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

Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues.	Rulemaking 13-11-005 (Filed November 14, 2013)

COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) ON DRAFT POTENTIAL AND GOALS STUDY

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Pursuant to the May 1, 2019 *Administrative Law Judge's Ruling Inviting Comments on Draft Potential and Goals Study* ("ALJ Ruling," "Navigant Study"), San Diego Gas & Electric Company ("SDG&E") respectfully submits these comments.

I. OVERVIEW

SDG&E summarizes its comments and responses below as follows.

- SDG&E recommends the Commission evaluate the Navigant Study potential, from the perspective of whether it is providing concrete, reasonable and credible cost-effective energy savings before adopting 2020 and beyond EE goals.
- SDG&E recommends the "Reference" case as most appropriate for setting goals. The Reference case provides adequate balance between achieving as much Energy Efficiency ("EE") savings as possible and remaining cost-effective.
- SDG&E recommends that additional scenario analysis be done on the BRO savings in particular prior to finalizing the study. SDG&E also recommends reconsideration of the behavior experimental program design to allow for program expansion.

- SDG&E recommends that the results from the Navigant Study not be used to inform goals for the low-income sector.
- SDG&E recommends that the Commission reevaluate the current threshold of TRC at 1.25 to determine if this attainable or should be lowered.

II. RESPONSE TO ALJ RULING QUESTION

SDG&E addresses the questions posed by the ALJ Ruling below.

1. Commission staff proposed five scenarios that attempt to capture a reasonable range of energy efficiency potential for 2020-2030. Which scenario – either in the Navigant study or an alternative recommendation – is most appropriate to inform 2020 – 2030 goals? Justify your recommendation.

Response: SDG&E recommends the "Reference" case as most appropriate for setting goals. SDG&E appreciates Navigant incorporating the recommendation to provide alternate scenarios and looking at sensitivities to adjustments to certain parameters. If the goal of EE is to achieve the most EE savings and at the same time provide value to ratepayers, scenarios "Alternate 1" and "Alternate 4" with a TRC ratio of less than 1.0 do not accomplish this. On the other hand, the assumptions behind scenario "Alternate 3" with "increased marketing strength" and "aggressive BROs adoption assumptions,"[1] are vague at best and provides no real indication of the scenario being attainable. Scenario 2 may be plausible, but at a high cost. The increase in TRC to 1.25 may increase value to ratepayers but constrains the amount of overall energy savings and GHG reductions possible. This higher cost-effectiveness threshold also restricts what program administrators can offer and options available to ratepayers.

[1] Navigant Study, p. 34.

2. Do you recommend alternative values for any of the inputs or modeling used in the Navigant study? If so, specify the particular input or modeling (with section or page references, if applicable) and your recommendation for alternative values. Justify your recommendation and provide references. In particular, we invite responses regarding the following specific assumptions used in the Navigant study:

Response: SDG&E recommends the following alternative assumptions and inputs for developing values in the Navigant Study.

- The avoided costs should be updated to the new avoided costs and CO2 added values adopted by the Commission on May 16, 2019.
- Include both the 2017 and 2018 claimed EE results for purposes of calibration. Both years have integrated final Commission dispositions which were not specifically accounted for in the Navigant Study.[2]
- Calibrate the model by eliminating the 0.75 NTG for below code savings.3
- Incorporate the 2013-2018 results versus the 2013-2015 period in the updates to the whole building commercial retrofit savings and costs assumptions.4
- Update the Zero Net Energy ("ZNE") costs for purposes of developing whole building incremental ZNE cost over Title24 as specified on page 51 of the draft study. The draft provides for an adjustment on savings and is unclear whether cost was adjusted to account for updated ZNE cost information.

a. Do you agree with the cost assumptions used in the Navigant study? Explain why or why not, and (if applicable) provide references to alternative sources of information for specific cost assumptions used in the Navigant study.

