

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

Order Instituting Rulemaking Concerning
Energy Efficiency Rolling Portfolios, Policies
Programs, Evaluation, and Related Issues

(U 39 M)

Rulemaking 13-11-005
(Filed November 14, 2013)

**COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39-M) ON THE
ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON MARKET
TRANSFORMATION STAFF PROPOSAL**

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I. INTRODUCTION

Pacific Gas and Electric (PG&E) appreciates the opportunity to comment on the *Administrative Law Judge’s Ruling Seeking Comment on Market Transformation Staff Proposal* and associated whitepaper, *Energy Efficiency Market Transformation: A Staff Proposal* (collectively “Staff Proposal”). An effective market transformation framework is essential to reach Senate Bill (SB) 350 savings goals and greenhouse gas reduction targets, will enable California to directly influence national markets, and provides a path toward a modernized portfolio capable of saving Californians billions of dollars in the coming decades.

Working to implement the California Public Utilities Commission’s (CPUC or Commission) vision through both traditional incentive programs and the Codes and Standards portfolio, PG&E has precipitated permanent changes in several important markets. California’s lighting programs have played a major role in transforming lighting markets, first to energy efficient fluorescent technologies, and more recently to high quality LED products that meet future iterations of Title 20.^{1/} California’s new construction programs work in concert with Title

1/ *Voluntary California Quality Light-Emitting Diode (LED) Lamp Specification 3.0*, California Energy Commission Final Staff Report, December 2016. “This is the third update to the specification, which will continue driving the market towards higher quality products and prepare for the upcoming appliance efficiency regulations for state regulated LED lamps. For this purpose, the Voluntary California Quality LED Lamp Specification, Version 3.0, is aligned with the Title 20 standards.” p. i

24 advancements^{2/} to ensure that the construction builder workforce is prepared for successful adoption of advancing building codes leading eventually to Zero Net Energy. PG&E's food service and equipment programs have established markets for energy efficient commercial refrigerators, freezers, and various cooking equipment, enabling several generations of code advancement for these products. The deep retrofit programs, including Energy Upgrade California, provide extensive training on building performance best practices that contractors can incorporate into competitive business models. More recently, partnering with Energy Star, PG&E's Retail Products Platform, a dedicated market transformation pilot launched in 2016,^{3/} has expanded to 12 states, 14 program administrators (PAs), and 6 major retailers and buying groups. This national effort (the ENERGY STAR Retail Products Platform or ESRPP) focuses on the growing plug load and appliance market and was initiated by PG&E and the Northwest Energy Efficiency Alliance (NEEA). PG&E's comments draw from knowledge gained and practical lessons learned from the design, execution, administration, and evaluation of these programs.

II. DISCUSSION

PG&E appreciates the CPUC's efforts to propose an adaptable yet accountable market transformation framework. PG&E supports many important elements of the Staff Proposal. The Market Transformation Accords would ideally minimize the risk of ineffectual spending while maximizing transparency, collaboration, and accountability. However, greater flexibility will be needed to engender successful market transformation programs. The Commission should also embrace higher levels of uncertainty, as evaluation of entire markets is often less precise than

2/ *2018 California Advanced Homes Program Participant Handbook and Program Agreement for Single-family and Multi-family New Construction Projects*, California IOUs, "The 2018 California Advanced Homes Program serves to encourage residential new construction builders to meet two visionary goals set forth by the California Public Utilities Commission (CPUC). The first is to help builders prepare for future code changes and build homes better-than-code. The second is for all new homes to reach ZNE." p. 2

3/ Advice Letter 3668-G/4765-E and Supplemental Advice Letter 3668-G-A/4765-E-A.

evaluation of individual EE measures. In response to the Staff Proposal, PG&E offers the following recommendations and discussion.

A. The Staff Proposal should encourage forceful, opportunistic intervention toward an agreed upon market end state even when detailed, accurate counterfactuals are not attainable during an initiative planning stage.

