Draft MTAB Meeting Notes

August 20, 2025
Virtual Meeting

Welcome, Agenda & Conflict of Interest Declarations

Stacey Hobart opened the meeting by welcoming attendees, facilitating introductions, and sharing the meeting agenda. She shared the conflict-of-interest policies established for both MTAB members and CalMTA and asked attendees to disclose any conflicts.

Stephen Miller from SEI (proxy for Cyane Dandridge) noted that they have workforce development programs that support Building Performance Standards, which is aligned with but not in conflict with CalMTA's Commercial Building Efficiency Accelerator idea currently in Phase I: Concept Development.

Stacey asked MTAB members for any comments regarding draft notes from the previous meeting (6/27). There were none.

Commercial RTUs: Market Characterization

Rick Olson-Huddle described key product definitions for the Commercial Rooftop Unit (CRTU) Market Transformation Initiative (MTI) under development, including the connected controls and commissioning targeted by CalMTA.

Cynthia Kan then presented the methodology and key findings from the CRTU Market Characterization study which ultimately informed refinements to the product definition, with support from Garth Torvestad of 2050 Partners.

MTAB questions and comments included the following:

- Are resistance-heated units outlawed by code? Many large buildings with RTUs tend to be cooling-dominated and utilize resistance.
    - Garth confirmed that generally resistance is prohibited as a primary source of heating.
- If research shows that 80% of RTU sales go through the distributor, how can we create a sales-weighted estimate?
    - Karen Horkitz replied that the 18 contractor interviews conducted by CalMTA, which had a preponderance of respondents in Southern California, did not yield enough information to confidently state the percentage of gas pack vs. heat pump RTU products beyond a range. Additionally, the only real saturation data to source is seven years old. CalMTA did see a fair amount of electric

resistance models installed in 2018 but believe these are being replaced by heat pumps as they retire.

- It's surprising that facility managers are more willing to wait for preferred RTU equipment than building owners – it seems like the facility manager would be more in tune with immediate facility needs (e.g., need for cooling on hot days).
    - Cynthia clarified that facility managers were more likely to plan replacements than respond reactively, so that impacts their willingness to wait.
- The product definition proposed by CalMTA includes a number of beneficial features, but are all weighted equally (e.g., savings distributed across the features) or are some more critical? The market includes disparate groups (contractors who want to sell features, building owners/managers who might want those features, etc.), but where is the beachhead market given that people have been trying to build the business case for controls for quite some time?
    - Garth noted that when prioritizing features, the avoided cost will be highest for cooling efficiency and variable speed capabilities. Modeling connected controls is challenging since the counterfactual is hard to determine, but we do know the savings are lower. It feels like this is the right time in the market to target RTU connectivity: the cost of sensors has dropped significantly and can now be addressed at the factory at a relatively low cost.
- For the "two-minute" purchase market estimated to comprise the majority of sales, what factors impacted their decision-making (price, product availability, etc.)?
    - Cynthia replied that price and product availability were the primary factors, but some nuances also emerged between building owners vs. facility managers. Building owners trust their contractor more but facility managers put greater trust in their peers as decision-making influences.
- What is the current prevalence/market share of each of the RTU features included in CalMTA's product definition?
    - Cynthia said that most of these features are not highly prevalent. Connected commissioning is standard on top-of-the-line models and optional on the mid-tier product lines, and usually not available on entry-level models. Variable speed capabilities are currently only included on very top-of-the-line models (5-10% of the market). Ultra-high efficiency cooling varies widely across mass market brands: some sizes meet our criteria and some don't. These brands often use the same size chassis for different product types, which can limit the number of components and result in reduced efficiency as the size increases.
- Does CalMTA's product definition include any box insulation or dampers?
    - Rick confirmed that while these features yield benefits, they are not currently in the product definition. Some requirements for dampers already exist through Title 24; however, research found that box insulation does not yield significant savings in most California climate zones.

- Do any proposed interventions include activities to influence or change Title 24 requirements? Given that sales are predominantly of the cheapest available products, codes/standards could have significant influence on moving the market forward.
    - Rick agreed and clarified that the intervention focused on coordination with other California programs includes codes and standards working groups' influence as an outcome.
- Interventions focused on influencing or coordinating with voluntary energy efficiency programs and codes/standards should be disaggregated, as these groups function very differently.
- How much does MT success depend on a functional market of maintenance contractors? In the Northwest, work improved when programs were offering incentives and conducting inspections, but the market reverted to old practices when those interventions stopped.
- If contractor interviews were a small sample size skewed to a specific region (Southern California), are there plans to expand this? Cold-climate heat pumps may be under-represented, although these represent a small percentage of overall statewide sales.
    - Karen replied that CalMTA's schedule to deliver a final MTI Plan by the end of the year does not allow us to conduct additional interviews before then. However, we will look at a sensitivity analysis and focus on understanding the market forecast from a range and not a discrete point. Once the MTI moves into market deployment, CalMTA will release an RFP for an evaluation contractor and anticipates that a quantitative survey of contractors expanding this sample will be one of the first activities the selected evaluator would complete.
- Is a California program supporting the Los Angeles school district's initiative to replace gas packs? CalMTA may be able to leverage this as a workforce training opportunity.

Commercial RTUs: Market Transformation Theory and Logic Model

Rick Huddle presented the key components of the CRTU MTI's MT Theory and Logic Model, including a vision for the future, market barriers and opportunities, strategic interventions, and theory of market change.

MTAB feedback included:

- CalMTA may want to think about contractors and technicians as two distinct groups. On the contractor side, we may need to gather info through the demonstration project that goes beyond technical factors (satisfaction, risk, whether a premium could be charged, etc.).
- The theory of change describes a roadmap and tiers of efficiency. Is CalMTA thinking about multiple tiers for the product definition? A definite roadmap and tiers will make it easier to speak to goals and where energy savings come from; a defined objective of phasing in advanced features will clarify MT goals over time.

    - Rick said that this was not yet being explicitly considered. CalMTA envisions that the controls package will happen first and might be a first tier, and variable speed capabilities or cooling efficiency could be a second tier.
- The two-minute RTU market (what's on the truck now) seems similar to the water heating market, which has been explored extensively. Is there potential to look at lessons learned/what's worked there?
    - Rick agreed that this was a good idea to explore.

Stacey asked MTAB members to share what surprised/excited them and what they'd like to know more about. Responses included:

- Surprised by:
    - Facility manager vs. building owner bifurcation
    - Prevalence of the two-minute market
    - Discrepancy between contractor and distributor sales data
    - The market share of heat pump RTUs already being sold in California
    - The existence of RTUs with cellular modems
- Excited by:
    - Connected controls and commissioning (CCC) — the confluence of improved sensors/AI to do better commissioning is an interesting idea and it would be great to harness innovation in that space
    - Commercial employers looking for seasoned experienced workers, since experience with residential HVAC contractors indicates that they are seeking less experienced workers so they have control over training
    - Possibility of Title 20 impacts – had initially written off due to federal pre-emption
    - Opportunities to leverage Los Angeles school district work
    - The large percentage of building owners/managers willing to consider switching from gas packs even if energy costs increase
- Interested in learning more about:
    - The standard-setting process, as this is a way of ensuring the right product is on the truck
    - How this market compares to the residential HPWH market
    - Motivating factors for the two-minute buyer and analysis of that, as understanding the details will be critical if they're 80% of the market
    - How the logic model is translated to the distributor level
    - How the MT approach could/should be bifurcated to address property owners vs. facility managers as decision-makers, since they seem like different audiences
    - Better understanding of the high variability in quality and durability of sensors
    - Opportunities to address operational cost increases via messaging

- Workforce-related strategies: ways to communicate phased/tiered approach to workforce so they can prepare, honing the list HVAC contractors, the need to mitigate potential workforce bottlenecks as California moves forward with something like BPS (has been an issue in New York City)
- External program coordination needs to be explored further, separating out voluntary programs vs. codes/standards
- Load flexibility options being built into products by manufacturers
- The potential for controls to strengthen the value proposition for HVAC contractors

Rob Bohn of Pacific Gas and Electric (PG&E) (proxy for Mary Anderson) also added that a member of his team participates in the Standards Technical Committee (STC) for AHRI 1390, which is the industry standard being developed for non-residential HVAC. The purpose of this standard is to develop communication protocols for smart grid interface for flexible loads for Commercial HVAC equipment and supporting systems and the scope will include commercial hydronic equipment.

Stacey discussed the elements of the MTI Plan and what appendices were covered today, as well as which will be addressed in future MTAB meetings.

Public Comment

- Cathy Chappell, TRC: In the codes and standards realm, Title 24 has been mentioned but is CalMTA looking into Title 20 update opportunities? Title 20 may be able to push more than federal standards and CCC integration.
    - Garth replied that CalMTA is interested but has not yet explored it extensively.
- Cathy Chappell, TRC: In addition to Advanced Heat Pump Coalition, has CalMTA been in touch with the California Heat Pump Partnership?
    - Rick confirmed that CalMTA has been coordinating with the CAHPP on multiple MTIs.
- Cathy Chappell, TRC: Does CalMTA plan to provide direct financial incentives to manufacturers? Regarding California program coordination: most of the programs listed do not provide equipment incentives. What do you expect the incentive connection to be?
    - Rick confirmed that CalMTA is planning on offering financial incentives to manufacturers early on, with a focus on CCCs to eliminate the cost differential. We would seek to encourage other programs to offer downstream incentives through our coordination approach

Review Commercial Building Efficiency Accelerator (CBEA) Advancement Plan Comment/Response Summary

Rick Huddle shared a summary of the feedback received on the CBEA Advancement Plan,

including common themes and next steps for finalizing this before moving into Phase II activities.

MTAB feedback included:

- Line items for every redundant comment may have made it easy to redline but it made the comment list voluminous and difficult to review.

Stacey reiterated the conflict-of-interest policy and what would trigger an MTAB member recusing themselves or stepping away as CBEA moves to Phase II: Program Development.

Public Comment

No public comments were received.

Next Meeting & Next Steps

Stacey reviewed the MTAB meetings scheduled for the remainder of 2025 and early 2026, which include both virtual and in-person meetings, as well as the key agenda items. Lynette added that the intent of the Idea to Initiative (I2I) series is to inform MTAB members and the public and ensure well-vetted MTI Plans, including the forthcoming CRTU MTI.

The meeting was adjourned.

Attendees

MTAB Members

1. Rob Bohn, PG&E (proxy for Mary Anderson)
2. Jennifer Green, MCE
3. Haley Goodson, TURN
4. Fred Gordon, Context Consulting
5. Jeff Harris, Northwest Energy Efficiency Alliance
6. Peter Miller, Natural Resources Defense Council
7. Stephen Miller, SEI (proxy for Cyane Dandridge)
8. Christie Torok, California Public Utilities Commission

Participating Staff & Consultants

1. Lynette Curthoys, CalMTA/Resource Innovations
2. Rachel Good, CalMTA/Resource Innovations
3. Stacey Hobart, CalMTA/Resource Innovations
4. Karen Horkitz, KSH Advising
5. Cynthia Kan, The Cadmus Group
6. Jeff Mitchell, CalMTA/Resource Innovations
7. Rick Olson-Huddle, CalMTA/Resource Innovations
8. Garth Torvestad, 2050 Partners

Guests

1. Shelly Adams, Cascade Energy
2. Daniel Bailey, CLEAResult
3. Tobias Barth, MN CEE/ETA
4. Beth Braddy, Trane Technologies
5. Alamelu Brooks, Energy Solutions
6. Josaphine Bunnagel, PG&E
7. Paul Campbell, ICF
8. Rengie Chan, Lawrence Berkeley National Laboratory
9. Cathy Chappell, TRC
10. Colleen Collins, Resource Innovations
11. Maria Dahlin, N'de Apache Tribe
12. Craig David, PG&E
13. Victoria Engel-Fowles, NYSERDA
14. Lacy Estes-Hill, Rheem Manufacturing Company
15. Richard Fennelly, COILPOD LLC
16. Rocco Guaragno, Resource Innovations
17. James Hanna, Energy Solutions
18. Curtis Harrington, UC Davis
19. Harshad Inamdar, Rheem Manufacturing Company
20. Savannah McLaughlin, CPUC
21. Dominique Michaud, SDG&E
22. Carley Murray, NYSERDA
23. Joaquin Narvaez, West Coast Green Builders LLC
24. Rawad Abi Saab, Energy Solutions
25. Madeline Salzman, Earth Advantage
26. Shelby Sinkler, City of Palo Alto Utilities
27. Timothy Sisson, Trane Technologies
28. Roger Snow, Proteus
29. Rusty Tharp, Aozora Consulting
30. Carol Yin, ETCC
31. Kate Zeng, SDG&E