

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



January 14, 2014

Advice Letter SDG&amp;E 2516-E/2225-G et. al,

**To:**

Megan Caulson  
Regulatory Tariff Manager  
San Diego Gas and Electric  
8330 Century Park Court, Room 32C  
San Diego, CA 92123-1548

Sid Newsom  
Tariff Manager – GT14D6  
Southern California Gas Company  
555 West 5th Street  
Los Angeles, CA 90013-1011

Megan Scott-Kakures  
Vice President, Regulatory Operations  
Southern California Edison Company  
8631 Rush Street  
Rosemead, California 91770

Leslie E. Starck  
Senior Vice President, Regulatory Policy &  
Affairs  
c/o Karyn Gansecki  
Southern California Edison Company  
601 Van Ness Avenue, Suite 2030  
San Francisco, California 94102

Brian K. Cherry  
Vice President, Regulatory Relations  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10C  
P.O. Box 770000

**Subject: Disposition approving advice letter requesting approval of the HVAC Code Compliance Incentive Program Pilot pursuant to Decision 12-11-015.**

Dear Messrs. Newsom, Cherry and Ms. Caulson, Scott-Kakures, Starck and Ganseki,

Pursuant to CPUC decision (D.) 12-11-015 (EE Decision) Ordering Paragraph (OP) 7; the Investor Owned Utilities (Joint IOUs)<sup>1</sup> filed Advice Letters (ALs) seeking approval to their HVAC Code Compliance Incentive Program Pilot. The EE Decision ordered this AL to be filed no later than June 1, 2013. The Joint AL was timely filed on September 3, 2013.<sup>2</sup>

After review and analysis, the Energy Division staff (staff) has determined that SDG&E AL 2516-E/2225-G, SCG AL 2935-E, SCE AL 2935-E and PG&E AL 3412-G/4281-E (Joint AL) filed on September 3, 2013 is approved effective October 3<sup>rd</sup>, 2013.

<sup>1</sup> Pacific Gas and Electric (PG&E), Southern California Edison (SCE), San Diego Gas and Electric (SDG&E) and Southern California Gas Company (SoCalGas) – collectively “Joint IOUs”

<sup>2</sup> The Decision OP 7 set an advice filing date no later than June 1, 2013. The Joint IOUs filed a request for a three-month extension on May 1, 2013, which was approved by the Executive Director on May 24, 2013.

January 14, 2014

Disposition Letter to Megan Caulson, Sid Newsom, Megan Scott-Kakures

Leslie Starck and Brian K. Cherry

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The Utility Reform Network (TURN) and Division of Ratepayer Advocates<sup>3</sup> (DRA) timely filed joint comments (TURN/DRA) on September 23, 2013. On September 25, 2013, the Heating, Air-Conditioning and Refrigeration Distributors International (HARDI) filed a late protest, which staff accepted on September 30, 2013. On September 30, 2013, the Joint IOUs filed a response to TURN/DRA comments. On October 1, 2013, staff suspended the AL to allow more time for review. On October 7, 2013 the Joint IOUs replied to HARDI's protest.

Attachment 1 contains a detailed discussion of the comments, protests, replies and staff's determination that the Joint AL is compliant with D.12-11-015 OP 7.

Please contact Paula Gruending of the Energy Division staff at 415-703-1925 or at [pg1@cpuc.ca.gov](mailto:pg1@cpuc.ca.gov) if you have any questions.

Sincerely,



Edward Randolph  
Director, Energy Division  
California Public Utilities Commission

cc: Service List A.12-07-001, R.13-11-005

Simon Baker, Energy Division

Pete Skala, Energy Division

Hazlyn Fortune, Energy Division

Hayley Goodson, The Utility reform Network

Michael Campbell, Office of Ratepayer Advocates

Jonathan Melchi, Heating, Air-Conditioning & Refrigeration Distributors International

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<sup>3</sup> DRA's name changed to Office of Ratepayer Advocates (ORA) after the comments were filed. For consistency, we use DRA as filed.

## Attachment 1

### Review and Analysis

#### I. Background

On September 3, 2013, Joint IOUs submitted a proposal to implement a Code Compliance Incentive Program (Pilot) to encourage code compliant installations of residential heating, ventilation and air-conditioning (HVAC) equipment as directed in D.12-11-015 (EE Decision)<sup>4</sup>.

The EE Decision at OP 7 states that the Joint IOUs:

“shall propose an incentive program that encourages code-compliant installations of residential heating, ventilation, and air-conditioning equipment in a Tier 2 advice letter by no later than June 1, 2013.”

The EE Decision (at 75) further required that the “to-code” incentives should be piloted in hotter climate zones (climate zones 9-16) in 2013 and 2014.

The Joint IOUs filed a proposal to provide incentives to distributors or retailers and to customers to encourage permitted HVAC system replacements. The pilot allows incentives to be shared in part or in full with contractors. Participation in the program is voluntary.

Entity receiving the incentive	Incentive level	Objective
Distributor or retailers	\$100	Collect and submit HERs registry unique ID and job Compliance Forms (CF-1R) <sup>a</sup>
Customers	\$200	Obtain finalized permit for job

<sup>a</sup> CF-1R is one of the certificates of compliance filed during the permitting process, other types may apply according to job type and stage of the process; Home Energy Rating System (HERS) ID is the proof that the HERS verification process for the job has been initiated.

TURN and DRA (TURN/DRA) timely filed comments on September 23, 2013. HARDI filed a late protest on September 25, 2013, which staff accepted on September 30, 2013. The Joint IOUs filed a joint reply to TURN/DRA's comments on September 30, 2013, and a joint reply to HARDI's protest on October 7, 2013.

#### II. Party Comments, Protest and Reply Comments

TURN and DRA (TURN/DRA) filed comments in support of the program proposal, to support extending the collection of compliance information as required in this Pilot to the Residential Upstream HVAC Incentive Program<sup>5</sup> and to suggest questions to be included in the Pilot's evaluation. HARDI protested the Pilot's proposed incentive structure and data collection requirements.

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<sup>4</sup> The Decision Ordering Paragraph set a date no later than June 1, 2013, but the Joint IOUs filed a request for a three-month extension on May 1, 2013, which was approved by the Commission Executive Director on May 24, 2013. The proposal was filed late on September 3, 2013.

<sup>5</sup> SDG&E Advice Letter (AL) 2498-E/2210-G, SCG AL 4514-G, SCE AL 2919-E, PG&E 3395-G/4219-E

### *TURN/DRA Comments and Replies*

In their September 23 joint comments, TURN/DRA support the Pilot design, as described in the background section above, and believe it is adequate to help realize increased energy efficiency in the residential HVAC market sector. Therefore, TURN/DRA recommends Commission approval of the Pilot in full.

TURN/DRA strongly support the collection of compliance documentation<sup>6</sup> as proposed in the Pilot. TURN/DRA recommend that the same information be collected in the IOU proposed Residential Upstream HVAC Incentive Program<sup>7</sup>, in specific that the adoption of the HERs related data collection process proposed in this Pilot be extended to that other program.<sup>8</sup>

In their reply, the Joint IOUs disagree with TURN/DRA's proposal that the compliance documentation required for participation in the Pilot be extended to the Residential Upstream HVAC Incentive program. The Joint IOUs state that neither program design<sup>9</sup> has been proven in the field. They also state that additional requirements could delay implementation and result in increased costs to ratepayers. The Joint IOUs maintain that each program has different objectives and until these proposals have been tested and evaluated, neither proposal should be integrated into a wider set of territories.

TURN/DRA recommend that the Pilot's evaluation be designed to at least address a suggested list of questions related to both impact and adequacy of program design. The Joint IOUs reply agrees with TURN/DRA's suggestions and expresses openness to collaborate with TURN, DRA, ED and other stakeholders to further develop the evaluation of the Pilot.