The Staff Proposal generally describes market transformation as a process that can be assessed, prescribed, executed, and evaluated with a high degree of accuracy, predictability, and certainty. Regarding the creation of a Market Transformation Accord the Staff Proposal states, “Only well-established and reliable leading market indicators or other well-understood market metrics would be approved for use in Market Transformation Initiatives.”^{4/} While this may be occasionally possible, in most cases, markets do not have such clean and calculable metrics, especially the nascent and emerging markets that could be most influenced by timely intervention. PG&E believes that by setting a strong expectation for detailed and reliable pre-program market data, the Staff Proposal could unintentionally restrict the possibilities for future market transformation interventions to products well into their adoption lifecycles.

B. PG&E recommends that the Commission recognize and enable market transformation initiatives that serve as a bridge between emerging technologies and early, informed code adoption.

There are many instances in which California’s codes and standards programs have achieved market transformation without partnering with a dedicated market transformation initiative. Where possible, this model is an extremely cost-effective way to achieve large energy savings. However, there are also many cases in which a market transformation program partnered with a codes and standards effort can bring to bear the force needed to transform a product or industry. In each of the cases cited above in which program interventions have brought sustained changes in large markets, the programs have been guided by, work in concert with, or themselves enable, standards-setting proceedings.

^{4/} *Energy Efficiency Market Transformation: A Staff Proposal, Draft*. September 2018. Section 3.2

The current Staff Proposal does not emphasize this type of coordination with standards-setting bodies as a means to facilitate permanent changes in a market at lower cost and shorter timeframes. While it may be possible for an initiative to independently yield sustainable changes across a market, coordination with standards-setting bodies can often bypass the need for continuing intervention well into product adoption lifecycles.^{5/} Importantly, well-coordinated market transformation programs offer the opportunity to generate or collect the detailed data needed to demonstrate market readiness and pursue aggressive codes and standards advancements. PG&E recommends that the Commission recognize the connection between market transformation initiatives and codes and standards adoption.

C. PG&E recommends that the Commission adopt a means to better engage market actors on their terms.

PG&E agrees with the Staff Proposal’s assessment that interventions at particular “leverage points” within a broader market can effectively break down barriers and propagate influence throughout a supply chain. Even so, the most important markets are often comprised of large-scale enterprises that view efficiency programs as peripheral to their core business models. With the size and scale of many important market actors, private companies, typically protective of the competitive advantages their business data affords, may be unwilling to release the information needed to fully inform the forecasts, baselines, statistical models, sensitivity analyses, market indicators, metrics, savings milestones, and detailed logic models called for by the proposed Market Transformation Accords.

The success of market transformation interventions will hinge on the flexibility provided to PAs to build trust with market actors and deliver value on their terms. With successful initial intervention and longer-term commitments, the PAs can gain credibility and the programs can

5/ Despite heavy program support totaling hundreds of millions of dollars, without successful coordination between the Upstream Lighting Program and codes and standards efforts, California was unable to fully transition the screw-in lamp market away from incandescent lamps. CFL saturation in California reached an estimated 30% in 2012 according to: *Saturation Comparison of Massachusetts, California, and New York: Final Report*, March 2015 (Cadmus)

attract additional sponsors. This in turn can lead to greater influence and a reinforcing cycle capable of ultimately delivering sustained changes in market dynamics.

D. To achieve the potential of market transformation, the California framework should provide sufficient flexibility for effective coordination outside of California.

Along with a long-term commitment of resources and program structures that meet industry partners on their terms, scale at regional or national levels can provide sufficient value for market actors to incorporate energy efficiency into their business models. PG&E appreciates that the Staff Proposal recognizes this opportunity to draw from broader collaborations. Well-designed programs initiated in California^{6/} have proven capable of attracting out-of-state sponsors. In these cases, California gains important influence but loses full control over program governance.

Because consistency is essential in crafting an attractive program for market actors, California will lose opportunities for greater influence through market transformation if it imposes requirements untenable for national partners. To enable regional and national partnerships, PG&E encourages the CPUC to recognize the need for compromise with jurisdictions that may have different sets of policies, priorities, and evidentiary standards for claiming savings.

