

# Table of Contents

- 1. TECH Contractor Program Experience ..... 2
- 2. Customer Post-Install Survey ..... 10
- 3. Level 1 (Reaction) NCI Air Flow Post- Training Survey ..... 17
- 4. Level 1 (Reaction) NCI Refrigeration Post-Training Survey ..... 24
- 5. Level 1 (Reaction) NCI Residential System Performance & Electrification Post- Training Survey ..... 31
- 6. Level 1 (Reaction) EMH Post-Training Survey ..... 38
- 7. TECH Contractor Interview Guide ..... 45
- 8. HVAC Manufacturer Interview Guide ..... 49
- 9. HPWH Manufacturer Interview Guide ..... 52
- 10. Customer Follow-Up Interview Guide ..... 55

# CPUC TECH: TECH Contractor Program Experience

June 10, 2022

## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	10 minutes
Population Description	Participating TECH Contractors
Type of Sampling	Census
Contact Sought	Contractors enrolled in TECH
Incentive Types and Amounts	\$30 Tango e-gift card
Outreach Methods	Email
Fielding Firm	Qualtrics

## Instrument

### Introduction

Welcome! This is the survey for TECH Clean California contractors to share feedback on their experience with TECH so far. As a reminder, Opinion Dynamics is conducting this survey on behalf of the California Public Utilities Commission. We will keep your answers confidential and not share your name nor your company name in anything we report.

Please click the arrow to start the survey.

[INCLUDE AS FOOTER ON EACH PAGE: "If you need any assistance with or have questions about this survey, please contact Taylor Williams at [taylor.williams@opiniondynamics.com](mailto:taylor.williams@opiniondynamics.com)."] ]

### Program Awareness [ASK ALL]

First, we have a few questions to understand how you began participating in TECH Clean California.

Q1. How did you first learn about TECH Clean California?  
[ROTATE, SINGLE RESPONSE]

1. Employer or colleague
2. A customer
3. The Switch is On

4. Communication from a utility, CCA, or REN
5. A local, community-based organization
6. Friend or family member
7. Mass media/advertising (TV/radio/newspaper)
8. Manufacturer or distributor
9. A Trade Association or Contractor Association
0. [ANCHOR] Other, please specify: [OPEN-ENDED RESPONSE]

Q2. How easy or difficult was it to enroll in TECH Clean California?

*Enrollment involved filling out an application to demonstrate your firm met the requirements and, once approved, attending some onboarding trainings.*

1. Very easy
2. Somewhat easy
3. Neither easy nor difficult
4. Somewhat difficult
5. Very difficult

[ASK IF Q2 = 4, or 5]

Q3. What made the enrollment process difficult?

1. [OPEN-ENDED RESPONSE]

Q4. After the required onboarding trainings, TECH partnered with other organizations to offer optional trainings on home electrification and HVAC heat pumps. Some are webinars and some are in-person.

Did you hear about these optional trainings?

1. Yes
2. No

[IF Q4 = 1]

Q4A. Optional trainings may have been administered by National Comfort Institute, Association for Energy Affordability, or Electrify My Home.

Did you attend any of the optional trainings?

1. Yes
2. No
3. Don't know

[IF Q4A = 2]

Q5. What were some reasons you did not sign up for an optional training? *Select all that apply.*

[ROTATE, MULTIPLE RESPONSE]

1. Inconvenient location, not close enough
2. Inconvenient time, or duration too long
3. Topics were not of interest

4. Unclear what would be covered in the training
5. Wanted to attend, but it never became a priority
6. Already attended similar trainings
7. Other reason(s) you didn't sign up for an optional training: [TEXT]

## Eligibility and Incentives [ASK ALL]

Next, we have some questions about TECH eligibility and incentives.

- Q6. Once you were enrolled in TECH Clean California, please rate how clear each of the following eligibility requirements were.  
[DISPLAY FOLLOWING OPTIONS FOR EACH STATEMENT BELOW: 1=Not at all clear, 2=A little clear, 3=Somewhat clear, 4=Moderately clear, 5=Very clear; 6 = not applicable, don't sell this equipment]

How clear were the...

- A. Customer eligibility criteria?
- B. HVAC heat pump incentive eligibility criteria?
- C. Heat pump water heater incentive eligibility criteria?

[IF ANY in Q6 = 1 or 2]

- Q7. What aspects of the eligibility criteria were not clear?

1. [TEXT]

- Q7A. We'd like to know how adequate the qualified product selection was. Were there enough options to choose from or did you feel restricted in your equipment choices?

For HVAC heat pumps:

1. I always had enough options to choose from for my projects
2. Sometimes I had trouble finding a qualified product for my projects
3. Oftentimes I had trouble finding a qualified product for my projects
4. Not applicable – did not install HVAC heat pumps

For water-heating heat pumps:

1. I always had enough options to choose from for my projects
2. Sometimes I had trouble finding a qualified product for my projects
3. Oftentimes I had trouble finding a qualified product for my projects
4. Not applicable – did not install water-heating heat pumps

- Q8. How easy or difficult was it to complete an incentive application through the contractor portal at [catechincentives.com](http://catechincentives.com)?

1. Very easy
2. Somewhat easy
3. Neither easy nor difficult
4. Somewhat difficult
5. Very difficult

98. Not applicable – haven't completed an application

[ASK IF Q8= 4 or 5]

Q9. What made completing an incentive application difficult?

1. [OPEN-ENDED RESPONSE]

[ASK IF Q8 = 98]

Q9A. Please tell us what has prevented you from applying for an incentive through TECH.

If it is because you did not have an eligible project, please tell us why your projects have not qualified for TECH incentives.

2. [LARGE TEXT BOX]

[SKIP TO Q12 IF Q8=98]

Q9B. In some areas, contractors can layer a TECH incentive with incentives offered by another program on the same project.

Did you pair a TECH incentive with another program's incentive on a project?

1. Yes
2. No
3. Don't know

[IF Q9B =1]

Q10. How easy or difficult was it to determine the customer's total incentive amount when you paired the TECH incentive with another program's incentive on a project?

1. Very easy
2. Somewhat easy
3. Neither easy nor difficult
4. Somewhat difficult
5. Very difficult

[ASK IF Q10 = 4 or 5]

Q11. What suggestions do you have to make layering a TECH incentive with another program's incentive more straightforward?

1. [OPEN-ENDED RESPONSE]

[IF Q9B =1]

Q11A. To what extent did having two incentives to offer your customer (TECH plus another program) help your ability to sell a heat pump?

1. A great deal
2. A moderate amount
3. Somewhat
4. A little
5. Not at all

Q12. Have you filled out a Multifamily Incentive Reservation form?

1. Yes
2. No
98. Don't know

[ASK IF Q12=1, ELSE SKIP TO Q16]

Q13. How easy or difficult was it to fill out the Multifamily Incentive Reservation form?

1. Very easy
2. Somewhat easy
3. Neither easy nor difficult
4. Somewhat difficult
5. Very difficult

[ASK IF Q13=4 OR 5]

Q13A. What made filling out the Multifamily Incentive Reservation form difficult?

1. [OPEN END]

Q14. Did you coordinate with TECH Clean California representatives to complete the Multifamily Incentive Reservation form?

1. Yes, I coordinated with TECH Clean California representatives to complete the form
2. No, I completed the form on my own and provided to the property owner
3. Don't remember

[ASK IF Q14 = 1]

Q15. How satisfied or dissatisfied were you with your experience coordinating with TECH Clean California representatives to complete the reservation form?

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor dissatisfied
4. Somewhat dissatisfied
5. Very dissatisfied

## TECH Communication

The next few questions ask about communication related to TECH Clean California information.

Q16. TECH Clean California provides information on various websites about eligibility, trainings, and updates, such as changes to incentives. How useful is the information TECH provides on the following websites?

[SINGLE RESPONSE]

Items	1. Very useful	2. Moderately useful	3. Somewhat useful	4. A little useful	5. Not at all useful	97. Don't know, haven't visited
The Switch is On (switchison.org)						
TECH Clean California (energy-solution.com/tech)						

Q17. TECH Clean California sends emails periodically with updates, such as any changes to incentives. How satisfied or dissatisfied have you been with the email communication from TECH?

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor dissatisfied
4. Somewhat dissatisfied
5. Very dissatisfied
98. Don't know/haven't seen the emails

[ASK IF Q16 or Q17>3]

Q18. What could TECH do to improve communication with contractors or make the information more useful?

1. [OPEN END]

## TECH Influence on Heat Pump Sales

You are almost done! Our last few questions are about how TECH Clean California has influenced your work.

