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March 11, 2026

**Tier 2 Advice Letter RI-CalMTA-4**

(California Market Transformation Administrator<sup>1</sup> ID U-1399-E)

Public Utilities Commission of the State of California

**Subject: Revised Induction Cooking MTI Plan (Compliance with Ordering Paragraph 1 of D.25-11-023)**

**I. Purpose**

The California Market Transformation Administrator (U-1399-E) (CalMTA) submits its Revised Induction Cooking Market Transformation Initiative (MTI) Plan by Tier 2 Advice Letter in compliance with Ordering Paragraph (OP) 1 of California Public Utilities Commission (CPUC) Decision (D.) 25-11-023, which conditionally approved CalMTA's proposed MTI for Induction Cooking subject to "CalMTA's submission of a Tier 2 Advice Letter by April 3, 2026," with revisions to the MTI specified in that Ordering Paragraph.<sup>2</sup>

CalMTA requests that the CPUC approve its proposed Revised Induction Cooking MTI Plan herein as compliant with D.25-11-023 and timely submitted by this Tier 2 Advice Letter. Advice Letter RI-CalMTA-4 also complies with the requirements of General Order 96-B governing Tier 2 advice letter filings.<sup>3</sup>

**II. Background**

In D.25-11-023, the Commission concluded that "Public Utilities Code Section 399.4(d)(1) requires the Commission to 'authorize market transformation programs with appropriate levels of funding to achieve deeper energy efficiency savings.'"<sup>4</sup> In compliance with this statutory requirement, the Commission approved CalMTA's Room

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<sup>1</sup> Resource Innovations, Inc. holds the contract with Pacific Gas and Electric to administer CalMTA.

<sup>2</sup> D.25-11-023, Ordering Paragraph 1, at pp. 85-86.

<sup>3</sup> General Order 96-B, General Rule 7 and Energy Industry Rule 5.2.

<sup>4</sup> D.25-11-023, Conclusion of Law 1, at p. 80.

Heat Pump MTI and conditionally approved the Induction Cooking MTI subject to CalMTA filing a Tier 2 Advice Letter to narrow the Induction Cooking MTI to focus market interventions on 120 volt (120V) products.<sup>5</sup>

In approving the MTIs, the Commission concluded that CalMTA's proposed MTIs are likely to drive incremental savings beyond that currently being achieved in the broader energy efficiency portfolio and "have the potential to help ease the electrification transition among environmental and social justice communities and disadvantaged communities in order to help California meet its long-term (2045) environmental goals."<sup>6</sup> By D.25-11-023, the Commission further recognized that 120V electrification technologies, particularly for cooking, offer a practical pathway across a wide range of housing types, including multifamily buildings, manufactured homes, and older structures, because they can be deployed without triggering costly electrical upgrades such as wiring, panel, or service expansions.<sup>7</sup>

With respect to the Induction Cooking MTI specifically, by OP 1 of D.25-11-023, the Commission approved that MTI conditioned on "...CalMTA's submission of a Tier 2 Advice Letter by no later than April 3, 2026, that does the following:

- "(a) Narrows the Induction Cooking MTI focus to 120V technologies, with or without battery backup;
- "(b) Related to the narrower technology focus, specifies changes to the logic model, intervention strategies, market progress indicators, milestones, and cost-effectiveness forecast and schedule;
- "(c) Modifies the logic model to account for market and policy environment changes since the MTI was developed; and
- "(d) Modifies the MTI deployment budget to reflect the narrower technology focus and discusses how changes related to items (a), (b), and (c) above are reflected in the budget revisions."<sup>8</sup>

In compliance with D.25-11-023 and General Order 96-B, CalMTA timely submits this Tier 2 Advice Letter for Commission approval of the Revised Induction Cooking MTI Plan described herein and detailed and supported in Attachments A through H hereto. The Revised Induction Cooking MTI Plan fully complies with all requirements of OP 1 of D.25-11-023 and continues to place emphasis on environmental and social justice communities as approved by the Commission in OP 2<sup>9</sup> of D.25-11-023.

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<sup>5</sup> D.25-11-023, Ordering Paragraph 1, at p. 86.

<sup>6</sup> D.25-11-023, Conclusion of Law 16, at p. 82.

<sup>7</sup> D.25-11-023, Findings of Fact 11-14, at pp. 77-78.

<sup>8</sup> D.25-11-023, OP 1, at pp. 85-86.

<sup>9</sup> D.25-11-023, OP 2, at p. 86.

### **III. Discussion**

#### **A. Summary**

This section identifies and describes the revisions to CalMTA's originally proposed Induction Cooking MTI Plan made in compliance with OP 1 of D.25-11-023. The central revision is the expansion of the product definition to include 120V non-battery-equipped, permanently installed products in addition to 120V battery-equipped products. While the broader induction cooking market, including 240V products, remains in scope, the revised MTI Plan focuses interventions on 120V products in order to advance a more accessible and scalable market pathway. In particular, greater emphasis on emerging 120V non-battery-equipped products is intended to accelerate the availability of more affordable options, expand the expected share of benefits that will go to environmental and social justice (ESJ) and multifamily communities, and enable simpler gas-to-electric conversions in existing buildings.

This revised focus also requires acknowledgment of associated trade-offs. CalMTA must now support market development across two distinct early-stage product segments, 120V battery-equipped and 120V non-battery-equipped products, thereby increasing the complexity of manufacturer, supply chain, and market engagement activities. Further, because the revised strategy places less emphasis on 240V products than originally proposed, uptake of those products is expected to be lower than forecasted in CalMTA's original MTI Plan. CalMTA therefore forecasts a modest reduction in cumulative adoption of efficient cooking technologies over the 20-year program lifecycle, with a corresponding reduction in total system benefits. Even with these trade-offs, the Revised Induction Cooking MTI Plan aligns the initiative with the Decision's direction and the objective of advancing a practical, equitable, and more affordable pathway for market transformation. The revisions described herein track and comply with D.25-11-023, Ordering Paragraph 1, items (a) through (d), at pages 85–86, and OP 2, at page 86. Additional details are provided in Attachment A<sup>10</sup> and Attachment C<sup>11</sup> to this Advice Letter.

#### **B. Compliance with Ordering Paragraph 1 of D.25-11-023: Items (a) through (d)**

##### **1. D.25-11-023, OP 1, Item (a): “Narrows the Induction Cooking MTI Focus to 120 Volt Technologies With or Without Battery Backup.”**

In compliance with OP 1, subsection (a), the Induction Cooking MTI has been revised to expand manufacturer engagement to also focus on 120V non-battery-equipped induction products in addition to 120V battery-equipped products and to remove any interventions targeting 240V products with builders and retailers. This revision is

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<sup>10</sup> Revised Induction Cooking MTI Plan – Redline

<sup>11</sup> Product Assessment Memo Summarizing Updates to Appendix C

intended to accelerate market availability of more affordable 120V options, particularly those that can support simpler gas-to-electric conversions in existing buildings and increase the expected share of benefits that will go to ESJ and multifamily communities. Attachment C<sup>12</sup> to this Advice Letter updates the product definition with revised focus on the 120V products, including both battery-equipped and non-battery-equipped.

**2. D.25-11-023, OP 1, Item (b): “Related to the Narrower Technology Focus, Specifies Changes to the Logic Model, Intervention Strategies, Market Progress Indicators, Milestones, and Cost-Effectiveness Forecast and Schedule.”**

**a. Logic Model and Intervention Strategies**

To achieve the Commission-directed narrower focus of the Induction Cooking MTI to 120V technologies (with or without battery backup), the logic model and CalMTA’s market intervention strategies have been updated and revised. Consistent with the Commission’s order, CalMTA has refocused upstream and midstream activities to accelerate 120V product availability, shift demand-building toward multifamily affordable housing decision makers, and align market delivery with existing multifamily and zonal decarbonization program pathways. This refocused strategy is intended to advance a more affordable and accessible 120V market, with particular relevance for ESJ and multifamily applications, and for fuel substitution in existing buildings where minimizing electric service upgrades is important.

Revisions to the market interventions include the following:

- **Intervention 1:** Manufacturer supply chain engagement will now be completely focused on bringing 120V products to market, both battery-equipped and non-battery-equipped.
- **Intervention 4:** Increasing demand from builders has been removed from the scope of this intervention. This intervention will now focus entirely on building owners and property management firms in the multifamily market to increase demand for 120V products.
- **Intervention 6:** The MTI has been revised to focus on making affordable 120V products available to existing multifamily and zonal decarbonization programs.
- **Intervention 8:** For retailer engagement, midstream retailer stocking incentives for 240V induction products have been removed. Instead, engagement with retailers will focus on acquiring data regarding overall induction cooking adoption and support sales of 120V products once they become available for the retail channel.

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<sup>12</sup> Product Assessment MEMO SUMMARIZING UPDATES to Appendix C (Product Assessment)

Based on the refocused strategy and revised interventions above, the MTI's outputs and near-, medium-, and long-term market outcomes have been changed to reflect the expected impact of the revised MTI interventions.

Revisions to the logic model are provided in Attachment D<sup>13</sup> and additional details in Section 2 of Attachment A<sup>14</sup> to this Advice Letter.

### **b. Market Progress Indicators and Milestones**

Revisions to the Market Progress Indicators (MPIs) have been made to align with changes to the logic model outcomes. The revisions include the addition of MPIs and milestones on availability and adoption of 120V non-battery-equipped products and slowed expectations on meeting established milestones for 240V induction products resulting from the refocusing of efforts toward the 120V products. MPIs and milestones associated with adoption in the new-construction market segment have been removed, and a milestone for adoption of 120V induction products as part of zonal decarbonization pilots and programs has been added.

For additional reference and details, please see Attachment F<sup>15</sup> to this Advice Letter.

### **c. Cost Effectiveness and Re-Forecasting Approach**

The market forecast for the MTI has been updated to reflect revised projected market adoption of both 120V battery-equipped and non-battery-equipped induction products. Adoption is expected to ramp gradually in the early years because 120V non-battery-equipped products are not yet widely available. Forecasted adoption accelerates after 2030 as product availability expands. The updated strategy is forecasted to increase overall 120V fuel-substitution adoption because non-battery-equipped products are expected to enter the market at a lower price point, although the strategy is expected to marginally reduce adoption of competing 240V products.

The incremental measure cost (IMC) of 120V non-battery-equipped products is forecasted to be substantially lower than 120V battery-equipped products, resulting in a lower average IMC for 120V products. This is particularly apparent when non-battery enabled products become available in 2028, before battery-equipped models are expected to achieve greater production scale and lower costs.

CalMTA updated the Total System Benefit (TSB) and cost-effectiveness forecasts for the MTI to reflect the change in strategy and revised inputs, as shown in Table 1.

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<sup>13</sup> Appendix A: Induction Cooking Logic Model - REDLINE

<sup>14</sup> Revised Induction Cooking MTI Plan - REDLINE

<sup>15</sup> Appendix F: Evaluation Plan - REDLINE

**Table 1. Revised Cost Effectiveness and TSB for Induction Cooking**

<b>TSB<sup>16</sup> (2026-2045)</b>	<b>TSB - Energy</b>	<b>TSB - Grid</b>	<b>TSB - GHG</b>
	\$36M \$25M	(\$125M) (\$131M)	\$626M \$601M
<b>TSB - Total</b>	\$537M \$495M		
<b>Cost-Effectiveness (2024-2045)</b>	<b>TRC<sup>17</sup></b>	<b>PAC<sup>18</sup></b>	
	1.12 1.05	14.36 12.68	

Overall, the revised Induction Cooking MTI is forecasted to result in a modest reduction in TSB, TRC, and PAC cost-effectiveness ratios – compared to the MTI originally proposed by CalMTA. Specifically:

- TSB declines as a result of lower market adoption of MTI products over the period 2026-2045. Greenhouse gas (GHG) benefits remain the largest source of TSB (\$601M) due to benefits from fuel substitution. Energy benefits, which represented approximately 7 percent of TSB in the originally proposed MTI, now represent 5 percent of re-forecasted TSB in the Revised Induction Cooking MTI plan. The decline in forecasted energy benefits is driven by a reduction in adoption of battery-equipped 120V equipment (the primary source of energy cost savings) as some of the previously forecasted adoption shifts to less expensive non-battery-equipped units. Additional details about these changes are provided in Attachment B<sup>19</sup> to this Advice Letter.
- The forecasted TRC ratio for the MTI declines from 1.12 to 1.05, reflecting the combined effect of lower TSB and IMC, and higher program costs over the 20-year period. Additional details about the IMC and program costs over the MTI lifetime are provided in Attachment B and Attachment H<sup>20</sup> to this Advice Letter.
- The forecasted PAC ratio for the Induction Cooking MTI declines from 14.36 to 12.68. The forecasted PAC ratio’s decline reflects the combined effect of lower TSB and higher program costs over the 20-year period. The PAC is a narrower test than the TRC because it measures cost-effectiveness purely from the program administrator's perspective, meaning incremental measure costs borne by customers are excluded from the calculation entirely. This makes the PAC more sensitive to changes in TSB and program spending, with no offsetting reduction in IMCs. The \$41.5M decline in TSB reduces the benefits the program is credited with delivering, while the modest \$1.7M increase in program costs reflects the additional investment required to support the updated 120V-focused

<sup>16</sup> Total System Benefit (TSB) = TSB Energy + TSB Grid + TSB GHG

<sup>17</sup> Total Resource Cost (TRC) measures net costs as a resource option based upon the total costs for the participants and the utility.

<sup>18</sup> Program Administrator Cost (PAC)

<sup>19</sup> Market Forecasting and Cost Effectiveness MEMO SUMMARIZING UPDATES to Appendix B

<sup>20</sup> Appendix H: Phase III Cost Estimate - REDLINE

strategy. Together, these produce a roughly 12 percent drop in PAC, twice the relative decline seen in TRC.

For additional reference and details, please see Attachment B to this Advice Letter.

CalMTA has also updated the cost-effectiveness schedule, included in Table 9, “Updated cost-effectiveness schedule” of Attachment B.

**3. D.25-11-023, OP 1, Item (c): “Modifies Logic Model to Account for Market and Policy Environment Changes Since the MTI Was Developed.”**

CalMTA updated the intervention strategies for the Induction Cooking MTI to better reflect the current policy landscape shaping this market, given developments over the past 18 months. The reliance on federal Inflation Reduction Act incentives was removed, given that those provisions primarily support existing 240V conditions and there have been recent shifts in federal priorities. The efforts to coordinate with, or leverage, new construction programs were removed due to the shift in focus away from the 240V products that are more prevalent in that segment. In their place, an increased emphasis on the pivotal role of 120V products was added, particularly where such products provide enabling solutions for targeted gas decommissioning and pilot neighborhood decarbonization zones, such as those being pursued as part of Senate Bill 1221 implementation<sup>21</sup> by the CPUC.