### *HARDI Protest and Replies*

HARDI protested the Pilot's \$100 incentive for distributors. HARDI argues that it would have little or no impact on their members' decision to participate in the program. HARDI cites findings from a recent incremental cost study showing that incentives of hundreds of dollars would be required to motivate participation.<sup>10</sup> Further, HARDI protests the Pilot's \$200 customer incentive, requesting opportunity to review data supporting it. HARDI believes that allocating a portion or all of the consumer incentive to the distributor would result in better allocation of ratepayer funds.

The Joint IOUs reply disagrees with HARDI's claims and states that HARDI's protest to the distributor incentive is insufficiently explained. The Joint IOUs clarify that the distributor incentive is not aimed at encouraging the stocking of higher efficiency equipment and therefore is not aimed at covering incremental measure cost. The Joint IOUs maintain that the distributor incentive is designed to reward the distributors and/or retailers who voluntarily encourage contractors to initiate the code compliance process.

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<sup>6</sup> CF-1R/CF-1R-Alt and HERs Unique ID (UID) number

<sup>7</sup> SDG&E Advice Letter (AL) 2498-E/2210-G, SCG AL 4514-G, SCE AL 2919-E, PG&E 3395-G/4219-E

<sup>8</sup> TURN had originally recommended this data collection in their protest to the Residential HVAC Upstream Incentive Pilot Program (AL SDG&E AL 2498-E/2210-G et al.), submitted July 22, 2013. In their comments to the extant Joint AL, DRA express agreement with this recommendation.

<sup>9</sup> The Residential Upstream Program as proposed does not include compliance data collection requirements. TURN/DRA's request would mean an additional requirement to that program.

<sup>10</sup> Report, "Western HVAC Performance Alliance Program Design Recommendations for 2013-2014 Residential Upstream HVAC Equipment Incentive Program" (June 13, 2013)

Regarding HARDI's customer incentive protest, the Joint IOUs disagree with the proposal that redirecting a portion or all of the consumer incentive to the distributor would result in better allocation of ratepayer funds. The Joint IOUs explain that the customer incentive is designed to encourage customers to complete the compliance process. The Joint IOUs assert that the customer incentive is key to achieving the program's objective of increasing compliance with the building code. The Joint IOUs did not address HARDI's request to review data informing the customer incentive level.

HARDI opposes the Pilot's data collection requirement from distributors. HARDI maintains that the Pilot's requirement for distributors to disclose noncompliant contractors would damage the long-term relationships between HARDI's members and their customers. The Joint IOUs assert in their reply that the basis for HARDI's data collection protest is inaccurate. The Joint IOUs explain that participation in the program is voluntary and that data collected is part of regular code enforcement process.

### **III. Discussion**

After considering parties' comments and protests and the Joint IOU reply, staff made determinations on the following topics: Extension of Data Collection to Residential HVAC Upstream Incentive Program, Pilot's Evaluation, Pilot's Incentive Structure, and Pilot's Data Collection.

#### *Extension of Data Collection to Residential HVAC Upstream Incentive Program*

In their comments, TURN/DRA suggested extending data collection requirements of the IOU Code Compliance Improvement Program to the IOU proposed Residential HVAC Upstream Incentive program. The Pilot proposal in the extant AL aims to increase code compliance in residential HVAC equipment replacements by testing an approach to encourage the initiation and close out of the permit process. The Residential HVAC Upstream Incentive Program has a different focus and instead aims at "offer[ing] incentives to distributors to stock and promote qualifying high efficiency residential HVAC equipment".<sup>11</sup>

Staff agrees with the Joint IOUs that the TURN/DRA proposal is inappropriate for this Pilot program. Staff concurs that these are distinct efforts, which should be implemented and evaluated as designed. More importantly, staff finds TURN/DRA's proposal out of scope in this AL proceeding because the Residential HVAC Upstream Program design is pending review in another advice filing. Once staff has more information on the performance of both Pilot programs, staff may consider changes to the proposed designs in the future.

#### *Pilot Evaluation*

TURN/DRA recommend that the Pilot's evaluation be designed to, at least, address their suggested list of questions. The proposed questions address design and impact topics, including improvement of program impacts over time, comparison of historical permits issued, forms/tools used by the pilot and their effectiveness, amongst others. Staff agrees the questions are relevant; however staff defers the decision on which questions to include in the Pilot's evaluation to the development of the evaluation plan.

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<sup>11</sup> SDG&E Advice Letter (AL) 2498-E/2210-G, SCG AL 4514-G, SCE AL 2919-E, PG&E 3395-G/4219-E

Staff supports the Joint IOUs suggestion in their reply to TURN/DRA comments of collaborating with stakeholders in the development of the evaluation for the Pilot. This process should follow applicable evaluation procedures.

#### *Pilot's Incentive Structure*

Staff finds HARDI's protest of the Pilot's incentive structure unpersuasive because they did not establish why their request was relevant to the purpose of the incentive. Per the Pilot program design, distributor incentives are not intended to encourage the stocking of higher efficiency equipment nor are customer incentives intended to encourage the purchase of such equipment. Instead, the proposed incentives are anticipated to encourage contractor behavior change by addressing the initial and final stages in the HVAC replacement process and the code compliant installation of equipment.

In addition, staff finds HARDI's request to review data supporting customer incentives unfounded, as the incentive does not aim to address the incremental cost of more efficient equipment. The customer incentive has the objective to encourage customers to participate in the permit process and is not related to the incremental cost of higher efficiency equipment. In fact this incentive does not aim at covering the entire cost of the replacement process. Rather, this Pilot is designed to test the hypothesis that installations that meet code have intrinsic value, which customers will pay for if educated about it. Findings from the Pilot evaluation will show if this model is an effective approach to improve code compliance or not. Therefore staff rejects HARDI's protest and approves the Pilot's proposed incentive structure.

#### *Pilot's Data Collection is Burdensome*

Staff does not agree with HARDI's position that the information collected by the pilot implementer would be detrimental to long established relationships. Participation in the program is voluntary and the information requested is not of a sensitive nature. Therefore, staff approves the Pilot's data collection plan as proposed.



Clay Faber - Director  
Regulatory Affairs  
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September 3, 2013

**ADVICE LETTER 2516-E/2225-G**  
(San Diego Gas and Electric - U902-M)

**ADVICE LETTER 4536-G**  
(Southern California Gas Company – U 904-G)

**ADVICE LETTER 2935-E**  
(Southern California Edison Company – U 338-E)

**ADVICE LETTER 3412-G/4281-E**  
(Pacific Gas and Electric Company - U 39-M)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

**SUBJECT: REQUEST OF SAN DIEGO GAS AND ELECTRIC COMPANY, SOUTHERN CALIFORNIA GAS COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY AND PACIFIC GAS AND ELECTRIC COMPANY FOR HVAC CODE COMPLIANCE INCENTIVE PROGRAM TO ENCOURAGE TO-CODE INSTALLATIONS OF RESIDENTIAL HEATING, VENTILATION AND AIR CONDITIONING EQUIPMENT IN COMPLIANCE WITH DECISION 12-11-015**

## **PURPOSE**

San Diego Gas & Electric Company (SDG&E), on behalf of itself, Southern California Gas Company (SCG), Southern California Edison Company (SCE) and Pacific Gas and Electric Company (PG&E) (together the Investor-Owned Utilities (IOUs)), hereby submit for filing, a proposed incentive program that encourages code-compliant installations of residential heating, ventilation and air conditioning (HVAC) equipment in compliance with Ordering Paragraph (OP) 7 of the California Public Utilities Commission (CPUC or Commission) 2013-2014 Energy Efficiency ( E E ) Portfolio Decision (D.) 12-11-015 (Nov. 15, 2012).

