



MTAB Meeting Notes

September 19, 2024

Virtual Meeting

Welcome & Introductions

Stacey Hobart opened the meeting by welcoming attendees and reviewing the meeting agenda. She reiterated 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 in the Northwest but that no conflict of interest exists.

Stacey invited any comments regarding the previous meeting (8/26) notes. There were none.

Induction Cooking: Market Transformation Theory & Logic Model

Tom Bougher of 2050 Partners presented the results of CalMTA's product assessment for the Induction Cooking Market Transformation Initiative (MTI) including product definition details, energy consumption, bill impacts, avoided cost, and health and safety benefits. Hope Lobkowitz of the Cadmus Group presented key findings and conclusions from CalMTA's market characterization study for this MTI, which included primary and secondary research, stakeholder interviews, and focus groups. Elaine Miller then shared the updated MT theory and logic model.

MTAB comments and questions related to the material presented included:

- Plug-in/portable induction cooktops are currently excluded from CalMTA's product definition but can still be a valuable technology, particularly as a transitional step for consumers who are not fully ready replace gas cooking. Participating ESRPP retailers all sell these products and include them in sales data, so adoption could be easily tracked. The inclusion of portable cooktops would also enable induction adoption among renters without requiring the building owner to agree to a full stove replacement.
- CalMTA should assess the energy implications of battery charging/discharge in storage-enabled induction products. ENERGY STAR looks at a product's total energy consumption, which would capture some energy increase from charging and could result in the exclusion of induction products with batteries.
- More field data is needed to be confident in assumptions about how often consumers use their oven as well as to understand the current level of induction awareness in the general California population.

- Tom agreed that this will be a priority in Phase III. Current assumptions are based on an EPRI field study, but CalMTA wants to capture more California-specific field data.
- In CalMTA's assessment of consumer interest regarding induction cooktop loaner programs, did the survey describe the look and size of the loaner product?
 - Hope confirmed that the survey included a detailed description of the loaner product, including number of burners and approximate size.
- Recent U.S. Department of Energy materials emphasize the health impacts of switching from gas to electric cooking. Safety surfaces as a consideration for consumers in CalMTA's market characterization work, but does health also factor in?
 - Hope replied that health concerns did not come through as a significant concern in surveys or focus groups. Some respondents expressed skepticism about whether gas cooking truly has negative health impacts.
- Health factors seem like a strong selling point for induction, even for landlords. Did CalMTA track before-and-after responses related to presenting information about health impacts?
 - Hope noted that the study asked participants for their initial response, then presented information and asked if that changed their position. We saw only a minor change related to indoor air quality and other health-related factors.
- While the identified barriers are real, it's important to remember that there's a significant market for this technology already because of the millions of homes, specifically single-family residences, that are currently wired to accept induction products.
- The health benefits of switching from gas cooking may be challenging to communicate, given the individualized and varied nature of kitchen airflow and ventilation usage. Health impacts are most serious in smaller, more enclosed, and less ventilated kitchens or in cases where consumers do not use ventilation consistently (e.g., ventilating while using the range but not the oven). Many consumers may not view this as an issue for their household.
- The bill impact analysis looks at ranges, cooktops, and ovens. What is the impact of a consumer using an induction cooktop without the impact of the range? Would adopting an induction cooktop without replacing the oven reduce bill impacts as an interim step?
- Some activity should focus on the oven aspect of the range. Most wall ovens are electric and many consumers prefer electric ovens. Can this preference be leveraged in outreach and messaging to promote electric ranges and explain how an induction range provides a better and preferred built-in oven, particularly with consumers who like to bake? In a base case with a separate cooktop and oven, given that the oven is often electric, the energy bills for the oven only may be higher but the consumer preference and improved performance should also be taken into consideration.
- CalMTA should consider guiding ENERGY STAR toward a separate specification for battery-enabled induction products, given the different round-trip efficiency potential

as an Emerging Tech category for ENERGY STAR promotion. These products may be less efficient from an ENERGY STAR perspective, but from a carbon-reduction standpoint and off-peak charging perspective, they are hugely beneficial to total system benefits.

- To address the cost barrier for induction products, an intervention could try to determine potential economies-of-scale and the opportunity to reduce manufacturing costs, particularly with battery products, A tear-down analysis could help determine ways for these products to be cost-competitive with radiant electric products.
- The logic model seems to be trying to address two separate markets simultaneously: higher-income, single-family homes with plenty of ventilation, which could create an opportunity to accelerate the market with products that are widely available now, while simultaneously trying to push 120V battery products that are on a different timeline and have a different set of actions associated with market transformation.
- The new construction market seems easier to address, with more immediate short-term results. Many barriers identified in the logic model, such as panel upgrades, are not an issue in new construction. For the lower-income and multifamily markets, portable cooktops seem like the easiest way to influence induction adoption, backed with educational messaging that addresses the behavioral component and environmental benefits of shifting as much cooking as possible to electric.

Room Heat Pumps: Product Assessment, Market Characterization Summary & Logic Model

Tom, Hope, and Elaine followed the same sequence for sharing the results of CalMTA's product assessment, market characterization study, and updated MT theory and logic model for the Room Heat Pump MTI.

MTAB comments and questions included:

- Has CalMTA explored potential load-shifting opportunities given TOU rates?
 - Tom noted that CalMTA plans to explore this in the future and hopes to emphasize products with demand response capabilities.
- Does CalMTA's analysis assume a similar cooling efficiency for the base case and room heat pumps? It seems like new room heat pumps would have a higher cooling efficiency than the existing cooling unit.
 - Tom clarified that CalMTA assumed a comparable efficiency between the room heat pump and window AC units, with all savings coming on the heating side. The CEER of saddlebag units is around 16, which is also the federal minimum for window ACs in 2026, when this MTI would be active in the market.
- When looking at the baseline, most analyses indicate that any new unit, even those that are not a heat pump, will be more efficient than the product it's replacing due to updated efficiency standards.

