weather data[9] and the CBECC TMY weather file for the San Diego International Airport. It shows that recent weather (in blue) has been substantially hotter than the TMY data (in orange) for most of the year, even in the winters. Many other locations across California show a similar pattern.

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[8] http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/2010-11-16_workshop/presentations/06-Huang-Weather_Data.pdf and http://bees.archenergy.com/resources.html

[9] http://www.ncdc.noaa.gov/orders/qclcd/

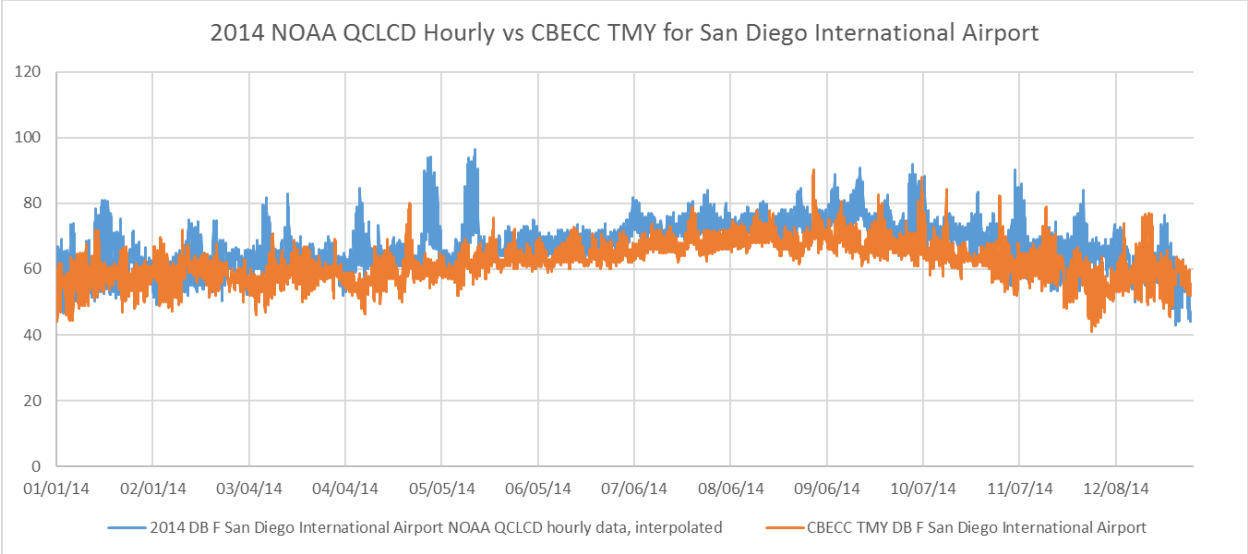

FIGURE 2: 2014 NOAA QCLCD HOURLY VS. CBECC TMY FOR SAN DIEGO INTERNATIONAL AIRPORT

Figure 3 below shows the average annual temperatures in California from 1895 to 2015[10]. The average temperature trend shows a steady increase in average annual temperature. In addition to this trend, the average temperatures since 2010 dramatically increased. The creators of the CBECC weather files attempted to account for future weather changes by incorporating future year weather files derived from forecasts, but the large above-average increase in temperature could not have been anticipated.

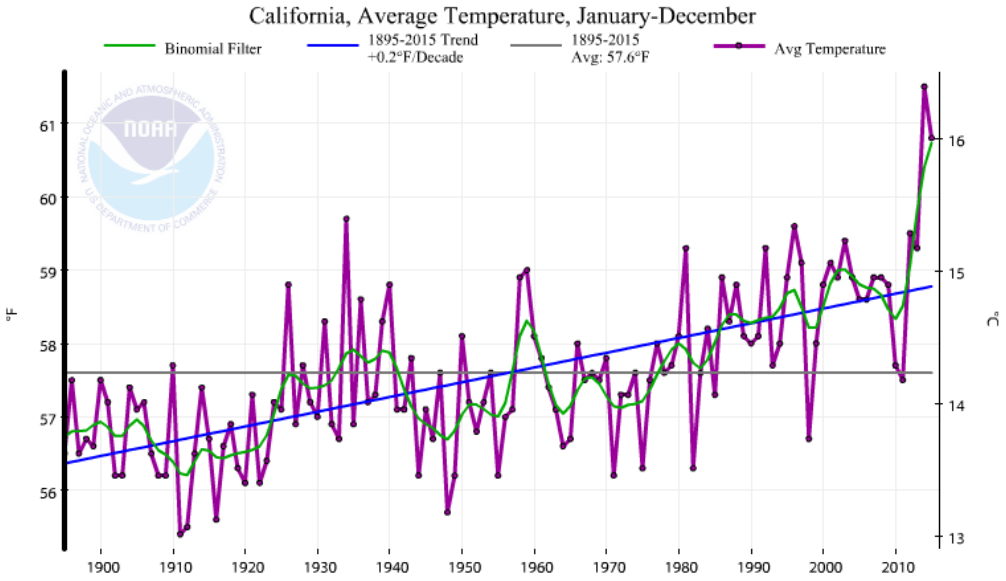

FIGURE 3: AVERAGE ANNUAL TEMPERATURES IN CALIFORNIA. NOTE THE SIGNIFICANT INCREASE SINCE 2010 THAT FAR EXCEEDS THE LONG-TERM AVERAGE

[10] http://www.ncdc.noaa.gov/cag/time-series/us/4/0/tavg/12/12/1895-2015?base_prd=true&firstbaseyear=1895&lastbaseyear=2015&trend=true&trend_base=10&firsttrendyear=1895&lasttrendyear=2015&filter=true&filterType=binomial

We request the weather files for the 2019 TDV methodology be updated with the most current information available, rather than continue to use the previous files, which by 2020, would be based on data and information outdated by more than 10 years.

Thank you for your consideration.