For additional references, please see Attachment A (Sections 2 and 5)<sup>22</sup> and Attachment E<sup>23</sup> to this Advice Letter.

To align with D.25-11-023, CalMTA revised the originally proposed Phase III Induction Cooking MTI schedule to reflect a six-year deployment period with an approximate six-month delay in Year 1, which shifts the timing for issuing the Phase III RFP and for activities associated with selecting and onboarding a program implementer to support Phase III market development. This is reflected in the update to the budget as discussed in Section 4 below with additional details in Attachment H<sup>24</sup> to this Advice Letter.

**4. D.25-11-023, OP 1, Item (d): “Modifies the MTI Deployment Budget to Reflect the Narrower Technology Focus and Discusses How Changes Related to [OP 1] Items (a), (b), and (c) Above Are Reflected in the Budget Revisions.”**

As a result of changes made in compliance with OP 1 items (a), (b), and (c), CalMTA modified the budget for the Induction Cooking MTI plan from that originally proposed.

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<sup>21</sup> <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/sb-1221-implementation>

<sup>22</sup> Revised Induction Cooking MTI Plan - REDLINE

<sup>23</sup> Appendix E: External Program Alignment & Coordination - REDLINE

<sup>24</sup> Appendix H: Phase III Cost Estimate - REDLINE

The revised budget reflects targeted adjustments to align the MTI plan with D.25-11-023 and the related implementation strategy adjustments described in this Advice Letter. The Phase III investment under the Revised Induction Cooking MTI plan is set at **\$29,672,000** over six years (2026-2031), which remains below the cap of \$32,399,000 set by D.25-11-023.<sup>25</sup>

The principal driver of the budget and timeline revisions is the increased emphasis on 120V induction products, which now represent the primary focus of the MTI under the revised scope. Although this narrower focus reduces investment in 240V-centered strategies and certain new-construction and builder-oriented activities, it does not reduce the level of effort required to transform the market. Instead, it shifts investment toward the upstream market-development activities needed to advance 120V products.

This shift is warranted because the 120V technologies remain at an earlier stage of development, with limited product availability, relatively high product costs, and low consumer awareness. In particular, non-battery-equipped 120V products are not yet broadly available, constraining near-term market readiness and requiring more intensive intervention upstream. Accordingly, the revised budget places greater emphasis on manufacturer engagement, product development support, supply-chain coordination, and related market-building activities necessary to establish the conditions for broader adoption.

As revised, the total investment needed to achieve the TSB forecast over 20 years (2024-2045) for the Revised Induction Cooking MTI increases to \$39,094,000 (up from \$37,427,000 for the originally proposed MTI). This increase is modest in magnitude and is justified by the market realities of the revised strategy and narrower technology focus. The revised budget reflects the practical costs of building a durable market foundation for the 120V products prioritized by D.25-11-023.

Overall, the revised budget appropriately reflects the earlier-stage nature of the 120V market and the corresponding need for more sustained and targeted intervention. It also demonstrates that a narrower technology focus does not necessarily translate into lower cost. In this case, the revised scope reduces some spending associated with new construction, builder incentives, and portions of the prior 240V-centered deployment strategy, but those reductions are offset by the greater upstream investment needed to develop the 120V market. As a result, a larger share of spending shifts into later years, particularly 2032-2033, while the overall 2024-2045 impact period remains unchanged. These adjustments are reasonable and necessary to preserve the expected market outcomes of the Revised Induction Cooking MTI Plan proposed here in compliance with D.25-11-023.

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<sup>25</sup> “The Phase III budget cap for the induction cooking is \$32,399,000 over a six-year period, as shown in line 7 of Table 3. This budget is based on CalMTA’s application budget for an Induction Cooking MTI that includes both 120V and 240V induction cooking technologies. The Phase III budget for induction cooking focused on 120 V technologies that will be authorized through approval of a Tier 2 advice letter as specified in this decision shall have a budget lower than \$32,399,000.” D.25-11-023, Table 3 and Footnote 104, at p. 60.

For additional budget revision details, see Attachment H<sup>26</sup> to this Advice Letter.

CalMTA acknowledges that no Phase III deployment funds may be spent until this Tier 2 Advice Letter is approved by the Energy Division.

#### **IV. Supporting Documents**

The following documents, appended and incorporated in full to this Tier 2 Advice Letter, describe and support the revisions to CalMTA's originally proposed Induction Cooking MTI Plan required to comply with D.25-11-023. These attachments, along with the explanations in Section III and V herein, constitute the Revised Induction Cooking MTI Plan proposed and requested for approval by CalMTA in this Tier 2 Advice Letter in compliance with OP 1 of D.25-11-023:

- Attachment A: Revised Induction Cooking MTI Plan - REDLINE
- Attachment B: Market Forecasting and Cost Effectiveness MEMO SUMMARIZING UPDATES to Appendix B
- Attachment C: Product Assessment MEMO SUMMARIZING UPDATES to Appendix C
- Attachment D: Appendix A: Induction Cooking Logic Model - REDLINE
- Attachment E: Appendix E: External Program Alignment & Coordination - REDLINE
- Attachment F: Appendix F: Evaluation Plan - REDLINE
- Attachment G: Appendix G: Risk Management Plan - REDLINE
- Attachment H: Appendix H: Phase III Cost Estimate - REDLINE

#### **V. Compliance Matrix**

To further facilitate review of this Tier 2 Advice Letter, CalMTA provides the following Compliance Matrix that identifies each requirement of OP 1 of D.25-11-023 for the Revised Induction Cooking MTI Plan, how each is addressed and complied with in that revised MTI, and what attachments support the revisions.

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<sup>26</sup> Appendix H: Phase III Cost Estimate - REDLINE, specifically Tables 1 and 2 and the accompanying explanatory discussion

**Table 2. Compliance Matrix**

<b>OP 1 Requirement</b>	<b>Reference Attachments</b>	<b>What is addressed</b>
(a) Narrow to 120V w/ or w/o battery	<ul style="list-style-type: none"> <li>• Attachment A: Revised Induction Cooking MTI Plan - REDLINE</li> <li>• Attachment C: Product Assessment MEMO SUMMARIZING UPDATES to Appendix C</li> </ul>	Revised product definition to include the 120V product w/o battery
(b) Revise logic model, strategies, indicators, milestones, cost effectiveness forecast/schedule	<ul style="list-style-type: none"> <li>• Attachment D: Appendix A: Induction Cooking Logic Model - REDLINE</li> <li>• Attachment B: Market Forecasting and Cost Effectiveness MEMO SUMMARIZING UPDATES to Appendix B</li> <li>• Attachment F: Appendix F: Evaluation Plan - REDLINE</li> <li>• Attachment G: Appendix G: Risk Management Plan - REDLINE</li> </ul>	Revised interventions + market re-forecasts + updated CE + MPI and milestones
(c) Modify logic model for market/policy changes	<ul style="list-style-type: none"> <li>• Attachment D: Appendix A: Induction Cooking Logic Model - REDLINE</li> <li>• Attachment E: Appendix E: External Program Alignment &amp; Coordination - REDLINE</li> </ul>	Revised context + barrier map
(d) Revise budget + explain tie to (a)-(c)	<ul style="list-style-type: none"> <li>• Attachment H: Appendix H: Phase III Cost Estimate - REDLINE</li> </ul>	Revised budget is under the \$32,399,000 cap established in D.25-11-023 for six-year deployment. And changes are explained in the narrative.
Tier 2 advice letter by no later than April 3, 2026	This Advice Letter	Filed prior to deadline on March 11, 2026

## **VI. Protests**

Anyone wishing to protest this submittal may do so by letter sent electronically via e-mail, no later than April 1, 2026, which is the first business day 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division  
ED Tariff Unit  
E-mail: [EDTariffUnit@cpuc.ca.gov](mailto:EDTariffUnit@cpuc.ca.gov)

The protest shall also be electronically sent to CalMTA at the addresses shown below on the same date it is electronically delivered to the Commission:

Smita Gupta  
Principal of Policy, CalMTA  
E-mail: [sgupta@calmta.org](mailto:sgupta@calmta.org)

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, General Rule 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name and e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, General Rule 3.11).

## **VII. Effective Date**

Pursuant to General Order 96-B, Energy Industry Rule 5.2, and OP 1 of D.25-11-023, this advice letter is submitted with a Tier 2 designation. CalMTA requests that this Tier 2 Advice Letter submittal become effective on regular notice, April 10, 2026, which is 30 calendar days after the date of submittal.

## **VIII. Notice**

In accordance with General Order 96-B, General Rule 4, a copy of this advice letter is being served electronically on the service list for A.24-12-009 and R.25-04-010 and has been uploaded to the Energy Division Advice Letter Website. All electronic approvals should be sent to [sgupta@calmta.org](mailto:sgupta@calmta.org).

/S/ Lynette Curthoys  
Lynette Curthoys  
Vice President of Market Transformation  
CalMTA

cc: Service List

- A.24-12-009 (CalMTA Application – Initial Tranche of MTI)
- R.25-04-010 (Energy Efficiency Rulemaking).



# ADVICE LETTER SUMMARY

## ENERGY UTILITY



MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.:

Utility type:

ELC       GAS       WATER  
 PLC       HEAT

Contact Person:

Phone #:  
E-mail:  
E-mail Disposition Notice to:

EXPLANATION OF UTILITY TYPE

ELC = Electric      GAS = Gas      WATER = Water  
PLC = Pipeline      HEAT = Heat

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #:

Tier Designation:

Subject of AL:

Keywords (choose from CPUC listing):

AL Type:  Monthly     Quarterly     Annual     One-Time     Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL:

Summarize differences between the AL and the prior withdrawn or rejected AL:

Confidential treatment requested?  Yes     No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required?  Yes     No

Requested effective date:

No. of tariff sheets:

Estimated system annual revenue effect (%):

Estimated system average rate effect (%):

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected:

Service affected and changes proposed<sup>1</sup>:

Pending advice letters that revise the same tariff sheets:

<sup>1</sup>Discuss in AL if more space is needed.

**Protests and correspondence regarding this AL are to be sent via email and are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:**

California Public Utilities Commission  
Energy Division Tariff Unit Email:  
[EDTariffUnit@cpuc.ca.gov](mailto:EDTariffUnit@cpuc.ca.gov)

Contact Name:  
Title:  
Utility/Entity Name:  
  
Telephone (xxx) xxx-xxxx:  
Facsimile (xxx) xxx-xxxx:  
Email:

Contact Name:  
Title:  
Utility/Entity Name:  
  
Telephone (xxx) xxx-xxxx:  
Facsimile (xxx) xxx-xxxx:  
Email:

CPUC  
Energy Division Tariff Unit  
505 Van Ness Avenue  
San Francisco, CA 94102

## ENERGY Advice Letter Keywords

Affiliate	Direct Access	Preliminary Statement
Agreements	Disconnect Service	Procurement
Agriculture	ECAC / Energy Cost Adjustment	Qualifying Facility
Avoided Cost	EOR / Enhanced Oil Recovery	Rebates
Balancing Account	Energy Charge	Refunds
Baseline	Energy Efficiency	Reliability
Bilingual	Establish Service	Re-MAT/Bio-MAT
Billings	Expand Service Area	Revenue Allocation
Bioenergy	Forms	Rule 21
Brokerage Fees	Franchise Fee / User Tax	Rules
CARE	G.O. 131-D	Section 851
CPUC Reimbursement Fee	GRC / General Rate Case	Self Generation
Capacity	Hazardous Waste	Service Area Map
Cogeneration	Increase Rates	Service Outage
Compliance	Interruptible Service	Solar
Conditions of Service	Interutility Transportation	Standby Service
Connection	LIEE / Low-Income Energy Efficiency	Storage
Conservation	LIRA / Low-Income Ratepayer Assistance	Street Lights
Consolidate Tariffs	Late Payment Charge	Surcharges
Contracts	Line Extensions	Tariffs
Core	Memorandum Account	Taxes
Credit	Metered Energy Efficiency	Text Changes
Curtable Service	Metering	Transformer
Customer Charge	Mobile Home Parks	Transition Cost
Customer Owned Generation	Name Change	Transmission Lines
Decrease Rates	Non-Core	Transportation Electrification
Demand Charge	Non-firm Service Contracts	Transportation Rates
Demand Side Fund	Nuclear	Undergrounding
Demand Side Management	Oil Pipelines	Voltage Discount
Demand Side Response	PBR / Performance Based Ratemaking	Wind Power
Deposits	Portfolio	Withdrawal of Service
Depreciation	Power Lines	

Attachment A:

Induction Cooking MTI Plan - REDLINE



# Induction Cooking

## Market Transformation Initiative Plan

CalMTA is a program of the California Public Utilities Commission (CPUC)  
and is administered by Resource Innovations



# Induction Cooking

## Market Transformation Initiative Plan

**Revised March 6, 2026 in compliance with CPUC Decision 25-11-023**

~~December 18, 2024~~ March 6, 2026

Prepared by:

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CalMTA is a program of the California Public Utilities Commission (CPUC) and is administered by Resource Innovations

## Purpose

This Market Transformation Initiative (MTI) Plan describes the business case for investment in the MTI including strategic interventions, intended market outcomes, and evaluation activities that will be implemented during Phase III: Market Deployment. This investment would result in long-term energy efficiency and other benefits for California. The MTI Plan was developed using the findings of Phase II assessment and research, which are detailed in the appendices of this document. ~~Development of the MTI Plan followed the stage gate process described in the approved Market Transformation Framework in D.19-12-021.~~ **The updates outlined in this plan are in response to the CPUC D.25-11-023 refined focus on 120V induction products.** The research findings and plan elements have been shared with CalMTA's Market Transformation Advisory Board (MTAB) throughout development. The MTAB also had the opportunity to review and provide comments and feedback on the plan, which are included in Appendix I of this plan. All MTAB meetings are public and interested parties will have an opportunity to comment via a California Public Utilities Commission (CPUC) application proceeding.

### MTI development documents by phase



Additional information on CalMTA and the MTI development process can be found at <https://calmta.org>.

The Advancement Plan for this MTI can be found at <https://calmta.org/resources-and-reports/>.



