



## **MTAB Meeting Notes**

October 25, 2024

Virtual Meeting

### **Welcome & Introductions**

Stacey Hobart opened the meeting by welcoming attendees and reviewing the meeting agenda. She invited comments regarding the previous meeting (Sept. 19 and 23) notes. There were none.

Stacey shared CalMTA's conflict of interest policies and asked the Market Transformation Advisory Board (MTAB) members to disclose any conflicts. Jeff Harris noted that he works for a market transformation organization with programs that target some of the same technologies as CalMTA, but that this does not present a conflict.

### **Market Progress Indicators and Milestones**

Karen Horkitz presented the metrics and milestones proposed to evaluate the progress of the markets targeted by the Room Heat Pumps and Induction Cooking Market Transformation Initiatives (MTIs), including key terminology used and a review of the logic mode outcomes for each MTI.

General MTAB questions and comments included the following:

- Are all metrics linked to activities for which CalMTA has primary or secondary influence, or do they encompass MTI activities completed by collaborators?
  - Karen clarified that the key distinction is in which metrics should be used to assess MTI success versus market activities that should still be tracked.
- Can the members of CalMTA's Evaluation Advisory Group be shared publicly?
  - Karen replied that independent consultant Fred Gordon (formerly Energy Trust of Oregon; MTAB member), Rafael Friedmann of Friedmann Clean Energy Consulting, and Alexandra Dunn of ILLUME Advising were selected as members.

### **Room Heat Pumps**

MTAB questions and feedback related to proposed metrics and milestones for the Room Heat Pump MTI included:

- Regarding tracking improved labeling in retail locations, labeling should include whether the heating technology is a heat pump or electric resistance heating. Today, product labeling rarely states this.

- It would be worth including a distinct ENERGY STAR designation as an output in the logic model, as one of the main areas of confusion in the market is determining between efficient heating and cooling products and efficient heat pump products.
- Confirming that the “limited market awareness” baseline condition applies to all products in the category, including products that look the same but are less efficient or don’t perform well.
- For the MTI to be successful, a federal standard that includes the heating component of these products should be in place, which would require a new test procedure.
- How will CalMTA share/present how established milestones evolve or change over time during implementation, as they are bound to do?
  - Karen shared that the current plan is to capture this in CalMTA’s annual operations plans, as NEEA does, and to reflect these changes in the MTI scorecards.
- For milestones with the start date of “contract execution,” what contract does this refer to?
  - Karen noted that this would be the date a contract is executed with a third-party implementer for the MTI following CalMTA’s RFP process. CalMTA anticipates some time will be needed between CPUC approval of the application and the subsequent solicitation for implementation.
- How does CalMTA plan to update milestones and metrics as the market evolves?
  - Karen acknowledged that while CalMTA needs to assess whether the MTI is making adequate progress, not all proposed metrics may be equally important or capable of being accurately predicted. Throughout Phase III: Market Deployment, any learnings with significant impact on the final plan will be shared with MTAB.
- It’s possible that several years into the MTI, the technology will have evolved so much that it no longer reflects the initial product description. Should this occur, will CalMTA have to start from scratch?
  - Karen replied that CalMTA will track, evaluate, and course-correct in a very transparent manner, reporting on variances and new learnings with the hope that product evolution won’t require an end to the MTI. She added that the third-party evaluator selected for the MTI may recommend a change in approach through their process.
- Even though we don’t know everything about the future market, market transformation isn’t possible unless we get something in place now. Having a good, plausible framework in place to assess our effort, even if the outcomes are well beyond what we anticipated, still validates the work.
- Adding an outcome that captures actual market activity (e.g., products actually being shipped and stocked) beyond just the contract in place could be beneficial.
- Interdependencies between MPIs or clarification that no interdependencies exist, would be useful to note, even if in a footnote.

- Are there multiple units now that don't meet the MTI criteria but have an ENERGY STAR label?
  - Elaine replied that there are not, although there are AC-only units with an ENERGY STAR label. An ENERGY STAR rating that captures both heating and cooling doesn't exist but is coming soon.
- It may be important to explore how important the engagement of established major manufacturers is in this market. For major HVAC systems there are roles for smaller manufacturers who tend to innovate first but whose products may not perform as predictably and who may not ever achieve significant market share. The engagement of the dominant manufacturers is a second, equally critical step toward market transformation. There is the need to better understand if there are dominant manufacturers in the nascent room heat pump market and where brand familiarity matters.
- CalMTA has established that there is a shortage of products suitable for slider or casement windows, which are most of the windows in California. Is it even possible to have a product that works in casement windows?
  - Elaine agreed that casement windows are challenging, but that some solutions exist in other markets. More residential buildings in California have slider windows than casement, and these are much easier to deal with so solutions are already being discussed with manufacturers.

