FILED
05/29/19
04:59 PM

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)**

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E) 2019 ENERGY EFFICIENCY ANNUAL BUDGET ADVICE LETTER WORKSHOP REPORT

STEVEN W. FRANK
TESSA CARLBERG
JENNIFER REYES LAGUNERO

Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105

Telephone: (415) 973-2361
Facsimile: (415) 973-5520
E-Mail: Jennifer.ReyesLagunero@pge.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

DATED: May 29, 2019

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)**

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E) 2019 ENERGY EFFICIENCY ANNUAL BUDGET ADVICE LETTER WORKSHOP REPORT

Pacific Gas and Electric Company (PG&E) submits its 2019 Energy Efficiency Annual Budget Advice Letter (ABAL) Workshop Report (Workshop Report) in accordance with Decision (D.) 18-05-041.

D.18-05-041 created an additional workshop process for program administrators (PAs) whose 2019 ABAL portfolio forecasted Total Resource Cost (TRC) meets or exceeds 1.0 but does not meet or exceed 1.25. The additional workshop process includes:

- Within 45 days after staff's approval of its ABAL, the PA must hold a workshop for stakeholders, to explain why its forecasted TRC does not meet or exceed 1.25, and propose how it will transition to a TRC forecast of 1.25 during the ramp years….
- Within 15 days after the workshop, the PA must produce a report summarizing the workshop, which will include the PA's A.17-01-013 proposal for meeting/exceeding a 1.0 TRC on an evaluated basis and transitioning to a TRC forecast of 1.25 during the ramp years, and stakeholder comments from the workshop. The PA must file and serve the report in R.13-11-005 or its successor proceeding.[1]

[1] D.18-05-041, p. 135-6.

On April 2, 2019, the Energy Division approved PG&E's 2019 ABAL via non-standard disposition and acknowledged PG&E's requirement to participate in the additional workshop process.[2]

On May 14, 2019, PG&E held a workshop for stakeholders regarding PG&E's 2019 ABAL pursuant to D.18-05-041 and Energy Division's Disposition Letter. In compliance with D.18-05-041, see the Appendix for the Workshop Report, which summarizes PG&E's May 14, 2019 workshop and includes the workshop presentation.

Respectfully Submitted,

STEVEN W. FRANK
TESSA CARLBERG
JENNIFER REYES LAGUNERO

By: */s/ Jennifer Reyes Lagunero*
JENNIFER REYES LAGUNERO

Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-2631
Facsimile: (415) 973-5520
E-Mail: Jennifer.ReyesLagunero@pge.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

DATED: May 29, 2019

[2] Energy Division Non-Standard Disposition Letter dated April 2, 2019 regarding PG&E AL 4011-G_5375-E and 4011-G-A_5375-E-A.

APPENDIX

Pacific Gas & Electric 2019 Annual Budget Advice Letter Workshop Report
May 29, 2019

On May 14, 2019, Pacific Gas & Electric (PG&E) held a workshop regarding its 2019 Energy Efficiency (EE) Annual Budget Advice Letter (ABAL) incompliance with Decision (D).18-05-041.

On April 2, 2019, the Energy Division approved PG&E's 2019 ABAL with a threshold portfolio TRC of 1.04, excluding Codes and Standards program forecasts. The workshop was held to explain PG&E's plans to improve cost-effectiveness in future program years to ensure a 1.25 forecasted TRC by 2023 and a 1.0 evaluated TRC

The following is a summary of the workshop presentation and question and answer session. Also included as an attachment are the slides from PG&E's 2019 ABAL Workshop Presentation.

I. Workshop Presentation Summary

A. Summary of PG&E's 2019 EE ABAL[1]

PG&E provided an overview of its 2019 ABAL, showing the total budget, net savings forecasts relative to the 2019 goals, and the portfolio Total Resource Cost (TRC) and Program Administrator Costs (PAC), excluding Codes and Standards program forecasts but including market effects. Table 1 below is PG&E's 2019 EE portfolio.

[1] PG&E's 2019 ABAL Workshop Presentation (Presentation) from May 14, 2019, slide 6.

Table 1. Summary of PG&E's 2019 ABAL

Forecast Component	PG&E 2019 ABAL	Percentage of 2019 Savings Goals
Budget[1]	$320 million	n/a
Net GWh Savings[2]	653	125%
Net MW Savings[2]	112	112%
Net MMTherm Savings[2]	19	100%
Portfolio TRC excluding C&S[3]	1.04	n/a
Portfolio PAC excluding C&S[3]	1.56	n/a

1. Budget amount excludes REN and CCA portfolio budgets
2. Savings include Energy Savings Assistance (ESA) program estimates and market effects, and exclude Codes & Standards
3. TRC and PAC include market effects

B. Cost-Effectiveness Highlights from PG&E's 2019 EE ABAL[2]

1. Cost-effective program changes

PG&E examined program cost-effectiveness for closures and reductions. In one example, a program with reduced budget was the Industrial Deemed Incentive program, in which the budget was reduced by $3.9 million (94%) due to diminished lighting opportunities. The full list of program closures can be found in PG&E's 2019 ABAL.[3]

PG&E ramped up its cost-effective the On-Bill Financing (OBF) non-incentive program for on-bill financing not tied to an incentive program, which had a forecasted 2019 program TRC of 1.6. PG&E submitted a Petition to Modify (PFM) D.09-09-047 that was adopted, increasing the OBF loan cap for both government agency and commercial customers. Customers familiar with the program are taking advantage of larger loan caps for more comprehensive projects. Customers not engaged with the program before, such as large commercial and industrial customers, can take advantage of the program now because loan opportunities above $100,000

[2] Presentation, slides 6-7.

[3] Pacific Gas and Electric Company's 2019 Annual Budget Advice Letter, Advice 4011-G/5375-E, Advice 4011-G-A/5375-E-A, and Advice 4011-G-B/5375-E-B.

are more appealing to those customers. This will bring in large projects that will drive more cost-effective savings into the portfolio.

2.Reduced PG&E costs and met administrative compliance target

PG&E has made ongoing progress in reducing its costs to deliver programs and support implementers-reducing its marketing, administrative, and implementation costs by 29% ($29 million) and reflecting a smaller workforce in preparation for the third-party and statewide transition. PG&E continues to be under the 10% administrative cost cap. Administrative costs for 2019 are at 6% of its portfolio budget total, based on the administrative cost cap definition from the EE Policy Manual.