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### List of Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
ACEEE	American Council for an Energy-Efficient Economy
AHAM	Association of Home Appliance Manufacturers
BMA	Baseline Market Adoption
BUILD	Building Initiative for Low-Emissions Development
CalEHP	California Electric Homes Program
CalMTA	California Market Transformation Administrator
CARB	California Air Resources Board
CBO	Community-Based Organization
CE	Cost-Effectiveness
CEC	California Energy Commission
CPUC	California Public Utilities Commission
DOE	Department of Energy
DR	Demand Response
EPA	Environmental Protection Agency
EPIC	Electric Program Investment Charge
ESA	Energy Savings Assistance
ESJ	Environmental and Social Justice
ESRPP	ENERGY STAR Retail Products Platform
GHG	Greenhouse Gas
HVAC	Heating, Ventilation, and Air Conditioning
IAQ	Indoor Air Quality
IMC	Incremental Measure Cost
IOU	Investor-Owned Utility
IRA	Inflation Reduction Act
MF	Multifamily
MPI	Market Progress Indicator
MT	Market Transformation
MTAB	Market Transformation Advisory Board
MTI	Market Transformation Initiative
NOx	Nitrogen Oxides
NYCHA	New York City Housing Authority
NYSERDA	New York State Energy Research and Development Authority
PA	Program Administrator
PAC	Program Administrator Cost
PG&E	Pacific Gas and Electric
RFI	Request for Ideas
SCT	Societal Cost Test
SF	Single-Family
TOU	Time of Use
TSB	Total System Benefit
TMA	Total Market Adoption
TRC	Total Resource Cost



**Market Transformation Initiative Plan for Induction Cooking**  
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# 1 Executive summary

CalMTA's Induction Cooking Market Transformation Initiative (MTI) seeks to accelerate market adoption of induction cooktops and ranges to provide a high-quality cooking experience with the added health and safety benefits afforded by induction technology. Cooking is one of the most visible and personal uses of energy in households and efficient induction cooking serves as a linchpin to bring about the full home electrification needed to meet California's decarbonization goals.

Induction cooktops use electromagnetic technology to heat cookware directly, delivering energy-efficient, precise, and faster cooking. Their surfaces also stay cooler to the touch and therefore are safer, especially for seniors or families with young children. While this MTI focuses on induction cooktops and ranges, it also incorporates ENERGY STAR 1.0 certified radiant cooking products. Many of the same benefits can be achieved with high-efficiency radiant cooking products (i.e., ENERGY STAR certified) and the ENERGY STAR label provides an important product differentiation mechanism. Nevertheless, induction cooking products achieve the temperature control associated with gas cooking and provide a safer working surface. These qualities, in addition to its superior energy efficiency, are the reasons for primarily focusing on induction products. Removing combustion sources for better indoor air quality (IAQ) will directly help Californians who live in smaller or multifamily (MF) homes. In addition to these non-energy benefits, the forecasted Total System Benefit of ~~\$537~~ **\$495** million demonstrates its clear value.

As California pivots to a more electrification-enabling rate structure, induction will provide a comparable alternative to gas cooking. Emerging battery-equipped **and non-battery-equipped** 120V products promise opportunities for gas replacements that will plug into existing outlets, limiting the need for **home electrical infrastructure** upgrades, and deliver cooking performance on par with gas. Battery-equipped induction cooking will allow for charging during times when electricity rates are low and reduce demand at peak times as well as the ability to cook during power outages. **120V non-battery-equipped induction cooking products will provide an affordable alternative that also does not require a costly electrical panel or outlet upgrades. Given their additional benefits and their emerging market status, this MTI's interventions will primarily focus on the development and adoption of the 120V induction products, which in turn will result in greater overall adoption of induction products.**

This MTI Plan is informed by CalMTA's extensive research, **MTAB, public comment and CPUC decision D.25-11-023** on the product, market, active programs, and potential market interventions to ensure the adoption of induction cooktops and ranges.

## 1.2 Market overview

Currently, gas cooking products dominate the California residential market, with over 70% market penetration.<sup>1</sup> While induction cooking offers numerous advantages over both gas and existing

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<sup>1</sup> U.S. Energy Information Administration. (2020). *Highlights for appliances in U.S. homes by state*, 2020. <https://www.eia.gov/consumption/residential/data/2020/state/pdf/State%20Appliances.pdf>.



electric coil or non-induction smooth top cooking products – such as improved IAQ, enhanced safety, superior cooking performance, and ease of cleaning – several barriers have prevented widespread adoption. The primary challenges include the following:

- Existing California homes built for gas cooking (120V) and there are no affordable 120V electric options that provide the same cooking capacity as 240V products
- Higher product and installation costs
- Cultural and consumer attachment to gas cooking
- ~~Concerns about durability given newer product and higher repair costs~~
- Low consumer awareness of induction and its benefits
- The need for new cookware for some buyers
- Potential energy bill increases under current gas and electric rate structures when customers change from gas to electric cooking

### 1.3 Vision

The vision for market transformation focuses on widespread adoption of induction cooking across California’s residential sector. Achieving this requires addressing the electrical infrastructure challenges posed by the dominant 120V circuitry found in most kitchens, increasing consumer awareness of induction benefits, and ensuring the availability of affordable induction products. The goal is for induction cooking to become the standard in California homes, with associated reductions in natural gas use, improved IAQ, enhanced energy efficiency, and improved cooking experience. The critical path includes engaging with manufacturers and retailers on suitable product for California’s infrastructure needs, building awareness of induction’s benefits, and engaging large influencers, aggregators, ~~builders~~, and California programs in the market to build market demand.<sup>2</sup>

### 1.4 Key Phase II research findings

While CalMTA envisions a changed market for induction cooking, Phase II research identified several important findings.

- Induction cooking technologies directly heat cookware and are 5-15% more efficient than traditional electric resistance cooking, making induction the preferred choice over electric resistance cooking.

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<sup>2</sup> For the purposes of this MTI, “programs” are defined as energy efficiency, decarbonization, weatherization, and climate resiliency programs, regardless of their funding source. Examples of such programs are listed in Appendix E. CalMTA will collaborate with such programs to aggregate demand and send a consistent signal to manufactures to develop California-appropriate room heat pumps.



- Induction stoves provide a high-performance cooking experience while significantly improving IAQ. They provide faster boil times, greater precision, do not emit indoor air pollutants, and are safer to operate. These features are especially desirable for families with young children and senior citizens. Over 80% of customers who stated that induction would be their preferred technology cited safety as a top reason.
- The primary barriers to adoption include lack of awareness of induction’s benefits and possible negative health impacts of gas cooking, the cost of transitioning from gas to electric, and the availability of products that meet California infrastructure needs. For most homes, accommodating affordable induction range models currently on the market would require an electrical upgrade ~~from the standard 120V to 240V~~. In addition, this move to electric from gas may increase electric bills, making the switch more costly for some. Therefore, the most important product improvement for this MTI is the development of more affordable 120V ranges with **and without** batteries to achieve both high cooking performance and limit ~~energy use away from costly peak timeframes~~ **the need to upgrade electrical infrastructure**.
- The research also found that induction products were significantly underrepresented at brick-and-mortar retail locations when compared to online stores, and retail sales associates often promoted gas.
- Despite these challenges, consumer sentiment toward induction cooking remains generally positive, though many are still unfamiliar with the technology’s benefits. When speaking with builders and multifamily property managers, many were open to installing induction cooktops or ranges if consumers showed increased preference and repairs were readily available.

## 1.5 Strategic interventions for Phase III

Based on what CalMTA learned during Phase II research, several strategic interventions were identified as important to undertake to achieve lasting change in the market. To overcome market barriers and drive market adoption, the following interventions are proposed for Phase III:

- 1) ~~Influence~~ **Accelerate** manufacturer development of affordable, 120V ~~battery-equipped~~ cooktops and ranges that fill the product availability gap for CA electrical infrastructure and multifamily market needs.
- 2) Support **and leverage** advancement of codes, policies, standards, and practices that increase ~~consumer market~~ preference for electric cooking and reduce costs associated with installation.
- 3) Support advancement of electrification-enabling rate structures and additional modifications that will work to mitigate the bill impacts of moving from gas to electric cooking.



- 4) Engage influential builders, remodelers, and property management firms **and building owners** through **demonstrations, upstream** incentives or bulk purchase pricing coupled with marketing support **specific to 120V induction products**.
- 5) Build ~~consumer~~ **market** acceptance and awareness through marketing and education campaigns on the benefits of induction cooking in partnership with aligned organizations.
- 6) Support inclusion of affordable **120V** induction cooking products in California programs, and the deployment of Inflation Reduction Act (IRA) funding. **especially those targeting MF and zonal electrification efforts**.
- 7) Engage ENERGY STAR specification development to support continued product differentiation and increased energy efficiency stringency.
- 8) Deploy midstream stocking incentives that motivate retailers to target environmental and social justice (ESJ) communities with more affordable induction products: **Engage retail partners to stock and promote 120V induction products and acquire full category sales data to track overall induction cooking adoption**

Through these strategic interventions, California can accelerate the adoption of induction cooking, **especially 120V induction products**, driving a significant shift toward all-electric homes, improving energy efficiency, **improving consumers' IAQ** and supporting the State's decarbonization goals.

## 1.6 Recommendations

CalMTA will monitor these interventions over the 20-year lifetime of the MTI.<sup>3</sup> Multiple short-, medium-, and long-term outcomes will be tracked with market progress indicators (MPIs) including the development of more 120V ~~battery-equipped~~ induction range products, and ENERGY STAR specification updates. Regular third-party evaluations of these MPIs will allow for real time evaluation of CalMTA's interventions, monitoring of the market's response, and identifying potential adaptations or shifts needed to the interventions.

CalMTA recognizes the other concurrent work being done in California by key stakeholders such as policymakers, statewide codes and standards advocacy, and efficiency and research programs. CalMTA intends to collaborate and build on this existing work to maximize the MTI's market development phase.

Induction Cooking not only demonstrates a unique opportunity to tackle what might be the last end-use in residential buildings that consumers electrify, enabling disconnection from the gas grid, but also provides strong Total System Benefit (TSB) and cost-effectiveness (CE) for California in the long term. TSB forecasts, using assumptions learned from Phase II research, indicates a potential of

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<sup>3</sup> The term "lifetime" refers to Phase III: Market Deployment only and has a defined "lifetime" of 20 years. While the lifetime of an MTI covers its implementation period, cost-effectiveness analyses include costs and savings from both Phase II and Phase III.



\$537 **\$495** million. This includes all savings from 2026-2045 and costs from 2024-2045. The contents of this MTI Plan summarize CalMTA’s lessons learned from Phase II activities as well as project the plan for market transformation over the next decade. Below is a table that includes a snapshot of the key cost and savings numbers derived from learnings in Phase II. Given the high potential value of this work, CalMTA recommends the Induction Cooking MTI advance to Phase III, pending approval from the CPUC.

**Table 1. Overview of the Induction Cooking MTI**

Budget description	Budget		
<b>Phase II investment (2024-2026):</b>	<b>\$4,626,000</b>		
Phase III investment over initial CalMTA funding cycle (2026-2031, 6 years):	\$29,672,000		
Phase III investment in remaining years of the MTI (2032-2045)	\$2,267,000		
Total evaluation budget	\$2,529,000		
<b>Total Phase III investment (implementation + evaluation) needed to achieve TSB forecast (2024-2045):</b>	<b>\$34,468,000</b>		
<b>TOTAL MTI Cost (Phase II + Phase III)</b>	<b>\$39,094,000</b>		
<b>TSB (2026-2045)</b>	<b>TSB - Energy</b>	<b>TSB - Grid</b>	<b>TSB - GHG</b>
	\$25M	(\$131M)	\$601M
<b>TSB - Total</b>	\$495M		
<b>Cost-Effectiveness (2024-2045)</b>	TRC	PAC	SCT Base/High
	1.05	12.68	3.04/3.04 <sup>a</sup>

<sup>a</sup> CalMTA has not yet updated the SCT cost-effectiveness ratio associated with the MTI changes described in the advice letter. We anticipate that those changes will result in a small reduction in the SCT ratio.

**Table 1. Overview of the Induction Cooking MTI**

<b>Market</b>	Residential single-family and multifamily target market, consumer products
Total Phase III investment needed to achieve TSB forecast (2026-2045):	\$33,477,000
Phase III investment over initial CalMTA funding cycle (2026-2030):	\$28,880,000



**Market Transformation Initiative Plan for Induction Cooking**  
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<b>Market</b>	Residential single-family and multifamily target market, consumer products		
Phase II investment (2024-2025):-	\$3,950,000		
Total investment including Phase II and Phase III investment (2024-2045):-	\$37,427,000		
FSB (2026-2045)	FSB - Energy	FSB - Grid	FSB - GHG
	\$36M	(\$125M)	\$626M
FSB - Total	\$537M		
Cost-Effectiveness (2024-2045)	FRC	PAC	SCT Base/High
	1.12	14.36	3.04/3.04

## 2 Market Transformation theory & opportunity

### 2.1 Theory of market transformation

#### 2.1.1 Brief product definition and benefits

Induction cooktops and ranges use electromagnetic induction in the cooktop portions of the appliance to heat cookware directly. Induction cooking saves energy through instant, direct, and efficient heat transfer, and provides precise temperature control. This MTI will primarily focus on induction cooking products that are permanently installed in homes, but the product definition also includes radiant electric technology that meets the current version of the ENERGY STAR 1.0 specification as these efficient radiant products offer similar benefits as induction and are currently covered<sup>4</sup> by ENERGY STAR's market differentiation<sup>5</sup>. **The product definition for this MTI includes 240V products and 120V cooktops and ranges that are both battery-equipped and non-battery-equipped, as shown in Figure 6, but cooktops and ranges with coil-style heating elements are excluded, as are standalone wall ovens.**<sup>6,7</sup>

Although cooktops and ranges are not high energy use appliances on their own, induction cooking can serve as a highly visible linchpin technology to increase consumer acceptance with whole-home electrification. If consumers do not embrace electric cooking while other home appliances like water heaters and heating, ventilation, and air-conditioning (HVAC) electrify, then utilities run the risk of maintaining gas infrastructure to homes for one, last remaining appliance.

<sup>6</sup> Radiant cooktops heat up the surface first, which then heats the cookware. Induction cooktops generate heat directly in the cookware using a magnetic field, offering faster, more efficient, and more precise cooking.

<sup>7</sup> [ENERGY STAR Residential Electric Cooking Products V1.0 Final Specification](#).



### 2.1.2 Target market

This MTI primarily targets consumer cooking in existing and ~~new construction~~ single-family (SF) and multifamily (MF) homes. It targets the entire residential cooking market but has a particular focus on the availability of affordable induction products that are well-suited to serving ESJ communities, **MF housing** and products that fit with California's current electrical infrastructure of primarily 120V outlets in kitchens.<sup>8</sup>

### 2.1.3 Initiative vision

Induction cooking offers consumers an improved cooking experience with clear benefits for the environment and consumer health and safety.<sup>9</sup> Cooking also represents the highest profile end-use in an all-electric home and serves as a linchpin technology to full electrification of the home. Induction products are currently available but consumer awareness, market share, and availability of affordable products that would serve California's infrastructure needs remain low. Overcoming consumers' reluctance and addressing the availability of affordable products need to be addressed at scale now for Californians to embrace induction, which is a critical step to decarbonizing housing stock. If this MTI's strategic interventions can overcome product availability challenges and persuade consumers of the superior cooking experience that induction provides, we can facilitate a faster and easier transition to an all-electric home.