- Tom agreed with this statement and noted that the baseline is based on the way CalMTA is tracking savings. For a normal replacement we consider what the consumer would buy instead of a heat pump. The room heat pump is therefore compared to a new AC unit or electrical resistance gas furnace, rather than the old product that is being replaced.
- Does the product definition update, which now includes through-the-wall options, indicate the inclusion of PTACs? Many low-efficiency PTACs are in existence, creating a significant opportunity to replace them with higher-efficiency units.
 - Jeff Mitchell responded that CalMTA explored this but is working with a definition that aligns with that used by the DOE/EPA. Information gained through this target market could potentially influence a future MTI or MTI offshoot focused on PTACs in the hospitality sector.
- It seems worth analyzing the cost of using the defrost functionality, which can be significant event in California climate zones that occasionally dip below 35 degrees.
 - Tom noted that CalMTA conducted this analysis and that it informed the decision to exclude Type 1 products. Consumers can still get most of the heat pump benefits without defrost in most climates, and the cost is much more competitive with standard window AC.
- Is price parity looking only at space heating or both heating/cooling?
 - Hope confirmed that while one survey question looked only at the former, other questions look at both. Consumer motivation related to improving comfort often links to the immediate functionality they need versus a holistic approach.
- It would be interesting to see how learning about benefits outside of cost parity impact the likelihood of adoption.
- Did CalMTA look at the segment of consumers who do not currently have air conditioning but are considering adding home cooling due to rising temperatures, and how might this impact the baseline?
 - Hope replied that while the study did not specifically incorporate bill impacts related to this, respondents were asked about plans to add air conditioning and their likelihood of choosing a room heat pump if they did.
- CalMTA should consider that savings projections for room heat pumps are often lower than expected due to challenging integration with resistance back-up heat, as demonstrated in Energy Trust of Oregon and NEEA programs. Savings will be very dependent on resident behavior and how they utilize one system versus the other.
 - Tom expressed familiarity with those studies and acknowledged the challenge, particularly in displacement cases where HVAC systems are operating in tandem.
- Messaging should reflect that consumers are more influenced by the promise of cooling capabilities with the bonus of supplemental heating and are very motivated to acquire cooling during extreme temperatures.

- California could play a significant role in shifting the national market to adopt natural refrigerants, particularly for hermetically sealed products. Could the State set its own standards for accepting natural refrigerants in products outside of federal regulations?
- Is the goal a product that will work all the time in moderate climate zones so that backup can be disconnected or eliminated? In absence of that, figuring out controls integration will be necessary.
- In multifamily properties and ESJ communities, a cold-climate HP is going to be more expensive. It's worth investigating behavioral changes and using end-user education to shift households away from using the backup system unless absolutely necessary. Buying the more robust unit that displaces all backup systems might not be needed.
- Passing curtailed solar to new electrical loads could be extremely advantageous, giving that these heating systems would likely consume energy during peak times.

Comment Summary on Draft Advancement Plan: Foodservice Water Heating

Jeff Mitchell presented an overview of comments received on the draft Advancement Plan for the Foodservice Water Heating Systems during the July 8 to July 31 public comment period, as well as CalMTA's responses to these comments.

Public Comment

- Andre Saldivar: The SCE Foodservice Technology Center is interested in testing how 120V induction products with battery backup perform from a volume and production capacity, particularly when the oven is in use. Can these products feed a large family? Does it give end-users a negative experience? Have boil times and times to cook been tested? Lending programs provide caveats for 120V burners when they're loaned out since they don't perform as well.
- Alice La Pierre: As CalMTA reconsiders the paused Efficient Streetlighting MT idea, the California Street Lighting Association could be a good point of contact.

ABAL Update & Upcoming Meetings

Lynette Curthoys provided an update on the 2025 ABAL and plans to have it approved by the end of 2024. Stacey shared times/dates and agenda items for the remaining 2024 MTAB meetings.

The meeting was adjourned.

Attendees

MTAB Members

1. Cyane Dandridge, SEI
2. Hayley Goodson, The Utility Reform Network
3. Fred Gordon, Energy Trust of Oregon

4. Jeff Harris, Northwest Energy Efficiency Alliance
5. Randall Higa, Southern California Edison
6. Peter Miller, Natural Resources Defense Council
7. Christie Torok, California Public Utilities Commission
8. 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. Hope Lobkowitz, the Cadmus Group
8. Elaine Miller, CalMTA/Resource Innovations
9. Jeff Mitchell, CalMTA/Resource Innovations
10. Nils Strindberg, CalMTA/Resource Innovations

Guests

1. Hellen Chen, ACEEE
2. Richard Fennelly, CoilPod LLC
3. Natalie Flores-Rios, SCE
4. Carlo Gavina, SoCalGas
5. Rocco Guaragno, Resource Innovations
6. Ted Howard, Small Business Utility Advocates
7. Mina Jimenez, Proteus
8. Weldon Kennedy, Copper
9. Alice La Pierre, City of Berkeley
10. Jim Lutz, HWR
11. Christopher Malotte, SCE
12. Emily Pelstring, CPUC
13. Mary-Ann Rau, Velma
14. Andre Saldivar, SCE
15. Steve Schiller, Schiller Consulting
16. Jason Wexler, Gradient
17. Carol Yin, Yinsight
18. Richard Young, Frontier Energy