



MTAB Meeting Notes

July 12, 2024

In-Person Meeting, David Brower Center, Berkeley, CA

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. There were none.

Stacey invited any comments regarding the previous meeting (6/14) notes. There were none.

RFI Initial Report & Advancement Plans Status

Jeff Mitchell presented an overview of all ideas in development as well as a summary of the recently closed Request for Ideas (RFI) results. He then shared an update on the Efficient Streetlighting idea in Phase I of development, communicating the rationale behind CalMTA's decision to conduct additional research and revisit it together with the third batch of market transformation (MT) ideas before moving forward. One MTAB member expressed appreciation that CalMTA is taking a reflective approach to MTI development.

Draft Advancement Plan: Foodservice Water Heating Systems

Sepideh Rezania presented the draft Advancement Plan for Foodservice Water Heating Systems with a focus on the current market challenge, desired future end-state, and preliminary logic model. MTAB member comments included:

- Challenges associated with the tenant-owner relationship, such as split incentives, should be addressed since many restaurants operate in leased buildings. Is there any data indicating what percentage of the foodservice market leases their space or how that decision-making structure factors into the proposed interventions and MT theory?
 - Sepideh responded the preliminary research indicates that most independent restaurants lease their space, so upgrade decisions are made by building owners. There may be opportunities to shift this model or explore opportunities to address the leasing structure, but the MTI will need to consider the split incentive issue upfront.
- Whether CalMTA is aware of any pending litigation around the Bay Area Air Quality Management District (BAAQMD) zero-emission appliance standards referenced in the Advancement Plan, or any similar developments that could impact the timing of these standards.
 - Sepideh would seek better understanding of the landscape around these standards and potential BAAQMD support as a priority activity in Phase II.

- It was noted that BAAQMD is in the process of developing a comprehensive climate action plan that includes community engagement, so from a strategy perspective it would be beneficial to engage them soon.
- If efficient dishwashers are included in the MTI, are there any health and safety standards for restaurants that would need to be addressed?
 - Sepideh noted that low-temperature dishwashers are currently in use at restaurants so presumably they meet health standards. There hasn't been significant uptake of ventless machines, but research indicates that they also meet required standards.
- The SCE Energy Education Center recently installed a dishwasher with a built-in booster electric resistance heater that is capable of utilizing low-temperature hot water. Dishwasher booster heaters are also available that can be connected directly to city water. These types of dishwashers enable food service facilities to eliminate the need for gas or electric booster heaters and therefore only rely on heat pump water heaters, which are limited to 140 degrees without the use of sanitizing chemicals.
 - Sepideh noted that electric resistance back-up supports heat recovery, an important element of this technology.
- The health code used to allow lower-temperature water to be used in restaurants when accompanied by sanitizing chemicals, which would be heat-pump-friendly, but this may have changed. Equipment is changing rapidly and efficient models are both available on the market and code-compliant, but local jurisdictions setting health guidelines may not be familiar with this technology.
- Affordability and upfront cost seem like a very significant and challenging barrier
 - Sepideh agreed and added that the large percentage of low-temperature dishwashers that are leased could inform an interesting approach. Also, since dishwashing chemical providers are the entities leasing this equipment, perhaps they would be willing to lease ventless machines.
- Because so many foodservice establishments operate in leased buildings, the split incentive issue could actually be an opportunity instead of a barrier: if building owners purchase the equipment, it could be a selling point for future tenants if/when a restaurant turns over.
- The MTI product definition touches on multiple different devices spanning water supply, distribution, and usage, which would historically be addressed separately with a unique logic model for each. How would an MTI that addresses all these technologies be implemented?
 - Sepideh acknowledged this is something that requires critical thought in Phase II. It would be interesting to learn more about how larger restaurant chains address this as many have their own labs to test systems.
- Also regarding product definition, CalMTA needs to narrow down the MTI's focus. Restaurants have widely varied decision-making processes and ownership structures and these products span different markets -- how do we get past the initial beachhead market? Small independent restaurants might not be a good target market due to

resource constraints and potential cost issues. Large-load chain restaurants are likely a better market and there's still potential to identify equity angles by engaging diverse business owners within that. Pulling all the components together seems challenging if we target the segment of small restaurants that lease equipment. Moving away from promoting retrofits and focusing on influencing chains' specifications would be an easier path.