Attachment A to this advice letter (AL) is the proposed Program Implementation Plan (PIP) addendum information for the joint-IOU statewide Residential HVAC sub-program PIP for this new HVAC Code Compliance program. The Residential HVAC sub-program is included in the Residential Program PIP, and the PIP will be updated via the PIP Addendum process after the AL is approved.

## **BACKGROUND**

Ordering Paragraph 7 of D.12-11-015 requires the IOUs to propose an incentive program that encourages code-compliant installations of residential HVAC equipment in a Tier 2 advice letter by June 1, 2013.

On May 1, 2013, on behalf of the IOUs, SDG&E requested a three-month extension until September 3, 2013 to comply with OP 7. The IOUs' request was granted by the Commission's Executive Director on May 24, 2013.

The Commission directed the IOUs to design and implement a "To-Code" installation incentive program for residential HVAC system replacements via the statewide Residential HVAC resource subprogram. It is generally recognized that the vast majority of residential HVAC replacements in California do not adhere to the established Title 24, Part 6 (code) compliance and permitting requirements. Accordingly, bringing installations of residential HVAC replacement systems to code will save energy.

On December 7, 2011, the Administrative Law Judge issued a ruling containing guidance from the CPUC's Energy Division that the IOUs are expected to closely integrate this new program with efforts of the ongoing Statewide (SW) Codes & Standards (C&S) Compliance Improvement Subprogram. The guidance from the ruling states, "It is essential that the SW C&S program and other EE programs have symbiotic relationships... The 'dynamic and integrated' approach should be implemented by the C&S program and coordinated with other EE resource (incentives/rebates) and non-resource or informational programs in the IOUs' portfolio to maximize code compliance with current codes and standards..."<sup>1</sup>

## **PROGRAM DESIGN**

The proposed HVAC Code Compliance program design that will be added to the Residential HVAC subprogram integrates with the existing C&S Compliance Improvement Subprogram to jointly address the HVAC code compliance challenge through complementary, but not duplicative, program activity elements. The HVAC Code Compliance program is designed to integrate with the Quality Installation (QI) and Quality Maintenance (QM) elements of the Residential HVAC Subprogram and with other EE programs through positioning the set of programs as a simple and efficient path to increasing levels of quality and achieving deeper energy savings.

In order to comply with D.12-05-015, Ordering Paragraph 53 and Public Utilities Code Section 399.4, the program rules require that both the customer and the contractor certify that all permitting and licensing requirements were followed before any program incentives are paid to either market actor.

## **EFFECTIVE DATE**

SDG&E believes this filing is subject to Energy Division disposition and should be classified as Tier 2 (effective after disposition) pursuant to GO 96-B. SDG&E respectfully requests that this filing be approved and become effective on October 3, 2013, 30 days after the date filed.

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<sup>1</sup> Administrative Law Judge Ruling Regarding Program Guidance for 2013-2014 EE Portfolio, Dec. 7 2011, Appendix A (details of CPUC-Energy Division (ED) Staff guidance to IOUs) pp. A25-A27



**PROTEST**

Anyone may protest this Advice Letter to the California Public Utilities Commission. The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. The protest must be made in writing and must be received no later than September 23, 2013, which is 20 days of the date this Advice Letter was filed with the Commission. There is no restriction on who may file a protest. The address for mailing or delivering a protest to the Commission is:

CPUC Energy Division  
Attention: Tariff Unit  
505 Van Ness Avenue  
San Francisco, CA 94102

Copies of the protest should also be sent via e-mail to the attention of the Energy Division at [EDTariffUnit@cpuc.ca.gov](mailto:EDTariffUnit@cpuc.ca.gov). A copy of the protest should also be sent via both e-mail and facsimile to the addresses shown below on the same date it is mailed or delivered to the Commission.

**For SDG&E:**

Megan Caulson  
Regulatory Tariff Manager  
San Diego Gas and Electric  
8330 Century Park Court, Room 32C  
San Diego, CA 92123-1548  
Facsimile No. (858) 654-1879  
E-mail: [MCaulson@semprautilities.com](mailto:MCaulson@semprautilities.com)

**For SoCalGas:**

Sid Newsom  
Tariff Manager – GT14D6  
Southern California Gas Company  
555 West 5th Street  
Los Angeles, CA 90013-1011  
Facsimile: (213) 244-4957  
E-mail: [snewsom@semprautilities.com](mailto:snewsom@semprautilities.com)

**For SCE:**

Megan Scott-Kakures  
Vice President, Regulatory Operations  
Southern California Edison Company  
8631 Rush Street  
Rosemead, California 91770  
Facsimile: (626) 302-4829  
E-mail: [AdviceTariffManager@sce.com](mailto:AdviceTariffManager@sce.com)

**For SCE (continued):**

Leslie E. Starck  
Senior Vice President, Regulatory Policy & Affairs  
c/o Karyn Gansecki  
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**For PG&E:**

Brian K. Cherry  
Vice President, Regulatory Relations  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10C  
P.O. Box 770000  
San Francisco, California 94177  
Facsimile: (415) 973-7226  
E-mail: [PGETariffs@pge.com](mailto:PGETariffs@pge.com)

**NOTICE**

A copy of this filing has been served on the utilities and interested parties shown on the attached list, including interested parties in A.12-07-001, A.12-07-002, A.12-07-003, A.12-07-004 & R.09-11-014, by providing them a copy hereof either electronically or via the U.S. mail, properly stamped and addressed.

Address changes should be directed to SDG&E Tariffs by facsimile at (858) 654-1879 or by email to [SDG&ETariffs@semprautilities.com](mailto:SDG&ETariffs@semprautilities.com).

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CLAY FABER  
Director – Regulatory Affairs

Attachments

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## ADVICE LETTER FILING SUMMARY ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **SAN DIEGO GAS & ELECTRIC (U 902)**

Utility type:

ELC

GAS

PLC

HEAT

WATER

Contact Person: Christina Sondrini

Phone #: (858) 636-5736

E-mail: csondrini@semprautilities.com

### EXPLANATION OF UTILITY TYPE

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: 2516-E/2225-G, et al

Subject of AL: Request of SDG&E, SCE, SCG & PG&E for HVAC Code Compliance Incentive Program to Encourage To-Code Installations of Residential HVAC Equipment in Compliance with D.12-11-015

Keywords (choose from CPUC listing): Energy Efficiency, Compliance

AL filing type:  Monthly  Quarterly  Annual  One-Time  Other \_\_\_\_\_

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #:

D.12-11-015

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL N/A

Summarize differences between the AL and the prior withdrawn or rejected AL<sup>1</sup>: N/A

Does AL request confidential treatment? If so, provide explanation: N/A

Resolution Required?  Yes  No

Tier Designation:  1  2  3

Requested effective date: 10/3/13

No. of tariff sheets: 0

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed<sup>1</sup>: N/A

Pending advice letters that revise the same tariff sheets: N/A

**Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:**

CPUC, Energy Division

Attention: Tariff Unit

505 Van Ness Ave.,

San Francisco, CA 94102

EDTariffUnit@cpuc.ca.gov

San Diego Gas & Electric

Attention: Megan Caulson

8330 Century Park Ct, Room 32C

San Diego, CA 92123

mcaulson@semprautilities.com

<sup>1</sup> Discuss in AL if more space is needed.

General Order No. 96-B  
ADVICE LETTER FILING MAILING LIST

cc: (w/enclosures)

Public Utilities Commission

DRA

S. Cauchois  
R. Pocta  
W. Scott

Energy Division

P. Clanon  
S. Gallagher  
D. Lafrenz  
M. Salinas

CA. Energy Commission

F. DeLeon  
R. Tavares

Alcantar & Kahl LLP

K. Cameron

American Energy Institute

C. King

APS Energy Services

J. Schenk

BP Energy Company

J. Zaiontz

Barkovich & Yap, Inc.

B. Barkovich

Bartle Wells Associates

R. Schmidt

Braun & Blaising, P.C.