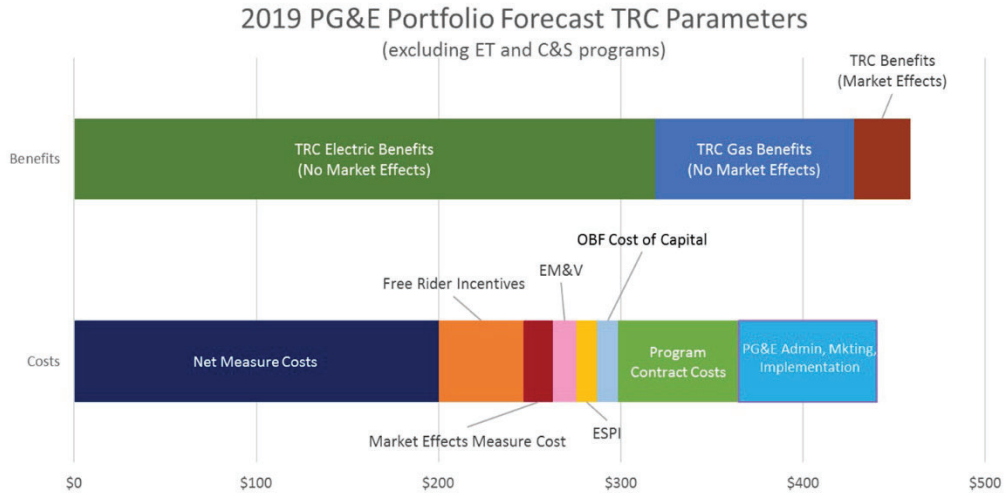
3.Raised organizational cost-effectiveness awareness

PG&E conducted multiple trainings with PG&E EE staff and implementers to raise awareness of the TRC and the CPUC-maintained Cost Effectiveness Tool (CET) that calculates the TRC. PG&E helps stakeholders understand the TRC and CET to enable them to design cost-effective programs and interventions. PG&E also provided trainings to raise general awareness and provided CET trainings to implementers.

4.Discussion of TRC benefits and costs

As presented during the workshop, Figure 1 below shows the TRC benefits and costs that were included in PG&E's 2019 ABAL. As depicted in Figure 1, net measure costs are 45% of TRC costs (excluding market effect measure costs, which bring the total closer to 50%). Net measure costs reflect the investment that customers are making for energy efficiency. Total program costs, including contract costs and PG&E costs, are 33% of the TRC cost. PG&E will continue to drive down its program costs to be as efficient as possible but recognizes the magnitude of these program costs relative to total TRC costs.

Figure 1. 2019 PG&E Portfolio Forecast TRC Parameters (Excluding Emerging Technologies and Codes and Standards programs)



C. Cost-Effectiveness Challenges[4]

1. Avoided costs have changed

Avoided costs have changed, driven primarily by natural gas prices and solar proliferation, resulting in kWh savings that may be less valuable at certain times of the day than in the past. Mid-day costs have decreased whereas evening costs have increased. At the portfolio level, a kWh saved in 2019 yields only 70% of the TRC benefits of a kWh saved in 2017. Additionally, the number of hours with avoided costs declines between 2019 and 2024, so benefits may decrease over the life of some measures. This is important for stakeholder considerations in program design.

2. Diminishing high-volume, cost-effective opportunities through Primary Lighting

Primary Lighting, aka Residential Upstream Lighting, has consistently contributed high-volume, cost-effective savings for the IOU portfolios for the last few years. This has primarily

[4] Presentation, slide 9.

been driven by screw-in lamp replacement products for both compact fluorescent (CFL) and light-emitting diode (LED) technologies. Baseline and savings methodology changes, and upcoming Title 20 code adoption of an expanded General Service Lamps (GSL) definition to include reflector and decorative style lamps (i.e. the remaining lamp types typically incentivized by the Primary Lighting program), severely limit the opportunity for cost-effective savings going forward.

3.Balancing priorities between savings goals and TRC

PG&E discussed that the annual savings goals and cost-effectiveness goals are not always aligned. The Energy Efficiency Potential and Goals Study, which informs investor-owned utilities (IOU) goals, has historically used a measure TRC threshold of 0.85. This results in including measures in the potential that are not cost-effective. As PG&E expands its portfolio to meet savings goals, there is potential for conflict with cost-effectiveness goals.

4.Schedule misalignment between forecasts and ex ante adjustments leads to outdated forecasting assumptions

PG&E discussed the schedule misalignment between the measure values used for forecasts and the measure value (*ex ante*) updates that inform savings claims. Program Administrators (PAs) are required to use the measure values available on the ABAL filing date in early September. This is true even if it is known that those values will likely change to new DEER (Database for Energy Efficient Resources) values effective in the subsequent year, and upon approval of new workpaper changes in Q1 of the program year of implementation. This can lead to a disconnect between forecasted and claimed savings assumptions. PG&E works to manage this disconnect as a portfolio team.

D. Forecasting a 1.25 TRC ratio and Achieving a 1.0 Evaluated TRC Ratio[5]

PG&E recognizes the recent gaps between its forecast and reported TRC. PG&E mentioned that one driver includes new workpapers or custom project dispositions that can change the claimed savings compared with forecast savings assumptions. PG&E further noted the importance of achieving a forecasted TRC of 1.25.

PG&E introduced three things that will help it reach a forecasted TRC, including 1) the likelihood of lower savings goals that will relieve some competing pressure between savings goals and TRC, 2) key cost-effectiveness strategies that PG&E plans to implement, and 3) PG&E's transition to an outsourced portfolio. See Section I.E. "PG&E Anticipates an Increase in Portfolio Cost-Effectiveness" below.

PG&E discussed its most recent evaluated TRC results from the 2013-2015 program cycle relative to its reported TRC values, in which the reported average TRC was 1.13, and the evaluated TRC was 0.97. PG&E recognized a gap between these forecasted and evaluated values. PG&E's gross realization rate (GRR, which is the ratio of the evaluated savings to the reported savings) from the last ten years, given that the evaluated savings correlate well with the cost-effectiveness, show a trend in evaluated gross savings matching more closely to reported gross savings over time. In the most recent evaluation, PG&E's realization rates for electric were around 95%, and gas was 77%. As the GRR goes to 100%, PG&E expects gap between the reported TRC and the evaluated TRC to approach zero.