Given these considerations, PG&E recommends retaining many core elements of the proposed Accord framework while enabling timely collective effort toward the desired end state of a market. To put PG&E's recommendations in context, consider the following market end states needed to cost effectively meet SB 350 and other California policy goals:

- An HVAC contractor workforce that routinely right-sizes equipment, performs measurement-based high-performance installations according to established industry standards,^{7/} and completes the permitting process.^{8/}

6/ The Business and Consumer Electronics Program and the ESRPP are two examples of collective programs between California and regional or national PAs.

7/ ACCA Standard 5, HVAC Quality Installation Specification, Standard Number ANSI/ACCA 5

- Online marketplaces that routinely promote energy efficient products without “widget-level” rebates.
- HVAC and lighting workforces capable of installing and maintaining controls systems that meet customer expectations and routinely achieve projected energy savings.
- A home-performance contractor workforce with a competitive advantage over counterparts who have not embraced the building performance best practices that deliver energy savings along with health and safety benefits.^{9/}
- A national plug-load products market governed by informed, effective codes.
- Solid state refrigeration, sonic dryer, and heat pump water heater markets that are accelerated through the uncertain emerging technologies phase and into code.
- A robust connected home energy management technology market that provides both energy savings and expands grid flexibility.
- An energy efficiency implementation market that utilizes advanced load shaping and demand response strategies to help participants transition to time-of-use rates, achieves the greatest avoided costs for the ratepayer base, and better compliments California’s 100% Renewable Portfolio Standard (RPS) goals^{10/} along with a regulatory framework capable of tracking and rewarding this transformation.

QI-2015.

8/ A number of studies completed during the last ten years have estimated very low permitting rates for HVAC installations in California. Most recently, permitting rates for installation of new HVAC equipment installations in the Residential sector were estimated between 8% – 29%. See: *Final Report: 2014-16 HVAC Permit and Code Compliance Market Assessment (Work Order 6) Volume I – Report*. DNV GL, 2017. CALMAC ID CPU0172.01

9/ Multiple studies have shown that customers experience a number of non-energy benefits from participation in PG&E’s whole home retrofit offering, Energy Upgrade California. See a.) *PG&E Whole House Program: Marketing and Targeting Analysis*. Opinion Dynamics Corporation, 2014. CALMAC ID: PGE0302.05; b.) *Energy Upgrade California – Home Upgrade Program Process Evaluation 2014-2015*, EMI Consulting, 2015. CALMAC ID: PGE0389.01

10/ SB 100

Several of these examples highlight nascent stages of market development and/or uncertain product futures. In these cases, immediate intervention to help establish markets could trigger long-term savings and benefits despite the unavailability of sufficient market data for detailed baselining and forecasting.

E. PG&E's Recommended Approach

PG&E's recommended approach to ideation, developing Accords and running initiatives is as follows:

1. PAs identify 3 – 5 potential high-impact market transformation opportunities that meet the market conditions described in the Staff Proposal (existence of significant leverage points, wide range of energy consumption outcomes, substantial barriers beyond price, and reasonable expectation of influence).

2. For each potential Initiative, PAs define the end goal or state of the market along with relatively few but definitive milestones at five-year intervals. These five-year milestones would be the primary instruments to gauge progress, inform approval requests for continuation, and potentially assign savings. Other market transformation indicators can gauge progress on shorter terms but should not be used for intermittent continuing funding approvals as such processes cast uncertainty over programs that will need room to adapt and provide longer term commitments to market partners. As initiatives adapt based on initial learnings and changing market conditions, some short-term indicators may become less relevant and others may become central.

3. For each potential Initiative, PAs establish the relevant data that are readily available and what insights can be gained from those data to inform potential baselines, savings claims and/or intervention strategies. In certain instances, existing data may provide for the detailed up-front analyses preferred for the proposed Accord structure.

4. In preliminary consultation with existing programs, stakeholders, and potential industry partners, PAs outline a proposed market transformation intervention strategy for each potential Initiative, describing how the market transformation program would work in concert with other efforts to achieve the desired milestones and end state of the market.