S. Blaising

California Energy Markets

S. O'Donnell

C. Sweet

California Farm Bureau Federation

K. Mills

California Wind Energy

N. Rader

Children's Hospital & Health Center

T. Jacoby

City of Chula Vista

M. Meacham

City of Poway

R. Willcox

City of San Diego

J. Cervantes

G. Lonergan

M. Valerio

Commerce Energy Group

V. Gan

CP Kelco

A. Friedl

Davis Wright Tremaine, LLP

E. O'Neill

J. Pau

Dept. of General Services

H. Nanjo

M. Clark

Douglass & Liddell

D. Douglass

D. Liddell

G. Klatt

Duke Energy North America

M. Gillette

Dynegy, Inc.

J. Paul

Ellison Schneider & Harris LLP

E. Janssen

Energy Policy Initiatives Center (USD)

S. Anders

Energy Price Solutions

A. Scott

Energy Strategies, Inc.

K. Campbell

M. Scanlan

Goodin, MacBride, Squeri, Ritchie & Day

B. Cragg

J. Heather Patrick

J. Squeri

Goodrich Aerostructures Group

M. Harrington

Hanna and Morton LLP

N. Pedersen

Itsa-North America

L. Belew

J.B.S. Energy

J. Nahigian

Luce, Forward, Hamilton & Scripps LLP

J. Leslie

Manatt, Phelps & Phillips LLP

D. Huard

R. Keen

Matthew V. Brady & Associates

M. Brady

Modesto Irrigation District

C. Mayer

Morrison & Foerster LLP

P. Hanschen

MRW & Associates

D. Richardson

Pacific Gas & Electric Co.

J. Clark

M. Huffman

S. Lawrie

E. Lucha

Pacific Utility Audit, Inc.

E. Kelly

San Diego Regional Energy Office

S. Freedman

J. Porter

School Project for Utility Rate Reduction

M. Rochman

Shute, Mihaly & Weinberger LLP

O. Armi

Solar Turbines

F. Chiang

Southern California Edison Co.

M. Alexander

K. Cini

K. Gansecki

H. Romero

TransCanada

R. Hunter

D. White

TURN

M. Hawiger

UCAN

M. Shames

U.S. Dept. of the Navy

K. Davoodi

N. Furuta

L. DeLacruz

Utility Specialists, Southwest, Inc.

D. Koser

Western Manufactured Housing

Communities Association

S. Dey

White & Case LLP

L. Cottle

Interested Parties In:

A.12-07-001

A.12-07-002

A.12-07-003

A.12-07-004

R.09-11-014

## ATTACHMENT A

HVAC Code Compliance Program Information for Addendum to the Statewide Residential HVAC Subprogram Program Implementation Plan (PIP)

- 1) **Program Name: Residential HVAC Subprogram**  
**Program type:** Statewide
- 2) **Total Authorized Program Budget Table**

**Table 1** – Reference Residential Program PIP for total authorized budget for the Residential HVAC Subprogram.

While the investor-owned utilities (IOUs) do not set specific detailed budgets below the subprogram level, the following budget information is provided for planning for the new HVAC Code Compliance program. This information is preliminary and subject to change based on the outcome of the Advice Letter (AL) process. Funding for this program may also increase or decrease during 2013-2014 within the bounds of the California Public Utilities Commission (CPUC) fund-shifting rules for management of subprogram and program funds in order to meet IOU Energy Efficiency (EE) portfolio directives and goals.

PG&E's Incentive budget for this new program is currently set at \$1,200,000. Direct Implementation, Administration and Marketing are planned currently at \$500,000 for a total budget of \$1,700,000.

SCE's Incentive budget for this new program is currently set at \$250,000. Direct Implementation, Administration and Marketing is planned currently to total \$250,000 for a total budget of \$500,000.

SDG&E's Incentive budget for this new program is currently set at \$ 350,000. Direct Implementation, Administration and Marketing is planned currently to total \$ 155,000, for a total budget of \$ 505,000.

SoCalGas' budget for this new program is currently set at \$130,000 for Direct Implementation. Administration is planned currently at \$7,304 for a total budget of \$137,304. Marketing funds were not initially allocated for this program.

- 3) **Program Description**

- a) **Describe program**

Within the HVAC community it is generally recognized the vast majority of residential HVAC replacements in California are not following the established Title 24, Part 6 (code) compliance and permitting process. The CPUC has directed the IOUs to design and implement a to code installation incentive program for residential HVAC system replacements to address this issue:

- The IOUs "shall propose an incentive program that encourages code-compliant installations of residential heating, ventilation, and air-conditioning equipment in a

Tier 2 advice letter.”<sup>1</sup> “We support further investigation of providing incentives for code compliance in the residential sector. The utilities should pilot “to code” incentives in the hotter climate zones (climate zones 9-16) in 2013 and 2014.”<sup>2</sup>

- The proposed HVAC Code Compliance program scope is to include the requirements of the new 2013 California Energy Code, pertaining to HVAC replacement installations.
- IOU first target locations for this program are Southern San Joaquin Valley (Climate Zone 13, Fresno area), Coachella Valley (Climate Zone 15), and inland in Climate Zone 10. Based on the results of the program process and impact evaluations, the program is planned to be scaled to a broader statewide audience in the next program cycle and to incorporate lessons learned.

The HVAC Code Compliance program was designed to achieve the following objectives:

- Ensure safety for all involved in program activities
- Test a design that engages existing market actors as partners in a scalable and sustainable compliance-based business practice
- Integrate with Codes and Standards Compliance Improvement subprogram without duplication of activities
- Integrate with other elements of the Residential HVAC subprogram: Quality Maintenance (QM) and Quality Installation (QI)
- Improve the customer experience with HVAC code compliance
- Demonstrate stakeholder collaboration best practices
- Evaluate program effectiveness via 2013-2014 HVAC EM&V studies.

#### **b) Incentive Types and Incentive Levels**

To achieve improved compliance with Title 24, a two-pronged approach will be implemented to engage important market actors in market transformation to drive improved code compliance in the targeted areas of the program.

To support market transformation, the program design identifies key decision points in the process that are common for all change-outs and provides financial incentives to appropriately motivate the market actors making the decisions during the process. The incentives, as shown in Table A below, are provided to distributors or retailers and to customers, but may be shared. The highest-leverage point of the market process occurs during the negotiation between the contractor purchasing the HVAC unit and the distributor or retailer. The incentive dollars are motivating as they can add to the distributor/retailer and/or to the contractor profit margins from the transactions affected. Shared incentives from distributor/retailer to contractor can be beneficial in creating long term relationships that encourage compliance-favorable behavior.

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<sup>1</sup> Ordering Paragraph 7 of CPUC Decision 12-11-015

<sup>2</sup> CPUC Decision 12-11-015, pg. 75

**Table A – Incentive Types and Incentive Levels**

<b>Market Actor</b>	<b>Required Action</b>	<b>Incentive</b>
Distributor/Retailer at Point of Sale (POS)	Collect and Submit HERS Registry Unique ID# (UID)	\$100
Customer	Obtain finalized permit for job	\$200

It is important to note that C20 contractors are at the center of the program design and can be motivated by both of these program incentives, since both the distributor and customer are provided the flexibility to share their incentives with the contractor. Contractors are not provided direct incentives, since the design intends to motivate more discussion by contractors of the value of compliance in the important negotiation and decision points in the HVAC replacement process.

To receive the incentive, the distributor or retailer will require the job CF-1R and HERS Unique ID# (UID) from the C20 contractor, plus information about the existing system and home obtained for program data collection and future results analysis. Increasing the number of UIDs and HERS registrations increases transparency and data collection for more HVAC installation jobs and thereby facilitates the ability of compliance entities and professionals to do their jobs to track and encourage increased code compliance.