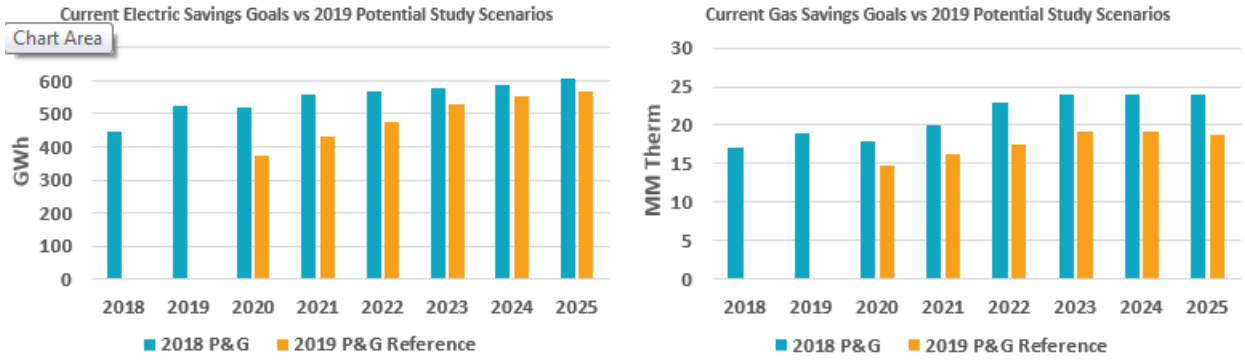
[5] Presentation, slides 10-11.

E. PG&E Anticipates an Increase in Portfolio Cost-Effectiveness[6]

1.Better Alignment Between Savings Goals and TRC[7]

The draft "2019 Energy Efficiency Potential and Goals Study" (Navigant Study) by Navigant Consulting, Inc. was released for comment on May 1, 2019. The Navigant Study is intended to inform the Commission's energy efficiency goal-making process for the IOUs. In the draft Navigant Study, five scenarios were proposed, of which three include increasing the Cost Effectiveness (C-E) Measure Screening Threshold from 0.85 to 1.0 or 1.25. Figure 2 (provided in presentation) illustrates a comparison of PG&E's goals as adopted in D.17-09-025 and the Reference Scenario from the draft Navigant Study.

Figure 2: Electric and Gas Potential from 2019 draft Navigant Study Reference Scenario compared with goals as adopted in D.17-09-025



Although all five scenarios are not included in Figure 2, all scenarios except one indicate significantly reduced energy efficiency savings potential for equipment rebate programs over the next several years. If the (1) California Public Utilities Commission (CPUC or Commission) adopts EE goals based upon the reduced potential from the draft Navigant Study, and (2) the adopted scenario reflects a Cost Effectiveness (C-E) Measure Screening Threshold of at least a 1.0 TRC to align with Commission policy to achieve an overall portfolio that meets that

[6] Presentation, slides 12-15.

[7] Presentation, slide 13.

threshold, then this may enable PG&E to forgo the pursuit of less cost-effective measures to achieve first-year net savings goals.

2.PG&E's Key Strategies for Improving Cost Effectiveness[8]

a. Portfolio Balancing Optimized for Cost effectiveness

PG&E is embracing the opportunity to refresh its EE portfolio through the third-party solicitations. During the portfolio transition occurring through 2022, PG&E will employ an iterative "Portfolio Balancing" approach that will assess new programs against the performance of existing programs to determine the appropriate portfolio mix to ensure that we are able to meet portfolio savings and cost effectiveness goals, while pursuing the outsourcing targets of 25%, 40%, and eventually 60%.

PG&E created an EE Portfolio Strategy & Optimization team, whose key roles include portfolio balancing, as well as increasing organizational awareness of cost-effectiveness, and optimizing PG&E's EE Portfolio to achieve cost-effective savings. This team will be dedicated to managing the performance of the portfolio, and providing targeted recommendations to optimize the portfolio, including recommendations to improve upon existing programs or reduce/discontinue programs with a focus on cost-effectiveness.

b. Enhanced Targeting

The proliferation of data, whether it is customer data, load profiles, or normalized-metered energy consumption (NMEC) data, opens opportunities to enhanced and targeted resource acquisition. PG&E wants to partner with third-party implementers to ensure they have the key pieces of customer data to effectively target for cost-effective offerings, while balancing this with our obligation to protect customer privacy. Within this framework, PG&E is interested in leveraging enhanced targeting capabilities to better align stakeholder interests to achieve cost-

[8] Presentation, slide 14.

effectiveness. PG&E has already tested this approach in one of its Pay-for-Performance programs. The implementers receive three times the normal incentive payment for savings achieved during highly cost-effective times of the day when avoided costs are highest.

c. Diversified Portfolio Offerings

PG&E discussed its need to ensure its portfolio is not based on a few cost-effective measures or programs, but rather a diversity of offerings. This could be leveraging meter-based savings platforms or financing or On-Bill Financing (OBF) platforms. PG&E wants to make its resources more cost-effective by offering opt-in services during the solicitations process.

3.PG&E's Portfolio Refresh through Solicitations[9]

PG&E's solicitations process will enable it to maximize its portfolio options, even if it too soon to determine exactly how new third-party programs will contribute to the future of PG&E's portfolio cost-effectiveness. The solicitations process is designed to enable third-parties to provide offerings that are newer and more innovative than PG&E's current portfolio offerings.

PG&E is adopting Energy Supply's performance contract model for its EE contract model, which will have clear Key Performance Indicators (KPIs) tied directly to portfolio metrics for program performance monitoring. PG&E will communicate to bidders how their program contributes to PG&E's overall portfolio. PG&E's current solicitations scope is large enough to allow PG&E flexibility to outsource 40% of its portfolio, which is beyond the 25% outsourcing requirement for 2020. This will allow PG&E to accelerate cost-effective programs being incorporated into its portfolio. Additionally, as part of the solicitations PG&E will be assigning costs to support services that PG&E provides, assign a value to those costs, and have that incorporated into the decision-making for the solicitations process.

4.Considerations for the Future[10]

[9] Presentation, slide 15.

PG&E shared considerations for the future that would affect cost-effectiveness. First, PG&E proposed that new default Net-to-Gross (NTG) values for new third-party programs be considered. Presently, any new third-party programs that are selected as a result of the solicitations process will be subject to the NTG values that are currently in the CPUC's DEER, most of which were derived from impact evaluation results from the 2006-2008 program cycle. Because these NTG values are based on programs from ten years ago, and free ridership is a function of incentive levels, efficiency levels, and program design, PG&E believes a new default NTG for new third-party programs should be considered instead of old NTG values that could reduce the benefits those programs can achieve immediately upon implementation.

As a second consideration for the future, PG&E suggested stakeholders consider the role of Codes and Standards in the threshold TRC. The TRC threshold currently excludes Codes and Standards, and Codes and Standards programs contribute a large amount of savings and are highly cost-effective relative to PG&E's EE incentive portfolio. PG&E would like to explore this complex topic with stakeholders further.