- Sepideh replied that while smaller cafes use less water than large full-service restaurants, the former segment could have fewer barriers. Phase II activities will allow CalMTA to better understand market entry-points and refine focus areas and strategy. Our initial theory that cafes and restaurant chains could be the easiest entry-point but that may not prove to be accurate.
- It is important to identify the decisionmakers at each level of the market. Building owners might be the primary decision-maker for water heaters, but restaurant owners may decide which dishwasher is purchased. The split-incentive issue applies in all cases but different decision-making points could require different interventions.
 - Sepideh shared that CalMTA's preliminary research found that in some cases, even when building owners own the equipment, cost of failures get passed on to the restaurant tenant. Initial conversations with market actors also indicate that equipment availability has significant impact on emergency replacement scenarios, and that ensuring the right equipment is in stock will be important.
 - Jeff Mitchell noted that Phase II activities will help identify a systems-approach to MT without having to cobble together three different MT strategies.
- While acknowledging the significance of Title 24 as a leverage point, ENERGY STAR should also be captured as leverage. There are ENERGY STAR standards for some foodservice equipment and may be one for relevant water-heating systems.
- In considering workforce development, inclusion of electric water heaters in new construction will not just create new jobs but *different* jobs - this may be a leverage point.
- The logic model combines reducing financial barriers together with other activities, but this is an important and distinct issue that should be in its own separate box.
- Participation in demand management is the primary way to achieve cost parity for electrification in this market. Most restaurants are challenged to participate in demand management due to the need for staff to be available at all critical times to run the thermostat and other DR-enabled equipment, as well as understanding how this equipment works.
- Regardless of whether the MTI includes end-use equipment like dishwashers, it should capture the need for water-heating equipment to adapt to changes in dishwashing technology.
- In addition to the BAAQMD standard, South Coast AQM may have stricter and more imminent policies in place with implementation dates as soon as 2026.
- Given the different decision-makers and points of influence, can CalMTA reach the dishwasher market through the logic model developed for HPWHs?

- Sepideh clarified that the MTI will focus on HPWHs and if we decide to try to influence the efficient dishwasher market, it would be in support of water heaters.
- CalMTA should clarify what specific market the MTI is specifically trying to address vs. a broad overall strategy that includes end-use devices, distribution, and supply.
- HPWH cost parity is a desired outcome but one of the challenges is rate structure, which is not captured in the Advancement Plan interventions but is needed for the MTI to be successful. It's possible the primary way to address this is through time-of-use rates or curtailment of negative pricing.
- The market characterization study should capture how different segments of the market behave since a one-size-fits-all approach will be hard. It will be challenging to approach a highly fractured market with widely varied energy savings potential, so CalMTA should understand those nuances before moving forward.
- The MTI should include a progress indicator tracking contractors that have proven profitable success with a business model for installing restaurant HPWHs, not simply the overall share of contractors doing this work, which would provide the impetus for others to be trained.

Equity Update

Rachel Good presented an update on CalMTA's equity workstream, including key objectives and recent activity as well as important findings from a series of ESJ community listening sessions conducted in June. MTAB comments included:

- More details about CalMTA's planned equity sounding board were requested.
 - Rachel and Stacey shared that a 6-8 member group who would meet three times annually with additional ad hoc engagement as needed. All members' organizations will be compensated for their participation.
- It was suggested that CalMTA should avoid use of the word "stakeholder" due to its colonialist background, particularly in interactions with ESJ communities.
- What is the intersection between ESJ community engagement and workforce development? What portion of listening sessions focused on workforce development and what other outreach is occurring to get input?
 - Rachel replied that June's listening sessions were focused on specific MTIs with workforce development as an integrated component. In addition, CalMTA is planning a dedicated series of briefings with WE&T organizations this fall to better understand market needs and coordination opportunities.
- The term "equity lens" often refers to a series of questions used to support implementation plan development vs. the series of strategies presented by CalMTA. Addressing equity requires awkward questions that must be struggled through.
- Regarding the equity sounding board, CalMTA should focus on quality relationships and not quantity when recruiting members. Any advisory relationship must come with

compensation. Members must also understand the broader context of MT and how CalMTA work integrates into the overall market.