Response: SDG&E is concerned that many of the measure costs used to estimate the potential comes from studies that are more than 5 years old. For example, some LED lighting

[2] Navigant Study, p. 30.
[3] Navigant Study, p.24.
[4] Navigant Study, p. 53.

costs were sourced from studies completed in 2012 and 2014. Other end-use costs such as freezers are from 2008. However, the question is, "Can the measure cost data be updated in a timely manner via the workpaper process or other means for measures that the Navigant Study currently show as not cost effective?" so that these measures can be implemented in EE programs with the latest and more accurate measure cost information. But for future Potential Studies, SDG&E recommends that Commission Staff prioritize updating the measure costs in a timely manner so that it can be incorporated in the Potential Studies.

b. Do you agree with the assumptions used in the BROs section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study. In particular:

Response: In general, SDG&E does not agree that all BROs should be included as part of energy efficiency goals. The Navigant Study points out in section 3.8.1[5] that Navigant "conducted an extensive industry scan for data on BROs initiatives and found that many of these programs are relatively new and much learning about their effectiveness is ongoing." SDG&E acknowledges although some BROs programs can provide savings but as Navigant states, the programs are relatively new and learnings, however, the estimates that the Navigant Study appear to be overly optimistic particularly as BRO savings exceed equipment savings in future years.[6] These savings depend on behavior changes and rely on its dependability and persistence. Therefore, to mitigate for uncertainty, SDG&E recommends providing scenarios using adjustments to the BROs programs by forecasting lower assumption values than the reference case savings forecast to estimate BRO savings and another scenario which would fall between the reference and aggressive BRO forecast savings forecast. These ranges would account for

[5] Navigant Study, p. 70.
[6] Navigant Study Appendix H.

uncertainties due to future post EMV savings results that will include persistence and impacts on the rolling cycle implementation.

Retrocommissioning ("RCx") presents another concern regarding the assumptions used in the forecast. The Commission has previously acknowledged that a "grey" area between what constitutes "regular maintenance and operation" of a building and "behavioral, retrocommissioning and operational" measures exists.[7] In that ruling the Commission limited savings to metered savings verified for a minimum of two years and allowed savings only beyond the level of regular maintenance and operation or naturally occurring maintenance. To-date, the Commission has not changed its policy on RCx. The Navigant Study also focuses on HVAC for commercial RCx but the study is not clear if the savings range of 2.3% to 5.17% includes all HVAC O&M savings or the incremental amount beyond regular practice. The Navigant Study should clarify what constitutes RCx program savings in its forecast.

i. HERs represent a significant amount of incremental electric savings in 2020. Do you agree with the assumptions used to forecast HERs energy savings in this study?

Response: Home Energy Reports ("HERs") provide a benchmarking service to homeowners. SDG&E agrees with the Navigant Study that HERs savings persistence is limited to the life of the active program, *i.e.*, 1 year. SDG&E is uncertain regarding the role HERs will play in EE portfolios of the future. By 2020 SDG&E expects that all residential customers will be on Time-Of-Use ("TOU") rates. SDSG&E expects this will reduce household energy bills as households adapt their appliance use to take advantage of the new rate structure. Customers typically participate in energy efficiency programs to save money and energy. As TOU rates provide an opportunity for customer bills to go down, the payback period for adopting energy

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[7] R.13-11-005 *Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity Energy Efficiency Programs or Projects,* December 12, 2015, p. 22.

efficient equipment becomes longer. Additionally, if adoption of rooftop solar and battery storage increases, HERs may become of less value as an EE program. With the combination of TOU rates and rooftop solar/battery storage adoption, SDG&E hypothesizes that HERs will not be a major source of savings in the future. Another consideration that potentially limits the expansion of HERs and behavior programs in SDG&E's territory is the current requirement that behavior programs must use a Randomized Control Treatment ("RCT") experimental design.[8] This program design requires maintaining a comparable control group for measurement and evaluation comparison purposes. SDG&E currently has over 600,000 residential HERs/behavior program participants out of its approximately 1,000,000 customers. In order to continue expanding the program, SDG&E recommends that the Commission remove the RCT requirement for behavior programs to allow for more customers to participate and instead make the requirement optional for new programs.

ii. The Navigant study includes new items in BROs forecasting, which indicate significant savings potential. Do you agree with the building benchmarking and universal audit tool assumptions used to calculate BROs savings?