Q19. Approximately how many heat pumps did you install in residential settings in an average month in 2021 before enrolling in TECH Clean California? *Your best guess is fine.*

1. HVAC heat pumps: [OPEN END]
2. Heat pump water heaters: [OPEN END]

Q20. To what extent has participating in TECH Clean California increased your sales and installations of heat pumps?

1. A great deal

2. A moderate amount
3. Somewhat
4. A little
5. Not at all

[ASK IF Q20 = 1-4]

Q21. Please describe how TECH Clean California has helped you sell more heat pumps to customers.

1. [TEXT BOX]

Q21A. How has the suspension of TECH incentives affected your heat pump sales, if at all?

1. A great deal
2. A moderate amount
3. Somewhat
4. A little
5. Not at all
6. Don't know

Q21B. TECH Clean California wants to make it easier for contractors like you to install a heat pump. Have you encountered any issues that made it difficult to install an HVAC heat pump or heat pump water heater?

*These may be related to electrical panel upgrades, permitting processes, scale buildup from hard water, ductwork condition, grid-connectivity, or electric rate options for customers, for example. Your answers will help TECH decide what additional support they can provide.*

1. Yes, I've encountered an issue: [LARGE TEXT BOX]
2. No

Q22. To what extent did you/your company increase your promotion of heat pumps after enrolling in TECH Clean California?

*By promotion, we mean actions like mentioning heat pumps in emails, newsletters, and advertisements, or recommending them to customers.*

1. A great deal
2. A moderate amount
3. Somewhat
4. A little
5. Not at all

## Satisfaction

Q23. Overall, how satisfied are you with your experience so far in TECH Clean California?

1. Not at all satisfied
2. Slightly satisfied
3. Somewhat satisfied

4. Moderately satisfied
5. Very satisfied

Q24. Is there anything else you would like us to know about your experience in TECH Clean California, or any changes TECH could make to help you sell more heat pumps?

1. Yes, please describe: [TEXT BOX]
2. No, nothing to add

## Closing [ASK ALL]

Q25. Thank you for your answers. As a token of our appreciation, we will be sending you a \$30 Tango gift card that can be redeemed at one of many businesses, such as Amazon, Best Buy, Nike, Home Depot, and many more. Below, please enter your name and the email address you would like your Tango gift card sent to. [RESPONSE REQUIRED]

*If you do not want to receive a Tango gift card, please select "I do not want my Tango gift card."*

1. Name: [OPEN-END TEXT BOX]
2. Email Address: [OPEN-END TEXT BOX]
98. I do not want my Tango gift card [EXCLUSIVE]

Thank you very much for taking the time to share your experience with TECH Clean California. The California Public Utilities Commission appreciates your valuable feedback.

[IF Q25<98 DISPLAY "Please allow up to 2-4 weeks for your Tango gift card to be delivered.

# Customer Post-Install Survey

February 25, 2022

## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	5-10 minutes
Population Description	Property owners who recently had a TECH-incented heat pump installed
Sampling Strata Definitions	Single-family and multifamily
Contact List Source and Date	Energy Solutions will upload application data to the secure, shared site once a week or every two weeks
Type of Sampling	Census
Contact Sought	Decision-maker present for installation
Incentive Types and Amounts	\$5
Outreach Methods	Email
Fielding Firm	Opinion Dynamics (on Qualtrics)

## Instrument

### Screening [ASK ALL]

S1. First, we want to confirm we have the right person. Were you present for the installation of a <measure> on <date> at <address>?

1. Yes [Proceed to Q1]
2. No

[If S1=2]

S2. These questions are designed for the person who talked to the contractor who installed the <measure>. Please have that person fill out the survey. They can use the same link and the survey will come back to this question.

Are you the person who was present for the installation of <measure> on <date> at <address>?

1. Yes [Proceed to Q1]
2. No [TERMINATE]

Terminate script: Unfortunately, we need to hear from the person who was present for the installation. Thank you for your interest in our survey.

## Main survey

First we have a couple questions about this home.

Q1A. Is the home at <Address> owner-occupied, or occupied by a renter?

1. Owner-occupied
2. Renter-occupied

Q1B. Does that home currently have solar panels or are you planning to add them?

1. I currently have solar panels
2. I am considering getting solar panels
3. I have no plans to get solar panels

The next questions are about finding your contractor.

Q1. How did you find the contractor who installed a <measure> on <date>?

1. Prior experience with the contractor or their company
2. Through a utility website
3. Through The Switch is On find a contractor tool
4. Recommendation from friend, family, neighbor, etc.
5. General web-search, Google, Yelp
6. From a retailer (Costco, Home Depot, etc.)
7. Other, please specify: [TEXT]

Q2. How many contractors did you speak with before choosing one to install this heat pump?

1. One contractor
2. Two contractors
3. Three contractors
4. Four contractors
5. Five contractors
6. More than five contractors
7. Don't know

Q3. What led to you reaching out to a contractor? Please select the answer that most closely matches your situation.

[SINGLE RESPONSE]

1. My existing equipment was broken and I needed to replace it
2. My existing equipment was old or not functioning well, so I wanted to replace it
3. My existing equipment was functioning, but I wanted to explore options for new equipment
4. I was doing an addition and needed to add new equipment
5. I wanted to reduce my carbon footprint/electrify my home
6. Other, please specify: [TEXT]

Q4. Did your contractor offer any information about why an electric option may be best for your home?

1. Yes
2. No
3. Don't remember

Q5. Who first mentioned a heat pump as an option?

1. I first mentioned a heat pump as an option
2. My contractor first mentioned a heat pump as an option
3. Don't remember

Q6. How much did you know about the heat pump equipment that was installed before purchasing it?

1. Very knowledgeable
2. Some existing knowledge
3. Little existing knowledge
4. Not at all familiar with this product

Q7. What were the main reasons you decided to move forward with the <measure> instead of an alternative?

1. [TEXT RESPONSE]

Q8. Please tell us how important each of the following were in your decision to purchase the <measure>.

[ROTATE ITEMS]

Items	1 – not at all important	2 – somewhat important	3- very important	N/A or don't know
Contractor's recommendation				
Incentives/rebates				
Energy savings				
Greenhouse gas reductions				
Equipment reliability				
Indoor comfort				
Indoor air quality				

That it uses electricity instead of another fuel				
Upfront cost				
Operating cost (cost to use over time)				
Speed of install				

[ASK IF incentives/rebates in Q8 = 2 or 3]

Q9. How likely would you have been to purchase a heat pump without the financial incentives?

1. Very likely
2. Likely
3. Not likely
4. Would not have purchased a heat pump

[ASK ALL]

Q10. Did you use financing to help cover the cost of the <measure>? Financing allows you to pay back the cost over time, such as through a loan.

1. Yes
2. No

[If Q10 =1]

Q11. What type of financing did you use?

1. Through the contractor who installed it
2. Through my utility company (such as, on-bill financing)
3. Through GoGreen Home
4. Through my bank or credit union
5. Put it on a credit card with intention to pay over time
6. Other, please specify: [TEXT]

[If Q10 =1]

Q12. How likely would you have purchased the heat pump without financing?

1. Very likely
2. Likely
3. Not likely
4. Would not have purchased a heat pump

[ASK ALL]

Q13. Did you need to have your electrical panel upgraded as part of having the <measure> installed? This would have involved your contractor performing work on your fuse box.

1. Yes

2. No

[If Q13 =1]

Q14. How did the need to upgrade your electrical panel affect your decision to move forward with the <measure>?

1. It didn't, I still wanted to get the heat pump
2. It didn't, I needed to upgrade my electrical panel soon anyway
3. It made me slightly less likely to get the heat pump
4. It nearly caused me to not get the heat pump

[ASK ALL]

Q14A. Did the equipment pass inspection on the first visit, or did the inspector have to come back?  
Inspections are usually performed by someone from your City's building department and they make sure the equipment is installed properly.

1. Passed inspection first time
2. Inspector found an issue and had to come back
3. Don't know or inspection not required

Q15. These last questions are about the contractor who installed your <measure>.

How satisfied are you with the quality of work performed by your contractor?

1. Very satisfied
2. Satisfied
3. Neutral
4. Dissatisfied
5. Very dissatisfied

Q16.

- 1.
- 2.
- 3.

Q17. Did the contractor answer any questions you had to your satisfaction?

1. Yes
2. No
3. Not applicable, did not have questions

Q18. Did the contractor explain how to use your equipment?