- Did listening session attendees ask about maintenance issues related to HPWHs in either the residential or foodservice market? There may be challenges finding contractors to do maintenance and repairs.
 - Rachel confirmed that this did not come up in the listening sessions.
- How will CalMTA communicate with participants regarding the impact of their participation, an important way to show the tangible impact they had on the process?
 - All listening session findings have been shared with and actively discussed with the MTI teams and revisions to draft Advancement Plans based on this feedback will be communicated with attendees.
- Many of the comments and feedback received in the listening sessions are not exclusive to ESJ communities and would have impacts across the entire market.

Public Comment

No public comments were received at this time.

2nd Quarterly Progress Report

Stacey presented second quarter milestones achieved by CalMTA as well as the ongoing cadence of future updates. Elaine Miller and Jeff Mitchell shared updates on the Phase II ideas under development, including refinements, timeline for key milestones, technology assessment and market characterization findings, and external coordination. They also presented updates on the ongoing strategy pilots for the Portable/Window Heat Pump MTI. MTAB comments included the following.

Induction Cooktops & Ranges

- Is the battery backup described in the product definition just a daily peak-load offset or would it provide reliable backup power during outages? How does this impact the price of the technology?
 - Elaine replied that the product could do both, but also ultimately allowed for a 120V product to perform at a higher level with all burners on. The battery does add to the price but not massively so, and the price is going down currently.
- Is the MTI also looking at plug-in appliance versions of 120V products, which are lower-cost and therefore important from an equity standpoint?
 - Elaine noted that while CalMTA would focus on the entire market, there are some concerns about how plug-in versions perform.

Portable/Window Heat Pumps

- CalMTA has documented a long list of future product enhancements. Is there a prioritization or ranking to help direct resources?
 - Elaine said CalMTA is working on this. Air filtration is a priority from an end-user perspective, but manufacturer feedback indicates it will be difficult to achieve.

- Jennifer Barnes added that form factors for different window configurations (e.g., horizontal sliding windows) and temperature performance (e.g., cold climate capabilities) were the highest priorities, followed by air filtration.
- CalMTA needs to address the issue of misinformation and lack of clear labeling when trying to buy a heat pump air conditioner.
- This technology faces the same challenge as ductless heat pumps/mini-splits did: backup systems will kick in that are less efficient than standard products, resulting in higher energy consumption. Areas with cold-climate capacity needs will also need strip resistance.
- The home heating/cooling scenarios presented should reflect that gas is not used only for central HVAC systems; many homes have gas wall heaters and baseboard heat.
 - Jennifer confirmed that this scenario was included in CalMTA's research.
- It would be helpful to know the distribution of all these scenarios across the target market, which may be captured in future work.
- CalMTA should clarify and separate out findings related to the cost of running this equipment vs. fuel-switching.
- This will be a hard market to penetrate and CalMTA should manage expectations about how long MT will take.

Efficient Rooftop Units (ERTUs)

- Do the values presented represent avoided cost or total system benefits (TSB)?
 - Jeff clarified that they were avoided cost.
- Heat recovery ventilation as a fuel-neutral improvement is part of the work being done in this market in the Northwest, as is better economizer operation.
- Understanding what percentage of the market would currently opt for a premium RTU vs. minimum efficiency unit might help target the MTI better - are we looking at trying to improve the commodity product or come up with a new premium product? If it's the latter, we will need to develop a strong value proposition since there's not much wiggle room in the RTU market. CalMTA should pick a niche where the MTI can have the most impact.
 - Jeff replied that we are not seeking to promote a premium product but rather to provide building owners/operators with options to achieve higher efficiency.
- The U.S. Department of Energy engages industry stakeholders in updating the efficiency regulations for RTUs without consideration of other components that can be added on such as economizers, heat recovery, etc.
- MTI success will depend on reaching a market state where premium products have enough of a competitive advantage to create cost pressure.
- Is there a split incentive issue here? Is the target market primarily owner-occupied or leased buildings?
 - Jeff noted that CalMTA was collecting this data now but assumes the majority of the market is leased buildings.

- Market characterization work should segment the market based on decision-makers and building types. Big-box retailers are already resistant but finding the right segment to market this to would build momentum.