### 2.1.4 Key market barriers

Induction cooking faces the following key barriers that this MTI needs to overcome before broad market adoption can take place. These are shown in Appendix A: Logic Model and also mapped to the planned interventions that seek to overcome these barriers in the strategic interventions listed below.

- Existing California homes have primarily been built for gas cooking (120V) resulting in higher installation costs (cost of rewiring and electrical upgrades) for 240V products. In addition, there is currently no affordable 120V electric options that provide the same cooking output as 240V products.
- Induction's higher product costs compared to incumbent gas products.
- ~~Concerns about durability given induction is a newer product:~~
- Cultural and consumer attachment to gas cooking.
- Low consumer awareness of induction and its benefits.

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<sup>8</sup> ESJ communities are identified by the CPUC as those where residents are: predominantly communities of color or low-income; underrepresented in the policy setting or decision-making process; subject to a disproportionate impact from one or more environmental hazards; and likely to experience disparate implementation of environmental regulations and socio-economic investments in their communities. These communities may also include: disadvantaged communities, all Tribal lands, low-income households, and low-income census tracts. <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/esj-action-plan-v2jw.pdf>.

<sup>9</sup> [Gas Stoves: Health and Air Quality Impacts and Solutions - RMI](#).



- Need for new cookware when converting to induction for some.
- Bill impacts of moving from gas to electric cooking, especially for ESJ communities.

### 2.1.5 Market opportunities and key leverage points

This MTI will exploit both market opportunities and preexisting points of leverage. Market opportunities are the market activities and forces that serve as opportunities for this technology to reach greater adoption. These are called out in Appendix A: Logic Model and are also mapped to the planned interventions that seek to exploit these opportunities in the strategic interventions below.

- ~~The IRA includes funding for induction cooking products. This IRA funding utilizes the ENERGY STAR certification to designate qualified products. In response, the U.S. Environmental Protection Agency (EPA) developed its first consumer ENERGY STAR specification for efficient electric cooking products in October 2023.~~ **The list of qualified products has grown substantially and offers a valuable product differentiation mechanism for consumers.**
- Cooking appliances, including electric and gas cooktops, have not historically been regulated by federal appliance standards. This lack of regulation left a gap in energy standards for cooking appliances until the Department of Energy (DOE) issued and updated efficiency requirements that will go into effect in 2028. This provides greater focus on the impacts and efficiency opportunities with cooking products and opens the door, over time, to ratcheting down the standard to an efficiency level that could only be met by induction cooking products.
- New market entrants (Copper, Impulse, **Electra and Summit**) and national partners generating manufacturer momentum on 120V ~~battery-equipped~~ induction cooking products providing additional **benefits to overcome installation costs posed by electrical infrastructure challenges and, in the case of battery-equipped products,** energy and grid benefits.
- California's electrification momentum and **decommissioning of gas infrastructure policies (SB2112) driving demand for 120V solutions** ~~growing awareness of IAQ benefits of electric cooking driving additional policies.~~

Key leverage points are points of aggregation that enable the MTI to reach a broader set of market actors at a reduced level of investment. CalMTA has identified several key leverage points and product benefits that this MTI will utilize to accelerate market adoption. These include:

- Induction cooking's extensive benefits over incumbent technologies: improved safety, superior cooking experience, improved IAQ, and ease of cleaning.
- Existing efficiency and climate resilience programs that are providing consumer incentives and education on induction and overall electrification measures.



- The existing ENERGY STAR Retail Products Platform (ESRPP) program and data collection efforts with national retailers **that cover over one half the sale of consumer appliances in the US.**<sup>10</sup>

### 2.1.6 Conditions that would trigger transitioning out of market

Once this MTI achieves the market conditions detailed below, the market will have sufficient momentum to allow CalMTA to begin to transition out of the market while continuing to monitor adoption progress. This is the point in time when funding levels reduce substantially while benefits continue to grow. For details on tracked MPIs and milestones, see Appendix F.

- There is wide product availability of induction products that serve the whole market, including affordable, ENERGY STAR certified products that serve MF housing, ~~battery-equipped~~ products that utilize 120V electrical infrastructure and remove the need for electrical upgrades **and a subset of consumers utilize induction 120V battery-equipped range product as tool for increased energy benefits (resilience, DR, load flexibility).**
- Widespread builder acceptance resulting in the majority of both SF and MF new construction, including induction or ENERGY STAR certified cooking.
- Overall sales market share of induction cooking reaches the majority of all cooktops and ranges sold in California.
- California Air Resources Board (CARB) and air quality districts set zero emissions appliance standards beyond space and water heating to include the sale of new cooking products. These regulations focus on phasing out traditional gas-burning appliances to reduce both greenhouse gases (GHG) and nitrogen oxides (NOx), the latter of which contributes significantly to smog and IAQ issues.

### 2.1.7 Market end state

CalMTA envisions a market end state where the following scenarios exist:

- Majority of California consumers are aware of the benefits of induction cooking including improved safety, improved cooking experience, improved IAQ, and ease of cleaning.
- As California moves towards further decarbonization, affordable ENERGY STAR certified induction options are the first choice for cooking in most SF and MF homes.
- Consumers utilize induction 120V ~~battery-equipped range~~ **products to benefits these products afford (reduced costs associated with 240V to 120V electrical infrastructure upgrades, off peak charging and climate resilience (for battery- equipped products))** ~~as a~~

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<sup>10</sup> The ENERGY STAR Retail Products Platform (ESRPP) is an existing, national collaborative midstream initiative of ENERGY STAR, energy efficiency program sponsors, retailers (i.e., The Home Depot, Lowe's, Best Buy, and independent stores through the Nationwide Marketing Group), and other key stakeholders. Depending on the product category, it is estimated that ESRPP retailers are responsible for the majority of incentivized product sales nationally, including induction cooking products.

tool for increased energy benefits, lower electricity bills and resilience, such as charging off-peak hours and being able to cook during power outages.

### 2.1.8 Environmental & social justice approach

This MTI will focus on the cooking needs of ESJ communities and ensure that they are not left behind in the move towards full electrification. Several interventions will work to overcome specific barriers faced by MF and small residential housing, which predominantly serve ESJ communities. They are as follows:

- Health benefits: The negative health impacts of gas cooking disproportionately impact ESJ communities because of smaller square footage and lack of ventilation in apartments and smaller homes, which result in increased concentrations of gas pollutants. By focusing on the benefits of induction cooking, these products will work to improve IAQ of these homes.
- Product availability through manufacturer engagement: The focus will be on influencing manufacturers to develop 120V battery-equipped product solutions that will lower the cost of transition to electric cooking and will proportionally benefit ESJ communities and the programs that serve them. Over time, CalMTA will work to drive down the costs of these products.
- **This MTI will target MF and owners of affordable housing early in market deployment on the benefits of induction cooking and through bulk purchase pricing coupled specific to 120V product. The MTI will also support local programs on whole building and zonal electrification efforts through inclusion of 120V products.** Product costs and availability through retail engagement: The MTI will incentivize retailers to stock and market more affordable induction products, including training retail staff to promote them to customers.

### 2.1.9 Theory/Assumptions

The following conditionals explain the theory of market change for this MTI and the key assumptions the theory is based on.

- **If** major manufacturers see large demand signals from building owners and programs, **then** they will be motivated to develop induction products that can be installed in 120V electrical circuits.
  - Assumes it is technically feasible to build a 120V induction product without compromising consumer cooking experience.
  - Assumes programs, **including zonal electrification efforts**, are in place in the early years for ESJ and MF households to help bring the price down of induction products overall and newer battery-equipped induction products once they come to market.
  - Assumes battery prices will continue to decline and concerns about battery are allayed.
- **If** builders and remodelers, **especially those who focus on MF housing**, understand the benefits of induction and hear from consumers that they want induction cooking to be part of remodeling projects and new construction, **then** builders will demand affordable and durable induction products from manufacturers.



- Assumes broad deployment of marketing “influencer” campaign targeting both consumers and builders to increase awareness of induction benefits.
- **Assumes programs, building codes, and policies targeting builders and the NC market continue to make gas cooking a more expensive choice, resulting in greater demand for electric cooking.**
- ~~Assumes short-term builder incentives or bulk purchase agreements to bring down initial costs of induction technology with influential builders.~~
- **If** consumers understand the superior cooking experience and health impacts of induction technology compared to cooking with gas, **then** they will demand induction cooking products.
  - Assumes deployment of marketing “influencer” campaign to build demand and continued market support from other California electrification efforts (i.e., Electrify Now Campaign).
  - Assumes increase in awareness on IAQ and safety benefits of induction cooking.
  - **Assumes more 120V induction products become available.**
  - Assumes induction product prices decline, **especially for 120V options**, as economies of scale drive down cost of production and more affordable products come to market.
- **If** consumers have financial tools to mitigate electric bill impacts from transitioning from gas to electric cooking, **then** they will demand induction cooking products.
  - Assumes California rate structures evolve to help consumers move towards full electrification.
  - **Assumes peak/off-peak energy pricing becomes more widespread to CA consumers, enabling them to charge their 120V battery-equipped induction products off peak to reduce impacts to electric bills.**
- ~~**If** California codes continue to push for residential electrification and consumers/builders value induction cooking, **then** the majority of new construction will utilize induction cooking products.~~
  - ~~Assumes California codes will continue to make it more expensive for builders to include gas in new homes.~~
- **If** retailers are rewarded with midstream incentives for stocking and selling more affordable **120V** induction products to consumers, **then** market share **of 120V products** will grow in the retail channel.
  - **Assumes more affordable 120V induction products becomes available.** Assumes differentiated midstream incentives for affordable induction products motivate retailers to push lower priced products, especially at stores serving identified ESJ zip codes.
  - Assumes consumer awareness of induction’s benefits grows, driving consumers to demand more products.



- **If** both product availability and market share of induction grows to be the majority of cooking products sold in the California market, **then** it will be easier for regulatory agencies to push for a transition away from the sale of gas cooking appliances.
  - **Assumes regulatory agencies are successful with HP water heaters and HP HVAC equipment, setting the stage to be successful with regulating the sales of cooking products.**
  - Assumes gas cooking is no longer associated with the culture wars and air quality regulatory agencies have the ability and political will to regulate the sales of consumer products.



## 2.2 Strategic interventions

Below are the strategic interventions that this MTI will deploy to overcome barriers in the induction cooking market. The list includes a general description of the intervention, market barriers the intervention will work to address, market opportunities it will exploit, and key outcomes. Many of the interventions will work to support multiple outcomes as detailed in the graphic Logic Model contained in Appendix A. Please also see the “Evaluability Map” Attachment to Appendix F for details on the outcomes, their associated MPLs and expected Milestones.

<p><b>Strategic intervention 1</b></p>  <p><sup>11</sup></p>	<p><b>Influence-Accelerate manufacturer development of affordable, 120V battery-equipped ranges- induction products that fill the product availability gap for CA electrical infrastructure and multifamily market needs</b></p> <p>This intervention will include on-going engagement with manufacturers coupled with a release of a “product challenge” built upon the experiences of the Tech Challenges driven in 2023 by <b>New York State Energy Research and Development Authority (NYSERDA)</b> and the New York City Housing Authority (NYCHA). It will look different than the NYC challenge because California has a more decentralized public housing ownership structure making the ability to aggregate a large demand signal for manufacturers different than the NY scenario, but the overall approach will be similar. If manufacturers see a large enough demand signal on a 120V induction product from MF building owners and local programs, then they will bring these products to market.</p> <p>As of 2024<del>5</del>, there are two local California <b>four</b> specialty manufacturers who are developing the market for and beginning to sell this 120V battery-equipped <b>induction cooking</b> products, but at a very high price point. They see the importance of this product as California begins to electrify housing stock. This market state is analogous to products like electric vehicles: manufacturers start with the high-end market before they invest in the development of mass-market products. <b>These products are in the early stages of market development and this intervention will leverage these new market entrants. Pricing remains high with product availability and adoption low, especially in the critical MF and affordable housing market. This market intervention will engage manufacturers on their product development roadmaps, support piloting of the products within the existing MF housing market, build the business case for their market demand, and support broader market introduction into retail appliance channels. It will accelerate further manufacturer development of affordable 120V products and influence a broader set of manufacturers, including more mainstream appliance manufacturers to follow suit. The MTI is exploring possible ways to support expansion of</b></p>
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<sup>11</sup> Icon represents interventions with a focus on equity considerations.

	<p><b>Intellectual Property (IP) licensing agreements to quickly scale production of the 120V battery-equipped products. This might stimulate further interest from other major manufacturers.</b> induction-product challenge will be to accelerate this process by offering manufacturers a potentially large purchase of over 20,000 units if they can develop an affordable 120V induction product for MF housing. If manufacturers can meet the staged milestones of the product challenge, they will be rewarded with a guaranteed large order for a 120V induction product:</p> <p>Another component of the product challenge might include an expansion of the Intellectual Property (IP) licensing agreement to quickly scale production of the 120V battery-equipped product. This might stimulate further interest from other major manufacturers:</p> <p>This intervention will support filling the product gap for induction cooking that primarily serve the needs of existing MF and affordable housing markets, and thus the needs of more ESJ communities. 120V <del>battery-equipped</del> <b>induction cooking</b> products provide a plug-n-play option for homes that have existing gas cooking products and does not require the costs associated with changes to a home’s electrical infrastructure. <b>In addition, they are cooler to operate and provide improved IAQ.</b> The battery-equipped 120V products also provide these consumers with a climate resilience measure that allows them –to continue to cook during a power outage. Overtime, a battery-equipped product will offer consumers the ability to participate in demand response (DR) programs and monetize off-peak charging, reducing the financial impact of moving to electric cooking.</p>
<p><b>Market barrier(s) addressed and opportunities to exploit</b></p>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>Existing California homes built for gas cooking (120V) and no affordable 120V electric options <del>that provide the same cooking capacity as 240V products.</del></li> <li>Higher product and installation costs. If the market has affordable <del>battery-equipped</del> 120V products, installation costs for moving from gas to electric will decline and <b>adoption of induction will increase.</b></li> <li>Bill impacts of moving from gas to electric cooking reduced via inclusion of a <b>battery-equipped induction product.</b></li> <li><del>Concerns about durability given newer product and higher repair costs can be addressed through manufacturer engagement.</del></li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>New market entrants and national partners generating manufacturer momentum on 120V <del>battery-equipped</del> cooking products offering additional energy and grid benefits.</li> </ul>
	<p><b>Outcomes</b></p>

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<b>Short-term outcomes (1-2 yrs)</b>	Manufacturers respond with plans for product roadmaps of 120V battery-equipped induction cooking products.
<b>Medium-term outcomes (3-5 yrs)</b>	Increased availability of 120V battery-equipped induction cooking products.
<b>Long-term outcomes (6-10+ yrs)</b>	Consumers utilize induction 120V battery-equipped ranges as tools for increased energy benefits such as the ability to cook during power outages and the ability to charge during off-peak hours.  <b>Market share of 120V induction products grows.</b>