5. For each potential Initiative, the PA presents the desired end state, five-year milestones, other proposed indicators, intervention strategies, and other important considerations to a Market Transformation Advisory Committee. The Advisory Committee should be comprised of informed and engaged California energy efficiency stakeholders and industry experts. The committee members vote to recommend moving forward with a maximum of 3 market transformation initiatives per PA.

6. For the recommended Initiative(s), PAs propose via Tier 2 advice letter detailed Accords, with particular focus on initial intervention strategies, required budgets, and five-year milestones for review and approval by the Commission.

7. Programs that achieve the established five-year milestones continue via filing of a Tier 2 advice letter, which contains a progress update, ten-year milestones, and updates to intervention strategies. If the lead PA is not seeing sufficient progress before the five-year mark, it would have the authority to end the Initiative. If at any point, the PA wishes to change the key five-year milestones, it would need to seek Commission approval by Tier 2 advice letter and explain the rationale, including the need to move away from any original five-year milestones.

In the case of a traditional market transformation program,^{11/} five-year milestones may be the rigorous energy-savings measurements relative to a forecast baseline envisioned in the Staff Proposal. In other cases, five-year milestones may be associated with the establishment of foundational elements needed to constitute markets for emerging technologies. Five-year milestones could also be oriented toward kick-starting stagnated markets like some described in the Strategic Plan.^{12/}

During the ideation process, beyond the described interactions with the Advisory Committee, the PA would not be required to host stakeholder or public workshops but could

11/ *Building a Policy Framework to Support Energy Efficiency Market Transformation in California.* Ralph Prahl and Ken Keating, Edited by Cathy Fogel and other Energy Division staff. 2014.

12/ Ibid

chose to do so if additional input or initial reactions are desired. Similarly, PG&E's recommended approach would also eliminate the need for a Tier 2 advice letter seeking approval of an Initiative Development Plan, which would save time and costs. Instead, the Market Transformation Advisory Committee recommendation would indicate support for more detailed Initiative planning and Accord development.

In PG&E's recommended approach, PAs would also be encouraged, but not required, to jointly fund proposals. California would be best served by flexibility around statewide administration for several reasons. First, some markets may be small and/or specific to a given region or service territory. For instance, agricultural markets as well as heating and cooling needs vary greatly by region. Similarly, markets for electric or gas applications may pose unique considerations depending on the single or dual fuel nature of PAs. Second, statewide coordination and planning can add significant complexity that may not be warranted, especially in the early stages of an Initiative. There are likely to be instances where an optimal approach would allow for individual or small groups of PAs to initiate interventions and where promising, other California PAs could join at lesser risk to ratepayers. Third, many markets are national or global in scale and for these markets it is even more important to build partnerships outside of California, regardless of the program's statewide nature.^{13/}

As the Staff Proposal describes, potential exists for simultaneous market transformation initiatives and resource programs that address the same products. In the absence of a market transformation framework, many of the "resource" programs operate as hybrid models with specific elements of market transformation design; several examples of such programs are given in the introduction above, where market transformation is pursued despite the lack of recognized benefits and often at low TRC. With a market transformation framework, the hybrid "resource"

13/ There are many examples of individual or subsets of California PAs forming effective partnerships with other jurisdictions to increase leverage in a regional energy efficiency effort, including the ESRPP.

programs could be rolled into more dedicated market transformation Initiatives and the resource portfolio could be better focused on achieving immediate cost-effective savings.

Regarding third party involvement and market transformation, PG&E recommends that PAs be allowed to put forward solicitations to meet the specific needs of market transformation initiatives. Third parties would be responsible for designing and implementing the program elements defined in the Accord and put out to bid via solicitation. In this context, PG&E requests that a revised market transformation framework allow for program elements implemented by third parties to count toward portfolio outsourcing requirements. In the role of administering portfolios, it will be the PAs responsibility to ensure that resource programs and market transformation Initiatives work well together.