1. Yes
2. No
3. Don't remember

Q19. Did the contractor explain how to perform maintenance that might be necessary?

1. Yes
2. No
3. Don't remember

Q20. Did the contractor mention they used a TECH Clean California incentive or rebate for your equipment?

1. Yes
2. No
3. Don't remember

[If Q20=1]

Q21. Did the contractor mention the dollar amount of that incentive/rebate?

1. Yes. The amount was: [NUMBER RESPONSE]
2. Yes, but I don't remember the amount
3. No
4. Don't remember

Q21A. Did [If Q2=1, SHOW 'the'; if Q2>1 SHOW 'any'] contractor provide you with a quote for gas-powered equipment for this project?

1. Yes
2. No
3. Don't remember

[SHOW IF Q21A =1]

Q21B. You can get an additional \$5 gift card if you can upload a picture or a scanned copy of the quote for gas equipment.

1. [UPLOAD PICTURE]
2. No picture/no thank you

[ASK ALL]

Q22. Is there anything else you think we should know about your decision to purchase a <measure> or about your interaction with the contractor who installed it?

1. No
2. Yes: [TEXT]

## Closing [ASK ALL]

Thank you for taking the time to answer our questions. Please enter the email below where you would like your e-gift card to be sent. If you don't want it, you can leave the box blank. The e-gift card is a Tango gift card that can be redeemed at one of many businesses, such as Amazon, Best Buy, Nike, Home Depot, and many more.

1. [TEXT BOX]



We will contact you again in a few months to hear about your experience with your new <measure>.

Please click below to submit your survey.

# CPUC TECH: Market Actors, NCI Air Flow Post-Training Survey

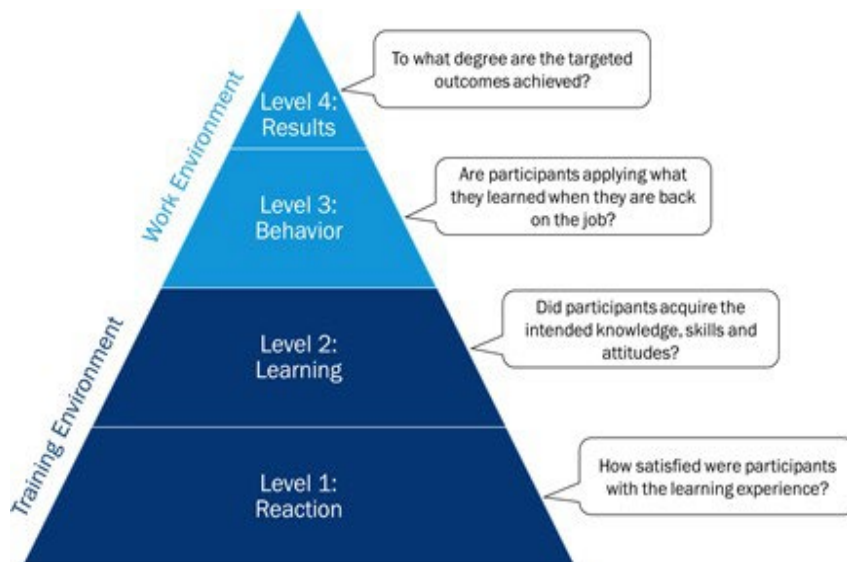
March 11, 2022

## Background

On behalf of the California Public Utilities Commission (CPUC), the Opinion Dynamics Team is working with the Energy Solutions Team to evaluate the trainings provided as part of the Technology and Equipment for Cleaning Heating (TECH) Initiative. In our evaluation, we will use Kirkpatrick’s Model, the gold standard for evaluating adult learning interventions (see Figure 1), to assess participant reaction to TECH training interventions.

As shown below, Kirkpatrick’s model consists of four levels. The first of these is Reaction, which measures how participants feel about the learning experience. Upon completion of WE&T trainings, training providers will administer an “exit survey,” to gauge, among other things, participants’ reactions to training interventions (e.g., instructor, presentation, materials, etc.). As good experiences often lead to more effective knowledge transfer, this initial Level 1 assessment is a crucial aspect of any learning evaluation. This Reaction Survey or exit survey is based on the Level 1 survey that was designed and approved by the CPUC and the California IOUs WE&T staff in July 2020.

Figure 1. Kirkpatrick’s Model



## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	10 minutes
Population Description	CPUC TECH Initiative training participants in the NCI Air Flow and Diagnostics training
Type of Sampling	Census
Contact Sought	Training attendee
Incentive Types and Amounts	None
Outreach Methods	To be administered immediately after the training is completed
Fielding Firm	Opinion Dynamics

## Programming note style conventions in this document

[PROGRAMMING] Programming instructions are in bracketed CAPS.

[Interviewer notes] Onscreen interviewer instructions are in *italics*.

<Piped value> Database inputs are inside <greater and less than symbols>.

For each multiple response question, create separate binary variables for each response option.

## Instrument (Anonymous Survey Link will be Provided)

### Introduction

Now that you have completed the National Comfort Institute’s training, we have some questions about your experience. Your feedback will help us understand the effectiveness of the trainings, including identifying opportunities for improvement moving forward.

The survey should take about 10 minutes to complete. This survey is being administered by a third-party entity, Opinion Dynamics, on behalf of TECH Clean California. Please be honest and candid in your feedback. Your responses will be confidential and only reported in the aggregate with responses from other trainees. Neither your name nor your company name will be linked with any results.

### Respondent Characteristics

[DISPLAY QA and QB on same page]

QA. Please enter your name, your company name, and select which National Comfort Institute (NCI) Training(s) you have taken in 2022.

1. First and last name: [TEXT ENTRY]
2. Company name: [TEXT ENTRY]

QB. NCI Training(s) taken in 2022. *Please select all that apply.*

1. Airflow Testing and Diagnostics held January 28 in Sacramento
2. Refrigerant Side Performance held February 8-9 in Sacramento
3. Airflow Testing & Diagnostics held February 18 in Los Alamitos
4. Refrigerant Side Performance held February 24-25 in Los Alamitos
5. Residential HVAC System Performance and Electrification held March 1-3 in Los Alamitos
6. Electrification Training held March 3 in Los Alamitos
7. Residential HVAC System Performance and Electrification held March 15-17 in Sacramento
8. Airflow Testing & Diagnostics held April 4 in Los Alamitos
9. Airflow Testing & Diagnostics held April 7 in Sacramento

For those who have taken more than one course – please select one course on which you will answer the survey questions about. [DISPLAY INTRO ON SAME PAGE AS Q1]

First, we have a few background questions to learn more about you.

Q1. What type(s) of buildings do you most commonly service in your current position? *Please select all that apply.*

1. Single-family homes (1 to 4 units on property)
2. Multifamily residences (5 or more units on property)
3. Small commercial properties
4. Large commercial properties
5. Other, please specify: [OPEN-END]

Q2. How many HVAC heat pumps and/or heat pump water heaters have you installed anytime in your career? *Your best estimate is fine.*

0. HVAC heat pumps: [NUMERIC OPEN-END]
1. Heat pump water heaters: [NUMERIC OPEN-END]
98. Don't know

Q3. What zip codes does your company serve?

0. [NUMERIC OPEN-END]
98. Don't know

## Course Motivation

Q4. How did you first learn about the trainings available through TECH Clean California, such as the one you recently completed?

[SINGLE RESPONSE; ROTATE RESPONSES]

1. Employer
2. Utility-sponsored Energy Center (PG&E, Edison, SDG&E, and/or SoCalGas)
3. The Switch is On Training Hub
4. The TECH Clean California website
5. A local, community-based organization (CBO)
6. Colleague
7. Friend or family member
8. Social media
9. Manufacturer
10. Distributor
11. Mass media/advertising (TV/radio/newspaper)
12. Other, please specify: [OPEN-END] [ANCHOR]

Q5. Which of the following describe your reason for participating in this training? *Please select all that apply.*

[MULTIPLE RESPONSE; ROTATE RESPONSE OPTIONS]

1. To earn the TECH contractor installation and/or training bonuses
2. To acquire new skills
3. To learn about new technologies and best practices
4. To stay competitive in the marketplace
5. Personal interest
6. To receive a promotion at work
7. To change jobs
8. Other, please specify: [OPEN-END] [ANCHOR]

## Electrification

Q6. Please select the extent to which you agree or disagree with the following statements.