<b>Strategic intervention 2</b>	<p><b>Support and leverage advancement of codes, policies, standards, and practices that increase consumer market preference for electric cooking and reduce costs associated with installation</b></p> <p>A number of policies and code requirements serve to motivate builders and building owners to move toward electric cooking. These policies and code strategies are part of overall electrification momentum, but also reflect the growing recognition that gas cooking can result in poor IAQ for occupants. For example, in Title 24, builders are required to install a 240V outlet within five feet of where the range or cooktop is installed regardless of whether they are installing gas cooking, which requires 120V. <b>There has also been some policy interest in labeling gas cooking products as potentially hazardous to consumer health and</b> builders are also subject to higher ventilation requirements if they want to install gas cooking. These could all drive the installation costs of installing gas cooking higher and help to make induction cooking more attractive.</p> <p>This intervention will work to support and arm policymakers with data, manufacturer support, public comment support, availability of affordable induction product, and overall growing consumer and builder awareness on the benefits of induction cooking. <b>This work will also include a targeted partnership with zonal electrification programs as 120V induction cooking products will be used increasingly as a solution in zonal/decarb efforts.</b> This should, over time, lessen consumer and supply chain resistance to policies making gas more difficult to install, which will lead to further adoption of induction cooking.</p> <p>In the long-term (8-10 years), this intervention could also make it easier for air quality districts, who have already adopted zero-NOx requirements for the sale of space- and water-heating, to also address the impacts of gas cooking products. These agencies will need data, affordable product availability, and consumer acceptance of induction to support policies that address the impact of gas cooking products on GHG and NOx emissions.</p>
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<b>Market barrier(s) addressed and opportunities to exploit</b>	<b>Barriers</b> <ul style="list-style-type: none"> <li>Higher product and installation costs including the cost of any electrical wiring or upgrades. These policies and code changes should lessen consumer and the supply chain's attachment to gas and lead to further adoption of induction cooking.</li> </ul> <b>Opportunities</b> <ul style="list-style-type: none"> <li>California electrification momentum and growing awareness of IAQ benefits of electric cooking driving additional policies and greater adoption of efficient electric cooking products. <b>California electrification momentum and decommissioning of gas infrastructure policies (SB2112) driving need for 120V solutions</b></li> </ul>
	<b>Outcomes</b>
<b>Short-term outcomes (1-2 yrs)</b>	NA
<b>Medium-term outcomes (3-5 yrs)</b>	<b>120V induction products increasingly used as solution in zonal/decarb efforts and targeted gas infrastructure decommissioning efforts</b> NA
<b>Long-term outcomes (6-10+ yrs)</b>	CARB and air quality districts set zero emissions appliance standards that impact the sale of new cooking products.

<b>Strategic intervention 3</b> 	<b>Support advancement of electrification-enabling rate structures to mitigate the bill impacts of moving from gas to electric cooking</b> <p>Switching from gas to electric cooking will, in many cases, increase customer bills under current gas and electric rate structures, especially for ESJ communities. This is not a problem unique to electric cooking, but a problem for all electrification measures. The challenge with induction is that the efficiency gains of moving to induction are modest compared to the efficiency gains posed by heat pump water heaters or heat pump HVAC, and thus, do not enable the consumer to make up for the higher cost of electricity with efficiency. This is a barrier to encourage consumers to move from gas to electric cooking. The development and deployment of new rate structures that reward consumers for utilizing their electric products off peak and through DR programs, will work to mitigate this barrier. With battery-equipped induction products, consumers will be able to charge their cooking device off peak, which will improve the bill impact of changing to electric cooking.</p> <p>This intervention will work to gather consumer cooking usage data that will help policymakers better understand how a move to electric cooking can impact consumers under different rate structures. Additionally, when</p>
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	coupled with the future availability of battery-equipped induction ranges that charge during off-peak hours, this intervention will also support California policymakers to develop rate structures to mitigate increases in the transition to electrification. As the market for battery-equipped products grows and consumers become more comfortable and adept at utilizing rate structures that reward them with off-peak charging, then there will be multiple advantages for consumers to benefit from the electric rates.
<b>Market barrier(s) addressed and opportunities to exploit</b>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>• Bill impacts of moving from gas to electric cooking, <b>especially for ESJ communities.</b></li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• California electrification momentum.</li> <li>• New market entrants and national partners generating manufacturer momentum on 120V battery-equipped range products offering additional energy and grid benefits.</li> </ul>
	<b>Outcomes</b>
<b>Short-term outcomes (1-2 yrs)</b>	NA
<b>Medium-term outcomes (3-5 yrs)</b>	Prevalence of electrification-enabling rate structures grows across the state.
<b>Long-term outcomes (6-10+ yrs)</b>	Market share of efficient electric products reaches majority for all cooktops and ranges sold in California.

<p><b>Strategic intervention 4</b></p> 	<p><b>Engage influential builders, remodelers, and property management firms and building owners through demonstrations, upstream incentives or bulk purchase pricing coupled with marketing support specific to the 120V products</b></p> <p>Builders, remodelers, and Property management firms <b>and building owners</b> are important influencers <b>and decision makers</b> on appliance products installed, <b>especially in MF housing</b> in new single- and MF homes. They are price sensitive and wary of trying what they perceive to be new technologies. <b>Yet large property management firms and building owners who own multiple properties</b> Builders of MF specifically are important aggregators of demand and likely to influence the larger replacement market over time. If this MTI can convince <del>leading builders to include induction in some model homes and developments</del> <b>leading property management firms with targeted pilots and buydowns of 120V products</b>, then manufacturers will pay attention to meet their product needs.</p>
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	<p>This intervention will likely first deploy education events targeting <b>builders</b>-property management firms <b>and building owners</b> to become more familiar with <b>120V</b> induction cooking <b>and how these products can be utilized in their properties, especially as key part of a solution in zonal/decarb efforts</b>. CalMTA will also engage key, influential builders (large builders of MF, production builders, and cutting-edge “green builders”) and their primary appliance suppliers on midstream incentives or bulk purchasing agreements that address the incremental cost difference between the induction models and what typically would have been offered to consumers (gas or basic electric radiant). It will initially focus on builders-property management firms active in the SF and MF affordable housing market to target ESJ communities. <del>Many builders offer “good, better, best” appliance packages and, along with midstream incentives to builders, could include both education materials/</del><b>cooking demos</b> and new cookware for the <b>residents</b> homeowner, if they chose the induction package</p>
<p><b>Market barrier(s) addressed and opportunities to exploit</b></p>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>• Cultural and consumer attachment to gas cooking. <b>Builders</b> Property management firms <b>and building owners</b> are important influencers.</li> <li>• Low consumer awareness of induction and its benefits. <b>Builders</b>-<b>Property management firms and building owners</b> are both consumers of cooking products themselves and important influencers who can help build consumer awareness.</li> <li>• Need for new cookware when converting to induction for some.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• California electrification momentum <b>and decommissioning of gas infrastructure policies (SB2112) driving need for 120V solutions</b> growing awareness of IAQ benefits of electric cooking driving additional polices.</li> </ul>
	<p><b>Outcomes</b></p>
<p><b>Short-term outcomes (1-2 yrs)</b></p>	<p><b>MF property management firms and building owners increasingly include 120V products in electrification efforts.</b> Builders change design plans and installation of induction cooking grows in new construction.</p>
<p><b>Medium-term outcomes (3-5 yrs)</b></p>	<p>Builders in both SF and MF increasingly utilize induction products.</p> <p>Market share of induction and ENERGY STAR certified electric radiant cooking products increase relative to gas cooking products.</p>
<p><b>Long-term outcomes (6-10+ yrs)</b></p>	<p>Market share of sales of efficient electric cooking products reaches the majority for all cooktops and ranges sold in California.</p>

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### Intervention strategy 5



#### **Build market consumer-acceptance and awareness through marketing and education campaigns on the benefits of induction cooking in partnership with aligned organizations**

Market research has shown that a majority of consumers are not familiar with induction cooking, do not understand the technology, and do not yet value its benefits. Cultural attachment to gas cooking persists and it continues to predominate in California. Consumers perceive it as offering a superior cooking experience, yet most are unaware of IAQ, and safety hazards associated with gas cooking. Published research on the impacts of cooking with gas, particularly with poor ventilation, concludes that there are significant health benefits by making the switch to electric cooking appliances. A 2023 study estimated 20% of current childhood asthma in California is attributable to gas cooking use.<sup>12</sup> Another study by the Lawrence Berkeley National Lab found 60% of homes in California that cook at least once a week with a gas cooktop can reach pollutant levels that would be illegal if found outdoors.<sup>13</sup> Most consumers are unaware of IAQ issues and the safety hazards generated by gas cooking, which may play a pivotal role in their family's health, especially for households with asthma concerns. **In addition, both battery-equipped and non-battery-equipped 120V products are an emerging class of products that consumers have very little understanding or awareness of.**

There are several programs and organizations that are deploying awareness tactics in pockets of the state to build the case with consumers on the benefits of induction cooking. Organizations like the Building Decarbonization Coalition have been hosting “Chefluencer” events where a local chef, often in the local language of the target audience, demonstrates the induction technology. Some local utilities, Regional Energy Networks (RENs), and libraries offer “induction loaner programs” where consumers can directly experience a mobile induction product. Hands-on experience with mobile products presents an effective opportunity for growing awareness and comfort with induction that CalMTA can build on. There is more work to be done to expand these, **ensure that they include 120V solutions**, and other efforts to build consumer understanding of the overall health and cooking benefits that induction cooking products provide.

The primary goal of this intervention will be to “change hearts and minds” for induction cooking through a leveraged and scaled marketing campaign. There is also the potential to tie this campaign to other interventions like retailer **engagement** midstream incentives, local utility consumer incentives, and **engagement with property management and building owners** IRA funding to further drive induction adoption. This intervention

<sup>12</sup> Gruenwald, T., Seals, B. A., Knibbs, L. D., and Hosgood, H. D. “Population attributable fraction of gas stoves and childhood asthma in the United States.” International journal of environmental research and public health 20, no. 1 (2023): 75.

<sup>13</sup> <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.1306673>.

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	<p>will include gathering and coalescing the current marketing and education messaging landscape for induction cooking, testing these messages, and then deploying the most effective ones to target <del>builders</del> <b>supply chain partners</b> and consumers. This work will require tailored messaging and delivery to various submarkets, based on building types and/or cultural communities. Messaging will likely include induction’s superior cooking experience, health benefits from improved IAQ, safety benefits, <b>and additional benefits afforded by 120V induction products</b>. Once key messages are developed, marketing can be deployed through a variety of partners like local programs that have induction loaner programs, co-marketing with willing manufacturers and retailers, scaled “Chefluencer” events targeting ESJ consumers, and programs targeting retail customers and <del>builders</del> <b>property management firms</b>. In addition, there will likely need to be a focused effort on owners of MF properties once the MTI has increased availability of 120V <del>battery-equipped</del> induction products.</p>
<p><b>Market barrier(s) addressed and opportunities to exploit</b></p>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>• Cultural and consumer attachment to gas cooking. If consumers see and experience induction cooking, they will change their attachment to gas cooking.</li> <li>• Low consumer awareness of induction and its benefits. As awareness of induction cooking’s benefits grows, consumers will increasingly demand induction cooking products.</li> <li>• Need for new cookware when converting to induction for some. As consumers learn how induction works and which cookware products operate with induction, if needed, consumers can be directed to specific promotions that couple a purchase for induction with appropriate cookware.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• California electrification momentum <b>and decommissioning of gas infrastructure policies (SB2112) driving demand for 120V solutions</b> and growing awareness of IAQ benefits of electric cooking driving additional policies.</li> <li>• First ENERGY STAR specification for cooking products and IRA funding.</li> </ul>
	<p><b>Outcomes</b></p>
<p><b>Short-term outcomes (1-2 yrs)</b></p>	<p>Awareness and preference for efficient electric cooking increases.</p> <p><b>MF property management firms and building owners increasingly include 120V products in electrification efforts.</b> <del>Builders change design plans and installation of induction cooking grows in new construction.</del></p>
<p><b>Medium-term outcomes (3-5 yrs)</b></p>	<p>Market share of induction and ENERGY STAR certified electric radiant cooking products increases relative to gas cooking products.</p>

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<b>Long-term outcomes (6-10+ yrs)</b>	Market share of sales of efficient electric cooking products reaches majority for all cooktops and ranges sold in California.
<b>Strategic intervention 6</b> 	<p><b>Support inclusion of affordable 120V induction cooking products in California programs and use of IRA funding especially those targeting MF and zonal electrification efforts</b></p> <p>Leveraging incentive programs will be important to gain market traction and help lower the consumer cost of induction cooking products in the initial stages of this MTI. This is especially true for reaching ESJ communities. Several local and statewide programs provide consumers with incentives to purchase an eligible induction stove. To help mitigate possible impacts to transitioning some consumers to full electrification, especially those of low income, this MTI will also need to work with electrification programs, <b>especially those that target MF, zonal electrification</b> to help mitigate possible bill impacts as electric cooking is one component of the wider-reaching electric transition.<sup>14</sup> Please see the program alignment section below for a more complete list of possible programs with which this MTI will need to coordinate and possibility leverage available incentives.</p> <p>This intervention will initially take the form of coordination with key programs to identify leverage opportunities and ways to support downstream programs. For example, for <del>new construction programs</del> <b>that target MF retrofits</b>, CalMTA's <del>builder intervention</del> property management intervention (#4 above) could support buying down the incremental cost of <b>120V</b> induction products for some <del>leading builders</del> influential building owners or property managers participating in electrification new construction programs like the Building Initiative for Low-Emissions Development (BUILD) and the California Electric Homes Program (CalEHP). This in turn will work to help aggregate demand for a 120V <del>battery-equipped products</del> <b>for manufacturers</b>, <del>can support community-based organizations (CBOs) and programs serving ESJ communities and low-income households with an electrification measure that mitigates the need to upgrade electrical infrastructure.</del> Overtime, this MTI will support these programs with greater product availability, manufacturer co-marketing, and midstream supply-side support, <del>and connection to IRA funding that can help drive overall program participation.</del></p>
<b>Market barrier(s) addressed and opportunities to exploit</b>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>• Higher product and installation costs including the cost of any electrical wiring or upgrades.</li> </ul>

<sup>14</sup> According to Assembly Bill 1550, low-income communities and households are defined as those who live in census tracts or households at or below 80% of the statewide median income or meeting the threshold designated as low-income by the California Department of Housing and Community Development's Revised 2021 State Income Limits. CalMTA uses the term "low-income" to describe individuals or households whose income status poses a barrier to adoption of the technology.