The modifications to the Staff Proposal would allow market transformation initiatives to better fit within existing industry business models, enable more timely intervention, and potentially save ratepayers millions of dollars. During the Sep. 25th public stakeholder workshop on market transformation, stakeholders raised the possibility of a second meeting, before reply comments, to discuss proposals brought forward in opening comments. PG&E supports this idea.

III. RESPONSES TO SPECIFIC QUESTIONS POSED IN THE RULING

1. What are the best characteristics of the market transformation framework in the Staff Proposal? What attributes are the most valuable and should be retained?

Market transformation has the potential to revolutionize energy efficiency in California and beyond and PG&E commends Commission Staff for recognizing this opportunity and taking a leadership role. PG&E especially appreciates the sincere consideration given to the proposed market transformation framework, including the Accord concept. It is clear that CPUC Staff have sought to understand the complex dynamics unique to market transformation while also addressing potential roadblocks related to specific challenges facing the energy efficiency portfolio. There are many elements of the proposed Accord structure, general processes, and the broader market transformation framework that PG&E supports. In particular,

- The Staff Proposal demonstrates a genuine consideration of the nature of real-world markets and recognizes certain important implications for market transformation programs. For instance, the Staff Proposal acknowledges the “possibility that markets change in unexpected ways over time” and attempts to provide PAs with a structure that would allow for programs to move dynamically in response to unanticipated market changes.

- The Staff Proposal recognizes the need to afford longer timelines to market transformation programs.

- The Staff Proposal recognizes the barrier that inclusion of market transformation in the business plan portfolio cost effectiveness analysis would pose to establishment of longer term initiatives. PG&E supports the proposal to initially treat market transformation programs independently when assessing portfolio cost effectiveness.

- The Staff Proposal notes the national or global nature of many markets and the opportunity that poses for California to expand influence beyond its borders.

- The Staff Proposal describes the need to take into account expert and stakeholder input, including industry expertise.

- PG&E appreciates the Staff Proposal’s framing of a Market Transformation Accord as a “comprehensive governing ruleset for the Initiative” and as an agreement between parties “intended to reduce the possibility of ongoing disputes over methodologies, targets, schedules, and the allocation of energy savings credit.”

2. *Do you agree with the staff recommendation to begin the development of market transformation initiatives initially separately from the business plan portfolios? Why or why not?*

Partially. As the Staff Proposal notes, market transformation programs often must act on significantly longer time horizons in order to achieve high levels of savings and cost effectiveness. Given the current challenges energy efficiency portfolios are facing to achieve TRC targets, in order provide sufficient latitude for market transformation programs to achieve longer term goals, maintaining them outside of the business plan portfolios is necessary.

3. *Do you agree with the budget limit of \$12 million per PA for operations outside of the business plan portfolios suggested in the Staff Proposal? Why or why not?*

With upcoming third party solicitations, the transition to statewide programs, and challenges in meeting TRC thresholds, there is a high degree of uncertainty in determining the energy efficiency portfolio budgets that will be required and justified in the upcoming years. Given this uncertainty, PG&E suggests that, where possible, market transformation budgets are pulled from existing, approved program funds. If additional funding is needed for market transformation initiatives, PG&E suggests that those requests be made at the time.

4. *Should there be a limit to the period for how long market transformation initiatives may operate outside of the business plans before being integrated with the overall portfolio? If so, what is your proposed time limit? Explain your rationale.*

No. Both in the Staff Proposal and PG&E's recommended framework contain safeguards for market transformation programs that are not meeting milestones. These safeguards are sufficient to protect ratepayers from protracted, expensive, and ineffectual market transformation programs. Further, a diverse array of market transformation programs is possible, and a wide variety of timelines should be expected depending on the degree of complexity, size, and challenges individual markets present. Thus, establishing such timelines for all potential programs would be arbitrary at best and could lead to missed opportunities.