2025 Annual Budget Advice Letter (ABAL)

Lynette Curthoys presented a summary of feedback received from MTAB members on the first draft of the 2025 ABAL. She shared slides summarizing key comments and CalMTA's responses to them, walked MTAB members through notable changes in the redline, and talked in detail about the new Appendix A that was developed in response to MTAB feedback. MTAB members were provided with a redlined copy of the draft ABAL and the new Appendix A. MTAB members asked the following clarifying questions and made some suggestions for improvement.

- Why did CalMTA revise the forecast for 2024 in ABAL Table 2 to increase the Administration cost category back up to the full 2024 ABAL amount and what resulting tasks were cut from other areas?
 - Lynette clarified that no activities were cut and that no changes are currently forecasted at the cost-category level for 2024. Rather, the forecast was updated because it is too early in the year to forecast shifting Administration costs to other cost categories as was done in 2023. She indicated that CalMTA could show the anticipated breakdown between routine and non-routine administrative costs in the final ABAL.
- It is important to note that the overall budget estimate did not increase from 2024 to 2025, and that administration remains below 10%.
- In response to an MTAB member question, Lynette confirmed that changes in level of effort anticipated for major activities from 2024 to 2025 can be seen in the increase or decrease in the full-time equivalent (FTE) numbers that were added to the table.
- Adding more line items to the budget, particularly for Phase II research and strategy pilot activities, would be beneficial.
- NEEA provides a single budget estimate for their equivalent of Phase II activities, followed by quarterly reporting on how and why the estimates change throughout the year.
- MTAB members were supportive of CalMTA's plans to include budget updates in future MTAB meetings and quarterly reports and mentioned the importance of including a brief narrative describing the driver of any changes and the implications. This is in line with expectations for utilities to report on deviations from budgets in all areas, even beyond energy efficiency.
- Why do the first three Advancement Plans include pilot costs that do not seem to be reflected in the 2025 ABAL?
 - Jeff clarified future MTIs may or may not require strategy pilots, and if they do, the funds would be allocated from the MTI's Phase II cost estimate. While strategy pilot funds are not earmarked in a separate gated funding pool,

CalMTA proposes to use the same strategy pilot approval process that was described in the 2024 ABAL.

- The draft ABAL had a typo on p. 13 regarding the number of MTIs that would transition to Phase II in 2025. The correct number is two, as shown on p. 12 in the list of key deliverables from Phase I.

Several members expressed that they were prepared to recommend the redlined ABAL as presented. One member indicated a desire to further discuss his comments with CalMTA before moving forward with the recommendation process. Lynette offered 1-on-1 discussions for any MTAB member that has additional questions. It was agreed that any additional redlines to the ABAL would be annotated in a different color and MTAB members would receive both the clean and redline version, as well as a response to comments memo, when asked to recommend the final ABAL.

MTI Evaluation in Practice

Karen presented evaluation activities by MTI stage, evaluation components of MTI Plans, and an overview of the process for evaluating CalMTA. MTAB comments and questions included:

- Will the metric tracking increase in market share look at this in terms of the baseline forecast?
 - Karen confirmed this metric captures incremental market growth.
- An early progress indicator related to implementation of key activities (e.g., distribution of communications in the market) would be viewed favorable.
- Distinguishing between leading and lagging indicators can be challenging in MT. Market share can be a lagging indicator because an organization must first work on awareness-building, stocking practices, etc. before impacting that metric. How do these dependencies figure in to CalMTA's approach?
 - Karen noted that final logic models will capture more cause-and-effect sequencing and will be part of the causality assessment used by the third-party evaluator to determine the impact of MTI activities. The evaluation plan will also include details about the type of planned data collection activities and the targeted outputs from each activity. Additionally, an evaluation advisory group will be formed in time to review draft MTI Plans before they are shared.
- Regarding timing of progress indicators, what is the assumed start date (e.g., when the selected implementer has a notice to proceed)? A clear start date and end date will allow the milestones make sense (e.g., "by the end of 2028"). This would also help us understand how market progress relates to product cycles or regulatory changes that would require compliance.
- More leading indicators would also be helpful because metrics that aren't measurable for five years won't allow CalMTA to course-correct if needed. Activity completion in pursuit of market change could be useful to track and document.