	<ul style="list-style-type: none"> <li>• Bill impacts of moving from gas to electric cooking, especially for ESJ communities.</li> <li>• Need for new cookware when converting to induction for some.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• First ENERGY STAR specification for cooking products and IRA funding.</li> <li>• California electrification momentum <b>and decommissioning of gas infrastructure policies (SB2112) driving need for 120V solutions</b> growing awareness of IAQ benefits of electric cooking driving additional policies.</li> </ul>
	<b>Outcomes</b>
<b>Short-term outcomes (1-2 yrs)</b>	<p>Programs include induction cooking products as measure, especially in programs that target <b>MF, zonal electrification</b> and ESJ customers.</p> <p>Awareness and preference for efficient electric cooking increases.</p>
<b>Medium-term outcomes (3-5 yrs)</b>	Market share of induction and ENERGY STAR certified electric radiant cooking products increase relative to gas cooking products.
<b>Long-term outcomes (6-10+ yrs)</b>	Market share of efficient electric products reaches majority for all cooktops and ranges sold in California.

<b>Strategic intervention 7</b>	<p><b>Engage ENERGY STAR specification development to support continued product differentiation and increased energy efficiency stringency</b></p> <p>The EPA enacted their first ENERGY STAR certification on cooking products in September 2023 and this is tied to consumer eligibility for IRA incentives targeting induction cooking purchases. This certification enables consumers to differentiate efficiency for electric cooktops and ranges with a growing number of products meeting the specification across all major manufacturers (47 induction and 41 radiant models as of December 2024).</p>
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	Typically, ENERGY STAR specifications are updated within 4-6 years <sup>15</sup> and CalMTA, armed with data and consumer insights, will engage EPA throughout this process to drive efficiency even higher in the next version of the specification (2.0). It is likely, as induction products improve, consumers become more aware, and demand increases, future ENERGY STAR specifications will ratchet up providing additional energy efficiency benefits and result in the majority of the products that meet the specification be induction. Although likely to be modest, this increased efficiency, and subsequent reduced electric consumption will also work to mitigate electric bill impacts for consumers who are moving from gas cooking to electric. CalMTA will also work to have 120V battery-equipped <b>induction cooking</b> products added to future specifications as these products have greater availability across the market.
<b>Market barrier(s) addressed and opportunities to exploit</b>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>• Low consumer awareness of induction and its benefits.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• First ENERGY STAR specification for cooking products and possible IRA incentives.</li> </ul>
	<b>Outcomes</b>
<b>Short-term outcomes (1-2 yrs)</b>	Awareness and preference for efficient electric cooking increases.
<b>Medium-term outcomes (3-5 yrs)</b>	The EPA develops version 2.0 of the ENERGY STAR specification for cooking, which includes increased efficiency and provisions for 120V battery-equipped range product.
<b>Long-term outcomes (6-10+ yrs)</b>	Market share of efficient electric products reaches majority for all cooktops and ranges sold in California.

	<p><b>Strategic intervention 8</b></p> <p><b>Deploy midstream stocking incentives that motivate retailers to target ESJ communities with more affordable induction products</b></p> <p><b>Engage retail partners to stock and promote 120V induction products and acquire full category sales data to track overall induction cooking adoption</b></p>
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<sup>15</sup> As of January 2026, EPA has stopped any new specification development for ENERGY STAR products, and, although the program has to date survived EPA program cuts, its future remains uncertain under the current administration. The current product lists are being kept up-to-date, but we do not expect the EPA to invest in any new specification development over the next three years. That said, the market’s response to the proposed cuts in 2025 did demonstrate how valuable the ENERGY STAR program is to market actors, so we expect the program to survive in some form. Thus, this intervention remains given the length of this MTI and will need to be monitored over time.

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	<p>ESRPP is an existing, national collaborative midstream initiative of ENERGY STAR, energy efficiency program sponsors, retailers (i.e., The Home Depot, Lowe’s, Best Buy, and independent stores through the Nationwide Marketing Group), and other key stakeholders. Depending on the product category, it is estimated that ESRPP retailers are responsible for the majority of product sales nationally, including induction cooking products. Current participating ESRPP retail partners in California collectively comprise more than 500 storefronts – a significant distribution channel. There are others like Ikea and Costco which also sell induction products and CalMTA will explore possible partnerships and data gathering with these additional retailers as well.</p> <p>Through ESRPP, incentives on qualifying products are paid directly to retailers, which encourages them to purchase, stock, and promote higher efficiency products and influence consumer purchasing decisions through increased availability and visibility of energy-efficient retail products. In turn, the impact of ESRPP on retailer buying practices can motivate manufacturers to design efficiency improvements into consumer products, creating permanent change to the manufacturing processes across entire product categories. By analyzing full category sales data, ESRPP also helps identify promising energy efficiency opportunities, and with these insights, work to advance ENERGY STAR specifications and state/federal codes and standards. The ESRPP sales data also serves as a means to reliably evaluate program impacts.</p> <p>This intervention for induction will build upon ESRPP’s existing functionalities to gather statewide data and target <b>120V induction</b> products <del>with lower price points in designated ESJ zip codes</del> through tailored retailer incentives. Currently, most retailers position induction as a premium product beyond the reach of many ESJ communities and <b>120V are not yet in the retail channel</b>. This intervention will influence retailer product selection, stocking, and sales practices towards more <b>including 120V</b> and affordable induction products.</p> <p>This intervention also will work to amplify several of the other interventions and support program needs. It will provide market data for program tracking, consumer buying habits for further engagement with manufacturers on product enhancements, and arm CalMTA with data for future ENERGY STAR specifications that will drive those specifications higher over time. It will also serve as a channel for building awareness on the benefits of induction via Chefluencer events, co-marketing opportunities with retailers, and coupling new cookware with the purchase of an induction cooking product. There will also be synergies of engagement with other CalMTA consumer product programs, such as room heat pumps, and with other programs like the Switch is On Campaign and consumer IRA incentives.</p>
<p><b>Market barrier(s) addressed and opportunities to exploit</b></p>	<p><b>Barriers</b></p> <ul style="list-style-type: none"> <li>Higher product and installation cost by deploying retailer incentives to stock more affordable induction products.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Low consumer awareness of induction and its benefits through retailer promotion and instore Cheflencer events.</li> <li>• Cultural and consumer attachment to gas cooking through retailer promotion and instore Cheflencer events.</li> <li>• Need for new cookware when converting to induction for some through joint promotions with cookware manufacturers.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• First ENERGY STAR specification for cooking products and IRA funding.</li> <li>• New market entrants and national partners generating manufacturer momentum on 120V battery-equipped range products offering additional energy and grid benefits.</li> </ul>
	<b>Outcomes</b>
<b>Short-term outcomes (1-2 yrs)</b>	Retail partners stock and sell more affordable efficient electric products and <b>120V induction cooking options.</b>
<b>Medium-term outcomes (3-5 yrs)</b>	<p>Market share of induction and ENERGY STAR certified electric radiant cooking products increase relative to gas cooking products.</p> <p>The EPA develops version 2.0 of the ENERGY STAR specification for cooking, which includes increased efficiency and provisions for 120V battery-equipped range <b>induction cooking</b> product.</p>
<b>Long-term outcomes (6-10+ yrs)</b>	Market share of efficient electric products reaches majority for all cooktops and ranges sold in CA.

**Market Transformation Initiative Plan for Induction Cooking**

*CalMTA is a program of the California Public Utilities Commission (CPUC)  
and is administered by Resource Innovations*

## 2.3 Environmental & social justice communities

This MTIs will work to serve the needs of ESJ communities and ensure that they are not left behind in the move towards full electrification. Induction cooking is currently a premium product with an expensive consumer value proposition. Initial product costs, the need for appropriate cookware and, in many cases, a need to upgrade the home's electrical infrastructure keep induction cooking beyond the reach of most middle- and low-income consumers. This MTI will address both cost and product availability, which will serve all consumers, but especially ESJ communities. ESJ community targets are woven throughout all of the proposed interventions, but the following encapsulate those that will directly work to benefit ESJ communities:

- Strategic Intervention 1 focuses on encouraging manufacturers to develop 120V ~~battery-~~equipped **induction cooking** products that will lower the cost of transition to electric cooking. This product fills a product gap for MF housing, which predominantly serves tenants and ESJ communities. In the long-term, these products will provide ESJ communities additional energy benefits through off-peak charging and increased resilience as battery-equipped technology will enable cooking during power outages.
- Strategic Intervention 3 supports advancement of electrification-enabling rate structures to mitigate the bill impacts of moving from gas to electric cooking. This intervention will work to gather consumer cooking usage data that will help policymakers better understand how a move to electric cooking can impact consumers under different rate structures.
- Strategic Intervention 4 will engage ~~influential builders, remodelers, and~~ property management firms and **buildings owners** through **demonstrations, upstream** incentives or bulk purchase pricing coupled with marketing support. Initially this intervention will focus on ~~builders~~ **building owners and property management firms** active in MF and SF affordable housing market to target ESJ communities.
- Strategic Intervention 5 will build market acceptance and awareness through marketing and education campaigns on the benefits of induction cooking in partnership with aligned organizations. The negative health impacts of gas cooking disproportionately impact ESJ communities because of the smaller square footage of apartments and smaller homes, which result in increased concentrations of gas pollutants. By focusing on the benefits of induction cooking, induction will work to improve the IAQ of ESJ communities.
- Strategic Intervention 6 focuses on supporting the inclusion of **120V** affordable induction cooking products in California programs, ~~the rollout of IRA funding~~ **especially those targeting MF and zonal electrification efforts**. This intervention will initially take the form of coordination with key programs to identify leverage opportunities and ways to support downstream programs. Availability of affordable induction products, **especially 120V products**, will enable programs that serve ESJ communities more and better electric cooking options to help consumers fully electrify.



- Strategic Intervention 8 focuses on engaging with retailers to stock and market more affordable **120V** induction products ~~positioning induction from a premium product, out of reach for many in ESJ communities, to a more affordable product.~~

## 2.4 Workforce development

As this MTI pushes for increased adoption of induction and ENERGY STAR certified electric resistance cooking, which is currently dominated by 240V products, there will be workforce needs in the near term to help convert homes to 240V to accommodate these products. As the MTI also works to jumpstart the development of 120V ~~battery-equipped~~ products **some contractors and consumer education will be required, but it won't be more skilled, electrician positions** that will not require larger workforce development needs. Given this, the workforce development approach will be to collaborate and contract with CBOs that are working to help communities move toward electrification in general.

## 2.5 Total System Benefit & Cost-Effectiveness forecast

CalMTA estimated the TSB, and CE for the Induction Cooking MTI, including the Total Resource Cost (TRC), Program Administrator Cost (PAC), and two Societal Cost Test (SCT) results. Table 2 below shows MTI TSB with energy, grid, and GHG impacts. The initiative will deliver an estimated ~~\$537~~**495** million in total system benefits over the period from 2024 to 2045. Most of these benefits come from greenhouse gas emission reductions associated with switching from gas to electric cooking appliances. These abated emissions are worth more than \$600 million when using TRC to calculate benefits, and substantially more when calculated using SCT, due to a much lower discount rate for that test. There are negative grid TSB benefits, largely due to the impact of fuel substituting as induction and efficient electric cooktops are projected to replace natural gas units. Overall, the initiative creates ~~\$30~~**\$25** million in net energy benefits. The initiative is cost effective under the TRC **and PAC cost-effectiveness** ~~passes CE in the other test perspectives~~. **Although CalMTA has not yet updated the SCT ratio, the updated initiative will remain cost effective from that perspective, because of its lower discount rate for GHG reductions, which remain the predominant source of TSB** including the SCT, because of its lower discount rate for GHG reductions (Table 3).



Table 2. Induction cooking TSB estimates

TSB (\$M)	Energy (\$M)	Grid (\$M)	GHG Non-Refrigerant (\$M)	GHG Refrigerant (\$M)
537	36	(125)	626	N/A
<b>495</b>	<b>25</b>	<b>(131)</b>	<b>601</b>	

Table 3. MTI cost-effectiveness estimates – cooktops

TRC	PAC	Base SCT	High SCT
1.12	14.36	3.04 <sup>a</sup>	3.04 <sup>a</sup>
<b>1.05</b>	<b>12.68</b>		

<sup>a</sup> CalMTA has not yet calculated the SCT ratio for the updated MTI, but it is expected to remain highly cost-effective, due to the higher value of GHG reductions under that test perspective.

To develop the TSB and CE estimates, CalMTA developed a model to forecast incremental units of market adoption resulting from the MTI.

### 2.5.1 Market adoption forecast

This section summarizes CalMTA's forecast of the baseline market adoption (BMA) and total market adoption (TMA) of induction and ENERGY STAR certified cooking products. BMA represents the expected "naturally occurring" market adoption, considering current and anticipated market, regulatory, and technological trends. TMA includes the additional adoption resulting from strategic interventions detailed in this MTI plan.

To estimate BMA and TMA for existing households, CalMTA developed a stock turnover framework that models households' decisions to retire their existing products and replace them with new cooking products. The baseline projection incorporates historical trends in appliance retirement and replacement decisions, along with residential energy usage patterns. The model builds on methods used by the DOE's Office Energy Efficiency and Renewable Energy (2022) to assess the impacts of ENERGY STAR specifications for cooking appliances. Model assumptions were further informed by surveys of property managers and households, discussions with stakeholders such as manufacturers, and analyses by the California Energy Commission (CEC) and DOE's Energy Information Agency. The TMA analysis accounts for accelerated retirement of gas equipment and the transition toward efficient electric cooking appliances, and it is aligned with MTI planned interventions and milestones.

Figure 1 illustrates the estimated annual baseline and total market saturation levels for existing SF (left) and MF (right) households, while Figure 2 presents the adoption numbers in thousands of households.



**Figure 1. Estimated proportion of households adopting induction and ENERGY STAR certified radiant cooking products**

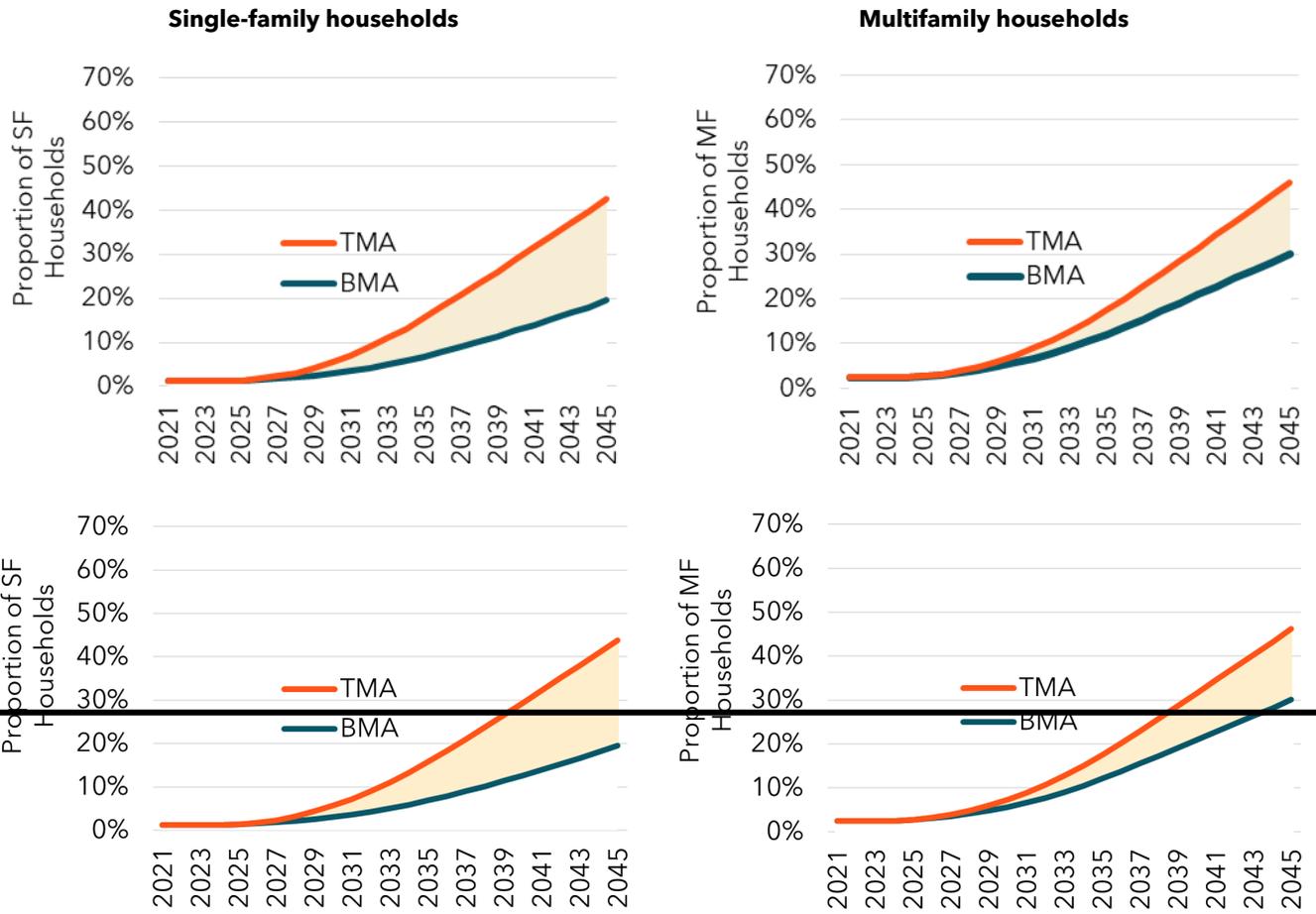
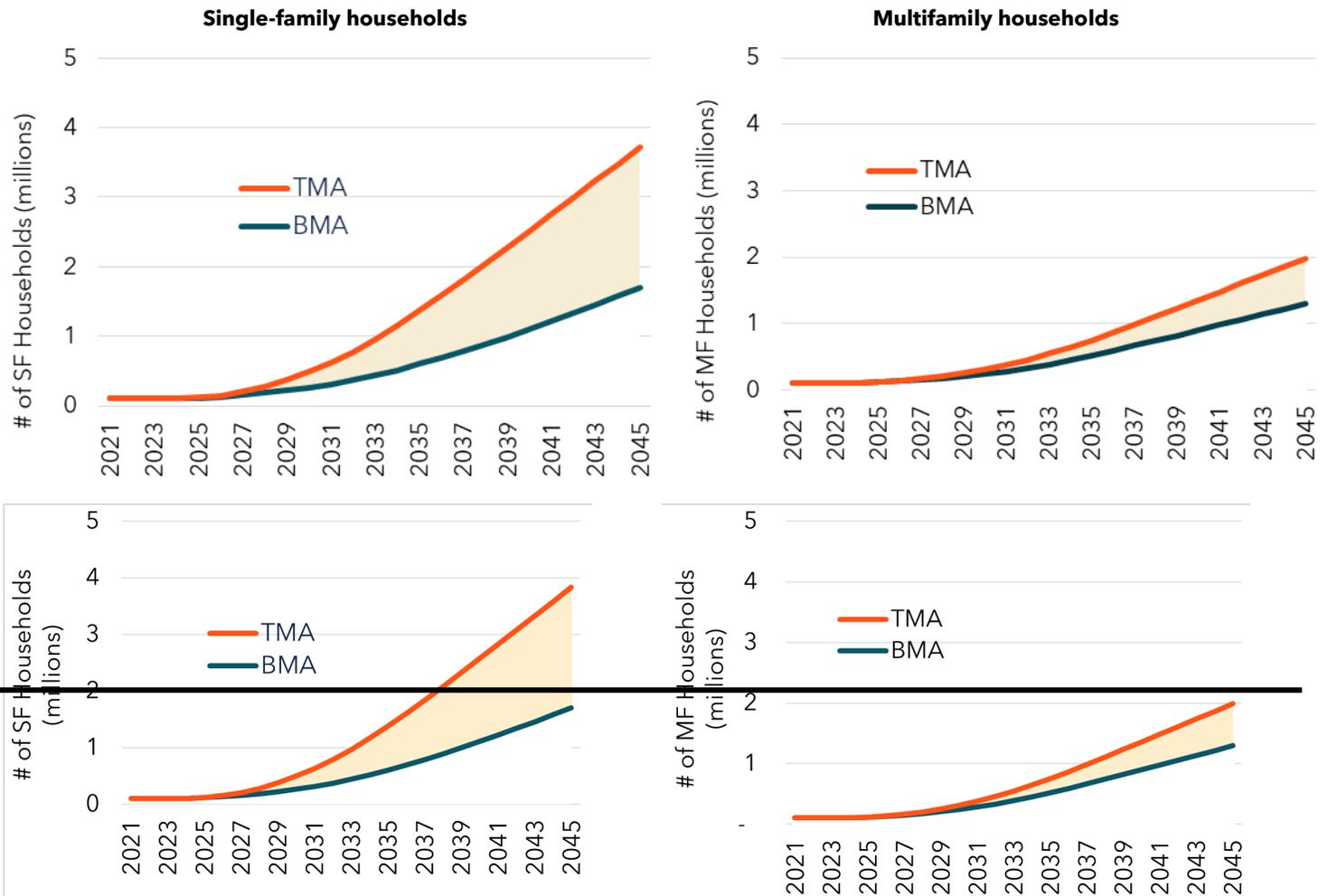


Figure 2. Estimated number of households adopting induction and ENERGY STAR certified radiant cooking products (in thousands)



In the next step of the adoption forecast process, CalMTA calculated the net incremental adoption, which is equal to TMA minus BMA, minus estimated adoption associated with Program Administrators' (PAs) verified savings (this included all PA programs statewide; for the investor-owned utilities (IOUs), this included programs reported in the California Energy Data and Reporting System or CEDARS).<sup>16</sup> The net incremental adoption is summarized in the equation below.

$$\gamma^{N.Incremental} = \gamma^{TMA} - \gamma^{BMA} - \gamma^{RA}$$

Where  $\gamma$  represents cumulative adoption of induction and radiant cooking products over the forecast period of 2024 to 2045. The superscripts  $N. incremental$ ,  $TMA$ ,  $BMA$ , and  $PA$  represent

<sup>16</sup> <https://cedars.cpuc.ca.gov/>.



net incremental adoption attributed to the MTI, Total Market Adoption, Baseline Market Adoption, and verified PA claimed savings respectively. Columns #2 to #5 of Table 4 below gives TMA, BMA, PA-verified units, and net incremental adoption in terms of units of ENERGY STAR certified radiant and induction products.

The approach summarized above estimated BMA, TMA, and net incremental adoption at a statewide level. The last two columns of Table 4 show the adoption attributed to households outside the service territories of the IOUs and the adjusted adoption estimates included in the estimation of TSB and cost-effectiveness.<sup>17</sup>

**Table 4. Forecast of adoption of ENERGY STAR certified radiant and induction products (in thousands, 2024-2045)**

	<b>TMA (<math>Y^{TMA}</math>)</b>	<b>BMA (<math>Y^{BMA}</math>)</b>	<b>PA-verified units (<math>Y^{PA}</math>)</b>	<b>Net Incremental (<math>Y^{N.Incremental}</math>)</b>	<b>Adoption attributed to non-IOU territory</b>	<b>Adoption for TSB and CE estimation</b>
<b>Single-family households</b>	<del>3,559</del> <b>3,450</b>	1,511	<del>124</del> <b>119</b>	<del>1,924</del> <b>1,820</b>	<del>492</del> <b>465</b>	<del>1,433</del> <b>1,355</b>
<b>Multifamily households</b>	<del>1,610</del> <b>1,607</b>	958	<del>35</del> <b>35</b>	<del>617</del> <b>614</b>	<del>158</del> <b>157</b>	<del>460</del> <b>457</b>
<b>New construction</b>	<del>459</del> <b>457</b>	338	-	<del>121</del> <b>119</b>	<del>31</del> <b>30</b>	<del>90</del> <b>89</b>
<b>Total</b>	<del>5,629</del> <b>5,515</b>	<b>2,808</b>	<del>158</del> <b>154</b>	<del>2,663</del> <b>2,553</b>	<del>681</del> <b>653</b>	<del>1,982</del> <b>1,900</b>

Note: PA verified units include adoption associated with PA programs statewide. Slight differences in sums are the result of rounding.

In addition to the net incremental adoption estimates attributed to households in the territories of the three IOUs, the TSB and CE calculations also considered initiative costs, incremental measure cost (IMC), avoided costs, load shapes, and unit energy impacts.

A detailed explanation of the methodology and approach, models, inputs, assumptions, and results are provided in Appendix B and Attachment B: Market Forecasting and Cost Effectiveness MEMO SUMMARIZING UPDATES to Appendix B.

<sup>17</sup> It is important to note that the state of California will realize electric system benefits from statewide incremental MTI cooking product market adoption - not only from adoption inside the IOU service territories. While the adjusted values may be the most appropriate values to use for the CPUC's cost-effectiveness tests, as a matter of policy, they do not fully represent the statewide benefits that will result from investment in the Induction Cooking MTI. This approach discounts statewide benefits by nearly 26%.



## 2.6 Other benefits

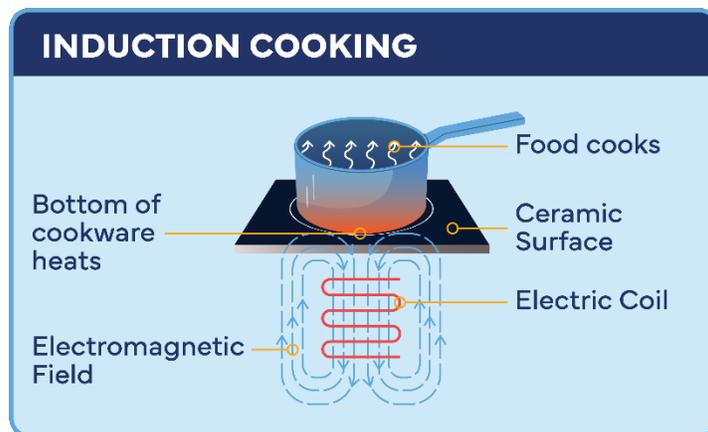
The following are additional, unique benefits (i.e., non-energy benefits) of induction cooking products.

- Superior cooking experience
- Safer cooking environment
- Improved IAQ and improved health benefits, especially for MF consumers
- Enables full electrification and prevents consumers holding on to last remaining gas appliance in the home
- **120V products will serve as a plug-and-play option to replace gas cooking products**
- 120V battery-equipped products provide resilience during power outages

## 3 Product definition & assessment

Modern, efficient electric cooking appliances offer improved IAQ, better cooking performance, energy savings, and emissions reductions compared to the natural gas and propane cooktops, ovens, and ranges found in most California homes. Electromagnetic induction is the principal technological advancement that provides targeted heating directly to cookware, enabling fast, efficient, and precise cooking.

Figure 3. Electromagnetic induction



This MTI will focus on electric cooktops and all-electric ranges using either induction or radiant electric technology. Cooktops and ranges that use radiant technology must be certified to version 1.0 of the ENERGY STAR specification.

This definition includes freestanding electric ranges, which can be installed between cabinets, or stand alone as well as slide-in electric ranges, which can only be installed between cabinets.

Freestanding ranges typically locate cooking controls in an elevated panel at the back of the appliance, whereas slide-in ranges typically put controls in the front.

**Figure 4. Slide-in range (left) and freestanding range (right)**



Photos credit: <https://www.whirlpool.com/blog/kitchen/slide-in-vs-freestanding-range.html>.

This definition also includes 240V standalone electric cooktops designed for permanent installation in a countertop.<sup>18</sup>

**Figure 5. 240V 5-burner Miele radiant cooktop (left) and 240V 6-burner Viking induction cooktop (right)**



Photos credit: <https://hintex.com/products/miele-km5627-electric-cooktop-240v> and <https://www.vikingrange.com/consumer/category/products/cooking/cooktops>.

The product definition for this MTI includes 240V products- and ~~new battery-equipped~~ 120V cooktops and ranges **that are both battery-equipped and non-battery-equipped** as shown in

<sup>18</sup> Induction and radiant plug-in products that are designed for countertop use only are not part of the MTI product definition.

Figure 6. are included in the product definition, but 240V Cooktops and ranges with coil-style heating elements are excluded, as are standalone wall ovens.

**Figure 6. Impulse Labs cooktop (left) and Channing Street Copper Range (right), both battery-equipped**



Photos credit: <https://shop.impulselabs.com/products/impulse-induction-cooktop-deposits> and <https://copperhome.com/products/charlie>.

### 3.1 Technical definitions and details

Cooking appliances have traditionally been grouped into cooktops, ovens, and ranges. Ovens are an enclosed compartment for cooking or heating food and can use either a gas flame or electric resistance heating. Cooktops consist of a horizontal surface with one or more surface units, commonly referred to as “burners.” Cooktop technologies are described by their respective modes of heat transfer: a gas flame, electric resistance coil, or electric inductive heating. Products that combine an oven and cooktop into a single appliance are referred to as “ranges.” The three types of cooktop heat modes are described below.

**Electric resistance:** Heat is generated by running an electric current through a metal wire with high electrical resistance and thermally conductive properties. The metal wire becomes hot and emits heat which is transferred to the cooking vessel primarily through conduction or radiation, depending on the type of resistance cooking product.

**Electric induction:** Heat is generated by allowing a high frequency alternating current to flow through a tightly wound coil of wire which generates a rapidly changing magnetic field at the surface of the cooktop. That heat is only transferred to a pot or pan containing ferrous material.

**Natural gas:** Heat is transferred to the cooking vessel via an open flame that is fueled by natural gas that is piped into the dwelling unit.