II. Question and Answer Session

The following are stakeholders' questions and PG&E's responses provided during the workshop.

1. **Question:** Are TRC benefits based on net savings?

   Answer: The TRC benefits are a function of net lifecycle savings. One of the key inputs into the TRC is avoided costs. Avoided costs for electric savings mid-day (when there is a preponderance of solar) are less valuable than savings in the evening when loads are higher. Driving those benefits up is key with lifecycle savings.

2. **Question:** Are the net measure costs calculated based on measure cost times NTG? What "net" is referred to here?

[10] Presentation, slide 16.

Answer: The net measure costs are the investment from non-free riders. The net measure cost is calculated as NTG times gross measure cost.

3. **Question:** Do the TRC benefits take into consideration distributed energy?

   Answer: The electric benefits are forecasted to include some adoption of solar through the electric avoided costs. The avoided costs are an input into the TRC model and are forecasted into future years. Many midday hours, especially out to 2025, have zero avoided costs for electric. Something installed today with a 7-year EUL may be getting less savings at a given time in year seven than today.

4. **Question:** PG&E forecasted 96 GWh in its 2019 ABAL Primary Lighting program (CEDARS program 21041). In the ten-month Primary Lighting program sales forecast PG&E submitted on May 1 to the CPUC, PG&E forecasted 63 GWh. There were two months absent from that forecast (January and February), and PG&E needs to make up a delta of 36 GWh between its 2019 ABAL and revised May 2019 sales forecast for Primary Lighting. Was there any program activity in January and February, and how will PG&E make up the 36 GWh forecast?

   Answer: Regarding program activity in January and February, PG&E did not have any program activity that was reportable during those months. PG&E ramped up program activity according to the timeline provided in the May 1 sales forecast. Regarding the gap between the savings provided in the program sales forecast submitted on May 1, 2019 versus what PG&E forecasted for the program in its 2019 ABAL, PG&E believes it will still hit its GWh goal given that its 2019 ABAL forecasted 125% of PG&E's GWh goal, and PG&E can still hit its GWh goal with a reduced savings forecast from Primary Lighting. Additionally, PG&E adopted a new approved workpaper for Primary Lighting in 2019 which has more cost-effective savings than what were included in the 2019 ABAL. The 2019 ABAL primary lighting savings were based on workpapers approved as of the September 4, 2019 filing date, per Commission direction. These new workpaper savings will enable PG&E to achieve higher cost-effectiveness for the savings achieved through its Primary Lighting program. These new workpaper savings are reflected in the May 1 sales forecast that PG&E provided to the CPUC.

   Note: In the course of preparing this report, PG&E determined that the new workpaper savings supporting the Primary Lighting program will enable PG&E to achieve a higher TRC for this program. However, because the overall realized benefits (total TRC benefits – total TRC costs) for Primary Lighting will be lower than originally forecasted in its 2019 ABAL, PG&E will monitor its portfolio activity in 2019 to determine whether a ramp-up of the Primary Lighting program is necessary later in the year.

5. **Question:** Regarding the Navigant Potential and Goals slide, can you clarify what the blue and orange bars represent.[11] How does this Potential and Goals study that Navigant did reconcile with the Potential study that the CEC did for SB 350 implementation?

Answer: The blue bars are from the 2018 Potential and Goals study, which are PG&E's current goals. These goals were adopted for 2018 – 2030. The orange bar is the reference scenario for the 2019 Potential and Goals study, which has a measure TRC threshold of 1.0. Some of the thresholds have a higher potential, up to 1.25, and some have a lower threshold. The key takeaway from Presentation slide 13 is that all of the draft 2019 Potential and Goals study scenarios result in potentially lower goals starting in 2020 and beyond than what was adopted from the 2018 Potential and Goals Study. The Potential and Goals studies are commissioned by the CPUC.

Regarding the CEC's Potential Study, the CEC used a different cost-effectiveness model that makes the two studies difficult to compare. Additional methodology questions on these studies should be addressed to Navigant or the CEC.

6. **Question:** Is anything in PG&E's control to improve the forecast relative to reported TRC? What is PG&E doing to iterate and learn from instances where forecasted TRCs were different from reported TRCs in the past?

Answer: One of the goals of PG&E's new senior manager in his role is to focus on forecasting and set up a process to build on prior processes where program managers work together across sectors to look at month-to-month activities to understand why PG&E's portfolio is at, above, or below target down to the sector level. PG&E currently looks at this every month. PG&E is also looking at ways to improve this process, and to identify drivers for inaccuracy in a certain sector. For example, PG&E looks at whether it is getting the right data from its implementers for third party programs, and whether it is asking the right questions of our implementers to ensure an accurate internal forecast.

The assumptions on which PG&E's forecast are built do change throughout the year in the reporting stage; some of these changes come from dispositions, and some changes result from PG&E's program activities. PG&E uses data available data at the time of the forecast to develop savings estimates, but the assumptions may change for reported values. There are also market factors such as more measures being installed than expected or forecasted in one program area, or less measures being installed than forecasted in another area. In another example, it is challenging to take programmatic

[11] Question refers to Presentation slide 13.

action to counter an unfavorable disposition received for energy efficiency projects in the middle or end of a program year, which can lead to fewer savings than forecasted.

7. **Question:** Is the change in TRC always in the same direction?

   Answer: In general, the forecasted TRC has generally been higher than what PG&E reports. That is also generally true between reported and evaluated TRCs. This is true at the portfolio level, but at the program or measure level, the results are not always directional and sometimes the evaluated results come in greater or less than 100% of what was reported. However, the overall the portfolio gap tends to be in the same direction. The purpose of Presentation slide 11 summarizing gross realization rates is to show that the gap between reported and evaluated TRC is narrowing for reported versus evaluated TRC.

8. **Question:** PG&E mentioned increasing performance payments for implementers for savings delivered during times with the highest avoided costs. In the industrial sector, one challenge is that the industrial load profile doesn't have enough granularity or targeted measures. If targeted savings and performance payments are possible on the residential side, is this possible on the industrial side?

   Answer: Regarding load shape availability, it would be beneficial for the load shapes available in the CET for TRC calculations to be updated. There are a limited number of load shapes available currently, which means that every measure in the portfolio gets applied to one of these load shapes, and the load shapes get combined with the avoided cost profiles to determine benefits. These limited load shapes may not accurately reflect the load shape for some programs or measure, and there is an opportunity for updating the existing load shapes and adding new ones.