Response: SDG&E agrees that the evidence to-date suggests that buildings participating in benchmarking programs tend to reduce their energy use and water consumption over time (NEMA 2016, EnergyStar 2016). The Navigant savings assumption per building are reasonable but are overly aggressive at the program level. Regardless, they don't apply to utility EE programs. In California, building benchmarking for large buildings is required as part of AB 802. Benchmarking is now the baseline. In addition, in San Diego local ordinances are also in place or being developed. The City of San Diego adopted the Building Energy Benchmarking

[8] D.10-04-029 *Determining Evaluation, Measurement and Verification Processes for 2010 through 2012 Energy Efficiency Portfolios*, Ordering Paragraph 13.

Ordinance ("BEBO") for commercial, multifamily and mixed-use properties as part of its climate action plan. The City of San Diego is actively working to enforce compliance with the ordinance. Even if SDG&E were able to take credit for savings, it is likely that the program would be credited with a high level of free ridership as benchmarking is a requirement. This would potentially drive the TRC ratio below 1.0 rendering the savings less cost-effective.

c. Whole Building rebate programs represent a significant portion of potential savings. Whole Building rebate programs encompass elements from multiple technology types and construction measures. Do you agree with the assumptions used in the Whole Building section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study.

Response: SDG&E does not agree with the Navigant Study assumption that significant nonresidential whole building savings are achievable beyond the 2019 Title 24 ("T24") building energy codes except for currently exempt building types. The 2019 codes added more building types and the codes are moving toward zero net energy buildings. Lighting for example needs to be nearly 50% more efficient with the 2019 T24 that with the 2016 T24. Furthermore, for building types that are not subject to Title 24 codes, the Commission directs utilities to determine Industry Standard Practice ("ISP") that would substitute for code. The Navigant Study does not have an ISP for every building type or equipment/processes that may be included in the study. Therefore, the potential could be overestimated.

SDG&E agrees with the Navigant Study that residential whole building programs (like Energy Upgrade California) have not proven to be cost-effective as measured by the TRC. While these retrofits may improve occupant comfort, the costs are too high relative to the gas and electric energy savings realized.

d. Do you agree with the assumptions used in the Low-Income section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study.

We expect to see little savings variability across years and across scenarios for Low-Income savings through the Energy Savings Assistance ("ESA") program and this is what the Navigant Study shows. For further discussion please refer to response to Question 3 below.

3. Should the Commission adopt goals that include energy savings potential from the low-income sector? Explain why or why not.

Response: The Navigant Study states they adjusted the measure list used for the low-income sector by removing measures "not likely to be rebated or not historically rebated by E."[9] However, the measure list provided in the file "2019 PG Study Measure Level Results – Draft Public 4-26-19.xlsx" includes many measures not installed through the program either currently or historically. This is especially true for gas saving measures. While the ESA program does install gas furnaces, gas water heaters, and attic insulation in homes with gas space heating, none of these measures qualify as high energy efficiency measures (with the exception of a few high efficiency furnaces installed in select cases).

It should also be noted that the majority of the gas appliance measures installed through the program replace non-working or non-used equipment and therefore result in added load instead of savings. In addition, the Commission has estimated that only 60% of the eligible California low-income population are willing and feasible for treatment through the ESA program.[10]

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[9] Navigant Study, p. 55.
[10] D.16-11-022 as modified by D.17-12-009, p.271.

The Commission in addressing the upcoming ESA application for 2021-2026 is requesting comments on its Guidance Document which includes addressing ESA savings ("ESA PD").[11] SDSG&E provides these additional considerations that should be reviewed prior to using the Navigant Study low-income savings potential for ESA programs as follows.

- First, the low-income population is a market unto itself. In most cases, services and products are provided at no-cost to participants making it an expensive market to serve. This is because the ability to pay is lower than in middle- and higher-income markets. The value proposition for these two groups are very different so the typically higher first cost for EE equipment makes most partial rebate programs ineffective.
- Second, because low income communities' needs are often different than what the mainstream markets provide, they typically have a broader coalition of stakeholders working on their behalf. These needs include housing, healthcare, education, and banking. The IOUs should continue to work within these coalitions to support low-income communities.
- Third, although the ESA PD states, "The Commission is specifically interested in a focus on deeper energy savings and innovative programs designs for the multifamily sector" and "consistent with the general IOU energy efficiency programs,[12] SDG&E is concerned with using the Navigant Study as support for Public Utilities Code Section 2790(a) may be diminished.