A complementary second incentive signals that there is a value to code compliance and motivates customers and contractors to discuss the value of code compliance during customer-contractor negotiations and sales. The incentive also serves the purpose of encouraging customers to finalize and close permits and it helps to defray *some* of the cost from obtaining and finalizing a permit. This incentive is not intended to cover all costs, since code compliance has value in and of itself.

**c) List non-incentive customer and contractor services**

The following non-incentive services will be offered in support of the program from the existing, complementary C&S Compliance Improvement Subprogram:

- Education of the market about the value of code compliance.
- Software tools to help contractors identify and access the proper 2013 Title 24 forms.
- List of HVAC contractors that have already completed IOU training on proper practices for residential HVAC installation.
- Additional HVAC contractors affected by the program will be offered training on HVAC replacement compliance requirements and process, industry standards, sales and marketing of the value of those standards, and their implementation in the field.

The following non-incentive services will be offered in support of the program from the Residential HVAC Subprogram:

- Customer education about the benefits of establishing a long-term trust relationship with a licensed and qualified contractor and on-going quality maintenance to optimize the efficiency and life of the replacement equipment.

- Customer education on the value of upgrading beyond code to quality installation of high efficiency equipment
- Improved comfort and indoor air quality for customers

#### 4) **Program Rationale and Expected Outcome**

##### **a) Market Transformation Information:**

Program incentives target the decision points that are the key to drive market transformation toward an improved climate of code compliance. The critical decision points needed to have a code compliant replacement are:

- Customer signs contract for installation which includes pulling and finalizing a permit; and completes the necessary HERS rater verification
- Contractor starts the process of compliance by registering CF-1R with a HERS Provider at the beginning of the change-out process, at the equipment point of negotiation and sale.
- Customer schedules the local jurisdiction inspection to close or finalize the permit.

A market transformation action is taken to impact important compliance process decisions, involving not only an incentive to the customer to ensure their active engagement in compliance decisions, but also and most importantly an incentive to the distributor or retailer at the time of sale negotiation with the contractor. The total cost of compliance varies for each house and system, so incentives are fairly and efficiently targeted to encourage the start and the finish of compliance processes and to encourage discussions of the value of compliance at the high-leverage, key decision points of the market process.

The required HVAC replacement compliance tasks are done by both the C20 contractor and HERS rater. The C20 contractor must ensure a CF-1R Certificate of Compliance is registered with a HERS Provider before applying for a permit and then file a CF2R Installation Certificate with the HERS provider after completing the installation. The HERS rater must file a CF3R Certificate of Field Verification and Diagnostic Testing. As with new construction, these costs are expected to decrease as compliance becomes a normal and widespread practice. Program incentives are targeted at the beginning and end of this process to encourage decisions in favor of code-compliance at those critical points.

C20 contractors buy from equipment distributors and retailers who buy from manufacturers. A well-developed system of industry incentives is already used by distributors to award contractors who are good customers in terms of volume and payment. Manufacturers provide incentives to distributors who stock their equipment and to increase sales. The details of distributor POS incentive systems used by each distributor vary and are constantly changing to respond to market conditions at the local level. Applying a HVAC Code Compliance Program incentive to distributors and retailers impacts the POS transaction by allowing more value to be considered in the give-and-take of those negotiations that is in favor of increased code compliance. In support of the incentive, materials will be provided by the C&S program to remind the contractor network of the importance of compliance and help them convey the significance to their customers. Please see process flow diagrams and program logic models incorporated below.



## b) Program Design to Overcome Barriers

Barriers to compliance have been identified in collaboration with the Western HVAC Performance Alliance (WHPA) Compliance Committee and the Compliance Improvement Advisory Group (CIAG). Many of the barriers are being addressed by the C&S Compliance Improvement Subprogram and will help to support the goals of this program. The barriers which this HVAC Code Compliance program will address directly are:

- Consumers, HVAC contractors (C20 Licensed Contractors), and technicians do not see the value, either financial or non-financial, in complying with code and their local permit processes.
- Current market forces and incentives do not incentivize contractors to complete the entire code compliance process and the permit process.
- Compliance is not addressed at the point of sale when the C20 contractor purchases equipment.
- Lack of coordination pertaining to institutional infrastructure and coordination between C20 contractors, HERS providers, HERS raters, and local government building departments.

Program scope and duration is met by focusing in specific areas within each IOU's service territory. SCE and SCG will be working together in Climate Zone 15; PG&E will target Climate Zone 13, and SDG&E will target Climate Zone 10. At each locality, there is a history of partnership between the IOU and the local governmental agencies that will support rapid implementation and success.

## c) Quantitative Program Targets

The expected outcome of the HVAC Code Compliance program is increased code compliance in the targeted geographic areas. This outcome is expected to be demonstrated by an increased number of residential HVAC replacement jobs that are tracked by California Energy Commission (CEC) Title 24 Compliance forms entered in the HERS registry and an increased number of finalized permits for residential HVAC replacements in the targeted geographic areas.

Historical baseline data and program data for these metrics and other related data tracked in the HERS registry about each job are planned to be provided to the program by the local building departments and CALCERTS with whom the IOU program team is working on this program effort. A two-year or longer trend line of residential HVAC replacement permits pulled and finalized will be tracked. During the program duration, current data will be compiled regularly and compared to an estimate of what would have been predicted from past trends. If needed, the data will be corrected for economic trends or other major variables that may be appropriate.

**Table B – 2013-2014 Quantitative Program Targets**

IOU	CF-1R UID	Finalized Permits
PG&E	3,250 -4,500	1,750 –3,750
SCE	208-416	208-416
SCG	325	325
SDG&E	625-1000	625-1000

EM&V process and impact evaluation efforts discussed in Section 7 below will provide additional data and analysis to support the understanding of the results of this program and support the development of lessons learned to make program improvements.

Energy saving estimates for the program will be developed based on the number of code compliant jobs affected by the program combined with applicable information from the Database of Energy Efficiency Resources (DEER) and past EM&V studies. Energy savings will not be determined for each home, but will be developed more cost-effectively in aggregate, in order to avoid unnecessary program costs of extensive data collection for individual homes. Title 24 compliance includes requirements based on four HVAC replacement scenarios. The most common scenario of replacing the furnace, evaporator coil, and condenser will require duct test and seal, and refrigerant charge adjustment (RCA). DEER has savings values for these installation activities. To calculate energy savings, the program plans to use the results of EM&V studies of 2006-08 RCA and Duct Test and Seal to set incidence multipliers and plans to assume that without a permit these activities would have not been done.

#### **d) Advancing Strategic Plan Goals and Objectives**

The HVAC Code Compliance program addresses the Market Transformation goals for HVAC in all of the policy areas except Emerging Technologies (ET) as is seen by a review of California Long-Term Energy Efficiency Strategic Plan<sup>3</sup>.

The market transformation strategies covered in the Strategic Plan are built upon one or more of the following policy tools employed to “push” or “pull” more efficient products or practices to market:

- Customer Incentives including rebates; and/or non-financial support to consumers are the carrots that help pull consumers into choosing the efficient option.
- Codes and Standards which mandate minimum efficiency thresholds for buildings, appliances and/or equipment, removing the less efficient choices from the marketplace are the sticks that push builders and manufacturers to provide efficient goods and services.
- Education and Information through marketing, education and outreach inform market actors about energy efficiency opportunities. These programs often include labeling; benchmarking; internet-based comparisons; professional and trade materials; school curricula; peer-to-peer exchanges; and other resources.

Program activities will provide customer incentives that coordinate with the ongoing work of the C&S Compliance Improvement Subprogram, and together they rely on all of the above strategies.

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<sup>3</sup> Section 6, p. 54. California Energy Efficiency Strategic Plan, January 2011 Update, California Public Utilities Commission.