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree	98 Unsure
1. I understand how the concepts taught in this class apply to HVAC electrification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I understand why most heat pump conversions need to go beyond a basic equipment changeout to be successful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Moving forward, I plan to assess existing duct systems prior to installing a heat pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I understand the difference in required airflow for heat pumps versus furnaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree	98 Unsure
5. I understand how static pressure measurements can help me assess the viability of an existing duct system for a heat pump retrofit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7. Please rate your level of confidence for each of the following, before completing this training. If any of the following are not applicable to you or the services you provide, please select "N/A."

	1 Not confident	2 A little confident	3 Moderately confident	4 Very confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

Q8. Compared to your level of confidence before the training, please rate how much this training affected your confidence for each of the following. If any of the following are not applicable to you or the services you provide, please select "N/A."

	1 No more confident	2 A little more confident	3 Moderately more confident	4 A great deal more confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

## Training Assessment

Q9. On a scale of 1 to 5, where 1 is very dissatisfied and 5 is very satisfied, how satisfied or dissatisfied were you with each of the following?

		1 Very dissatisfied	2 Dissatisfied	3 Neither satisfied nor dissatisfied	4 Satisfied	5 Very satisfied
1.	The training overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	The instructors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q10. Please select the extent to which you agree or disagree with the following statements about the training overall.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The learning objectives were clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The training was an appropriate length to address the learning objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The training materials (e.g. presentations, displays, handouts, etc.) were easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The training content was relevant to my industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The format and structure of the training was easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The training was a good use of my time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. Now, I would like to ask you some specific questions about your instructor(s). Please select the extent to which you agree or disagree with the following statements.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The instructor(s) demonstrated a good understanding of the material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructor(s) understood my trade or role in the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The level of instructor/student interaction was appropriate for class objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The instructor(s) delivered the materials in an understandable way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q12. Based on what you expected to learn, to what extent would you say that this training exceeded, met, or fell short of your expectations?

1. Far exceeded your expectations
2. Somewhat exceeded your expectations
3. Met your expectations
4. Fell somewhat short of your expectations
5. Fell far short of your expectations

Q13. Do you plan to share the information you learned in this course with your coworkers or colleagues?

1. Yes
2. No
3. Unsure

Q14. If someone asked you about training opportunities, how likely would you be to recommend this training?

1. Not at all likely
2. Slightly likely
3. Somewhat likely
4. Very likely
5. Extremely likely

Q15. What improvements, if any, would you suggest for the training?

0. [OPEN-END TEXT BOX]
99. No additional areas of improvement

Q16. What additional topics, if any, would have been helpful to cover in the training that were not covered?

0. [OPEN-ENDED RESPONSE]
99. None

Q17. What is your biggest takeaway from the training?

1. [OPEN-ENDED RESPONSE]

## Closing [ASK ALL]

Q18. If you have additional comments you would like to provide about the training, or its impact on your knowledge or skills, please provide them here.

0. [OPEN-END TEXT BOX]
98. Nothing to add

# CPUC TECH: Market Actors, NCI Refrigeration Post-Training Survey

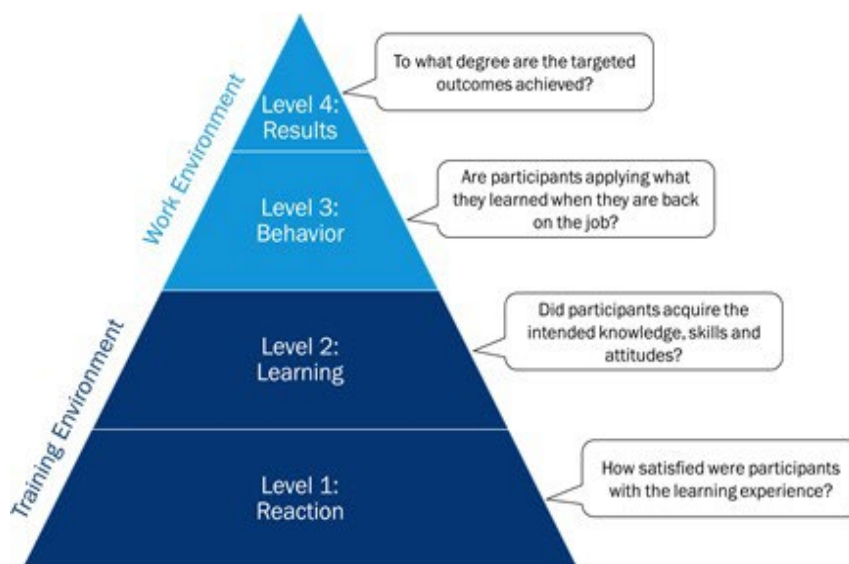
March 11, 2022

## Background

On behalf of the California Public Utilities Commission (CPUC), the Opinion Dynamics Team is working with the Energy Solutions Team to evaluate the trainings provided as part of the Technology and Equipment for Cleaning Heating (TECH) Initiative. In our evaluation, we will use Kirkpatrick’s Model, the gold standard for evaluating adult learning interventions (see Figure 1), to assess participant reaction to TECH training interventions.

As shown below, Kirkpatrick’s model consists of four levels. The first of these is Reaction, which measures how participants feel about the learning experience. Upon completion of WE&T trainings, training providers will administer an “exit survey,” to gauge, among other things, participants’ reactions to training interventions (e.g., instructor, presentation, materials, etc.). As good experiences often lead to more effective knowledge transfer, this initial Level 1 assessment is a crucial aspect of any learning evaluation. This Reaction Survey or exit survey is based on the Level 1 survey that was designed and approved by the CPUC and the California IOUs WE&T staff in July 2020.

Figure 1. Kirkpatrick’s Model



## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	10 minutes
Population Description	CPUC TECH Initiative training participants in the NCI Refrigerant-Side Performance Training
Type of Sampling	Census
Contact Sought	Training attendee
Incentive Types and Amounts	None
Outreach Methods	To be administered immediately after the training is completed
Fielding Firm	Opinion Dynamics

### Programming note style conventions in this document:

[PROGRAMMING]      Programming instructions are in bracketed CAPS.

[*Interviewer notes*]      Onscreen interviewer instructions are in *italics*.

<Piped value>      Database inputs are inside <greater and less than symbols>.

For each multiple response question, create separate binary variables for each response option.

## Instrument (Anonymous Survey Link will be Provided)

### Introduction

Now that you have completed the training, we have some questions about your experience. Your feedback will help us understand the effectiveness of the trainings, including identifying opportunities for improvement moving forward.

The survey should take about 10 minutes to complete. Please be honest and candid in your feedback. Your responses will only be reported in the aggregate with responses from other trainees.

### Respondent Characteristics

- Q1.      What types of buildings do you most commonly service in your current position? *Please select all that apply.*
1.      Single-family homes (1 to 4 units on property)
  2.      Multifamily residences (5 or more units on property)
  3.      Small commercial properties

4. Large commercial properties
  5. Other, please specify: [OPEN-END]
- Q2. How many HVAC heat pumps and/or heat pump water heaters have you installed? *Your best estimate is fine.*
0. HVAC heat pumps: [NUMERIC OPEN-END]
  1. Heat pump water heaters: [NUMERIC OPEN-END]
  98. Don't know
- Q3. What zip codes does your company serve?
0. [NUMERIC OPEN-END]
  98. Don't know

## Course Motivation

- Q4. How did you first learn about the trainings available through TECH Clean California, such as the one you just completed?

[SINGLE RESPONSE; ROTATE RESPONSES]

1. Employer
  2. Utility-sponsored Energy Center (PG&E, Edison, SDG&E, and/or SoCalGas)
  3. The Switch is On Training Hub
  4. The TECH Clean California website
  5. A local, community-based organization (CBO)
  6. Colleague
  7. Friend or family member
  8. Social media
  9. Manufacturer
  10. Distributor
  11. Mass media/advertising (TV/radio/newspaper)
  12. Other, please specify: [OPEN-END] [ANCHOR]
- Q5. Which of the following describe your reason for participating in this training? *Please select all that apply.*

[MULTIPLE RESPONSE; ROTATE RESPONSE OPTIONS]

1. To earn the TECH contractor installation and/or training bonuses
2. To acquire new skills
3. To learn about new technologies and best practices
4. To stay competitive in the marketplace
5. Personal interest
6. To receive a promotion at work
7. To change jobs
8. Other, please specify: [OPEN-END] [ANCHOR]

## Electrification

Q6. Please select the extent to which you agree or disagree with the following statements.