5. *Do you support the Staff Proposal elements with respect to cost effectiveness? Why or why not? Describe in detail any changes you would suggest.*

PG&E supports some elements of the Staff Proposal's approach to cost effectiveness and is concerned around other aspects. As discussed above, PG&E supports maintaining initial market transformation programs and planning outside of the business plan portfolio cost effectiveness determination in recognition of the longer time horizons generally needed for market transformation programs to achieve cost effective savings. However, as detailed in

several recent filings,^{14/} PG&E remains concerned about the current formulation and application of the TRC as the principal metric for determining energy efficiency cost effectiveness. Particularly relevant for market transformation is the CPUC’s current treatment of spillover (or “market effects”) measure costs. The CPUC currently includes spillover measure costs in the TRC calculation, which could create a major cost effectiveness barrier for market transformation programs, which will be designed specifically to induce spillover. PG&E recommends that in a final market transformation framework, program investment is included in the determination of cost effectiveness and that spillover measure costs are excluded.

PG&E also recommends that a final market transformation framework clarify that benefits from codes and standards updates that are enabled or accelerated by market transformation initiatives would be included in determination of an Initiative’s benefit-to-cost ratio. In many cases, initiatives may be designed specifically to induce multiple rounds of code advancement. If the associated benefits are not included in the determination of cost effectiveness, many potential market transformation opportunities would not appear viable. A final market transformation framework would benefit from these changes as well as additional clarity around how cost effectiveness will be calculated, and how benefits and costs will be defined.

6. *Do you support the concept identified in the Staff Proposal for Market Transformation Accords? Why or why not? Describe in detail your suggested improvements.*

PG&E does support the general structure of Market Transformation Accords but, as discussed above, is concerned over the expectations and predictability for several of the specific elements suggested. Many potential market transformation initiatives will not lend themselves to the types of detailed forecasts and baselines described in the Staff Proposal.

14/ See a.) Advice Letter 3881-G/5137-E and Supplemental Advice Letter 3881-G-A/5137-E-A, b.) Advice 4011-G/5375-E, c.) Energy Efficiency Business Plan 2018 – 2025, Pacific Gas and Electric Company, 2018. d.) Opening Comments of Pacific Gas and Electric Company (U 39-M) on the Proposed Decision Addressing Energy Efficiency Business Plans, April 24, 2018

7. *The Staff Proposal includes an allocation of funding for market transformation planning efforts. In some cases, such planning efforts may fail to produce a workable Market Transformation Accord. Should spending on such planning efforts be subject to separate budget caps or time limitations? If so, what should those limits be and why?*

PG&E's proposal above would limit funding needed for multi-year Market Transformation Accord development and associated risk of unfruitful ratepayer funding.

8. *Do you agree with the Staff Proposal's recommendations with respect to the interaction with statewide and third-party program requirements in the business plan portfolios? Why or why not?*

As described above, PG&E recommends that market transformation initiatives are encouraged but not required to be conducted on a statewide basis. Regarding the role of third parties, PG&E would expect that third-party designs, analyses, and implementation will be valuable. However, PG&E encourages recognition of the unique position that IOUs have in broader markets. PG&E has the expertise, credibility, relationships, stability, and size to move real world markets.

9. *Do you support the Staff Proposal recommendation for how to conduct evaluation, measurement, and verification on market transformation initiatives? Why or why not?*

Yes, PG&E supports the Staff Proposal's recommendation for the lead PA to budget, plan, and implement EM&V through an independent evaluation firm to address at a minimum the services included in the Staff Proposal, specifically:

- Monitor market developments and update forecast baseline projections.
- Validate and refine program theory and logic models.
- Gather data and report leading market indicators and Initiative milestones.
- Examine program processes and gather feedback to refine implementation strategies.

The intervals for each of these activities should probably vary. For example, it may not be

necessary to update program logic models annually, while annual updates for some market indicators may be reasonable and appropriate.

While PG&E also believes it is important that evaluators conduct independent analyses, real-time feedback from evaluators, especially in the early stages of a market transformation Initiative, will be essential to adapting and optimizing strategies on a timely basis.

10. Comment on the Staff Proposal's discussion of milestone-based performance assessments.

As described above, PG&E believes that a set of core market transformation milestones should be established in an Accord and assessed at five-year intervals. Barring compelling reasons to the contrary, if insufficient progress is made toward achieving these five-year milestones, the market transformation Initiative should be terminated.

