Decision 17-11-006 November 9, 2017

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

DECISION REGARDING TO-CODE PILOTS

Table of Contents

Title **Page**

DECISION REGARDING TO-CODE PILOTS

Summary

This decision:

1) directs the investor-owned utilities[1] to discontinue the energy efficiency To-Code Pilots,[2] for which the Commission ordered program implementation plans in D.14-10-046;

2) directs investor owned utilities to work with other program administrators[3] and third-party implementers to seek and report on to-code program research questions through their program design, implementation and evaluation activities; and

3) declines to require energy efficiency program administrators to employ Randomized Control Trial designs for specific programs.

This proceeding remains open.

1. Background

1.1. Procedural and Legislative History

The Commission's initial scoping ruling in this proceeding established the schedule for developing an energy efficiency rolling portfolio framework and addressing associated implementation issues, including transition from the

[1] Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company and Southern California Gas Company.

[2] Decision (D.) 14-10-046 Ordering Paragraph 8 required the investor-owned utilities to conduct pilots for exploring the extent of available savings from replacing equipment that does not meet applicable building codes or appliance standards, and testing the efficacy of offering incentives for such replacements with equipment that either meets or exceed applicable building codes or appliance standards. This decision refers to those pilots as the "To-Code Pilots."

[3] All four investor owned utilities, Marin Clean Energy, Southern California Regional Energy Network, Bay Area Regional Energy Network, and Tri-County Regional Energy Network currently have energy efficiency business plan applications, for which they would serve as program administrators, pending in Application (A.) 17-01-013 et al.

existing framework of triennial portfolio cycles to the new rolling portfolio framework.[4] To that end, the scoping ruling dedicated Phase I of the proceeding to consideration of 2015 energy efficiency programs and budgets that largely aligned with program administrators' 2013-2014 portfolios, while the Commission continued developing the record for a rolling portfolio framework.

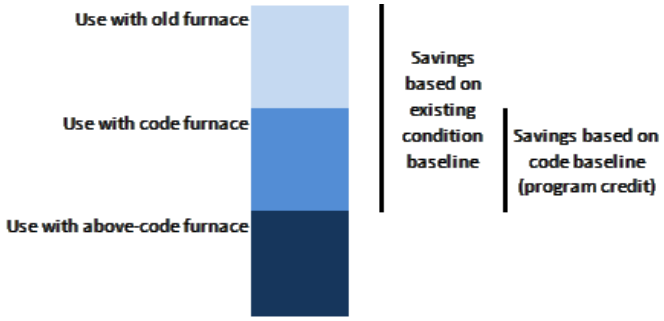
As part of program administrators' 2015 energy efficiency program proposals, the investor owned utilities (IOUs) proposed to use an existing conditions baseline[5] for projects that were eligible for Proposition 39 funds.[6] Decision (D.) 14-10-046, which approved 2015 energy efficiency programs and budgets, describes "existing conditions" and "code" baselines, and their corresponding ("to-code" and/or "above-code") savings:

> Assume for a moment that a customer replaces an old gas furnace with a high-efficiency gas furnace that exceeds code requirements.
>
> - 'Existing conditions' baseline savings = (gas used [fn. omitted] with old furnace) - (gas used with the new furnace).
> - 'Code' baseline savings = (gas used with a 'to-code' furnace) – (gas used with the new 'above-code' furnace).

[4] Rulemaking (R.)13-11-005 Assigned Commissioner's Ruling and Scoping Memorandum Regarding 2015 Portfolios (Phase I of Rulemaking 13-11-005), issued January 22, 2014.

[5] All reference to "code" in this decision refers specifically to Title 24 Building Efficiency Standards and Title 20 Appliance Efficiency Regulations.

[6] Proposition 39, 2012, California Clean Energy Jobs Act, authorized a change to the tax code that generated new revenues, half of which were directed toward clean energy projects in schools during the first five years.