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree	98 Unsure
1. I understand how the concepts taught in this class apply to HVAC electrification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I understand why most heat pump conversions need to go beyond a basic equipment changeout to be successful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I understand why proper airflow needs to be verified before refrigerant charge can be evaluated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I see a benefit in using non-invasive airside diagnostics prior to attaching refrigerant gauges to a heat pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I understand how airflow and refrigerant charge impact heat pump performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I know how to assess whether other trades may need to be involved in an electrification project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I see value in educating my customers on the need for system renovations when considering upgrading to a heat pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7. Please rate your level of confidence for each of the following, before this training:

	1 Not confident	2 A little confident	3 Moderately confident	4 Very confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

Q8. Compared to your level of confidence before the training, please rate how much this training affected your confidence for each of the following:

	1 No more confident	2 A little more confident	3 Moderately more confident	4 A great deal more confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

## Training Assessment

Q9. On a scale of 1 to 5, where 1 is very dissatisfied and 5 is very satisfied, how satisfied or dissatisfied were you with each of the following?

	1 Very dissatisfied	2 Dissatisfied	3 Neither satisfied nor dissatisfied	4 Satisfied	5 Very satisfied
1. The training overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q10. Please select the extent to which you agree or disagree with the following statements about the overall training.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The learning objectives were clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The training was an appropriate length to address the learning objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The training materials (e.g., presentation, displays, handouts, etc.) were easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The training content was relevant to my industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The format and structure of the training was easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
6. The training was a good use of my time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. Now, I would like to ask you some specific questions about your instructor(s). Please select the extent to which you agree or disagree with the following statements.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The instructor(s) demonstrated a good understanding of the material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructor(s) understood my trade or role in the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The level of instructor/student interaction was appropriate for class objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The instructor delivered the materials in an understandable way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q12. Based on what you expected to learn, to what extent would you say that the training exceeded, met, or fell short of your expectations?

1. Far exceeded your expectations
2. Somewhat exceeded your expectations
3. Met your expectations
4. Fell somewhat short of your expectations
5. Fell far short of your expectations

Q13. Do you plan to share the information you learned in this course with your coworkers or colleagues?

1. Yes
2. No
3. Unsure

Q14. If someone asked you about training opportunities, how likely would you be to recommend this training?

1. Not at all likely
2. Not very likely
3. Somewhat likely
4. Very likely
5. Extremely likely

Q15. What improvements, if any, would you suggest for the training?

- 0. [OPEN-END]
- 99. No additional areas of improvement

Q16. What additional topics, if any, would have been helpful to cover in the training that were not covered?

- 0. [OPEN-END]
- 99. None

Q17. What is your biggest takeaway from the training?

- 0. [OPEN-END]

## Closing [ASK ALL]

Q18. If you have additional comments you would like to provide about the training, or its impact on your knowledge or skills, please provide them here.

- 1. [OPEN-END]
- 98. Nothing to add

# CPUC TECH: Market Actors, NCI Residential System Performance & Electrification Post-Training Survey

March 11, 2022

## Background

On behalf of the California Public Utilities Commission (CPUC), the Opinion Dynamics Team is working with the Energy Solutions Team to evaluate the trainings provided as part of the Technology and Equipment for Cleaning Heating (TECH) Initiative. In our evaluation, we will use Kirkpatrick's Model, the gold standard for evaluating adult learning interventions (see Figure 1), to assess participant reaction to TECH training interventions.

As shown below, Kirkpatrick's model consists of four levels. The first of these is Reaction, which measures how participants feel about the learning experience. Upon completion of WE&T trainings, training providers will administer an "exit survey," to gauge, among other things, participants' reactions to training interventions (e.g., instructor, presentation, materials, etc.). As good experiences often lead to more effective knowledge transfer, this initial Level 1 assessment is a crucial aspect of any learning evaluation. This Reaction Survey or exit survey is based on the Level 1 survey that was designed and approved by the CPUC and the California IOUs WE&T staff in July 2020.

Figure 1. Kirkpatrick's Model



## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	10 minutes
Population Description	CPUC TECH Initiative training participants in the NCI System Performance Training
Type of Sampling	Census
Contact Sought	Training attendee
Incentive Types and Amounts	None
Outreach Methods	To be administered immediately after the training is completed
Fielding Firm	Opinion Dynamics

### Programming note style conventions in this document:

[PROGRAMMING]      Programming instructions are in bracketed CAPS.

[*Interviewer notes*]      Onscreen interviewer instructions are in *italics*.

<Piped value>      Database inputs are inside <greater and less than symbols>.

For each multiple response question, create separate binary variables for each response option.

## Instrument (Anonymous Survey Link will be Provided)

### Introduction

Now that you have completed the training, we have some questions about your experience. Your feedback will help us understand the effectiveness of the trainings, including identifying opportunities for improvement moving forward.

The survey should take about 10 minutes to complete. Please be honest and candid in your feedback. Your responses will only be reported in the aggregate with responses from other trainees.

### Respondent Characteristics

Q1.      What types of buildings do you most commonly service in your current position? *Please select all that apply.*

1.      Single-family homes (1 to 4 units on property)
2.      Multifamily residences (5 or more units on property)
3.      Small commercial properties

4. Large commercial properties
  5. Other, please specify: [OPEN-END]
- Q2. How many HVAC heat pumps and/or heat pump water heaters have you installed anytime in your career? *Your best estimate is fine.*
0. HVAC heat pumps: [NUMERIC OPEN-END]
  1. Heat pump water heaters: [NUMERIC OPEN-END]
  98. Don't know
- Q3. What zip codes does your company serve?
0. [NUMERIC OPEN-END]
  98. Don't know

## Course Motivation

- Q4. How did you first learn about the trainings available through TECH Clean California, such as the one you just completed?

[SINGLE RESPONSE; ROTATE RESPONSES]

1. Employer
  2. Utility-sponsored Energy Center (PG&E, Edison, SDG&E, and/or SoCalGas)
  3. The Switch is On Training Hub
  4. The TECH Clean California website
  5. A local, community-based organization (CBO)
  6. Colleague
  7. Friend or family member
  8. Social media
  9. Manufacturer
  10. Distributor
  11. Mass media/advertising (TV/radio/newspaper)
  12. Other, please specify: [OPEN-END] [ANCHOR]
- Q5. Which of the following describe your reason for participating in this training? *Please select all that apply.*

[MULTIPLE RESPONSE; ROTATE RESPONSE OPTIONS]

1. To earn the TECH contractor installation and/or training bonuses
2. To acquire new skills
3. To learn about new technologies and best practices
4. To stay competitive in the marketplace
5. Personal interest
6. To receive a promotion at work
7. To change jobs
8. Other, please specify: [OPEN-END] [ANCHOR]

## Electrification

Q6. Please select the extent to which you agree or disagree with the following statements.

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree	98 Unsure
1. I understand how the concepts taught in this class apply to HVAC electrification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I understand why most heat pump conversions need to go beyond a basic equipment changeout to be successful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I understand the difference between rated equipment performance and installed system performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I understand how to measure installed system performance on heat pumps in the field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I intend to verify installed system performance for heat pumps my company installs going forward	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I know how to assess whether other trades may need to be involved in an electrification project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I see value in educating my customers on the need for system renovations when considering upgrading to a heat pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7. Please rate your level of confidence for each of the following, before this training:

	1 Not confident	2 A little confident	3 Moderately confident	4 Very confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

Q8. Compared to your level of confidence before the training, please rate how much this training affected your confidence for each of the following:

	1 No more confident	2 A little more confident	3 Moderately more confident	4 A great deal more confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

## Training Assessment

Q9. On a scale of 1 to 5, where 1 is very dissatisfied and 5 is very satisfied, how satisfied or dissatisfied were you with each of the following?

	1 Very dissatisfied	2 Dissatisfied	3 Neither satisfied nor dissatisfied	4 Satisfied	5 Very satisfied
1. The training overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q10. Please select the extent to which you agree or disagree with the following statements about the overall training.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The learning objectives were clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The training was an appropriate length to address the learning objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The training materials (e.g., presentation, displays, handouts, etc.) were easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The training content was relevant to my industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The format and structure of the training was easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The training was a good use of my time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. Now, I would like to ask you some specific questions about your instructor(s). Please select the extent to which you agree or disagree with the following statements.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The instructor(s) demonstrated a good understanding of the material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructor(s) understood my trade or role in the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The level of instructor/student interaction was appropriate for class objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The instructor delivered the materials in an understandable way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q12. Based on what you expected to learn, to what extent would you say that the training exceeded, met, or fell short of your expectations?