[http://www.cpuc.ca.gov/NR/rdoonlyres/A54B59C2-D571-440D-94773363726F573A/0/CAEnergyEfficiencyStrategicPlan\\_Jan2011.pdf](http://www.cpuc.ca.gov/NR/rdoonlyres/A54B59C2-D571-440D-94773363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf)

The first goal<sup>4</sup> of the HVAC section of the Strategic Plan is:

**Goal 1: Improve Code Compliance:** Consistent and effective compliance, enforcement, and verification of applicable building and appliance standards.

Strategies to achieve significantly improved compliance include:

- **Permitting Reform.** Streamlining local government permitting and State licensing processes, beginning with programs.
- **Mandatory Requirements.** Changing the building code by replacing the current optional quality control requirements with mandatory requirements.
- **Verification.** Improving the current processes for inspecting and verifying compliant system installations, such as tracking the installation of all new and replacement equipment to ensure they are installed in compliance with all applicable State energy codes, or developing lower-cost compliance verification mechanisms.
- **Enforcement.** Actively enforcing penalties for contractors who do not pull required permits or who operate without the appropriate licenses.

The HVAC Code Compliance program, in cooperation with the Statewide C&S Program is focusing primarily on improving interest in and consistency of compliance, while the C&S Compliance Improvement subprogram will continue addressing other compliance barriers through training, outreach, process improvements and tools.

As listed in the non-incentive customer and contractor services section above and in the C&S section of the Strategic Plan, the C&S Program includes complementary activities for improving code compliance.

- Coordination with non-regulatory market transformation efforts, such as utility incentives and rebates, ENERGY STAR® and other benchmarking programs, and builder and consumer education efforts that pave the way for successive strengthening of codes and standards.<sup>5</sup>
- Support of better enforcement and compliance at local levels.<sup>6</sup>

## 5) **Program Development and Implementation**

### a) **Statewide IOU Coordination:**

The IOUs' HVAC and C&S Program teams have jointly participated in the program design, including the stakeholder engagement process, and will deliver this as a geographically focused program. The IOUs will continue to work together with the HVAC industry, compliance supply chain and Energy Division on efforts to explore and implement design enhancements for the Residential HVAC subprogram.

### b) **Program delivery mechanisms:**

The program is delivered in partnership with local government partners at critical decision points: equipment point of negotiation/sale and the interactions between contractors and

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<sup>4</sup> p. 55, Section 6, Strategic Plan

<sup>5</sup> p. 62, Section 7, Strategic Plan

<sup>6</sup> p. 63, Section 7, Strategic Plan

customers, including C20 contractor's presentation of bid to a homeowner and at the inspection sign off by local jurisdiction. Participating HVAC equipment distributors and retailers will be recruited, trained, and supported to motivate their C20 contractors to begin the permit process by having a registered CF-1R for each purchase.

Internal IOU staff will manage a third party implementer or one under contract. SDG&E expects to use the first implementer model, while the other IOUs expect to use the second model, with no difference in implementation expected as a result of these program categorization differences. Those implementation entities will work with the local jurisdiction and C20 contractors to educate owners having completed a change-out for which a rebate is available for finalizing the permit. The program is targeted to consumers and contractors to create a push/pull dynamic that influences the achievement over time of sustained market transformation.

In addition to an EM&V process evaluation described below in Section 7, program quality, including issues, concerns and challenges, will be continuously monitored through regular discussions with and review of implementation data provided by the local building departments and program implementers. Also, participating distributors and retailers will be solicited for their input and feedback on possible program improvements. A sampling of customers applying for incentives will also be contacted by program staff for their perspective about the program.

**c) Program development process:**

In collaboration with the WHPA, an extensive set of meetings about program needs and design was conducted to receive and incorporate stakeholder input and feedback. With so many players involved in the residential HVAC replacement market, it was important to identify the relevant market actors and stakeholders, and incorporate stakeholder input and collaboration as part of the HVAC Code Compliance program development process. The IOUs utilized the WHPA's stakeholder input process to create a working group to inform the development of the HVAC Code Compliance program. During the development period, the working group met many times via web conferencing to identify and discuss roadblocks to compliance, program objectives, and potential market solutions and to provide comments on the recommended program initiatives included in this proposal.

In addition to utilizing this stakeholder working group, a subset of the C&S Program's CIAG was consulted, including representatives for HVAC contractors, HERS providers and raters, building officials, relevant state agencies, IOUs, and energy research & training organizations. This smaller group provided an additional detailed connection to industry and potential solution ideas to inform the program design process.

**d) Connection to Other IOU Programs:**

In addition to industry input, the program development team worked together with the IOU Statewide HVAC and C&S Program team members to ensure coordination with existing IOU programs. This collaboration resulted in a better understanding of current compliance improvement and HVAC incentive activities by both program teams and enabled the design of this program to be complimentary to existing efforts. The program will be coordinated with the following IOU EE program portfolio activities.

- **Codes and Standards Program**

The HVAC Code Compliance program brings incentives to the key decision points that have been identified by the C&S Compliance Improvement subprogram. The

work done with the CIAG and local jurisdictions is utilized thereby leveraging work that has already been done. As the program is implemented it is supported by the customer education, market actor training, and tools provided by the Compliance Improvement subprogram. Through cross-promotional links of distributor participation to other Residential HVAC subprogram elements and the Energy Upgrade California (EUC) subprogram, the program can support code compliance, proper permitting and the use of licensed contractors.

- **Workforce Education and Training (WE&T)**

The HVAC Code Compliance program will work with the IOU energy training centers to develop informational classes for distributors, contractors, technicians, building departments and HERS raters. In particular, the energy training centers will focus on delivering the new Residential Standards Essentials courses for AC QI Contractors.

- **HVAC Quality Installation, HVAC Quality Maintenance and Energy Upgrade California Home Upgrade**

The HVAC Code Compliance program will be integrated with the other elements of the Residential Program. The adoption of a code-minimum entry level installation services is positioned with market actors and integrated with QI and QM and EUC Home Upgrade to provide a simple and smooth path to increasing levels of quality and deeper energy savings.

Any licensed HVAC contractor that provides code compliance process support to participating distributors, retailers or customers may be involved with and benefit from the HVAC Code Compliance program. The program will encourage these contractors to consider participation in the QI, QM and EUC programs, if they are not already participating, since they would be better able to provide additional energy savings value to their customers via the set of these programs.

HVAC contractors that already participate in these other programs will be trained on the new HVAC Code Compliance program, including the expectation to promote to customers that the best option for HVAC installation service quality is to apply the QI standards, with a to-code level installation positioned as the absolute minimum requirement.

The C&S Compliance Improvement subprogram will offer all contractors involved with the HVAC Code Compliance program tools and training about HVAC replacement compliance requirements and process, industry standards, sales and marketing of the value of those standards, and their implementation in the field. The HVAC Code Compliance program will provide additional information to all contractors involved about the value to customers of also upgrading equipment to higher efficiency levels.

The program will seek additional opportunities to integrate further with the Residential HVAC QI and QM programs and EUC Program to streamline the implementation of higher efficiency equipment and installation services for residential customers.

- **Program-Specific Marketing and Outreach efforts**

Utility marketing support is planned to advance statewide HVAC Code Compliance program efforts. Such support can include promotion on IOU and building department websites, brochures, and other materials that can be used to promote the program. As mentioned above, the program will continue to work with the industry for additional methods to promote the program and the value of code compliance. If

warranted by such feedback, the program shall explore providing additional general promotional materials such as point-of-sale displays for equipment dealers.

The HVAC Code Compliance Program will also coordinate its activities with IOU local government partnerships, Third-Party programs, and C&S activities to improve integration of code compliance efforts. Program marketing includes common outreach materials developed by the IOUs in partnership with HVAC industry, local government partnerships, and C&S, with feedback from HVAC contractors.

- **Other Agencies**

The IOUs' HVAC Code Compliance program will have interactions with California Energy Commission (CEC), California Air Resources Board (ARB), Air Quality Management Districts (AQMD), local government programs, and other government programs as applicable.