> The difference in energy use between an old furnace and a new, 'above-code' one is essentially guaranteed to exceed the difference between a new 'to-code' furnace and a new 'above-code' furnace. In EE parlance, the 'existing conditions' baseline is a 'lower' baseline; it is easier to show savings when comparing new equipment to existing equipment than when comparing new equipment to equally new, albeit less-efficient, 'to-code' equipment.[7]

In response to the IOUs' proposal, other parties recommended that all energy efficiency programs use an existing conditions baseline. D.14-10-046 discusses at length the reasons for the Commission's long-standing policy and practice of measuring energy efficiency savings based on a code-compliant baseline.[8] D.14-10-046 states, in relevant part:

> The short answer is that *we do not want to give tens or hundreds of millions of ratepayer dollars to individual customers to do things that those customers are already going to do, or are already required to do* [fn. omitted]. Paraphrasing D.11-07-030, the purpose of EE incentives is to lead customers to save energy in ways that they would not have absent the incentive. Customers are generally legally obliged to meet code requirements when replacing a burned-out piece of equipment, when engaging in a normal retrofit, and in new construction. If a water heater fails, a homeowner has to replace it with a code-compliant (or better) water heater. Even

[7] D.14-10-046 Decision Establishing Energy Efficiency Savings Goals and Approving 2015 Energy Efficiency Programs and Budgets (Concludes Phase I of R.13-11-005) at 52 – 53.

[8] D.14-10-046, at 52 – 64.

> absent a code requirement, standard practice may set the baseline where technological advances, federal standards, and supplier and manufacturer choices about what to produce and sell limit choices. It is often impossible to buy new equipment as inefficient as the equipment being replaced. The upshot of all this is that customers in these cases [fn. omitted] would meet code requirements (or in the absence of code, their standard practice equivalent) without incentives, so there is no reason to pay them incentives to "get to code."
>
> Using a code baseline is one way to ensure that programs do not pay for, and PAs are not devoting resources to savings that would have occurred anyway, even without a program. Turning this around, giving program credit only for savings that would not have occurred anyway incentivizes PAs to focus programs on incremental savings, exclusive of savings that are virtually unavoidable when a customer replaces old equipment.

D.14-10-046 declined to adopt an existing conditions baseline for all programs. D.14-10-046 acknowledged, however, that then-current policy already allowed for use of alternative baselines in certain instances, such as for early replacements of equipment. D.14-10-046 also noted that the question of appropriate baselines is within the scope of Phase III of this proceeding. In preparation for consideration of a possible change to Commission baseline policy, D.14-10-046 ordered the IOUs to design and implement "To-Code Pilots" to assess the extent of savings available through replacing below-code equipment with equipment that either meets or exceeds applicable code specifications. Ordering Paragraph 8 of D.14-10-046 states:

> We also direct Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company and Southern California Gas Company (IOUs) each to file with us a Program Implementation Plan for a pilot program to better understand the extent to which there is below-code equipment that is not getting replaced quickly enough through natural turnover or existing programs. The pilots shall be designed to assess whether

> cost-effective ratepayer-funded programs can be developed to target this equipment when Program Administrator's receive savings credit and customer incentives are made available based on to-code, in addition to through-code, savings. As with the Zero Net Energy pilots, and for the same reasons, we expect investor-owned utilities to fund these programs via fund shifts. The Pilots shall:
>
> a) Be budgeted up to $1m per Investor Owned Utilities using program funds authorized in this decision;
> b) Find similar cohorts within a service territory, then break them into control and treatment groups, with the treatment group eligible for incentives "to and through" code, while the control group receives only incentives based on above-code savings;
> c) Extend through one full calendar year, so that we see program impacts across seasons; and
> d) Include program implementation and third -party evaluation, with the evaluation to address at minimum program impact on both program uptake (does the program increase replacement rates? Are customers who did not have a particular device at all participating, as well as customers who are replacing a device?) and customer energy use (aggregate use and load shape).