1. Far exceeded your expectations
2. Somewhat exceeded your expectations
3. Met your expectations
4. Fell somewhat short of your expectations
5. Fell far short of your expectations

Q13. Do you plan to share the information you learned in this course with your coworkers or colleagues?

1. Yes
2. No
3. Unsure

Q14. If someone asked you about training opportunities, how likely would you be to recommend this training?

1. Not at all likely
2. Not very likely
3. Somewhat likely
4. Very likely
5. Extremely likely

Q15. What improvements, if any, would you suggest for the training?

0. [OPEN-END]
99. No additional areas of improvement

Q16. What additional topics, if any, would have been helpful to cover in the training that were not covered?

0. [OPEN-END]

99. None

Q17. What is your biggest takeaway from the training?

0. [OPEN-END]

## Closing [ASK ALL]

Q18. If you have additional comments you would like to provide about the training, or its impact on your knowledge or skills, please provide them here.

0. [OPEN-END]

98. Nothing to add

# CPUC TECH: Market Actors, Electrify My Home Post-Training Survey

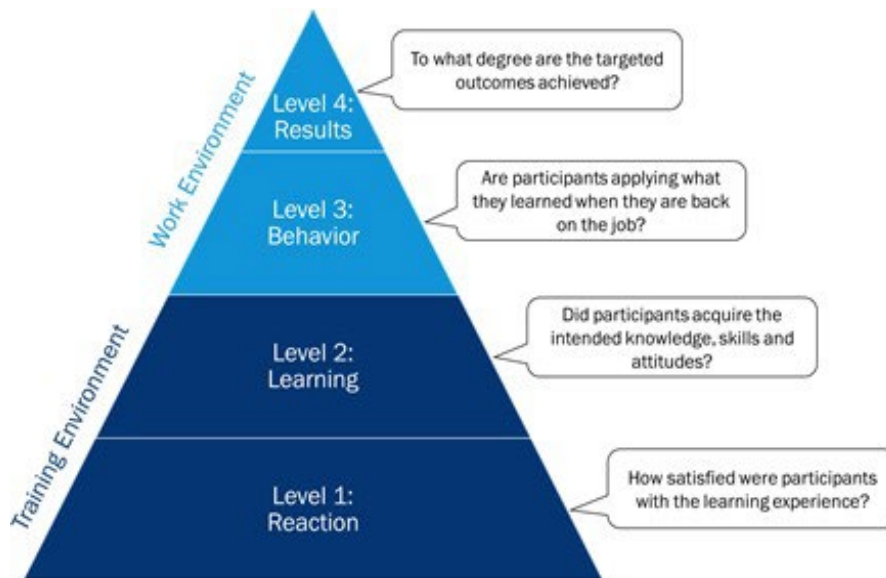
March 11, 2022

## Background

On behalf of the California Public Utilities Commission (CPUC), the Opinion Dynamics Team is working with the Energy Solutions Team to evaluate the trainings provided as part of the Technology and Equipment for Cleaning Heating (TECH) Initiative. In our evaluation, we will use Kirkpatrick’s Model, the gold standard for evaluating adult learning interventions (see Figure 1), to assess participant reaction to TECH training interventions.

As shown below, Kirkpatrick’s model consists of four levels. The first of these is Reaction, which measures how participants feel about the learning experience. Upon completion of WE&T trainings, training providers will administer an “exit survey,” to gauge, among other things, participants’ reactions to training interventions (e.g., instructor, presentation, materials, etc.). As good experiences often lead to more effective knowledge transfer, this initial Level 1 assessment is a crucial aspect of any learning evaluation. This Reaction Survey or exit survey is based on the Level 1 survey that was designed and approved by the CPUC and the California IOUs WE&T staff in July 2020.

Figure 1. Kirkpatrick’s Model



## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	Web survey
Estimated Time to Complete	10 minutes
Population Description	CPUC TECH Initiative training participants
Type of Sampling	Census
Contact Sought	Training attendee
Incentive Types and Amounts	None
Outreach Methods	To be administered immediately after the training is completed
Fielding Firm	Opinion Dynamics

### Programming note style conventions in this document:

[PROGRAMMING]      Programming instructions are in bracketed CAPS.

[*Interviewer notes*]      Onscreen interviewer instructions are in *italics*.

<Piped value>      Database inputs are inside <greater and less than symbols>.

For each multiple response question, create separate binary variables for each response option.

## Instrument (assumes survey is administered in LMS)

### Introduction

Now that you have completed the training, we have some questions about your experience. Your feedback will help us understand the effectiveness of the trainings, including identifying opportunities for improvement moving forward.

The survey should take about 10 minutes to complete. Please be honest and candid in your feedback. Your responses will only be reported in the aggregate with responses from other trainees.

### Respondent Characteristics

- Q1.      What types of buildings do you most commonly service in your current position? Please select all that apply.
1.      Single-family homes (1 to 4 units on property)
  2.      Multifamily residences (5 or more units on property)
  3.      Small commercial properties

4. Large commercial properties
  5. Other, please specify: [OPEN-ENDED RESPONSE]
- Q2. How many HVAC heat pumps and/or heat pump water heaters have you installed? *Your best estimate is fine.*
1. HVAC heat pumps: [NUMERIC OPEN-END]
  2. Heat pump water heaters: [NUMERIC OPEN-END]
  98. Don't know
- Q3. What zip codes does your company serve? If not known, list counties your company serves.
1. Zip Codes: [NUMERIC OPEN-END]
  98. Don't know

## Course Motivation

- Q4. How did you first learn about the trainings available through TECH Clean California, such as the one you just completed?

[SINGLE RESPONSE]

1. Employer
  2. Utility-sponsored Energy Center (PG&E, Edison, SDG&E, and/or SoCalGas)
  3. The Switch is On Training Hub
  4. The TECH Clean California website
  5. A local, community-based organization (CBO)
  6. Colleague
  7. Friend or family member
  8. Manufacturer
  9. Distributor
  10. Mass media/advertising (TV/radio/newspaper)
  11. Other, please specify: [OPEN-END]
- Q5. Which of the following describe your reason for participating in this training? *Please select all that apply.*

[MULTIPLE RESPONSE]

1. To earn the TECH contractor installation and/or training bonuses
2. To acquire new skills
3. To learn about new technologies and best practices
4. To stay competitive in the marketplace
5. Personal interest
6. To receive a promotion at work
7. To change jobs
8. Other, please specify: [OPEN-END]

## Electrification

Q6. Please select the extent to which you agree or disagree with the following statements.

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree	98. Unsure
1. Moving forward, I plan to present an option for an electric solution to my customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I see the potential benefit for my business from electrification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A gas solution is no longer a good investment for most California ratepayers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel confident that I can explain the value of heat pump technologies to customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel confident promoting electrification strategies to customers who currently use gas appliances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel confident that I can answer my customers' questions about the importance of electrification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q7. Please rate your level of confidence for each of the following, before this training:

	1 Not confident	2 A little confident	3 Moderately confident	4 Very confident	97 NA
1. Selling heat pumps					
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

Q8. Compared to your level of confidence before the training, please rate how much this training affected your confidence for each of the following:

	1 No more confident	2 A little more confident	3 Moderately more confident	4 A great deal more confident	97 NA
1. Selling heat pumps					

	1 No more confident	2 A little more confident	3 Moderately more confident	4 A great deal more confident	97 NA
2. Sizing heat pumps					
3. Installing heat pumps					
4. Servicing heat pumps					
5. Maintaining heat pumps					

## Training Assessment

Q9. On a scale of 1 to 5, where 1 is very dissatisfied and 5 is very satisfied, how satisfied or dissatisfied were you with each of the following?

	1 Very dissatisfied	2 Dissatisfied	3 Neither satisfied nor dissatisfied	4 Satisfied	5 Very satisfied
1. The training overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q10. Please select the extent to which you agree or disagree with the following statements about the overall training.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The learning objectives were clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The training was an appropriate length to address the learning objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The training materials (e.g., presentation, displays, handouts, etc.) were easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The training content was relevant to my industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The format and structure of the training was easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The training was a good use of my time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. Now, I would like to ask you some specific questions about your instructor(s). Please select the extent to which you agree or disagree with the following statements.

[ROTATE]	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. The instructor(s) demonstrated a good understanding of the material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The instructor(s) understood my trade or role in the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The level of instructor/student interaction was appropriate for class objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The instructor delivered the materials in an understandable way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q12. Based on what you expected to learn, to what extent would you say that the training exceeded, met, or fell short of your expectations?