11. Do you support the Staff Proposal's recommendations for the administrative aspects of management of the Initiatives, particularly in Section 5 on procedural approach? Why or why not?

As described in the Discussion section above, PG&E recommends several updates to the Staff Proposal to simplify and streamline the procedural approach.

12. Are there other ways (besides those represented in the Staff Proposal) to engage and leverage stakeholder expertise effectively? If so, describe them.

PG&E appreciates the extent to which CPUC staff have sought to understand and incorporate the best practices of other jurisdictions with well-established market transformation regulatory frameworks. In consideration of future market transformation initiatives, PG&E encourages the Commission and energy efficiency stakeholders to incorporate advice and opinions of industry experts, including important market actor subject matter experts.

13. Are there characteristics of market transformation initiatives that are not sufficiently embodied in the framework described in the Staff Proposal? If so, describe them and suggest ways these characteristics can be integrated into the framework or requirements.

As described above, PG&E believes the unique role that market transformation programs could serve as a bridge between emerging technologies and codes and standards adoption is not sufficiently addressed in the Staff Proposal. In PG&E's view the current Staff Proposal is too focused on detailed pre-program baselining and forecasting, which would likely limit many market transformation opportunities for which robust data is not available during the intervention planning stage. Further, PG&E encourages the Commission to remain open to "Golden Carrot^{15/}" types of initiatives, programs that would focus on the development of entirely new classes of equipment. Such competition-driven reward strategies can spur the market forward at relatively low risk to ratepayers. Consider the current heat-pump water heater market as an example. A primary barrier facing widespread market adoption is a lack of product availability for the replacement market, limiting retrofit opportunities. A Golden Carrot reward offered for a manufacturer to advance product development may be a successful strategy. If no manufacturer could meet the specifications put forward in the challenge, no ratepayer funds would be spent.

14. *Are there elements in the Staff Proposal that are missing or unclear? Describe.*

The Staff Proposal's funding mechanism is unclear. PG&E would appreciate more detail on possible funding avenues for market transformation initiatives, including if and how such funding could be drawn from unspent funds approved as part of the business plans. PG&E also recommends greater clarity on a cost effectiveness calculation and associated benefits and costs.

15. *Ultimately, do you recommend that the Commission adopt this framework, or a version of the framework with your suggested modifications described in answers to the above questions? Why or why not?*

Yes, PG&E recommends adoption of the Staff Proposal with the proposed changes described.

15/ *Super Efficient Refrigerators: The Golden Carrot from Concept to Reality*, J.W. Feist et al., ACEEE, 1994

16. *Include any other comments or recommendations not covered by the above questions.*

The ENERGY STAR Retail Products Platform (ESRPP) is the only current dedicated market transformation program operating in California energy efficiency. The ESRPP targets retailer profit margins as a leverage point to influence full supply chains for several plug load products. PG&E designed the ESRPP in partnership with the U.S. Environmental Protection Agency (EPA) and the Northwest Energy Efficiency Alliance. The ESRPP offers California real-world lessons on the opportunities that market transformation offers, showcases a number of challenges that should be considered when crafting new policy, and highlights the exciting potential for market transformation programs:

- The ESRPP has rapidly attracted program sponsors and major retail participants across the United States. In less than three years, the ESRPP has expanded to 14 utility sponsors across 12 states, covering roughly 20% of the U.S. population. Currently six major retailers and buying groups, representing thousands of smaller retailers, are actively participating. This level of participation expands California's influence well beyond its borders.
- With a consistent framework and shared vision, the ESRPP is able to pool resources on a national scale, which increases leverage over industry practices. This level of influence and organization, aided by the simplicity the single ESRPP platform provides, has motivated the major retail program partners to share full-category sales data as a prerequisite to inclusion.^{16/} Access to these data is unique to the ESRPP and would not have been possible without coordinated program efforts.