Part B of Ordering Paragraph 8 specifies a Randomized Control Trial (RCT) design for the To-Code Pilots, for which the Commission contracted with The E2e Project (E2e) to provide consultation services.[9] On August 14, 2015, the electric IOUs filed a joint advice letter with their To-Code Pilot proposals pursuant to D.14-10-046 and further staff guidance; on September 22, 2015 Southern California Gas Company filed an advice letter to implement its own

[9] E2e is a joint initiative of the Energy Institute at Haas at the University of California, Berkeley, the Center for Energy and Environmental Policy Research (CEEPR) at the Massachusetts Institute of Technology, and the Energy Policy Institute at Chicago, University of Chicago.

To-Code Pilot proposal. Almost concurrently with Staff's approval of the To-Code Pilot advice letters, the State legislature adopted Assembly Bill (AB) 802 (Stats. 2015, Chap. 590), which required the Commission to make the following changes to energy efficiency program policies starting September 1, 2016:

- use "existing conditions" as the default baseline for determining energy efficiency savings, and
- provide incentives for measures that bring buildings into compliance with code, but do not necessarily exceed code.

On April 11, 2017, Commission Staff hosted a workshop to review the current status of, and provide lessons learned from, design and implementation of the To-Code Pilots. During the April 11, 2017 workshop, E2e provided a primer on RCT design and the IOUs described their respective pilot designs and activities to date.

1.2. Administrative Law Judge Ruling Inviting Post-Workshop Comments on To-Code Pilots

On June 23, 2017, the assigned administrative law judge (ALJ) issued a ruling inviting comments on whether and how to proceed with the To-Code Pilots in light of the findings of the April 11, 2017 To-Code Pilots Workshop and the passage of AB 802 (Ruling). The Ruling notes that the new baseline policy established by AB 802, and the challenges encountered thus far in implementing the To-Code Pilots (as described in the post-workshop staff report attached to that ruling), provide cause to revisit the pilots' original intent and to assess the merits of continuing these activities. The Ruling acknowledges that AB 802 precludes the Commission from deliberating on whether to adopt a default existing conditions baseline, and thus reasons that it is less essential and less practical to assess the cost-effectiveness of pursuing to-code savings through a RCT design. The Ruling goes on to note that there is still much to learn

regarding circumstances under which pursuing to-code savings is cost-effective, but that such learning may be more effectively achieved through ongoing activities within the energy efficiency portfolio than through the To-Code Pilots. In addition, the Ruling affirms the Commission's interest in conducting RCT in the context of energy efficiency programs. With those issues in mind, the Ruling invited comments on the following issues:

1. whether to continue the To-Code Pilots as designed; and
2. the appropriate uses of RCT designs within the energy efficiency portfolio.

The Ruling also directed the IOUs to suspend all To-Code Pilot activities unless and until ruled otherwise.

On July 17, 2017, the following parties filed comments in response to the Ruling: the Office of Ratepayer Advocates (ORA), Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE), Southern California Gas Company (SCG), and the County of Los Angeles on behalf of the Southern California Regional Energy Network (SoCalREN). On July 24, 2017, one party, the Natural Resources Defense Council (NRDC), filed reply comments.

We summarize and address parties' comments according to the general issues for which we invited comments, and additional issues raised by parties below.

2. Discussion

2.1. Whether to Continue the To-Code Pilots

The first issue for which the Ruling invited comments was whether to continue the To-Code Pilots as designed. In directing the IOUs to propose and design the To-Code Pilots, the Commission had two related but fundamentally distinct research objectives: (1) to determine the extent of available to-code

savings, and (2) to assess whether cost-effective ratepayer-funded programs can be developed to target this equipment when PAs receive savings credit and customer savings are made available based on to-code, in addition to through-code, savings.

Parties generally agree that AB 802 renders the first research objective immaterial and the To-Code Pilots, as currently designed, are not the most effective means for addressing the latter research objective outlined in D.14-10-046 (*i.e.*, assessing cost-effectiveness of to-code savings), and should be discontinued.

PG&E, SCE and SDG&E agree that the To-Code Pilot designs that have been considered or proposed to-date likely will not generate findings that both address the research objectives of D.14-10-046 and apply to the marketplace at large, given the niche markets targeted in the pilots. The selection of these niche markets resulted from the IOUs' efforts to satisfy the design requirements and guidance outlined for the To-Code Pilots, as well as to comply with the specified budget constraint.[10] These parties do not support continuing the pilots as designed.