   The Residential Pay-for-Performance program that provides the higher performance payments for targeted savings is an NMEC program, which enables the incentives to be structured at differing levels for targeted savings. However, the CET does not allow for NMEC or custom load shapes to be uploaded into the tool.

9. **Question:** SCE's reported (claimed) TRC has been close to its forecasted TRC in recent years. Are there any lessons learned or best practices that PG&E can adapt from SCE to close the gap between its forecasted and reported TRC?

   Answer: PG&E is an electric and gas utility with a large geographic region of customers to support relative to SCE. PG&E still aspires to what SCE is doing and appreciates learning from them. PG&E will work with SCE to explore lessons learned for its portfolio in 2020 and beyond.

10. **Question:** When was the last year that PG&E achieved a cost-effective portfolio TRC (excluding C&S and market effects) on an evaluated basis? How does that affect the credibility of what PG&E has said today in terms of achieving cost-effective evaluated portfolios?

Answer: The last year that PG&E received evaluation results from the CPUC was 2015. The last year that PG&E's evaluated portfolio TRC was greater than 1.0 was 2014. The evaluated TRC was 1.17 in 2014. In 2013, the evaluated TRC was 1.53. These results are from the CPUC's portfolio evaluation that was published in 2018. These TRC values exclude Codes and Standards programs and include market effects. If the market effects adder of 5% was removed, these TRC values would still be above 1.0.

Regarding credibility, PG&E plans to do its best to implement the plan to improve cost-effectiveness discussed in its workshop presentation. Adding to PG&E's plans for improvement, some of the changes discussed include lower goals that may be adopted and will likely make cost-effective easier to achieve, creating an environment that may make cost-effectiveness measures easier to pursue than has historically been the case. PG&E is also moving into an outsourced portfolio model, which will position PG&E to take advantages of opportunities that arise from that outsourcing, and while PG&E doesn't know what this looks like yet, PG&E is optimistic that it has strategies in place to take advantage of these opportunities as they arise.

11. **Question:** How is it credible that PG&E will achieve a cost-effective portfolio if it has failed to do 2015-2018?

Answer: On an evaluated basis, the last three evaluated years for PG&E's portfolio were 2013-2015. Two of those three years (2013 and 2014) resulted in an evaluated TRC greater than 1.0. This is the most recent evaluation data that's available. However, PG&E's reported TRC in the past few years has not been above 1.0. Cost effectiveness is very challenging, and there are multiple factors discussed in the workshop presentation that will drive cost-effectiveness upward. PG&E is doing its best to meet this challenge.

12. **Question:** What was PG&E's reported TRC for 2018? How will PG&E turn that 2018 performance into a cost-effective portfolio in 2019 and 2020?

Answer: The reported TRC ratio for 2018 was 0.70, which can be found on the CEDARS website. PG&E will be working to improve cost-effectiveness through the key strategies discussed in the presentation ("PG&E's Key Strategies for Improving Cost Effectiveness," slide 14), in addition to the changing goals and the transition to an outsourced portfolio model that will likely enable PG&E to better manage cost-

effectiveness and increase its forecasted, reported, and evaluated savings moving forward.

13. **Question:** Was the OBF Alternative Pathway program TRC of 1.6 what was filed in its ABAL on September 4th, 2018, or was this a revised value filed in a subsequent supplemental? What was behind PG&E's original filed TRC for this program versus the revised value?

    Answer: The OBF Alternative Pathway program TRC of 1.6 was the revised, final forecast filed in its second supplemental 2019 ABAL. The original Alternative Pathway forecast for the 2019 ABAL was based on impact evaluation results that have been done for OBF and PG&E's assumption on how the measure costs would be handled under OBF. The revised, final Alternative Pathway forecasted TRC of 1.6 assumed an NTG of 0.55 and other custom program ex ante values. PG&E is confident that evaluation will show a higher TRC than 1.6 for this program as larger projects come through this program with lower free ridership rates than used for the revised forecast.

14. **Question:** What is the status of being able to use a new default NTG for new third-party programs? Is PG&E waiting for CPUC approval, or dependent on something else?

    Answer: Currently there are no formal CPUC proposals for a new default NTG for third-party programs that PG&E is aware of. PG&E believes a new NTG default would typically come through a DEER update, and PG&E included its recommendation for a new default NTG for third-party programs in its comments on the Scoping Memo for the DEER 2020 and 2021 update.

15. **Question:** What's the focus of the Public Sector Solicitation?

    Answer: PG&E will soon be launching a public sector Request for Abstracts (RFA), looking at local government partnerships. The exact scope of that RFA will be released to the market in the coming weeks.

16. **Question:** Does PG&E believe that ratepayers are being served less equitably with a higher TRC and savings requirement?

    Answer: A cost-effective portfolio means that both participating and non-participating customers are well served. PG&E wants to ensure that it serves the disadvantaged communities, however there are challenges in serving disadvantaged and hard-to-reach communities while still achieving cost-effectiveness goals. There is a 0.85 NTG default for these customer groups meeting specific hard-to-reach qualifying criteria, but it is still challenging to serve these customers because the deemed savings values do not

accurately reflect the existing conditions in these customer homes, and thus benefits are lower than they potentially could be. PG&E continues to work on this area, and existing metrics for these customer segments help to drive PG&E to equitably support customers.

PG&E 2019 Annual Budget Advice Letter Workshop

May 14, 2019

Together, Building
a Better California

Life Safety

Call 911
Jenny Roecks
(PG&E)

Inform PEC guard
Mananya Chansanchai
(PG&E)

CPR
Rob Bohn
(PG&E)

AED
Rob Kasman
(PG&E)

Earthquake
- Drop
- Cover
- Hold

Evacuation Plan
- **Option 1:** exit rear doors to lobby to 4th St
- **Option 2:** exit doors near windows, emergency exit stairs to right to 5th St

Active Shooter
- Get Out
- Hide Out
- Take Out

Agenda

- Safety
- Workshop Purpose
- Cost-Effectiveness Highlights from PG&E's 2019 EE ABAL
- Cost-Effectiveness Challenges
- Forecasting a 1.25 TRC ratio and Achieving a 1.0 Evaluated TRC ratio
- Improving Cost-Effectiveness
    - Goal and Cost-Effectiveness Alignment
    - PG&E's Portfolio Strategies
    - Refreshing the Portfolio through Solicitations
    - Considerations for the Future
- Q&A

Sign-In

Please sign in at the back of the room, and identify whether you are a CPUC decision-maker so that we can comply with ex parte rules if applicable.
Thank you.

Workshop Purpose

PG&E's 2019 ABAL was approved on April 2, 2019 with a portfolio TRC of 1.04.