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[11] *Proposed Decision Issuing Guidance to Investor-Owned Utilities for California Alternate Rates for Energy /Energy Savings Assistance Program Applications for 2021-2026 and Denying Petition for Modification,* Attachment A-Section C. ESA Program Goals and Budgets, April 30, 2019.
[12] ESA PD, p. 8.

For these reasons, the Navigant Study results for the low-income sector reflect the technical potential for a program that installs high efficiency equipment, replacing working and used equipment of a lower efficiency, with a very high adoption rate. Therefore, SDG&E recommends that the results from this study not be used to inform goals for the low-income sector.

4. **In D.10-04-029, the Commission adopted a different process for crediting savings from comparative energy use (e.g., HERs) programs, prohibiting the utilities from submitting workpapers for ex ante numbers to project savings for these programs; instead, savings from these programs can only be credited after the Commission verifies them. Results from HERs program impact evaluations have been consistently high for the past several (approximately seven) years.1 Should the Commission continue to evaluate home energy report behavior programs that have had consistent evaluation results for several years?**

Response: As stated in the response to Question 2.b.i above, with the implementation of the TOU rates and expected increase in solar/battery storage installations, SDG&E does not expect that the current HERs savings will persist over time. SDG&E recommends that persistence studies should be the next focus of the evaluation work for HERs programs.

5. **What are the impacts of reduced energy savings goals, if adopted by the Commission? Should reduced energy savings goals result in smaller portfolio budgets, going forward? Explain why or why not, and (if applicable) how much smaller.**

Response: A reduced savings goal may result in a lower portfolio budget, but the relationship between savings and budgets is not linear. Reducing energy savings goals means that the opportunities for energy savings are reduced. This includes technologies to install and opportunities for installation. Using a standard technology adoption lifecycle (see Crossing the Chasm, by Geoffrey Moore) as a basis, the remaining market for EE consists of a portion of the late majority and laggards. As a result, more aggressive efforts will be required to convert these groups to adopters of EE products. In other words, California's more stringent building codes and appliance standards along with the rapid adoption of efficient technologies, *e.g.*, LED lights, has created a period of diminishing returns with the current available EE measures where it will be increasing expensive to convert late adopters. This means marketing and outreach dollars and/or rebate dollars will need to be increased to acquire more EE savings.

6. Given the changes in potential for 2020, should there be any changes to the required components of annual budget advice letters (ABALs) due from the PAs in September 2019, and/or to the process or criteria for reviewing the September 2019 ABALs (Sections 7.2 and 7.3 of D.18-05-041)? Explain why or why not. Any recommendations in response to this question should focus on new ideas and not repeat recommendations previously made and that the Commission has already dismissed.

Response: As stated above, if the energy savings goals decrease, particularly if this is due to the elimination or significant reduction in lighting with no comparable cost-effective savings from alternative sources, it will be increasingly challenging to meet the minimum threshold of a TRC of 1.25. Program Administrators have already experienced this challenge in the 2019 ABAL. The Navigant Study seems to indicate that although lighting is not a major source of savings at this time, the economic potential does not provide clear and dependable savings alternatives. Although the Commission is expecting innovation resulting in more cost-effective savings from the third-party solicitation, these third parties are also looking to the Navigant Study to provide them with information on reliable sources of savings that they can propose. The loss of a significant source of EE savings, *i.e.*, commercial lighting, may create confusion and discourage potential third parties from responding to the IOU solicitations. Therefore, SDG&E recommends the Commission evaluate the Navigant Study potential, from the perspective of whether it is providing concrete, reasonable and credible cost-effective energy savings before adopting 2020 and beyond EE goals. Furthermore, SDG&E recommends that the Commission reevaluate if the current threshold of TRC at 1.25 is attainable and should be lowered. Although this has been discussed previously in D.18-05-041 and directed that the matter be addressed in

R.13-11-005,[13] this change in the composition of the EE potential should warrant revisiting the TRC threshold in this rulemaking.

That being said, SDG&E is cautiously optimistic that it can propose a 2020 ABAL that is cost effective, *i.e.*, at least at 1.0, but with the potential outlook it will be challenging to achieve at least a 1.25 TRC with the significant reductions in lighting potential.

SDG&E respectfully submits these comments for the Commission's consideration.

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[13] D.18-05-041, p. 75.