The IOUs are engaged in communication with the CEC and other agencies via the C&S process and will be able to coordinate and communicate voluntary programs and incentives with mandatory codes that are enacted in the future. Increasing the communication regarding the Strategic Plan will allow all entities to align objectives.

Collaboration with local programs will synergize the program delivery. Cities and Counties with their building departments can deliver public service information as a trusted source. These jurisdictions can effectively be responsible for enforcement and addressing incorrect perceptions of what an inspection entails by providing "what to expect" materials. Additionally, these jurisdictions can speak to legal requirement issues and help overcome any customer misperception of dealing with their local building department.

- **Similar IOU and Publicly Owned Utility (POU) programs**

The IOUs will coordinate with POUs in California to encourage these other utilities to make this a program for future statewide efforts.

- **Non-IOU programs**

Through WHPA and other stakeholder engagement forums the program interacts with the HVAC industry and other stakeholders to continue to develop relationships for ongoing collaboration on program improvements.

- **CEC work on C&S**

Continuous improvements and enhancements will be coordinated statewide to ensure the Residential HVAC Code Compliance program maintains consistency with updates to C&S.

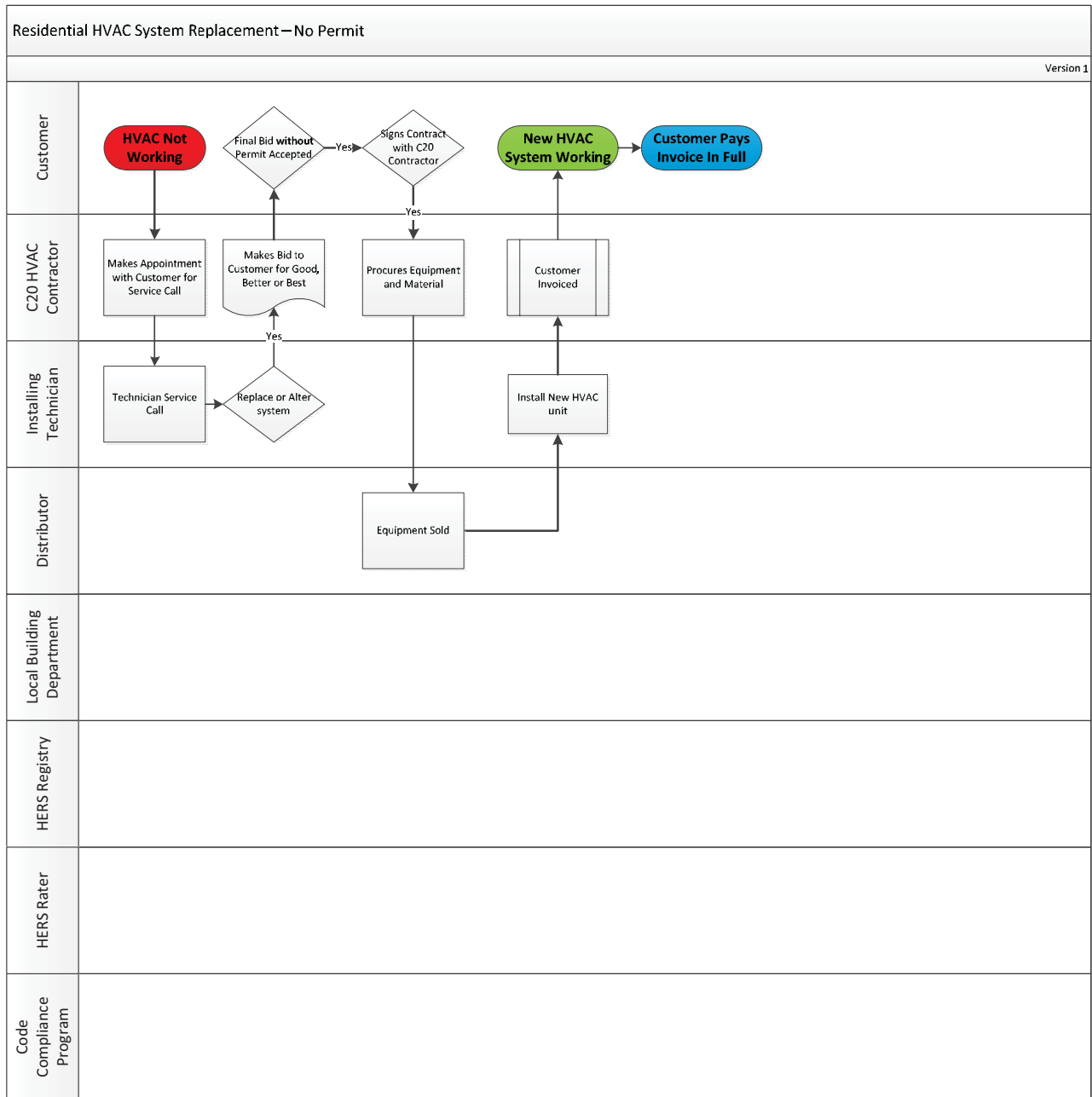
The responsibility for HVAC C&S issues has been given to the Statewide C&S Program. This will ensure that the code-based solutions are consistent with that program's other activities. Section 6 of the C&S PIP describes the specific actions that the program will employ to address HVAC. HVAC, C&S, and ET activities will be coordinated through the Joint Program Management Team.

6) HVAC Code Compliance Program Structural Relationship to Title 24 and Market Actors

In order to understand the flow of transactions between the market actors identified as relevant to the residential HVAC replacement market, a set of two flow charts were created, as shown below.

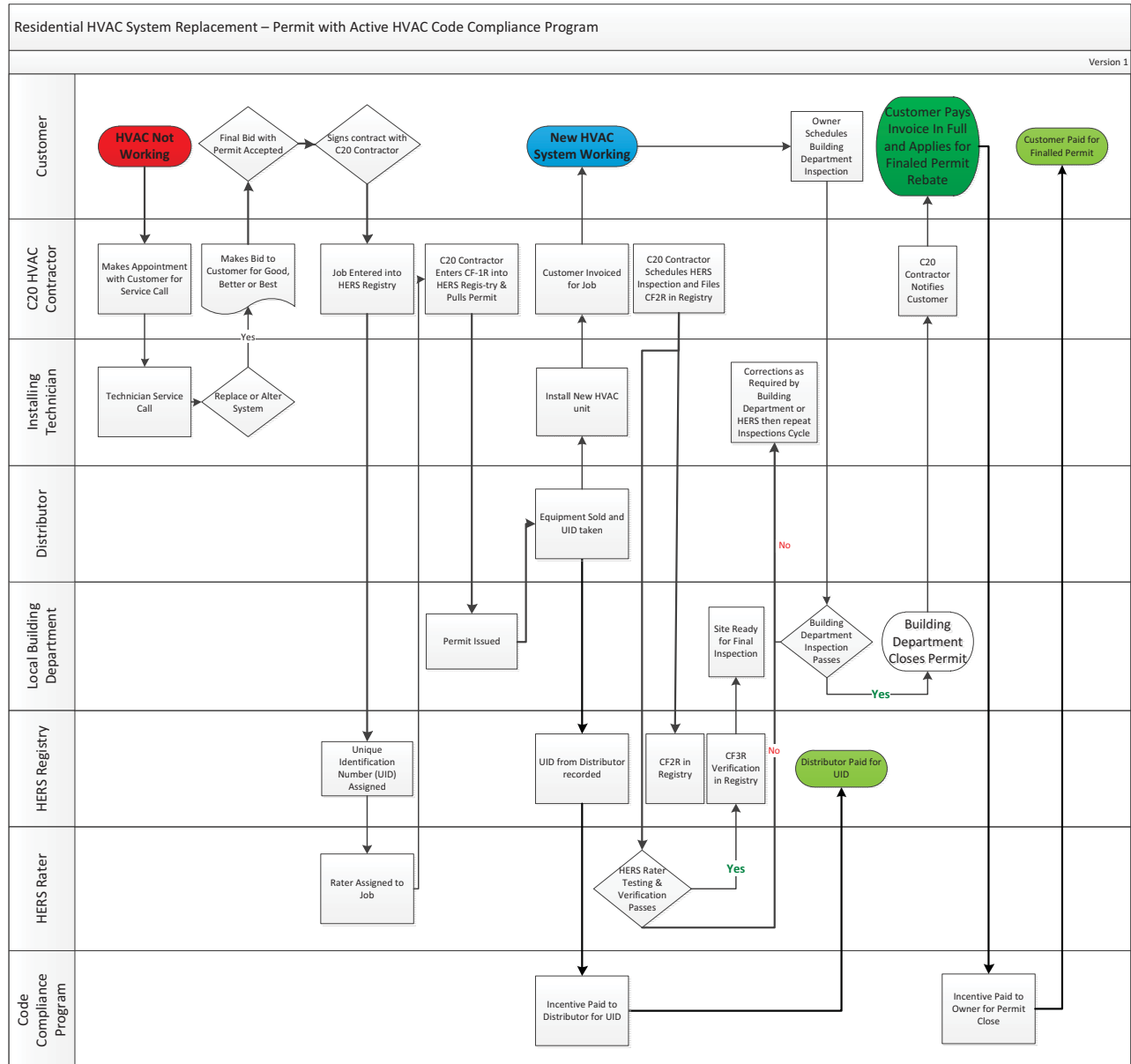
a) Non-compliant HVAC Replacement Process Flow – Without Permit