Pursuant to D.18-05-041, PG&E is holding this workshop to explain its plans to improve cost-effectiveness in future program years to ensure a 1.25 forecasted TRC by 2023 and a 1.0 evaluated TRC starting in 2019.

Summary of PG&E's 2019 EE ABAL

Forecast Component	PG&E 2019 ABAL	Percentage of 2019 Savings Goals
Budget[1]	$320 million	n/a
Net GWh Savings[2]	653	125%
Net MW Savings[2]	112	112%
Net MMTherm Savings[2]	19	100%
Portfolio TRC excluding C&S[3]	1.04	n/a
Portfolio PAC excluding C&S[3]	1.56	n/a

1. Budget amount excludes REN and CCA portfolio budgets
2. Savings include Energy Savings Assistance (ESA) program estimates and market effects, and exclude Codes & Standards
3. TRC and PAC include market effects

Cost-Effectiveness Highlights from PG&E's 2019 ABAL

Made cost-effective program changes

- Ramp-up of cost-effective OBF non-incentive projects through OBF Alternative Pathway (program TRC = 1.6)
- Closed or reduced some programs with low cost-effectiveness, such as reducing Industrial Deemed Incentive program budget by 94% ($3.9M) due to diminished lighting opportunities

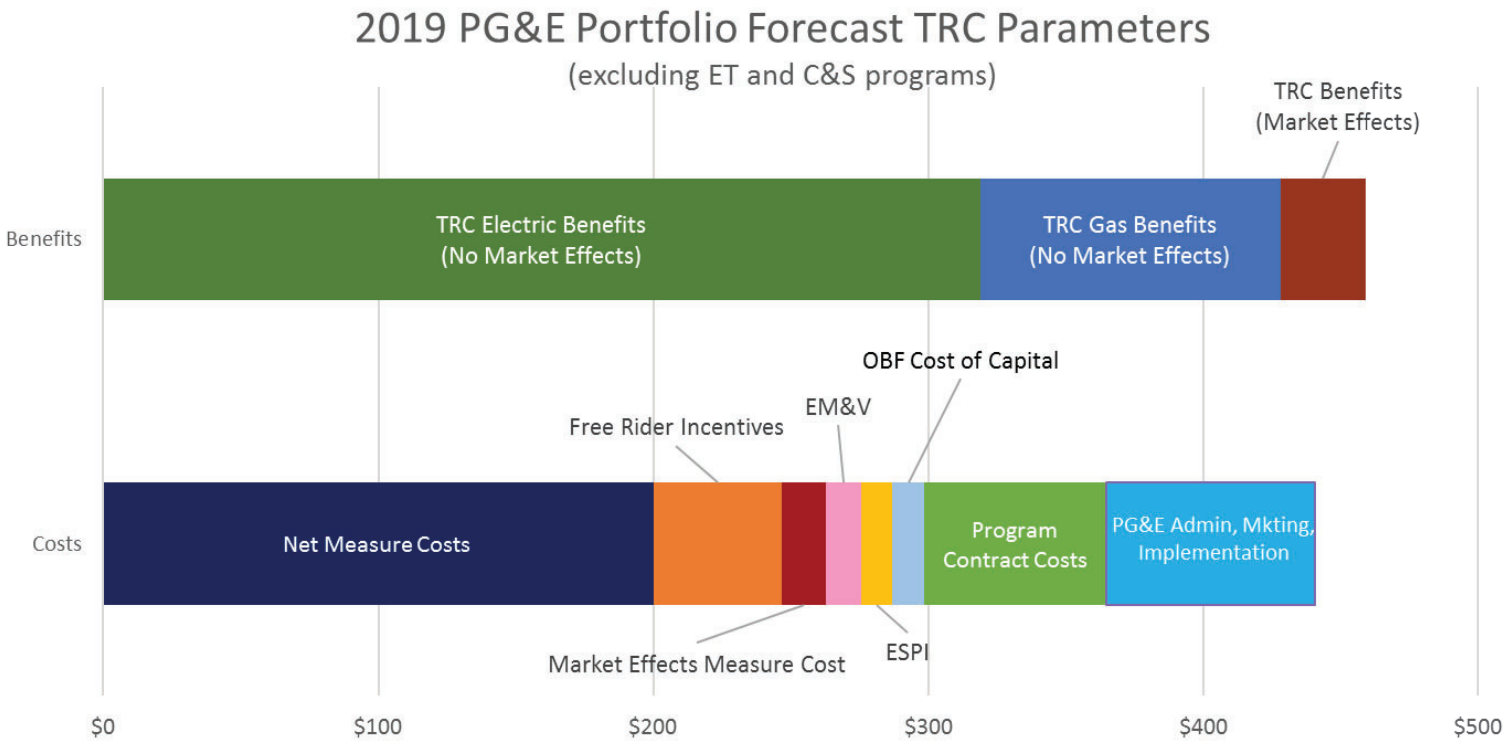
Reduced PG&E costs and met admin compliance target

- PG&E administrative, marketing, and implementation costs reduced by 29% ($29.4M) relative to PY 2016, reflecting a smaller workforce in preparation for third-party and statewide transition
- PG&E administrative costs ~6%, below the 10% compliance cap

Raised organizational cost-effectiveness awareness

- Held cost-effectiveness and CET trainings with implementers and program managers for forecasting exercises
- Provided measure optimization tool training using Excel Solver

Cost-Effectiveness Highlights from PG&E's 2019 ABAL



Key Takeaways:

- **Measure costs alone account for 45% of TRC costs**
- **PG&E admin, marketing, and implementation account for 17% of TRC costs (encompasses program implementation, marketing, and admin)**

Cost-Effectiveness Challenges

Avoided costs have changed

- Driven by low natural gas prices and mid-day solar proliferation
- At the portfolio level, a kWh saved in 2019 yields only 70% of the TRC benefits of a kWh saved in 2017
- The number of hours in a day bringing in avoided costs declines between 2019 and 2024, so benefits may decrease over the life of some measures.

Balancing priorities between savings goals and TRC

- Goals have been derived from potential based on a measure TRC threshold of 0.85
- Pursuing savings for measures with low cost-effectiveness compromises the portfolio TRC

Diminishing high-volume, cost-effective opportunities through Primary Lighting

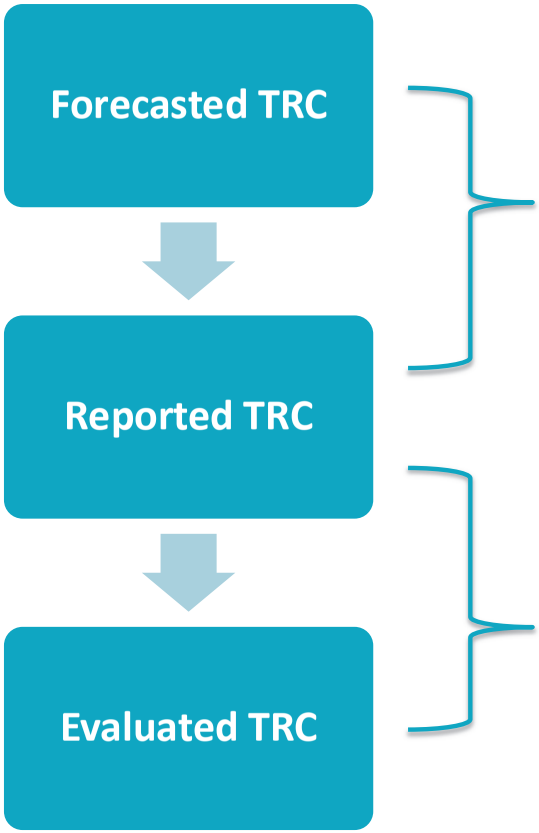
- Primary lighting is largely going away in 2020 with new code changes rendering remaining offerings not cost-effective
- Primary lighting has been a large part of PG&E's portfolio for many years

Schedule misalignment between forecasts and ex ante adjustments leads to outdated forecasting assumptions

- New DEER estimates and workpaper dispositions for a given PY are released after the forecast filing.
- This leads to a disconnect between forecasted and reported ex ante assumptions.

Forecasting a 1.25 TRC and Achieving a 1.0 Evaluated TRC

PG&E's plan to forecast a 1.25 by 2023 and achieve an evaluated TRC prospectively:

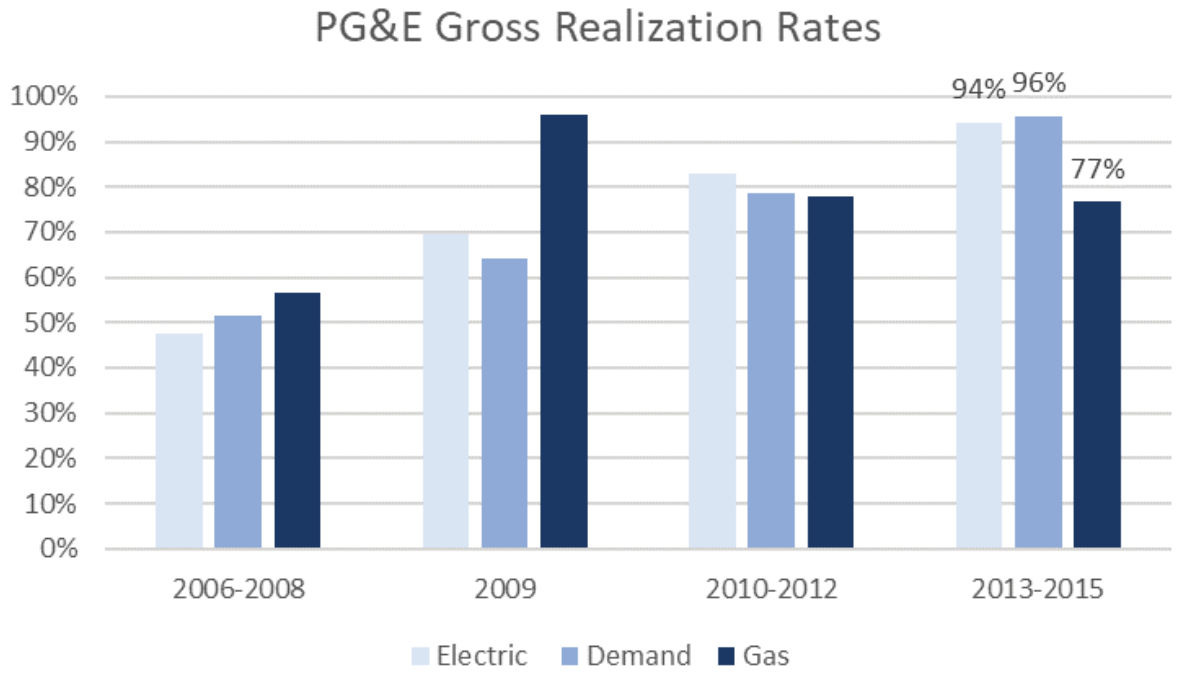


- **Recently, there have been gaps between forecasted and reported TRC**
  - PG&E Forecasted TRC, 2017 - 2018: 1.02 – 1.07
  - PG&E Reported TRC, 2017 - 2018: 0.87 – 0.70
- **Prospectively, the forecasted TRC will increase due to**:
  - Savings goals will likely be revised at a lower threshold, encompassing more cost effective measures, enabling removal of low-TRC savings from the portfolio and a high TRC forecast
  - PG&E implements key cost-effectiveness strategies
  - PG&E transitions to a more nimble, targeted outsourced portfolio

- **Most recent** evaluated (2013-2015) vs. reported TRCs were:
  - PG&E Reported avg. TRC: 1.13
  - PG&E Evaluated avg. TRC: 0.97
- **Prospectively, PG&E expects its reported TRC to be above a 1.0**, and track in evaluation, based on its cost-effectiveness strategies and demonstrated trend toward higher GRRs.

PG&E's Historical Evaluated EE Portfolio Performance

Ten-year trend in gross realization rates:



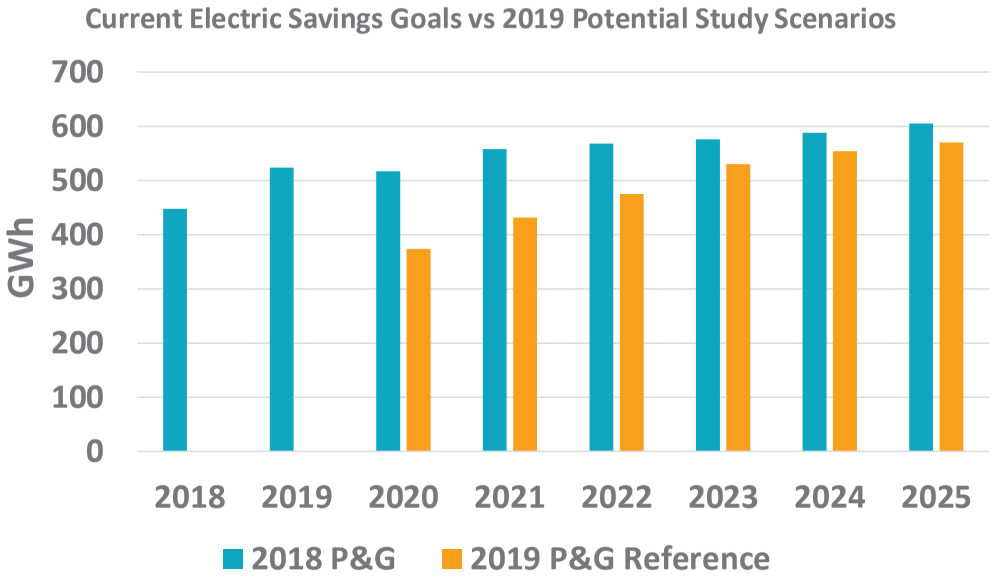
Gross Realization Rate (GRR) = Evaluated Gross Savings / Reported Gross Savings