### Induction Cooking

MTAB questions and feedback related to proposed metrics and milestones for the Induction Cooking MTI included:

- To assess market saturation, will CalMTA look at induction specifically, induction with radiant, only 120V battery-equipped products, etc.?
  - Karen clarified that the MTI would track efficient electric products overall but segment all product types. Elaine added that some interventions are focused on the 120V battery-equipped product, but others look at the whole market.
- Market saturation is an end-metric and should focus on all induction products. 120V battery-enabled products are a means to that end.
  - Karen noted that CalMTA will include all relevant products in the evaluated impacts, including radiant.
- When calculating the market share by percentage of full category sales, does this include both electric and gas cooking products?
  - Karen said that it does.
- 120V battery models are trying to overcome the barrier of bill impacts related to switching to induction, but less specificity in this metric may be beneficial. If a manufacturer could make a 120V model without a battery, wouldn't CalMTA want to include those? Some consumers may want a low-cost option that doesn't require service upgrades.

- Less specificity could also negatively impact some MPIs, as CalMTA must be specific enough to figure out what the MTI is actually accomplishing in the market. For instance, in trying to track the incremental cost of battery-equipped 120V induction compared to 240V induction products, the specification of models that include batteries is important because of the additional benefits associated with storage.
- Inclusion of a battery enables a lower cost of installation and potentially lower operating costs, but doesn't it also have load-shifting potential?
  - Karen confirmed that it does and noted that this is captured in another MPI and built into CalMTA's cost-effectiveness forecasting.
- To compare the cost of 240V induction products and battery-equipped 120V models, does this include the total cost of service and potential panel upgrades? Tracking the average price of the standalone product is easy, but it may be challenging to track all the components of installation and wiring, so CalMTA should consider using a proxy that includes panel upgrades.
- CalMTA should track cooktops separately from ranges. Also, to address a large portion of the low-income market, there should be tracking of 24" wide cooktops and ranges.
- What is the current incremental cost of battery-equipped 120V versus 240V induction?
  - Jeff Mitchell said that the battery-equipped 120V models are currently 2.5-2.7x the cost of the 240V product.
- Market share metrics at any given point in time are not all that helpful, except directionally. Given that induction currently has a very low market share across all cooking devices, it seems reasonable to have a marker that shows MT moving market adoption from the innovators to early adopters at 10% market share, and then reaching a 20% market share puts the market in the early majority phase, using the diffusion of innovation theory.
- Recognizing that CalMTA won't be responsible for all activities in the market, it's important to capture where CalMTA has only a secondary influence but where the MPI itself is critical to MTI success.
- What is the logic behind the MPI tracking availability of data on bill impacts for low-income consumers?
  - Elaine replied that one of the barriers to including induction technology in income-qualified programs is the lack of data providing evidence that battery-equipped 120V products reduce bill impacts for low-income customers. If programs reference data gathered/shared by CalMTA as they get approval for including the products, we could track that.
- One significant concern: induction adds peak load more than other fuel substitution measures, so while it is a linchpin for full electrification, the grid may not ultimately be able to handle widespread adoption.
- It's also concerning that CalMTA does not anticipate that a 120V product with battery will really be affordable for many customers within a reasonable timeframe. If the focus is simply incremental cost and trying to get these products into the homes of low- and moderate-income customers, where is the positive outlook? Batteries provide benefits

to consumers and the grid that other products don't, but isn't part of the value proposition also ensuring comparable performance to 240V and gas ranges?

- Jeff described CalMTA's work to examine the feasibility of a standard 120V product on a 15-amp circuit and ultimate consensus that the user experience was very poor, which was substantiated by NYSERDA/NYCHA work. Regarding price, battery-equipped 120V products are still in a very early stage of the product development lifecycle and it's a very dynamic market. Innovation in batteries will help drive the cost down.
- CalMTA should carefully look at the many different market segments included in the overall target market and determine which are best positioned for early adoption.
- One member shared that their overall reaction was that CalMTA was doing the right thing in the right direction, and that they were fully supportive of what's been put together so far, with some tweaks around the edges. In the future, the market barrier is more important than the baseline condition, since that directly links to logic model outcomes.

Karen noted that the full plan will be shared with MTAB members for review on Nov. 14, but that CalMTA welcomes feedback on what has been shared so far. Feedback should be provided by Oct. 30. CalMTA will provide a Word document where comments can be shared.