16/ Full category sales data for eight product categories (Clothes Dryers, Clothes Washers, Dehumidifiers, Freezers, Refrigerators, Room Air Cleaners, Room Air Conditioners, and Soundbars) has been collected from all participating retailers.

- Among other encouraging developments,^{17/} the industry data obtained through ESRPP has already assisted the EPA in product specification and technical roadmap planning, which represents an important connection to the standards-setting processes and progress toward the envisioned end state of the associated products markets.

These accomplishments have come at less than 1% of PG&E’s total energy efficiency portfolio budget.

Several challenges experienced by the ESRPP illustrate the need for certain elements of the Accord structure to be modified by the recommendations PG&E offers above.

- With PG&E’s ESRPP program established as a pilot, PG&E is required each year to submit an advice letter seeking approval for the next year’s funding.^{18/} These advice letters have been protested and delay program implementation. In particular, the delay caused by this annual regulatory approval process has caused PG&E to miss retailer product planning cycles, substantially impacting PG&E’s influence over product selection during these critical periods. This experience within the ESRPP leads to PG&E’s recommendation for a minimum of five-year funding and approval cycles geared toward major transformation milestones.

- In seeking approval to launch the RPP pilot in 2015, PG&E described detailed logic models, retailer requirements, and plans for evaluation in its original RPP Advice Letter.^{19/} However, retailer partners have voiced concern over requirements that do not fit within their business models; in the normal run of business most retailers do not develop the types of detailed marketing plans and sales forecasts called for in the original advice letter.

This has limited and delayed short-term evaluation efforts that had been planned according to

17/ The EPA accelerated their specification development process for energy efficient air purifiers and soundbars, in response to market penetration data that RPP accessed for these products. The EPA also introduced an ENERGY STAR ‘Most Efficient’ designation for dryers to accommodate the RPP advanced tier.

18/ “Disposition to PG&E 3668-G/4765-E and Supplemental PG&E 3668-G-A/4765-E-A,” p. 3.

19/ Advice Letter 3668-G/4765-E and Supplemental Advice Letter 3668-G-A/4765-E-A

the original advice letter.^{20/} These experiences are at the heart of PG&E’s recommendation to craft market transformation policy that better allows PAs to reach industry partners on their terms and build influence over time with the desired milestones and market end state in mind.

- Upon expansion of the ESRPP program, PG&E became one of many national program sponsors. While PG&E has been a consistent leader in national program direction and decision making, PG&E cannot dictate all original planned standards to other jurisdictions. This has caused concern among California evaluators, accustomed to more rigorous California evidentiary standards. PG&E’s recommendation for the CPUC to recognize the need to accommodate priorities and policies of outside jurisdictions is rooted in this experience.

- Due in part to very low NTG ratios prescribed for the RPP product workpapers,^{21/} and in part due to delays in the initial evaluation efforts associated with data QA/QC, PG&E has foregone resource savings claims for the RPP products, leading to a TRC of 0.0. With the RPP program being a drag on portfolio TRC, other California IOUs have been hesitant to join the program,^{22/} limiting California’s resources and influence within the national ESRPP effort. For this reason, PG&E appreciates the Staff Proposal’s approach of initially maintaining market transformation initiatives outside of the business plan portfolios.

PG&E is hopeful that these experiences in ESRPP will serve as valuable lessons when weighing real-world market transformation considerations.

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20/ For information on the PG&E RPP Evaluation Plan, see “California 2016-2019 Retail Products Platform Program Pilot,” EMI Consulting, 2015.

21/ <http://www.deeresources.net/workpapers>; Workpaper PGECOAPP128

22/ During the 8/29/2018 Quarterly Public RPP Stakeholder Update, SCE and SDG&E reported concerns over portfolio TRC as a primary barrier to joining the program.

IV. CONCLUSIONS

PG&E appreciates this opportunity to comment on the Staff Proposal and hopes the recommendations assist the Commission in crafting a successful market transformation framework. With greenhouse gas reduction becoming an even greater focus of California's energy and policy goals, market transformation provides an opportunity for California to continue its leadership in the energy efficiency.

Respectfully Submitted,

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