The flow of activities is organized by the actions of the actors to show their role and how it relates to others. Please note that not all of the actors are engaged, particularly the Local Building Department and HERS.



## b) Compliant HVAC Replacement Process Flow With Active HVAC Code Compliance Program

The flow changes dramatically when the HVAC replacement meets Title 24 code and all of the market actors are engaged. The program incentives are applied at the key decision points that are public and repeated for every compliant job. The inspection by the local jurisdiction is primarily to ensure the safety of the gas and electrical connections and devices.





## 7) HVAC Code Compliance Program Components

### a. Best Practices:

As described in Section 5.a, this program is creating a new standard for HVAC service-based programs by offering an alternative entry approach for quality HVAC that delivers reliable energy savings. This program was developed with industry involvement to ensure that it (1) is accepted by the industry and meets market transformation objectives; (2) effectively educates and motivates service technicians to provide services that are at least to-code; (3) provides the necessary quality control processes to ensure that the required services are performed; (4) delivers reliable energy savings; and (5) demonstrates a clear value proposition for contractors and customers.

### b. Innovation:

The innovation of this program is mainly in using the high leverage point of the negotiation and sale of equipment between an HVAC contractor and a distributor or retailer. Innovation is also demonstrated through the adoption of a code-minimum entry level installation services approach that integrates with QI/QM and other EE programs in a simple and smooth path to increasing levels of quality and deeper energy savings. Also, focusing the scope and delivering this program through active partnership with local governments and the industry increases the likelihood of its success. Finally, innovation results through a continuous improvement process to evaluate the viability of offering incentives for services and other offerings that exceed established program standards.

### c. Integration across resource types (energy, water, air quality, etc.):

N/A

### d. Pilots

N/A

### e. EM&V

EM&V for the Residential HVAC Code Compliance program will be managed via the EM&V program. Appropriate EM&V activities and detailed plans will be conducted as coordinated by EM&V and overseen by the CPUC Energy Division.

Detailed plans for process evaluations and other evaluation efforts specific to this program will be developed after the final program design is approved by the CPUC and program implementation has begun, since final plans will be based on identified program design and implementation issues and questions. An EM&V Impact evaluation to include this program is already included in the 2013-2014 EM&V plan for HVAC.

A brief description of preliminary additional program review plans is provided below:

### **Baseline Compliance:**

Although not statistically verified through any independent study, it is generally believed through anecdotal evidence that only a small percentage (10% per California Strategic Plan) of residential HVAC replacements are completed following established code compliance guidelines. In other words, most customers do not know, nor do they require their contractor, to complete the CF-1R HERS process or apply for a building permit with the local jurisdiction to install a replacement unit. At the same time HVAC installation contractors typically do not take initiative to complete the required code compliance process. As stated earlier, these failures may be lack of awareness, lack of training, or contractor disinterest. While this HVAC Code Compliance program is being developed to address this compliance gap, actual impacts and the resulting energy savings can only be estimated based on the anecdotal assumption of current performance in the market. While a more detailed study of the market conditions relating to-code compliance is needed, it is beyond the scope of this program's EM&V effort. That is not to say that there will be no attempt to characterize performance based on the prevalent practices by customers and contractors, a complete assessment of the market conditions will help to refine the expected program impacts anticipated by this HVAC Code Compliance program. In the fourth quarter of 2013, the Energy Division is scheduled to begin a "Market Assessment to Identify Baselines and Barriers for Existing HVAC Conditions, Building Permit and Title 24 Compliance" to specifically quantify baseline activity for replacement HVAC market.

### **Impact Evaluation:**

An abbreviated Impact Evaluation will be conducted. The purpose of the study will be to quantify the first year and lifecycle gross and net kWh, kW and therm savings that accumulate from program intervention in the market place. The evaluation will measure the savings that result from the contractor actions for participants' HVAC change-outs that adhere to the CF-1R HERS process, permit application and approval process, as well as the installation and verification of the required actions outlined in Incentive Types and Incentive Levels (see Section 4.b).

In order to determine the program's performance, it will also be necessary to measure non-participant activity. Non-participants will be selected through contractor HVAC change-outs for which the compliance process was not initiated. It is admitted that selection of non-participants will be problematic, since contractors may not be willing to share information about these installations. As a result strict confidentiality and customer anonymity will be required to secure participation in an evaluation of these installations.

This preliminary evaluation will include verification of contractors' installation via direct measurement of refrigerant charge, as well as metering information (interval metering data before and after unit replacement), and customer and contractor interviews. The results of the evaluation will be used to examine the program's cost effectiveness. The results will also be used to refine the program design to improve performance and integration with the QI/QM programs to assure long-term persistence and customer satisfaction. Finally, this abbreviated evaluation will be used to inform a more complete and thorough Impact Evaluation of any statewide HVAC Code Compliance program in the future.

## Process Evaluation:

A Process Evaluation will be conducted to systematically review the program's structure, operations, services and delivery mechanisms. This evaluation will be used to identify possible design and program improvement opportunities needed to increase its effectiveness leading to a fully implemented statewide program. This evaluation will include surveys (telephone, internet, and/or mail) of the program stakeholders – customers, contractors, distributors, building officials and utility program personnel.

For the HVAC Code Compliance program, the Process Evaluation will assess the program's operations (policies, procedures, marketing), delivery mechanisms, and logic in the following areas:

- *Engagement*: determine the ability of the program to identify and engage the chain of market actors – distributors, contractors, customers and building code enforcement officials
- *Effectiveness*: evaluate the effectiveness of the program:
  - Customer education components demonstrating the value of to-code installations of high-efficiency HVAC equipment to customers and contractors
  - Contractor training to ensure code compliance of HVAC system installations/repairs
  - Incentive structure (targets and size) in motivating market actor behaviors along the chain
- *Sustainability*: assess whether the program's savings will persist over time including the on-going quality maintenance of to-code installations
- *Scalability*: determine whether the program can be economically scaled to a statewide audience
- *Satisfaction*: measure program satisfaction from each market actor group – distributors, contractors, customers, and building code enforcement officials
- *Lessons Learned*: identify areas of strength in program delivery or areas where problems exist that must be overcome in order for the program to succeed on a statewide basis

## f. Program Logic Model:

