
CalMTA
9/23/24
Market Transformation Advisory Board (MTAB) Meeting
CalMTA is a program of the California Public Utilities Commission and is administered by Resource Innovations

1
Welcome, Agenda & Introductions

Agenda

Time	Agenda Item	Presenter
3:00 p.m.	**1. Welcome, Agenda, & Introductions**	Stacey Hobart
3:05 p.m.	**2. COI Declarations**	Stacey Hobart
3:10 p.m.	**3. RFI #2 Submissions: Stage 1 Scoring & Prioritization**	Rick Dunn & Jennifer Barnes
4:55 p.m.	**4. Public Comment**	
5:00 p.m.	*Adjourn*	

Phone participants will be muted throughout the meeting and can raise their hand during the public comment period to be unmuted.

Recruitment Updates

Evaluation Advisory Board

Members have been selected; announcement will come at the end of September after we have confirmed acceptance

Equity Sounding Board

Recruitment kicks off on Oct. 7-25

2
COI Declarations

MTAB Declaration of COI

MTAB Eligibility

- Can’t receive funding from CalMTA or be in pursuit of funding

Recusal Requirements

- Can’t bid on RFP/RFQ if giving input after Phase I
- Those with a competitive interest can recuse from discussion, but must leave MTAB if responding to RFP
- Agree not to influence remaining MTAB
- Interpretation, if needed, done by CPUC staff

MTAB Charter with Conflict of Interest

Transparency

- Public meetings & process where COI concerns can be raised by the public

CalMTA COI Policies

- The CalMTA program has robust COI policies to ensure decision-making is transparent, impartial, and unbiased.
- Resource Innovations employees and subcontractors who function in decision-making roles for CalMTA are firewalled from any ongoing work with California utilities or other covered entities and sign COI certifications.
- CalMTA seeks CPUC approval when there is a need to draw on specialized expertise from subject matter experts who also support work with covered entities.

3
RFI Submissions: Stage 1 Scoring & Prioritization

Rick Dunn, Resource Innovations
Jennifer Barnes, 2050 Partners

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Meeting objectives

1. Review the scoring team process & discuss recommendations for MT ideas to advance to Stage 2 scoring
2. Secure MTAB input on scoring team recommendation for five ideas to score in Stage 2 of RFI 2

Reminder about the scoring process

Threshold Review	Stage 1	Stage 2
Does it save energy? Is it commercially available? Is there enough information to be scored?	Scores based on expertise and easily accessible information	Scores based on calculated values for TSB & TRC/PAC

We are here

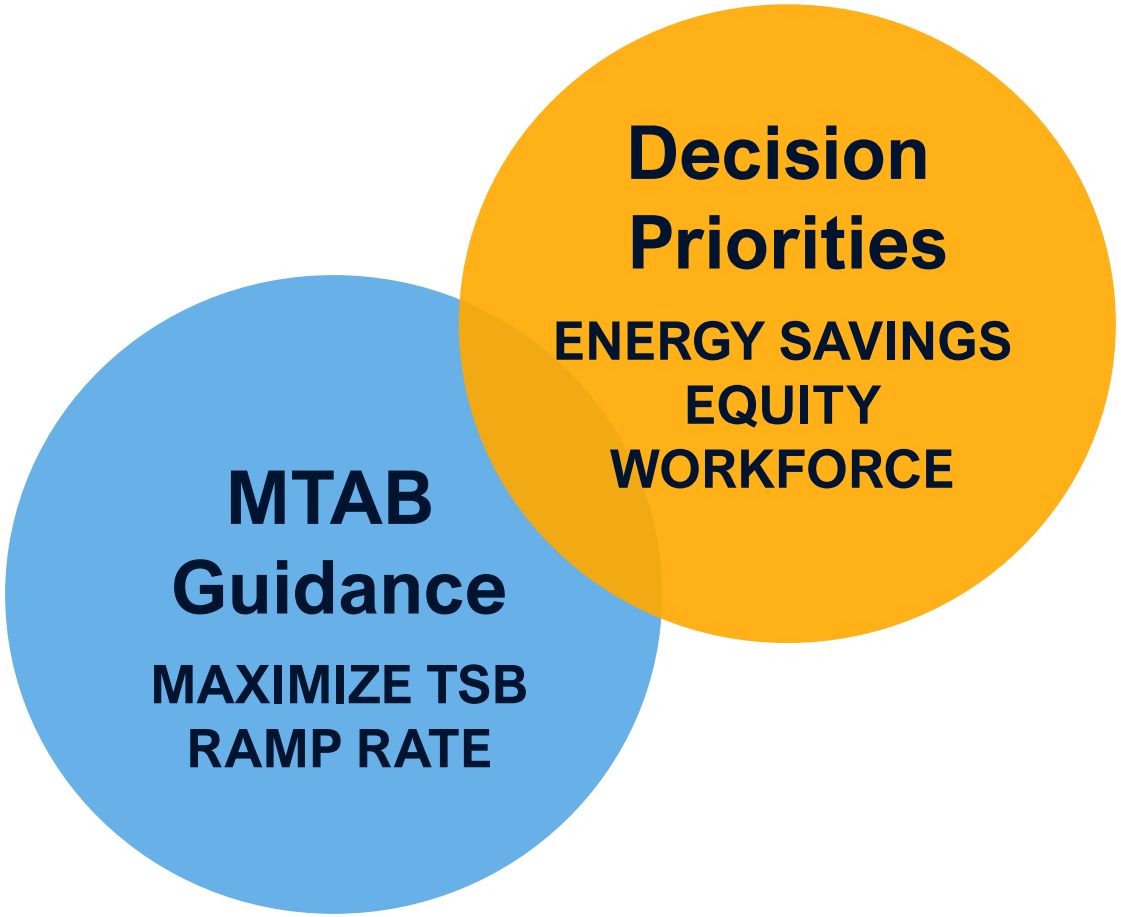
The scoring process was the same as the first RFI:

- Team aligned on key parameters
- Each idea was scored individually
- The team then discussed & agreed on a single, final Stage 1 score

Reminder about scoring criteria

Category	Criteria
Total System Benefit (TSB) A single metric that encompasses energy savings, grid benefits and reliability, and GHG impacts (Stage 2)	Energy TSB
	Grid Benefits TSB
	GHG Impacts TSB
Product Readiness An indicator of the supply chain maturity/product availability	Readiness
Participant Cost/Cost-effectiveness Assesses the overall estimated cost of the MTI against its benefits	Participant Cost (Stage 1) PAC & TRC (Stage 2)
ESJ Impacts (Equity) Assesses whether the MTI will provide beneficial impacts to ESJ communities or leverage existing community resources in its execution	Beneficial Impacts to ESJ Communities
	Partnership Opportunities with ESJ Communities
Non-energy Impact Captures the benefits or impacts (in addition to energy savings and greenhouse gas emissions reductions) that the MTI will deliver	Non-energy Impacts
MT Alignment Ensures MTI aligns with key aspects of MT theory; presents a strong MT opportunity	Innovation Characteristics
	Leverage Points
	Sustained Benefits

Stage 2 selection process



- Used guidance from MTAB & decision priorities to recommend five ideas to advance to Stage 2 scoring
- Ideas ranked & reviewed both by final weighted score & TSB-weighted score
- Team assessment of ramp rate & other key drivers also considered

Disposition of new & carried forward ideas

13
New ideas submitted 2024 RFI

20
Ideas from 2023 RFI to be reconsidered in 2024 RFI

3 archived at threshold
2 similar to existing MT ideas
2 combined with ideas from 2023 RFI

6 remaining (scoring review)

2 combined

20 remaining
(12 used 2023 RFI scores)
(8 scored in 2024 RFI)

26
Scored ideas reviewed and prioritized in 2023 RFI - Stage 1

12
Highest-scoring ideas

Highest scoring ideas weighted by TSB

Idea Name	Weighted Score	"TSB" High	"TSB" High & MT Alignment
0085 Combination Heat Pumps	8.11	9.51	8.50
0218 Sustainable Outdoor Lighting	6.78	8.86	8.38
0118 Very High Efficiency Dedicated Outdoor Air System (DOAS)	6.51	8.56	7.00
0133 Thermal Energy Storage as a Distributed Energy Resource	6.60	8.17	6.87
0188 Reflective Insulation for Windows	7.09	7.48	6.21
0024 Variable Frequency Drives (VFDs) on all Pumps and Fans > 10 HP	7.32	7.45	7.21
0142 Agricultural Irrigation as a Flexible Demand Load	6.81	7.41	5.96
0193 Building Performance Standards (BPS) Accelerator	7.30	7.37	7.62
0080 Smart Electric Panels	6.44	7.28	6.08
0022 Smart Home	7.14	7.02	6.21
0010 High Performance Windows	7.51	6.14	6.96
0222 Residential Smart-Splitting	5.49	6.08	4.83

Summaries for Recommended Idea Choices

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IDEA-0085 Combination Heat Pumps

Description

Integrates water heating, space heating, and space cooling into one combined, three-function heat pump system for residential use. These systems can also store some amount of thermal energy for use at a later time.

Portfolio Priorities	
☐	Equity
☒	WE&T
☒	Energy Savings
☒	Grid Benefits
☒	GHG Reductions

IDEA-0085 Combination Heat Pumps

Stage 1 Scoring Assumptions

Sector(s)	Residential SF & MF
End Use(s)	Space & water heating
Decision Type(s)	Normal replacement & new construction
Baseline	NR: Gas furnace & gas WH NC: space HP & HPWH

Weighted Score	**8.11**
TSB	
Energy Savings	High
Grid Benefits	High
GHG Impacts	High
MT Alignment	
Innovation Characteristics	3
Leverage Points	4
Sustained Benefits	4

Recommendation Rationale: Two manufacturers already in the market and gaining traction in new construction; offers a quicker path to CARB NOx compliance

IDEA-0218 Sustainable Outdoor Lighting

Description

Combines a typical outdoor light fixture with a solar panel, battery, and smart controller. The smart controller decides when to use battery power and when to draw from the grid. Typically, the battery is sized to be charged predominantly by the solar panel during the day.

Portfolio Priorities	
☐	Equity
☒	WE&T
☒	Energy Savings
☒	Grid Benefits
☒	GHG Reductions

IDEA-0218 Sustainable Outdoor Lighting

Stage 1 Scoring Assumptions

Sector(s)	Commercial, MF & municipality parking lot lighting & streetlights (any lighting on a pole, no matter who owns it)
End Use(s)	Outdoor lighting
Decision Type(s)	Retrofit
Baseline	Existing

Weighted Score	**6.78**
TSB	
Energy Savings	High
Grid Benefits	High
GHG Impacts	High
MT Alignment	
Innovation Characteristics	4
Leverage Points	4
Sustained Benefits	3

Recommendation Rationale: High incremental cost that is unlikely to come down significantly

IDEA-0118 Very High Efficiency DOAS

Description

Use high efficiency heat recovery combined with a high-performance heat pump as an HVAC system approach which result in significant commercial sector energy savings potential.

Portfolio Priorities	
☐	Equity
☒	WE&T
☐	Energy Savings
☒	Grid Benefits
☒	GHG Reductions

IDEA-0118 Very High Efficiency DOAS

Stage 1 Scoring Assumptions

Sector(s)	Commercial, schools & high-rise MF
End Use(s)	HVAC
Decision Type(s)	New construction or major renovation
Baseline	RTU with no DOAS

Weighted Score	**6.51**
TSB	
Energy Savings	Medium
Grid Benefits	High
GHG Impacts	High
MT Alignment	
Innovation Characteristics	4
Leverage Points	2
Sustained Benefits	4

Recommendation Rationale: Closely related to ERTU

IDEA-0133 Thermal Energy Storage as a Distributed Energy Resource

Description

Proposes using thermal energy storage as a distributed energy resource at commercial sites that traditionally have the highest energy intensities like hospitals, grocery stores, and refrigerated warehouses.

Portfolio Priorities	
☐	Equity
☐	WE&T
☐	Energy Savings
☒	Grid Benefits
☒	GHG Reductions

IDEA-0133 Thermal Energy Storage as a Distributed Energy Resource

Stage 1 Scoring Assumptions

Sector(s)	Commercial & industrial buildings with refrigeration loads
End Use(s)	Refrigeration
Decision Type(s)	New construction & add-on equipment
Baseline	No TES system

Weighted Score	**6.60**
TSB	
Energy Savings	Low
Grid Benefits	High
GHG Impacts	High
MT Alignment	
Innovation Characteristics	3
Leverage Points	3
Sustained Benefits	4

Recommendation Rationale: Market-ready & an established supply chain

IDEA-0188 Reflective Insulation for Windows

Description

Reflective Insulation for Windows is designed to keep building interiors cool without interfering with the occupants' views by blocking infrared light reducing solar heat gain by 50% in turn reducing summer cooling load.

Portfolio Priorities	
☐	Equity
☒	WE&T
☒	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0188 Reflective Insulation for Windows

Stage 1 Scoring Assumptions

Sector(s)	Commercial & residential (SF & MF)
End Use(s)	Envelope
Decision Type(s)	Add-on equipment
Baseline	Single-pane window with no reflective material

Weighted Score	**7.09**
TSB	
Energy Savings	High
Grid Benefits	Medium
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	4
Leverage Points	3
Sustained Benefits	2

Recommendation Rationale: Already have a windows MTI

IDEA-0024 VFDs on all Pumps and Fans > 10 HP

Description

Would promote the adoption of variable frequency drives on applicable pump and fan motors greater than 10 horsepower in both industrial and commercial applications. The initiative would leverage the Power Index, which is a ratio of rated power over baseline power, to calculate the energy savings from adding a variable speed drive to a motor-driven system.

Portfolio Priorities	
☐	Equity
☒	WE&T
☒	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0024 VFDs on all Pumps and Fans > 10 HP

Stage 1 Scoring Assumptions

Sector(s)	Commercial & industrial, some municipal & agriculture
End Use(s)	Non-embedded water pumping (food and beverage production), circulators, ventilation fans, hot water circulation (multifamily), office (hot water circulation: bathrooms & dishwashers)
Decision Type(s)	Add-on equipment or new construction
Baseline	No VFD or uncontrolled motor

Weighted Score	**7.32**
TSB	
Energy Savings	High
Grid Benefits	Medium
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	4
Leverage Points	4
Sustained Benefits	3

Recommendation Rationale: NEEA has been working on this since 2019, but market uptake is unclear. May require new approaches

IDEA-0142 Agricultural Irrigation as a Flexible Demand Load

Description

This initiative would support a new, patented agricultural irrigation technology called Virtual Water Table Irrigation system. This new technology and cuts irrigation water consumption by 80% and an equal amount of power consumption from well pumping, booster pumps and canal transportation pumps.

Portfolio Priorities	
☐	Equity
☐	WE&T
☒	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0142 Agricultural Irrigation as a Flexible Demand Load

Stage 1 Scoring Assumptions

Sector(s)	Agricultural
End Use(s)	Agricultural irrigation
Decision Type(s)	Accelerated replacement
Baseline	Existing, force flow pumped irrigation: • 25% fossil fuel pump (diesel, propane or other) • 75% electric pump

Weighted Score	**6.81**
TSB	
Energy Savings	High
Grid Benefits	Medium
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	3
Leverage Points	3
Sustained Benefits	2

Recommendation Rationale: TSB is high but not well aligned with MT; only one player in the market

IDEA-0193 BPS Accelerator

Description

Building Performance Standards (BPS) Accelerator MTI would encourage cities to adopt BPS policies which target existing building stock and improve efficiencies either through a prescriptive design or an energy use intensity benchmark.

Portfolio Priorities	
☐	Equity
☐	WE&T
☒	Energy Savings
☐	Grid Benefits
☒	GHG Reductions

IDEA-0193 BPS Accelerator

Stage 1 Scoring Assumptions

Sector(s)	Commercial buildings
End Use(s)	Potentially all end uses
Decision Type(s)	Normal/early replacement & add-on equipment
Baseline (savings)	Current commercial building stock with no BPS

Weighted Score	**7.30**
TSB	
Energy Savings	High
Grid Benefits	Low
GHG Impacts	High
MT Alignment	
Innovation Characteristics	2
Leverage Points	4
Sustained Benefits	5

Recommendation Rationale: Efforts underway at the local and state levels. Once passed, it would catalyze the adoption of other MTIs (such as CRAWS)

IDEA-0080 Smart Electric Panels

Description

A smart panel is an electric panel with integrated or add-on software controls, generally in the form of relays, that provide a user with additional information and power-management capabilities beyond a traditional panel.

Smart panels are capable of shutting down all non-critical loads, communicating circuit-level consumption, facilitating strategic participation in DR programs, limiting whole-home demand by preventing coincident demand from appliances, managing appliances, and enables electrification by allowing addition of loads in excess of rated panel capacity.

Portfolio Priorities	
☐	Equity
☐	WE&T
☐	Energy Savings
☒	Grid Benefits
☐	GHG Reductions

IDEA-0080 Smart Electric Panels

Stage 1 Scoring Assumptions

Sector(s)	SF & MF Residential
End Use(s)	Space & water heating, major appliances
Decision Type(s)	Normal replacement & new construction
Baseline	Assumes "dumb" panel

Weighted Score	**6.44**
TSB	
Energy Savings	Low
Grid Benefits	High
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	4
Leverage Points	3
Sustained Benefits	3

Recommendation Rationale: Team likes idea as an enabling technology but is cautious about low energy savings; potentially a quick ramp

IDEA-0022 Smart Home

Description

Smart home technology enables automation of certain appliances for increased capabilities, security, comfort, and convenience including products such as thermostats, lighting, refrigerators, and cooking appliances. In addition, these appliances can be connected to an overarching smart home energy management system which allows the customer to monitor their energy usage and make changes based on usage patterns.

Portfolio Priorities	
☒	Equity
☒	WE&T
☐	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0022 Smart Home

Stage 1 Scoring Assumptions

Sector(s)	SF & MF residential
End Use(s)	Space & water heating, major appliances, plug loads, lighting
Decision Type(s)	Normal replacement & new construction
Baseline	Uncontrolled loads

Weighted Score	**7.14**
TSB	
Energy Savings	Medium
Grid Benefits	Medium
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	3
Leverage Points	3
Sustained Benefits	4

Recommendation Rationale: No reason to exclude from advancing to Stage 2 but team is cautious about energy savings and level of control over home systems

IDEA-0010 High Performance Windows

Description

High performance windows are windows that outperform code efficient windows by ~20% or more through the use of two or more panes of glass and /or the use of gases such as krypton or argon. This initiative would promote the top tier of ENERGY STAR rated products which typically requires a thin triple-pane window.

Portfolio Priorities	
☐	Equity
☒	WE&T
☐	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0010 High Performance Windows

Stage 1 Scoring Assumptions

Sector(s)	SF & MF residential
End Use(s)	Envelope
Decision Type(s)	Normal replacement & new construction
Baseline	Retrofit: 60% single pane, 40% dual pane NC: code

Weighted Score	**7.51**
TSB	
Energy Savings	Medium
Grid Benefits	Low
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	4
Leverage Points	4
Sustained Benefits	5

Recommendation Rationale: Already have a windows MTI in development

IDEA-0222 Residential Smart-Splitting Solutions

Description

Electric vehicle supply equipment (EVSE) technology family, addressing the issue of insufficient electrical panel capacity. Smart-splitting solutions enable multiple devices to utilize an existing 240v outlet to power multiple devices by managing the charge.

Portfolio Priorities	
☐	Equity
☐	WE&T
☐	Energy Savings
☐	Grid Benefits
☐	GHG Reductions

IDEA-0222 Residential Smart Splitting Solutions

Stage 1 Scoring Assumptions

Sector(s)	SF residential
End Use(s)	Any 240V appliance end use such as clothes dryers, EV chargers, induction stoves, electric water heaters, AC
Decision Type(s)	Add-on equipment
Baseline	One 240V appliance only; potential for electrification; some load shifting

Weighted Score	**5.49**
TSB	
Energy Savings	Low
Grid Benefits	Medium
GHG Impacts	Medium
MT Alignment	
Innovation Characteristics	5
Leverage Points	2
Sustained Benefits	2

Recommendation Rationale: Cheap & easy solution but has a very narrow use; is not a comprehensive market transformation approach

Questions & Discussion

MTAB Reactions to Recommended Top 5

Idea Name	Weighted Score	"TSB" High	"TSB" High & MT Alignment
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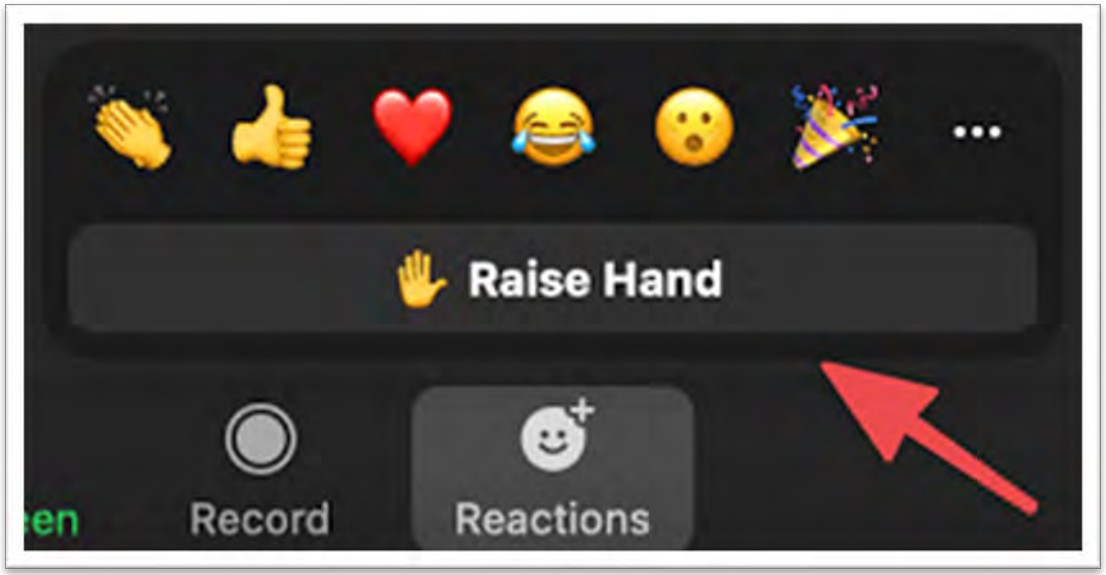
0010 High Performance Windows	7.51	6.14	6.96
0222 Residential Smart-Splitting	5.49	6.08	4.83

4. Public Comment

Raise your hand using the “Reactions” feature and we will allow you to unmute yourself.



Transformative Energy Solutions

for the public good

Market transformation is a proven approach that works to remove market barriers so that energy efficient, equitable, and climate-friendly approaches become the new standard practice for all Californians.

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