ORA agrees that the To-Code pilots as currently designed will not achieve the research objectives of D.14-10-046. Specifically, ORA notes that, as identified in the Workshop Report, three of the four IOUs have failed to identify markets where there is significant opportunity to replace inefficient equipment and design an intervention that can be tested using RCTs. The implication of this is that without markets identified where to-code incentives might be effective,

[10] SCE comments, at 2-3; PG&E comments, at 2; SDG&E comments, at 4; SoCalGas comments at 1.

useful information about cost-effectiveness cannot be gathered. Although ORA notes that SoCalGas successfully designed a pilot that is ready to launch as directed, and recommends that SoCalGas implement that pilot, ORA also cautions that findings from one pilot are likely insufficient to evaluate the effectiveness of to-code interventions.

SoCalGas states that the currently designed pilots have not met the research objectives of D.14-10-046. It states that the current designs aim to understand existence of below code equipment, not the drivers behind a customer's decision to refrain from installing to-code or above code equipment. One of SoCalGas's findings, through the four test phases it conducted for its Commercial Boiler To-Code Pilot, is that "participating customers did not seem to be motivated by the news of their underperforming gas equipment. A hypothesis of the To-Code Pilots is that financial incentives alone may persuade the customer to upgrade equipment; however, the right incentive that would invigorate this specific market was not explored due to the infancy of the experiment."[11] In light of this, SoCalGas acknowledges it may be appropriate to end the To-Code Pilots as designed.

SoCalREN recommends the Commission conclude the To-Code Pilot activities, stating that the pilots require significant resources and constitute a burden on ratepayer funds.

Since AB 802 requires a default existing conditions baseline, and since program administrators may now offer incentives to induce customers to bring below-code equipment up to code, the first research objective of

[11] SoCalGas comments, at 2.

D.14-10-046 - determining the extent of available to-code savings - is now less consequential than the second research objective - understanding the circumstances and interventions where the pursuit of such savings through ratepayer-funded programs is cost-effective.

As evidenced in parties' comments, much of the To-Code Pilots' efforts were directed toward exploring the availability and extent of to-code savings, and were not designed to adequately answer the question of what interventions could deliver cost-effective savings. In light of the fact that AB 802 obviates the need to answer the first research objective, and the current To-Code Pilots are not designed to provide adequate answers to the second research objective, we find that it is reasonable to discontinue the current To-Code Pilots and redirect efforts toward understanding the circumstances and interventions where the pursuit of to-code savings is cost-effective.

We agree with the insight ORA provides that the limited scope of SoCalGas's pilot would not provide sufficient findings to evaluate the overall effectiveness of to-code interventions, and we therefore find it is not appropriate to authorize this additional pilot at this time.

While one of the research objectives the To-Code Pilots originally sought to answer may be less relevant at this time, given that program administrators will be implementing programs focused on delivering to-code savings, important questions remain regarding the design and deployment of successful, cost-effective programs targeting to-code savings.

2.2. Remaining To-Code Program Research Questions

In comments on the Ruling and during the April 11, 2017 workshop, parties identified a number of ways in which additional research could help enable the design and deployment of cost-effective to-code programs.

Parties generally agree that a better understanding of the composition of to-code savings potential, including the customer segments and equipment types that offer the greatest potential to-code savings, is important and currently not well understood. Parties also indicate a need to improve our understanding of customer behavior, preferences and the decision-making drivers that lead customers to defer or forego replacing older equipment with high to-code savings potential, and/or improvements that would bring existing buildings into compliance with building codes.