## **Public Comment**

The following comments were received from public MTAB attendees:

- Anonymous attendee: These metrics are mostly upstream or midstream metrics. To address concern about overspecification of measures early on, perhaps it would be useful to include market metrics on a) end-use customers' needs for heating and cooling, b) customer energy burden for heating and cooling, etc.
- Alice La Pierre: I would love to see at least one other style of induction range with battery. Currently the "Charlie" is a drop-in stove, and not all apartments can accommodate this style. A model with the controls at the back would help sell these.
  - Jeff Mitchell noted that the logic model does include interventions to fill the technology gap and target the multifamily market.
- Anonymous attendee: How will you determine the percentage of market share that constitutes the "tipping point"?
  - Jeff Mitchell replied that CalMTA is developing adoption curves now, which will visualize how we see the market adopting these products over time. In addition, MTI plans include an exit strategy that will illustrate what we expect to see in the market and when we would propose to begin exiting market development activities.
- Anonymous attendee: What kinds of CalMTA data sources could low-income programs reference?

- Rick Dunn shared one example for room heat pumps: using data to demonstrate the need for models that work in horizontal slider or casement windows, which are more prevalent in affordable housing. CalMTA is engaged with manufacturers to explore the possibility of bringing solutions for casement windows, which are currently only available in Europe, to the U.S. market.
- Jim Lutz: During the room heat pump section of the Market Transformation Advisory Board (MTAB) Meeting on October 25 there was no mention of the zero-NOx regulations that will ban the sale of fossil fuel fired room and floor furnaces in Southern California (Proposed Amended Rule 1111 - Reduction Of NOx Emissions From Natural Gas-Fired Furnaces) after January 1, 2028 and in the Bay Area (Regulation 9, Rule 4, NITROGEN OXIDES FROM NATURAL GAS-FIRED FURNACES) after January 1, 2029. These rules will force the sales of room heat pumps as an alternative to wall and floor furnaces for the majority of the population of California. I strongly recommend the MTAB work with the South Coast and Bay Area Air Quality Management Districts to coordinate timing of proposed programs.

### **Next Meeting & Next Steps**

Stacey shared the plan for the next MTAB meeting in Irwindale, CA on Nov. 20-21. The meeting will feature discussions of the full MTI Plans for Room Heat Pumps and Induction Cooking, which will be sent out to MTAB members for review before the meeting.

The meeting was adjourned.

### **Attendees**

#### **MTAB Members**

1. Karina Camacho, Inland Regional Energy Network
2. Cyane Dandridge, SEI
3. Hayley Goodson, The Utility Reform Network
4. Fred Gordon, Context Consulting
5. Jeff Harris, Northwest Energy Efficiency Alliance
6. Randall Higa, Southern California Edison
7. Peter Miller, for Natural Resources Defense Council
8. Christie Torok, California Public Utilities Commission
9. Ky-An Tran, California Public Advocates

#### **Participating Staff & Consultants**

1. Taqua Ammar, CalMTA/Resource Innovations
2. Tom Bougher, 2050 Partners
3. Lynette Curthoys, CalMTA/Resource Innovations
4. Rachel Good, CalMTA/Resource Innovations

5. Stacey Hobart, CalMTA/Resource Innovations
6. Karen Horkitz, consultant to the Cadmus Group and evaluation lead
7. Elaine Miller, CalMTA/Resource Innovations
8. Jeff Mitchell, CalMTA/Resource Innovations
9. Priya Sathe, the Cadmus Group
10. Nils Strindberg, CalMTA/Resource Innovations

### **Guests**

Rob Bohn, PG&E

Kelly Cunningham, PG&E

Blake Dressel, CEC

Rocco Guaragno, Resource Innovations

Jennifer Holden, Community Resource Project, Inc. (CRP)

Mina Jimenez, Proteus, Inc.

Weldon Kennedy, Copper

Samantha Lamos, Gradient

Alice LaPierre, City of Berkeley

Jim Lutz, HWR

Christopher Malotte, SCE

Robert Marcial, PG&E

Kevin McFadden, 2050 Partners

Savannah McLaughlin, CPUC

Steve Nadel, ACEEE

Emily Pelstring, CPUC

Ralph Prah, Prah & Associates

Steve Schiller, Schiller Consulting

Rusty Tharp, Aozora Consulting LLC

Eduardo Uranga, The Negawatt Home Corporation

Carol Yin, Yinsight, Inc.

Richard Young, Frontier Energy Food Service Technology Center

Kate Zeng, SDG&E