- Karen replied that many logic models include not just interventions and outcomes but also outputs. Many activities conducted in support of MTIs will be a focus of the process evaluation (did we do the things we said we would and what's the proof) vs. looking at market change. CalMTA could include some of those metrics to indicate influence on the market even if they are not traditional market outcomes.
- Where does the evaluation advisory committee fit into the timeline for review and refinement of the evaluation plan?
 - Karen said that CalMTA intends to seat the committee in September and prepare them for a short turnaround review of the plan in October. In addition to reviewing all draft deliverables, this group will be instrumental once CalMTA starts soliciting third-party evaluators.
- Recognizing that this is a dynamic process of continuous improvement, is it customary to build in flexibility on progress indicators in contracts with third-party implementers?
 - Karen confirmed that this was typical and routine. Ongoing learning and adaptive management require a mode of continuous learning and improvement, although parameters would be set for when and why the plan would be updated.
- The audience for MT evaluation needs to prepare for a different mode of inference and precision than traditional energy efficiency programs as even when you can show significant savings, precision can be challenging.

Public Comment

Alice LaPierre of the City of Berkeley asked about the source of assumptions regarding window configurations for the Portable/Window Heat Pump MTI, as the Bay Area has many older buildings with double-hung windows.

Carol Yin requested that CalMTA clearly define the difference between metric, milestone, and threshold, and use these terms consistently. She also noted that any recommendation made by the third-party evaluator regarding CalMTA must be evaluated by a different evaluator, which CalMTA should consider in its planning.

Next Meeting & Next Steps

Lynette closed by presenting the MTAB review timeline for upcoming deliverables. She also reviewed the timeline for finalizing the 2025 ABAL, the MTI application, and providing quarterly updates.

The meeting was adjourned.

Attendees

MTAB Members

Cyane Dandridge, Strategic Energy Initiatives
Benjamin Druyon, Inland Regional Energy Network (virtual-proxy for Karina Camacho)
Hayley Goodson, The Utility Reform Network
Fred Gordon, Energy Trust of Oregon
Jeff Harris, Northwest Energy Efficiency Alliance
Randall Higa, Southern California Edison
Peter Miller, Natural Resources Defense Council
Christie Torok, California Public Utilities Commission
Ky-An Tran, California Public Advocates

Participating Staff & Consultants

Taqua Ammar, CalMTA/Resource Innovations
Jennifer Barnes, 2050 Partners (on the CalMTA team)
Lynette Curthoys, CalMTA/Resource Innovations
Rachel Good, CalMTA/Resource Innovations
Stacey Hobart, CalMTA/Resource Innovations
Karen Horkitz, consultant to the Cadmus Group (on the CalMTA team)
Elaine Miller, CalMTA/Resource Innovations
Jeff Mitchell, CalMTA/Resource Innovations
Sepideh Rezania, Unrooz Solutions (on the CalMTA team)
Nils Strindberg, CalMTA/Resource Innovations

Guests

Katie Abrams, Birch Road Consulting (virtual attendee)
Mary Anderson, PG&E
Sharyn Barata, Opinion Dynamics (virtual attendee)
Rob Bohn, PG&E
Kelly Cunningham, PG&E (virtual attendee)
Debbie Ebel, Okapi Architecture (virtual attendee)
William Graswich, CPUC (virtual attendee)
Alice LaPierre, City of Berkeley (virtual attendee)
Spencer Lipp, Timber Cove Energy Solutions (virtual attendee)
Jeff Luoma, NEEP (virtual attendee)
Cinthia Magana (virtual attendee)
Brian Maloney, SFPUC (virtual attendee)
Christopher Malotte, SCE (virtual attendee)
Tara McElhinney, NEEP (virtual attendee)
Kaitlin McGee, Clean Energy Alliance (virtual attendee)
Savannah McLaughlin, CPUC (virtual attendee)
Elizabeth Medrano, SoCal Gas (virtual attendee)
Emily Pelstring, CPUC (virtual attendee)

Alice Sung, Greenbank Associates (virtual attendee)
Peter Tanios, SoCal Gas (virtual attendee)
Ying Wang, Okapi Architecture (virtual attendee)
Carol Yin, Yinsight
Kate Zeng, SDG&E (virtual attendee)