1. Far exceeded your expectations
2. Somewhat exceeded your expectations
3. Met your expectations
4. Fell somewhat short of your expectations
5. Fell far short of your expectations

Q13. Do you plan to share the information you learned in this course with your coworkers or colleagues?

1. Yes
2. No
3. Unsure

Q14. If someone asked you about training opportunities, how likely would you be to recommend this training?

1. Not at all likely
2. Not very likely
3. Somewhat likely
4. Very likely
5. Extremely likely

Q15. What improvements, if any, would you suggest for the training?

0. [OPEN-END]
99. No additional areas of improvement

Q16. What additional topics, if any, would have been helpful to cover in the training that were not covered?

0. [OPEN-END]
99. None

Q17. What is your biggest takeaway from the training?

1. [OPEN-END]

## Closing [ASK ALL]

Q18. If you have additional comments you would like to provide about the training, or its impact on your knowledge or skills, please provide them here.

0. [OPEN-END TEXT BOX]

99. Nothing to add

# CPUC TECH: “Leader” Contractor In-Depth Interview Guide

June 9, 2022

## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	In-depth interview
Estimated Time to Complete	30-45 minutes
Population Description	Enrolled TECH Contractors
Contact List Size	20
Completion Goal(s)	6
Contact List Source	Energy Solutions
Type of Sampling	Purposive top 20 TECH contractors with highest number of sales
Contact Sought	TECH contractors with highest number of sales (“leaders”)
Incentive Types and Amounts	\$60
Outreach Methods	Email; phone
Fielding Firm	Opinion Dynamics

## Research Objectives Information

Table 2 maps the research objectives and questions to specific questions in the instrument.

Table 2. Research Objectives and Associated Questions

Research Objective/Question	Associated Instrument Questions
Contractor Background	Q1, Q2
Use of TECH Incentives	Q3, Q4, Q5, Q6, Q7, Q8
Equipment	Q9, Q10, Q11
Promotion and Sales	Q12, Q13, Q14, Q15

## Programmer Information

The variables listed in Table 3 are from the sample, database, or other external data source. The variables are to be generated/calculated within the instrument.

Table 3. Variables from Sample or Database

Variable Name	Variable Description and Values
HVAC	Contractors who sell/service HVAC heat pumps
HPWH	Contractors who sell/service heat pump water heaters
GAS_ONLY	Contractors who service only territories that provide gas

## Programming note style conventions in this document:

- [PROGRAMMING]      Programming instructions are in bracketed CAPS.
- [Interviewer notes]      Onscreen interviewer instructions are in *italics*.
- <Piped value>      Database inputs are inside <greater and less than symbols>.

## Outreach Materials

Hi <NAME>,

I'm reaching out from Opinion Dynamics, an independent research company, on behalf of the California Public Utilities Commission (CPUC) and TECH Clean California. You have been selected for a phone interview due to your leading performance based on the number of heat pump installs completed through TECH. We are very interested in hearing about experience on TECH and how it has influenced your work. This information will help us identify ways that TECH can better serve companies like yours.

In exchange for speaking on the phone for about 30 or 45 minutes, I will send you a \$60 e-gift card. Please reply to this email and let me know when a good time is for you to chat in the next week or two.

All your answers are confidential and nothing we report will include your name or company name. I would really appreciate the opportunity to hear your perspective on TECH Clean California. Looking forward to hearing from you soon!

Best regards,

## Instrument

### Contractor Background

Q1. To begin, how long have you been installing heat pumps in California?

- a.      Confirm HVAC + HPWH, or only one?

Q2. How did you hear about TECH Clean California and what led you to get involved?

- a.      Did you encounter any difficulties enrolling in TECH? (e.g., insurance requirements, training)

## Use of TECH Incentives

Now let's talk about the TECH incentives.

- Q3. Tell me about how the TECH incentives influenced your heat pump sales.
- # of HPs per month before TECH and after TECH?
  - How effective was it to be able to layer the TECH incentive with other programs' incentives?
  - Was it difficult to figure out what the final incentive amount would be?
  - Any suggestions to improve the layering process?
  - Was it confusing for customers at all to have more than one program incentive?
- Q4. When the TECH incentives were suspended, how did that affect your sales?
- How did it make you feel when you found out the incentives were running out?
- Q5. From your perspective, what impact has the TECH had on the California heat pump market?
- Q6. Do you have any feedback on the website where you fill out the applications for incentives?
- Was the zip code look-up tool easy to use?
- Q7. Do you have any feedback on the Multifamily reservation form and how that works?
- Q8. How, if at all, do you talk with customers about the TECH incentive or electrification?
- Do you discuss electric rate options for customers getting a heat pump? Why/why not?

## Equipment

Let's talk about the heat pump equipment.

- Q9. What are your thoughts on the equipment eligibility criteria? Was it restrictive or were you able to find enough eligible equipment/models for your projects?
- Were supply chain issues something you dealt with? [IF YES: Please tell me about those issues.]
- Q10. Do you get your heat pumps from a distributor, or do you ever go to big box stores?
- Q11. What installation difficulties did you encounter that TECH could help with? [PROBE: To get at common barriers to electrification – panel upgrades? Quality of ducting? Siting compressor?]
- I've heard some areas of California have hard water that causes calcification or scaling buildup in the water heater and there's a device you can install to help with this. What are your thoughts on this issue?
  - Should TECH require the installation of this device with HPWHs?

## Wrap-Up [ASK ALL]

I've just a few questions to wrap-up.

- Q12. Did TECH influence your company to promote heat pumps more? If so, how? [IF NEEDED: By promotion, we mean actions like mentioning heat pumps in emails, newsletters, and advertisements, or recommending them to customers.]
- Q13. What heat pump-related topics do you think are most important for TECH to offer trainings on?
- Q14. What could TECH do to help you sell more heat pumps?
- Q15. Is there any other feedback you would like to share about your experience with TECH Clean California?

## Closing [ASK ALL]

Thank you again for taking the time to provide this helpful information.

Should we have any additional questions, would it be okay if we reached out to you for a follow up?

[CONFIRM EMAIL TO SEND GIFT CARD TO]

Thank you very much for your time. We appreciate it!

# CPUC TECH: HVAC Manufacturer Interview Guide

## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	In-depth interview
Estimated Time to Complete	30 minutes
Population Description	Manufacturers of heat pump technologies
Completion Goal(s)	Up to 4-5 Manufacturer Interviews
Contact Sought	Contact most knowledgeable about heat pump market trends in California
Fielding Firm	Opinion Dynamics

## Instrument

### Introduction

Thank you for making the time to talk with me today. I am working with the California Public Utilities Commission to understand the market for HVAC heat pumps in residential settings in California. Your answers will help the CPUC know how they can best support and grow this market, including programs like TECH Clean California. All your answers are confidential and nothing we report can be used to identify you or your company. If I ask about information that you cannot share, please let me know if there is information related to that topic that you can share.

I'll be taking notes as we talk, but I'd like to record the conversation to help with my notetaking. Is that okay with you?

Do you have any questions for me before we get started?

### Respondent/Company Background

Q1. First, could you please tell me your title and role at your company?

### Market Trends and Signals

My next questions are going to be about market trends and signals.

Q2. How would you describe the current residential demand for heat pumps in California?

a. How does that compare to the US overall?

- Q3. Are there important differences between the single-family and multifamily markets? [If needed: are efficient HVAC units going into one of those markets more than the other?]
- Q4. Do sales of HVAC heat pumps differ between large urban areas and rural areas? [Probe: Is there more or less efficient HVAC equipment in city centers?]
- Q5. What differences in demand are you seeing in areas of the country with more advanced utility incentive programs?

## SPIFs, Utility Programs, and Training

Let's talk a little bit about utility incentive programs.

- Q6. What characteristics of utility programs work especially well in your experience?
- Q7. From what you've seen, how has TECH Clean California impacted the market in the last six months or so?
- Q8. What type of support would you like to see from TECH Clean California for HVAC heat pump equipment?
- Q9. Do you have any incentive programs/SPIFs with distributors to drive efficient HVAC sales?
  - a. [IF YES] Can you tell me a little bit about these?
- Q10. Do you provide any training on your efficient HVAC equipment?
  - a. [IF YES] Can you describe the trainings offered? [Probe for target audiences (distributors, installers), educational method, location, determining need, incentives to attend, cadence, etc.]
  - b. Do you provide any other support to distributors or installers related to high efficiency HVAC products?
- Q11. How do you typically market and promote your residential energy efficient HVAC units?
  - a. Do you do anything special for heat pumps?
  - b. Do you do anything differently in California related to promotions?

## Manufacturing

I'd like to switch to talk a little bit about manufacturing equipment.

- Q12. What signals do you receive from your distributors that would cause you to produce more of the high-efficiency HVAC equipment??
- Q13. How have supply chain issues affected your production of heat pumps in the last year or so?
  - a. Do you expect this to get better soon?
  - b. What barriers about heat pumps in California do you hear from your customers, if any?

## Production Shares and Channel Flows

We're getting close to the end. The last thing I want to do is review our understanding of the channels through which you sell your residential HVAC equipment. I want to emphasize that nothing we report will be tied to your company name.

Q14. Do you sell primarily to distributors or do you sell through other channels as well?

- a. What percent of all your residential HVAC equipment goes to distributors?
- b. Big box stores?
- c. Direct sales to builders or general contractors?
- d. Direct sales to homeowners?
- e. Is this overall breakdown the same for California?
- f. Would you mind sharing the names of your distributors in California?

## Closing [ASK ALL]

Q15. Those were all the questions I prepared. Is there anything else you think is important for me to know about your production of heat pumps?

Thank you again. We really appreciate your feedback.

# CPUC TECH: HPWH Manufacturer Interview Guide

## Instrument Information

Table 1 includes key characteristics about the instrument.

Table 1. Overview of Data Collection Activity

Descriptor	This Instrument
Instrument Type	In-depth interview
Estimated Time to Complete	30 minutes
Population Description	Manufacturers of heat pump technologies
Completion Goal(s)	Up to 4-5 Manufacturer Interviews
Contact Sought	Contact most knowledgeable about heat pump market trends in California
Fielding Firm	Opinion Dynamics

## Instrument

### Introduction

Thank you for making the time to talk with me today. I am working with the California Public Utilities Commission to understand the market for HPWHs in residential settings in California. Your answers will help the CPUC know how they can best support and grow this market, including programs like TECH Clean California. All your answers are confidential and nothing we report can be used to identify you or your company. If I ask about information that you cannot share, please let me know if there is information related to that topic that you can share.

I'll be taking notes as we talk, but I'd like to record the conversation to help with my notetaking. Is that okay with you?

Do you have any questions for me before we get started?

### Respondent/Company Background

Q1. First, could you please tell me your title and role at your company?

### Market Trends and Signals

My next questions are going to be about market trends and signals.

Q2. How would you describe the current residential demand for heat pump water heaters in California?

a. How does that compare to the US overall?

- Q3. Are there important differences between the single-family and multifamily markets? [If needed: are HPWH going into one of those markets more than the other?]
- Q4. Do sales of HPWHs differ between large urban areas and rural areas? [Probe: Is there more or less efficient HVAC equipment in city centers?]
- Q5. What differences in demand are you seeing in areas of the country with more advanced utility incentive programs?

## SPIFs, Utility Programs, and Training

Let's talk a little bit about utility incentive programs.

- Q6. What characteristics of utility programs work especially well in your experience?
- Q7. From what you've seen, how has TECH Clean California impacted the market in the last six months or so?
- Q8. What type of support would you like to see from TECH Clean California for HPWHs?
- Q9. Do you have any incentive programs/SPIFs with distributors to drive efficient HVAC sales?
  - a. [IF YES] Can you tell me a little bit about these?
- Q10. Do you provide any training on your efficient HVAC equipment?
  - a. [IF YES] Can you describe the trainings offered? [Probe for target audiences (distributors, installers), educational method, location, determining need, incentives to attend, cadence, etc.]
  - b. Do you provide any other support to distributors or installers related to high efficiency HVAC products?
- Q11. How do you typically market and promote your residential energy efficient HVAC units?
  - a. Do you do anything special for heat pumps?
  - b. Do you do anything differently in California related to promotions?

## Manufacturing

I'd like to switch to talk a little bit about manufacturing equipment.

- Q12. What signals do you receive from your distributors that would cause you to produce more HPWH?
- Q13. How have supply chain issues affected your production of heat pumps in the last year or so?
  - a. Do you expect this to get better soon?
  - b. What barriers about heat pumps in California do you hear from your customers, if any?

## Production Shares and Channel Flows

We're getting close to the end. The last thing I want to do is review our understanding of the channels through which you sell your residential HVAC equipment. I want to emphasize that nothing we report will be tied to your company name.

Q14. Do you sell primarily to distributors or do you sell through other channels as well?

- a. What percent of all your residential HPWH equipment goes to distributors?
- b. Big box stores?
- c. Direct sales to builders or general contractors?
- d. Direct sales to homeowners?

Q15. If you are aware, what are the trends on "do it yourself" water heater installations.

## Closing [ASK ALL]

Q16. Those were all the questions I prepared. Is there anything else you think is important for me to know about your production of heat pumps?

Thank you again. We really appreciate your feedback.

# Customer Follow-Up Interview Guide

The following describes the process of interview with TECH customer survey respondents who indicated some problem or issue with program participation and to determine some additional ancillary program and participant data.

## Instrument

### Phone Recruitment

Below is a phone script if the potential respondent is reached, or a voicemail message to leave if the respondent is not reached.

#### Phone scheduling script

Hello, is this [Name of Survey Respondent]? Hi, my name is [NAME] and I'm contacting you on behalf of the California Public Utilities Commission (also known as the CPUC). We are calling about an issue you mentioned in a survey that you had with a recent heat pump installation. We'd like to hear more about this, do you have some time to chat?

[IF NO] We are prepared to offer you a \$25.00 gift card to you in exchange for your assistance in helping us to understand your experience and how we can make this program work better for California residents, would you like to schedule a time that works better for you?

[IF YES] Continue with interview, or schedule interview for a later time.

#### Voicemail script

My name is [NAME] and I'm contacting you on behalf of the California Public Utilities Commission. I'm working with the CPUC to learn more about the issue you experienced with the recent installation of a heat pump under our incentive program.

We're offering a \$25.00 gift card in exchange for speaking with me over the phone to help us understand what the problem was and a bit more about your experience. Your feedback will help us improve installations of highly efficient electric equipment for Californians going forward.

Please give me a call back at [PHONE] at your convenience so that we can set up a time to talk about this. Again, my name is [NAME] and I am calling on behalf of the CPUC. My phone number is [PHONE], I look forward to hearing from you.

### Interview Questions

All of your answers are confidential and won't be tied to your name in what we report. Is it okay with you if I record this conversation just to make sure my notes are accurate?

Q1. I understand you had a [TYPE OF HEAT PUMP] installed around [Date of Install] is this correct?

[IF YES] It looks like you experienced a problem with (summarize issue presented in Q22 survey response). Can you tell me more about that?

[PRESENT A SERIES OF FOLLOW-UP QUESTIONS RELATED TO THE SPECIFIC ISSUE – CAPTURE MORE DETAILED DESCRIPTION OF ISSUE]

- a. Contractor-based issues
- b. Incentive process-based issues
- c. Unit installation issues
- d. Unit performance issues
- e. Energy consumption issues
- f. General assessment of issues

Q2. In the survey you took, you indicated you were (likely, very likely, not likely, wouldn't get a heat pump) without the paid incentive. Could you share some thoughts on how that incentive affected your decision to purchase the equipment?

[ANSWER CHARACTERIZATION & DISCUSSION]

[MORE]

- a. Installed less efficient equipment
- b. Not installed equipment
- c. Installed at a later time
- d. Nothing

Q3. Do you now or do you plan in the future to have solar panels installed at this location?

- a. [IF YES] How did having (planning to have) these panels affect your decision to go with this heat pump installation?
- b. [IF YES] How much does this affect your decision to install a heat pump?
  - 1. Completely
  - 2. A lot
  - 3. Somewhat
  - 4. A little bit

Q4. We also understand that there have been a lot of supply chain issues recently, did your contractor indicate they were having difficulty acquiring a unit to install at your location?

- a. [IF YES] How long did this delay the work completion?

Q5. It looks like you talked to [X#] of contractors before hiring one. What was it like for you trying to find a contractor, can you describe how the process went for you?

Q6. Is there anything else that you would like to tell me about your experience getting this equipment installed and using it?

Thank you for taking the time to answer these questions, your input will help us guide this program to alleviate future problems, hopefully, before they occur.

I would like to verify your email address is: [EMAIL FROM SURVEY FORM] and that this is the correct email to send the link to the online site that will allow you to select a \$25.00 gift card of your choosing.

Thank you again for your time.