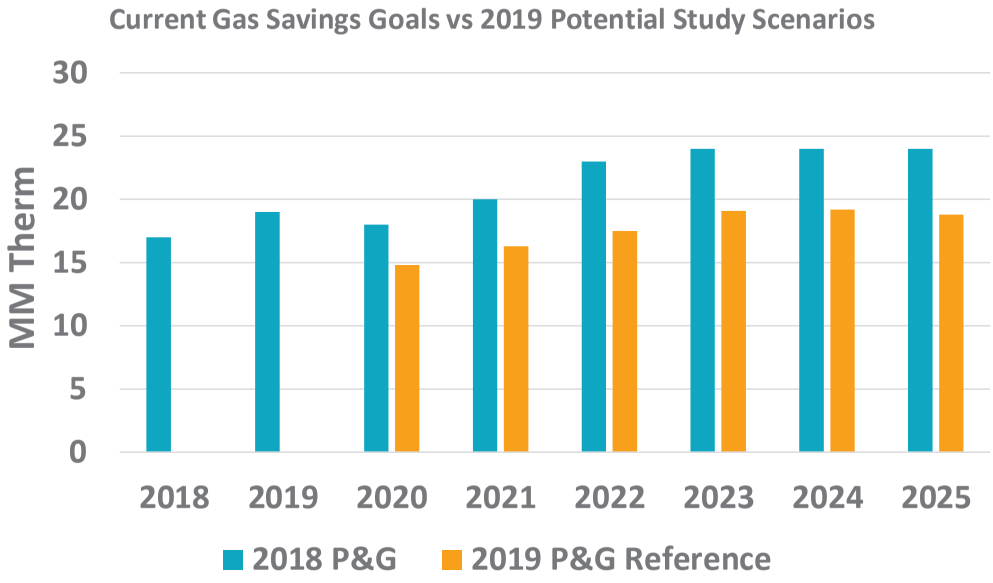
PG&E Anticipates Increase in Portfolio Cost Effectiveness

1. Better alignment between first-year net savings and cost effectiveness goals
2. PG&E's implementation of key cost-effectiveness strategies
3. PG&E's portfolio refresh through solicitations

Better Alignment Between Goals and TRC

The draft 2019 Potential and Goals study proposes increasing the threshold measure TRC ratio from *0.85* to at least *1.0*.





Key takeaway: Lower goals aligned with cost-effective measures will obviate the pursuit of measures with a TRC below 1.0 to meet first-year savings goals at the expense of portfolio cost-effectiveness.

PG&E's Key Strategies for Improving Cost Effectiveness

Portfolio balancing optimized for cost effectiveness

- PG&E solicitations will encourage innovative, cost-effective, market-driven solutions
- Standing up EE Portfolio Strategy & Optimization team
- Respond to changing EE landscape (e.g. Navigant Potential & Goals study)

Enhanced targeting

- Leverage PG&E customer database to provide locational targeting information to 3P implementers
- Align stakeholder interests on cost-effective offerings & projects
- Example: Res P4P program offers 3x implementer incentive payment for savings during peak period

Diversified portfolio offerings

- Increase number of cost-effective measures and programs, including through cost-effective NMEC and OBF offerings
- Make PG&E resources more competitive and C/E through opt-in service offerings to third parties

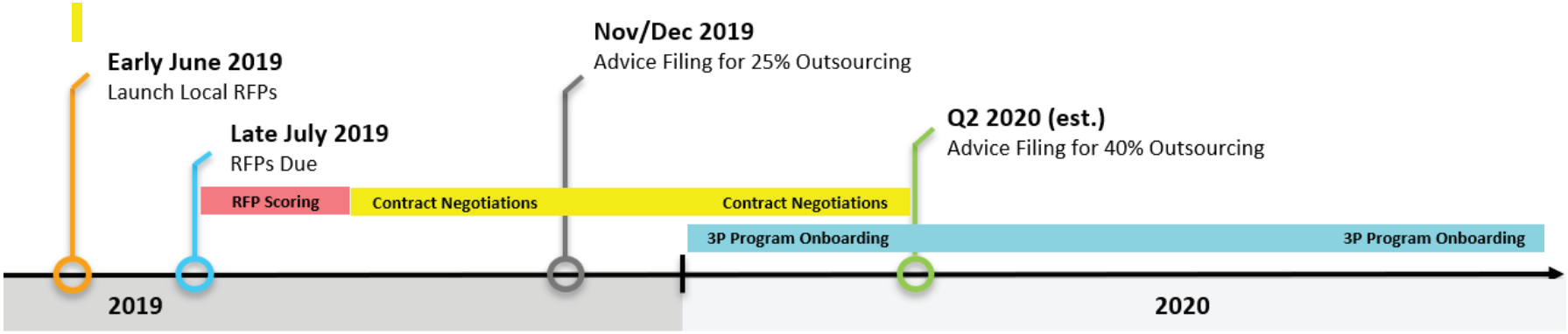
PG&E's Portfolio Refresh through Solicitations

Cost-Effectiveness Opportunities through an Outsourced Model

- Solicitation process looks for innovative and new program ideas
- Enhanced program and portfolio performance management through contract changes requiring KPIs with clear alignment to portfolio metrics
- Solicitation strategy allows for accelerated procurement of C/E programs and more nimble portfolio decision-making
- Engaging third-parties on support services they value

Timeline

- Outsourcing to 60% target by 2022
- Transition plan will be facilitated by portfolio balancing and program coordination
- Accelerated solicitations timeline reduces solicitation costs for bidders and PG&E



Considerations for the Future

NTG ratios for new third-party programs

- New third-party programs with innovative program design and measures should get a “fresh” NTG

Codes and Standards

- The role of Codes and Standards in portfolio cost effectiveness

Q&A

Questions?