For instance, SoCalGas's inference from its Commercial Boiler To-Code Pilot, that "participating customers did not seem to be motivated by the news of their underperforming gas equipment," is consistent with parties' general suggestion that non-financial factors may have a greater influence than financial factors on customer decisions to defer or forego equipment replacements needed to comply with code.[12] PG&E noted during the April 11, 2017 workshop that further information in this area is necessary, particularly with respect to "whether the size of incentives is even a key determinant of customer equipment replacement decisions," and "what opportunities for to-code interventions actually exist."[13]

ORA recommends that studies be conducted "to assess the prevalence of below-code equipment in different markets and different market segments, and to further understand the kinds of interventions that are likely to motivate customers to replace below-code equipment."[14] SoCalGas and SDG&E also

[12] *Ibid.*

[13] ORA comments, at 4.

[14] *Ibid.*

emphasize these information needs throughout their comments and workshop materials.

We agree with parties' general response that programs targeting to-code savings would benefit from an improved understanding of the areas identified above. Specifically, we find that programs targeting to-code savings would benefit from additional information on the following:

- *Where* does the to-code savings potential reside? What equipment types, building types, geographical locations, and/or customer segments promise cost-effective to-code savings?
- *What kind of* barriers are preventing code-compliant equipment replacements?
- *Why* is natural turnover not occurring within certain markets or for certain technologies?
- *What program interventions* would effectively accelerate equipment turnover?

2.3. Opportunities to Address Remaining To-Code Program Research Questions

Parties point to a number of existing programs and processes that may help shed light on some of the identified questions related to the design and implementation of cost-effective programs targeting to-code savings. These include: High Opportunity Programs and Projects,[15] Commission and IOU-sponsored market studies, and other energy efficiency program and portfolio

[15] AB 802 (Stats. 2015, Chap. 590) authorized electrical corporations and gas corporations to implement an existing conditions baseline, and provide incentives for bringing buildings into compliance with code, for "high opportunity program and projects," and directed the Commission to expedite authorization of such programs and projects.

evaluation studies, particularly studies supporting the determination of energy efficiency saving potential and goals.

SCE suggests undertaking a market characterization study to identify end-uses or measure-types where to-code savings may exist, and to identify market and customer barriers, or identify different market interventions that may measurably influence measure adoption.

SoCalGas favors flexibility within the rolling portfolio framework for program administrators "to perform market assessments to understand below-code opportunities and rely on third-parties to propose and design new programs which [sic] will test varying incentive structures to motivate customers to take energy efficiency actions."[16]

We agree with SoCalGas's suggestion that there is an opportunity to learn from the new program designs that will be proposed and implemented by third parties and program administrators under the new energy efficiency rolling portfolio framework. The scope of information related to delivering cost-effective to-code savings that we seek is too large to be addressed in a single pilot. However, the State's adoption of a default existing conditions baseline enables a new generation of programs targeting to-code savings under the rolling portfolio framework. These new programs can serve to provide useful information to help answer the remaining to-code savings research questions identified in this decision.

The IOUs should work with other program administrators and third-party implementers to expedite, through all reasonable means, development of a

[16] SoCalGas comments, at 2.

collective knowledge-base that will inform remaining to-code questions, and identify best practices for designing cost-effective programs that offer to-code and through-code incentives. To this end, we direct the IOUs to ensure that all program proposals and program implementation plans for programs that target (or will claim) to-code savings, describe what program design elements, data collection activities, and/or analyses will be conducted to help lend insight into the following questions as part of the planned implementation of the proposed program:

- *Where* does the to-code savings potential reside? What equipment types, building types, geographical locations, and/or customer segments promise cost-effective to-code savings?
- *What kinds of* barriers are preventing code-compliant equipment replacements?
- *Why* is natural turnover not occurring within certain markets or for certain technologies?
- *What program interventions* would effectively accelerate equipment turnover?

2.4. Appropriate Uses of Randomized Control Trial Design in Energy Efficiency Portfolios

The second issue for which the Ruling invited comments was the appropriate uses of RCT designs within the energy efficiency portfolio.

In comments on the Ruling, parties note several key factors that are conducive to RCT design. ORA states that RCT methods are most useful in evaluating large-scale downstream programs, such as the Home Upgrade program. In reply comments, NRDC agrees and elaborates that RCT is feasible when "the study is trying to test the impact of a limited and controllable set of

interventions (between the two cohorts)."[17] SoCalGas similarly notes that "RCTs enable comparison of various treatment groups and the opportunity to compare exposure to varying incentive levels, program marketing, program outreach, etc."[18]

PG&E and SCE both note that their respective Home Energy Reports programs currently employ a RCT design. PG&E asserts that RCT methodology is useful for Home Energy Reports because -- recognizing that RCTs require a sample size of at least several hundred -- the cost of the intervention is relatively low and the intended participants can be easily targeted. PG&E suggests one other criterion for considering whether to conduct a RCT, that a pre-RCT pilot demonstrate that the intervention will likely have the intended effect, again in consideration of the large sample size required by RCTs.

Nearly all parties respond that upstream and midstream programs are not ideal for RCT design, since assignment to treatment and control groups requires a distinct unit of analysis (typically consumer participants). SCE notes, however, that the unit of analysis could be, for instance, light bulb sales, which would enable random assignment of individual retail locations to either treatment or control groups.

SCE also identifies a number of distinguishing factors between treatment and control groups that it asserts are necessary elements to a successful RCT design, including whether both groups are of appropriate size and generally equivalent in characteristics in order to accurately test for and measure the

[17] R.13-11-005 Reply Comments of the Natural Resources Defense Council (NRDC) on Administrative Law Judge's Ruling Inviting Post-Workshop Comments on To-Code Pilots, filed July 24, 2017 (NRDC comments) at 2.

[18] SoCalGas comments at 3.

treatment effect. SCE further raises an equity issue with respect to withholding incentives from the control group. SDG&E makes a similar point in stating that all eligible participants should have the option to participate, once a pilot has established the effect of a given treatment (be it an incentive or otherwise).

Although parties identify several key factors that are conducive to RCT design, no party explicitly recommends a specific program or area for RCT design. We therefore see no immediate reason to order or otherwise direct RCT design for a specific area or program type at this time. In general, program administrators should consult with both Commission Staff and stakeholders on the most valuable research questions to address for a given program, and the most appropriate evaluation methods for addressing those questions.

2.5. Applicability to Non-IOU Program Administrators

SoCalREN raises one additional issue, which is that AB 802 and D.14-10-046's directives regarding to-code incentives "are not requirements – or opportunities – for non-IOU PAs," and requests the Commission afford to non-IOU PAs the opportunity to propose and implement pilots such as those directed in D.14-10-046.[19]

We clarify here that non-IOU program administrators may indeed propose to offer to-code incentives in their respective service areas, and/or employ RCT evaluation methods, to the extent such activities align well with their overall portfolio.

[19] SoCalREN comments at 3.

3. Conclusion

It is reasonable to discontinue the To-Code Pilots at this time, and direct the IOUs to work with other program administrators and third party implementers to expedite the development of cost-effective programs targeting to-code and through-code savings.

4. Comments on Proposed Decision

The proposed decision in this matter was mailed to the service list of R.13-11-005 in accordance with Section 311 of the Public Utilities Code and comments were allowed pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure. On October 26, 2017, ORA, PG&E, SCE and SoCalGas filed opening comments. On October 31, 2017, the Association of Bay Area Governments on behalf of the Bay Area Regional Energy Network (BayREN), ORA, California Efficiency + Demand Management Council and Natural Resources Defense Council (CEDMC/NRDC); and SCE filed reply comments.

ORA renews its recommendation that the Commission direct SoCalGas to proceed with its commercial boiler pilot, asserting the proposed decision errs in reaching the same conclusions about SoCalGas's boiler pilot as the other IOUs' To-Code Pilots. ORA asserts that SoCalGas's boiler pilot is designed to answer important and valuable research questions regarding varying incentive levels and other, non-financial, barriers. ORA does not, however, challenge our more general finding that the To-Code Pilots are not the most effective means for addressing our remaining research questions. Our preference is to focus on future program designs within the context of our current baseline policy as adopted in D.16-08-019, therefore we will not order SoCalGas to proceed with its commercial boiler pilot.

PG&E and SoCalGas request similar modifications to Conclusion of Law 6 to clarify that determination of program design elements, data collection activities, and/or analyses should be under the purview of the Commission's EM&V framework rather than as part of a third party implementer's responsibilities in the context of delivering a program. BayREN disagrees with PG&E's recommendation, arguing "[t]he questions are appropriately answered in the program specific [sic] Implementation Plans to account for the particular territory characteristics."[20] PG&E points out that Conclusion of Law 6 and Ordering Paragraph 2 require IOUs to ensure program proposals address certain research questions before implementing a program, which PG&E asserts may be interpreted as requiring "complete, compelling, and data-driven answers to the research questions before new programs may be approved and for existing programs to continue."[21] This is not the intent of the proposed decision, and we have modified Conclusion of Law 6 and Ordering Paragraph 2 to clarify that we are not asking implementers to definitively answer to-code research questions, or to design programs with the primary purpose of answering to-code questions. We are, however, asking that program designers/ implementers consider to-code research questions as they conceive of, and refine, their program designs. Program designers/implementers have a role in providing this information because they should have a deep understanding of the program theory,

[20] R.13-11-005 Reply Comments of The Association of Bay Area Governments (CPUC #941) on Behalf of the San Francisco Bay Area Regional Energy Network to Parties' Opening Comments on Administrative Law Judges' Proposed Decision Regarding To-Code Pilots, filed October 31, 2017, at 1-2.

[21] R.13-11-005 Pacific Gas and Electric Company (U 39-M) Comments on Proposed Decision Regarding To-Code Pilots, filed October 26, 2017, at 3-4.

processes, documentation/forms, logistics, and the roles of each contributing organization, etc.

To clarify, this decision does not require implementers to have definitive answers for to-code questions as a result of their program deployment, and certainly they are not required to offer definitive answers at the program proposal or planning stage. Implementers are also not required by this decision to meet any minimum standard with respect to the prospects of their proposed program to address to-code research questions. That said, this decision maintains its original requirement that program designers/implementers must take care to consider, and must document, the ways their program implementation can inform to-code research questions.

ORA also renews its recommendation that the Commission "order the IOUs – in consultation with Energy Division – to conduct turnover and market studies to assess the prevalence of below-code technologies in a variety of market segments and identify barriers preventing adopting of high-efficiency technologies." CEDMC and NRDC support ORA's recommendation, and states "[t]his recommendation is aligned with PG&E and SCG's recommendation that the proposed questions be included in the scope of an EM&V study such that these issues could be better understood before being applied to inform program design." SCE counters that D.16-08-019 already provides for Commission Staff to fund and oversee data collection and analysis efforts to evaluate baseline policy, therefore we need not explicitly order Staff to conduct turnover and market studies here. In general, both BayREN and SCE support the proposed decision and do not suggest any revisions to the findings, conclusions or orders.

We agree with SCE that we need not order Commission Staff to conduct market and turnover studies, since we expect Commission Staff will necessarily

conduct such studies pursuant to current practice and more specifically in the context of evaluating the Commission's new baseline policy. We also do not see EM&V research coordination activities and implementers' impact measurement and evaluation efforts as mutually exclusive; both can add value to our understanding of to-code savings. Therefore we do not modify our conclusions or orders insofar as they compel implementers to plan deliberately for addressing important research questions about to-code savings.

5. Assignment of Proceeding

Carla J. Peterman is the assigned Commissioner and Julie A. Fitch and Valerie U. Kao are the co-assigned ALJs in this proceeding.

Findings of Fact

1. D.14-10-046 ordered the IOUs to design To-Code Pilots using a RCT design. The two main objectives of the To-Code Pilots were to understand the degree to which there is below-code equipment that is not getting replaced quickly enough through natural turnover or existing programs; and to assess whether cost-effective ratepayer-funded programs can be developed to target below-code equipment when program administrators receive savings credit and customer incentives are made available based on to-code, in addition to through code, savings.

2. The electric IOUs submitted advice letters pursuant to D.14-10-046, Ordering Paragraph 8, on August 14, 2015.

3. SoCalGas filed an advice letter pursuant to D.14-10-046, Ordering Paragraph 8, on September 22, 2015.

4. On October 8, 2015, the Governor approved AB 802, which required the Commission to change its default baseline policy from code (or code compliant) efficiency, to existing conditions, and authorized the IOUs to offer customer

incentives and support for the installation of measures that bring existing buildings into compliance with current building code.

5. On April 11, 2017, Commission Staff held a workshop to review the current status of the To-Code Pilots. The IOUs discussed various challenges they encountered implementing the To-Code Pilots, including budget limitations and difficulties identifying appropriate targets given D.14-10-046's design requirements.

6. Parties generally agree that the To-Code Pilots, as currently designed, are not the most effective means for addressing the research objectives outlined in D.14-10-046, and should be discontinued.

7. Important questions remain regarding the design and deployment of successful, cost-effective programs targeting to-code savings.

8. Programs targeting to-code savings would benefit from additional information on the following:

- *Where* does the to-code savings potential reside? What equipment types, building types, geographical locations, and/or customer segments promise cost-effective to-code savings?
- *What kind of* barriers are preventing code-compliant equipment replacements.
- *Why* is natural turnover not occurring within certain markets or for certain technologies, and
- *What program interventions* would effectively accelerate equipment turnover.

9. Parties identify several key factors that are conducive to RCT design, but do not explicitly recommend a specific program or area that we should require incorporate RCT design.

Conclusions of Law

1. PG&E, SCE, SoCalGas and SDG&E complied with D.14-10-046 Ordering Paragraph 8 by filing advice letters to implement To-Code Pilots according to the Commission's design specifications.

2. AB 802, approved soon after the Commission approved the IOUs' To-Code Pilots, effectively obviated the need to address the first research objective of the To-Code Pilots, *i.e.,* to understand the degree to which there is below-code equipment that is not getting replaced quickly enough through natural turnover or existing programs.

3. The energy efficiency program administrators must design and implement cost-effective portfolios that include to-code and through-code incentive offerings.

4. In light of AB 802 and the challenges encountered in implementing the To-Code Pilots, it is reasonable to discontinue the current To-Code Pilots and redirect those efforts toward designing cost-effective portfolios that offer to-code and through-code incentives.

5. Program administrators and third party program implementers should endeavor to inform to-code research questions, and build a collective knowledge-base by leveraging opportunities for data gathering, analysis, experimentation, and other scientific methods that can be built into the program design without undue burden or risk.

6. To address the remaining to-code research questions, the IOUs should ensure that all program proposals and program implementation plans, for programs that target (or will claim) to-code savings, describe what program design elements, data collection activities, and/or analyses will be conducted to

help lend insight into the following questions as part of the planned implementation of the proposed program:

- *Where* does the to-code savings potential reside? What equipment types, building types, geographical locations, and/or customer segments promise cost-effective to-code savings?
- *What kind of* barriers are preventing code-compliant equipment replacements?
- *Why* is natural turnover not occurring within certain markets or for certain technologies?
- *What program interventions* would effectively accelerate equipment turnover?

7. We should not require a specific area or program type for which program administrators must use RCT design.

O R D E R

IT IS ORDERED that:

1. The investor owned utilities shall discontinue the To-Code Pilots.
2. The investor owned utilities shall ensure that all program proposals and program implementation plans, for programs that target (or will claim) to-code savings, describe what program design elements, data collection activities, and/or analyses will be conducted to help lend insight into the following questions as part of the planned implementation of the proposed program:

- *Where does the to-code savings potential reside? What equipment types, building types, geographical locations, and/or customer segments promise cost-effective to-code savings?*
- *What kinds of barriers are preventing code-compliant equipment replacements?*
- *Why is natural turnover not occurring within certain markets or for certain technologies?*

- *What program interventions would effectively accelerate equipment turnover?*

3. Rulemaking 13-11-005 remains open.

This order is effective today.

Dated November 9, 2017, at San Francisco, California.

MICHAEL PICKER
President
CARLA J. PETERMAN
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
Commissioners