## 3.2 Competitive analysis

This section covers some of the key strengths, weaknesses, opportunities, and threats for induction cooking products. A full analysis of the competitive landscape can be found in Appendix C.

### 3.2.1 Key strengths

Compared to gas cooking, induction cooking results in improved IAQ and a meaningful reduction in the negative health impacts associated with combustion by-products, contaminants, and particulates, benefitting ESJ communities in particular. Induction cooking technology also provides a higher-performance cooking experience. Heat output is precise and immediate, reaches desired temperatures faster than electric resistance or gas appliances, and are more efficient because nearly all energy generated is transferred to the cooking vessel. Induction technology eliminates the need for an open flame or exposed heating elements, making it a safer option. The direct application of heat to the cookware provides safety benefits as well by keeping the cooking surface cool compared to gas and electric resistance cooktops. This cooler, smooth surface also facilitates a much easier cleaning process.

Battery-equipped induction appliances in particular present significant benefits in the ability to provide demand response capabilities, operate during power outages, and reduce the demand on the electrical grid through low-power charging during off-peak hours. **Non-battery-equipped induction appliances reduce the need for a panel upgrade and offer a lower cost solution for those looking to switch from gas to electric.**

### 3.2.2 Key weaknesses

Most homes with existing gas cooking products require some degree of modification to the electrical system to accommodate 240V electric cooking appliances, which can be cost-prohibitive for many consumers and building owners. Induction cooking appliances are generally more expensive than incumbent products and they require compatible cookware. Another key weakness is the cultural preference for gas cooking, for things such as woks or open flame heating.

### 3.2.3 Key opportunities

Title 24 Electric Ready Requirements mandate that all new homes are constructed with 240V circuits in the kitchen, even if the builder installs a gas cooking appliance, which removes the electrical upgrade cost barrier in newly constructed homes. The many initiatives to ban gas appliances by municipalities and regional air quality districts also presents a significant opportunity for electrification of cooking. The ENERGY STAR cooking product specification and IRA funding for products meeting these criteria will engage consumers looking for more affordable appliance upgrade opportunities. Lastly, messaging and awareness of the IAQ benefits of electric cooking are gaining the attention of consumers and may motivate a transition away from gas cooking. **California's Neighborhood Decarbonization Zone designated by the CPUC's policy brief: Long-Term Gas Planning & Decommissioning (R.20-01-007 / R.24-09-012) also present an opportunity for 120V products. As these pilots launch (likely 2026-**



**2027), entire neighborhoods will need to switch to electric cooking simultaneously. "120V Induction" solution will be the primary tool to enable these rapid, low-impact retrofits without requiring electrical panel upgrades for every home on the block.**

### 3.2.4 Key threats

Moving to electric cooking from gas using the electricity and gas rates of today will lead to increased bills for some. Although less efficient, gas is cheaper than electricity. Time of Use (TOU) rates amplify this by increasing the cost to cook dinner at the time most of California cooks dinner. Gas cooking does not currently suffer from this threat.

## 3.3 Bill impacts

The bill impacts of cooking electrification in California currently do not favor IOU ratepayers. Estimates show that substituting gas to electric cooking fuel results in higher bills for customers in Pacific Gas and Electric (PG&E), San Diego Gas and Electric, and Southern California Edison territories with an average increase of between \$145 to \$175 annually. Rates with a higher fixed rate and lower variable (\$/kWh) rate, like those available in Sacramento Municipal Utility District (SMUD) territory, improve the economics of fuel substitution efforts. We estimate that a SMUD customer using an electrification-friendly time of use (TOU) rate will save up to \$23 per year when switching from gas to induction cooking.<sup>19</sup> These bill impact estimates are based only on cooking energy consumption and do not include the potential ventilation and cooling energy savings with induction appliances compared to incumbent gas products.

The 120V battery-equipped induction products allow customers to cook during peak rate hours but charge the appliance during hours in which their electric rates are lower. TOU customers leveraging off-peak charging with a battery would be able to save \$70 to \$95 per year compared to a typical 240V induction range without battery. This is still an increase of \$57 to \$81 compared to a gas range with IOU rates, so electrification still presents a challenge even with a TOU-optimized battery range.

## 3.4 Product performance and/or behavior research summary

The following sections summarize the key findings from research that informed the development of this MTI. Expanded summaries are provided in Appendix C.

### 3.4.1 Technical differences that affect efficiency

Frontier Energy conducted research in 2019 demonstrating the efficiency of all three cooking technologies across six different appliances.<sup>20</sup> Induction cooking appliances were measured to be

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<sup>19</sup> In May 2024 the CPUC approved a proposal to increase the fixed monthly charge in all three electric IOUs to match SMUD's monthly charge of \$24.15. A detailed explanation of the bill impacts study can be found in Appendix C.

<sup>20</sup> Frontier Energy, *Induction Range Final Report*, July 2019, accessed July 7, 2024, <https://www.caetrm.com/media/reference-documents/Induction-Range-Final-Report-July-2019.pdf>.



85% efficient on average, compared to 77% for electric resistance products, and 32% for a gas-powered appliance. Notably, these efficiencies do not include the difference in ventilation energy required between each technology. These are likely conservative when viewing cooking appliances through a building systems lens.

A study published in the 2014 American Council for an Energy-Efficient Economy (ACEEE) Summer Study on Energy Efficiency in Buildings showed that conventional electric technology showed higher efficiency (83%) when tested with large cookware compared to small cookware (42%) while induction cooking maintained a relatively consistent efficiency regardless of cookware size.<sup>21</sup> The ENERGY STAR test procedure does not currently account for cookware size in the values published, which creates a potentially hidden benefit for conventional resistance cooking.

### 3.4.2 Advanced cooktop efficiency features

Some modern induction cooktops feature advanced pan size detection capabilities, which enable them to adapt the size of the inductive field to match the diameter of the cookware. This is achieved using multiple “rings” of inductive coils, arranged concentrically around the cooking surface. As the cookware is placed on the cooktop, the system detects its diameter and adjusts the heating zones accordingly. If smaller cookware is used, only the inner coil activates, ensuring optimal heating performance while minimizing energy waste.

Pan presence detection is an important feature in modern induction cooktops; it detects the presence of compatible cookware with a flat bottom surface containing iron. If an incompatible pan is detected, the cooktop will prevent inefficient operation that would have occurred without this technology. Conversely, when a compatible pan is present and the heating zone is turned on, the cooktop will stay on and adjust its power output accordingly, which provides precise heating control and minimizes energy consumption.

### 3.4.3 Standby power consumption

Historically, gas cooktops with pilot lights resulted in standby losses due to continuous gas consumption to maintain the pilot flame. However, modern natural gas cooktops typically rely on electrical ignition and no longer incur standby losses. In contrast, resistance and induction cooking appliances experience standby losses due to the ongoing operation of their electronic circuits, particularly in models featuring clocks, Wi-Fi chips, or other more complex electronic components. However, ENERGY STAR certified cooking appliances for residential use exhibit cooktop standby losses that are remarkably low, accounting for less than ~3% of their total annual energy consumption, although a few outliers in the ENERGY STAR data set did have standby losses up to 30%.

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<sup>21</sup> ACEEE, *Induction Cooking Technology Design and Assessment*, ACEEE, 2014, accessed July 7 2024, [https://www.caetrm.com/media/reference-documents/Induction\\_Cooking\\_Tech\\_Design\\_and\\_Assessment\\_ACEEE\\_2014.pdf](https://www.caetrm.com/media/reference-documents/Induction_Cooking_Tech_Design_and_Assessment_ACEEE_2014.pdf).

#### 3.4.4 IAQ and ventilation

IAQ can be compromised when using natural gas or propane-powered cooking appliances. These fuels emit chemicals like benzene, NO<sub>x</sub>, and nitrogen dioxide when combusted, and can seep into living spaces even when the appliance is not in use. This slow leakage exposes occupants to harmful chemicals and poses a risk of explosion. Furthermore, when these fuels are burned, unventilated exhaust gases can fill a household with small airborne particulates, leading to dirt and grime buildup, respiratory issues, and ground-level ozone generation.

The negative IAQ impacts from both un-combusted gas and the combustion byproducts of gas ovens and cooktops tend to be more severe in MF buildings and small SF homes, as well as older residential buildings of both types. This is because the concentration of IAQ contaminants is inversely proportional to the volume of a space, and generally higher in MF buildings. Older buildings are less likely to have a functional mechanical ventilation of any type, including quiet, correctly sized range hoods ducted outdoors. Unfortunately, those same building attributes tend to reflect housing commonly found in ESJ communities. Additional details related to gas and propane IAQ can be found in Appendix C.

Induction cooktops create significantly less waste heat to surrounding spaces compared to gas. Induction cooktops require minimal ventilation and no supplementary fans to remove excess heat,<sup>22</sup> which reduces the noise levels within the kitchen while also minimizing the infiltration of unconditioned outdoor air through unbalanced ventilation.

#### 3.4.5 Cooking performance

The following sections describe research around factors that influence the cooking performance of induction cooking.

##### *Thermal inertia and overshoot*

Induction cooktops boil water more quickly than the tested gas or resistance cooktops, while experiencing minimal temperature overshoot. Typically, gas burners have less material in contact with the cookware, which reduces the surface area of contact for residual conduction of heat to occur. Resistance ceramic cooktops heat the cooktop surface, a significant thermal mass, which takes time to cool and continually conducts heat into cookware after power input is stopped. Induction cooktops do not heat points of contact with the cookware, only the cookware itself. This produces the smallest overshoot between all technologies. A smaller overshoot typically indicates a better, more responsive and precise cooking experience.

##### *Power output*

Electric resistance cooktops have a fixed peak power output based upon element size and wire gauge, which can result in less precision and repeatability at lower heat output. However,

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<sup>22</sup> This is reflected in recently updated Title 24 range hood requirements that mandate higher cubic feet per minute ratings for new homes and apartments with gas cooktops.

induction cooktops have more dynamic power control electronics that allow for high precision and repeatability at all levels of heat output. This also means that the maximum heat output for a given inductive coil with PowerBoost/RapidBoil/PowerBoil or equivalent functionality can “share” power between heating elements under certain conditions where there is available power to share and increase the power output of a single element.

### *Boil times*

Induction cooktops can divert unused power from adjacent coils to boost maximum output of a single coil, resulting in a significant increase in effective heat supplied to cookware. As a result, boil times are directly linked to effective heat output, and induction cooking emerges as the technology with the largest effective output and therefore the shortest boil times compared to gas and radiant resistance methods.

#### **3.4.6 Improved safety/reduce risk of burns from induction cooktops**

Induction cooktops significantly reduce the risk of burns associated with touching the cooking surface compared to conventional gas and, especially, electric resistance cooking. Unlike the conventional technologies, induction cooktops themselves do not reach dangerous high temperatures and create fire risks. This also means it is generally safer to touch an induction cooktop with bare hands, provided no ferrous materials are nearby or on your skin. Furthermore, exposure to the electromagnetic field of the cooktop poses no documented health risks to humans.

## **3.5 Potential product improvements**

This section describes two broad categories of potential improvements to induction cooking products:

- Improvements that address market or technical barriers to adoption of electric appliances.
- Improvements that increase consumer interest and/or satisfaction with electric cooking appliances.

Any additional improvements that can increase the energy efficiency and/or demand flexibility of induction cooking products are described in Appendix C.

### **3.5.1 Improvements that address market or technical barriers to adoption**

Most of the potential improvements within this category address the lack of 240V electrical infrastructure in California homes and buildings. Even in cases where it is possible to provide a 240V circuit for a new electric cooking appliance, improvements that allow induction products to use existing 120V circuits may provide the lowest overall cost to convert homes from gas to electric cooking. These include:

- 120V battery-equipped cooktops and ranges that can provide the same cooking experience as a 240V product, allow use of the product during power outages, and shift cooking electricity load away from daily grid peaks.
- Products that can be manually or automatically adjusted to match available amperage on a circuit, ensuring the best possible cooking experience (fastest heating times), without the risk of exceeding the capacity of a circuit (tripping a breaker).



- Potential strategies for developing lower cost 120V cooktops and ranges with reduced (but still acceptable) performance relative to 240V products include:
  - Leveraging two 120V receptacles, each on a different circuit.
  - Operating the oven on a 120V AC and the cooktop on battery (DC) to reduce the coincident peak power demand on the circuit.
- Advanced strategies for balancing the allocation of power among heating zones, and/or between the oven and heating zones.
  - Reducing oven volume, increasing insulation, or other strategies to reduce oven power demand.

### 3.5.2 Improvements that increase consumer interest and/or satisfaction with electric cooking appliances

Induction cooking products already offer significant advantages over both gas and electric resistance cooking appliances; however, induction products will need to appeal specifically to customers who are accustomed to cooking with gas and have negative perceptions about electric cooking. Potential improvements that can help overcome this include:

- Development of new products like induction woks and tortilla makers that serve specific culturally important food needs.
- Visual cues that help users transition from gas cooktops, such as LED lights that emulate the look and intensity of a gas flame.
- Incorporation of a universally compatible resistance heating area (alongside several induction zones) to ease customer concerns about compatible cookware and allow more flexibility with use of existing cookware.
- Controls and digital temperature displays that allow the user to set and hold specific temperatures for each heating zone.
- Improvements to induction cooking products to address perceived/actual reliability issues.

## 4 Market characterization

### 4.1 Current market state summary

#### 4.1.1 Product availability

Induction cooking products are growing in popularity but still occupy the smallest selection of cooking appliances available to purchase online and in stores, compared to electric resistance and gas models.

Additionally, CalMTA's market research uncovered that induction products were underrepresented at brick-and-mortar retail locations when compared to online stores, and in-



person, retail sales associates often promoted gas. Across the stores the CalMTA team visited, there were approximately 271 total models of cooktops and ranges on display, 24 of which were induction models (9%). This contrasted with available models of induction cooktops and ranges found online, which represented 24% of all the cooktops and ranges found during web-scraping research. Interactions with sales associates in stores revealed many had a strong preference for gas fuel and lacked firm knowledge of induction technology, or potential rebates and incentives for induction, indicating an opportunity for more education and engagement with this sector.

#### 4.1.2 Technology outlook

While the vast majority of induction cooktops and ranges available to buy today are 240V, there are currently ~~three two~~ **three** induction cooking products on the market that use 120V with battery-equipped technology, which allow for cooking electrification without the cost of electrical upgrades or optimizations and without compromising performance. These products, sold by new market entrants, are priced **between \$4,000-\$6,000** (before any available incentives are applied) and therefore unattractive to most California consumers. ~~Based on findings from manufacturer interviews, mainstream kitchen manufacturers do not have plans to develop a 120V battery-equipped product to overcome electrification barriers, citing perceived technical issues, performance drawbacks, and the cost of research and development. The manufacturers of the 120V-battery solutions do not expect costs to decline substantially in the near term, particularly due to tariffs on battery imports.~~

#### 4.1.3 Market size

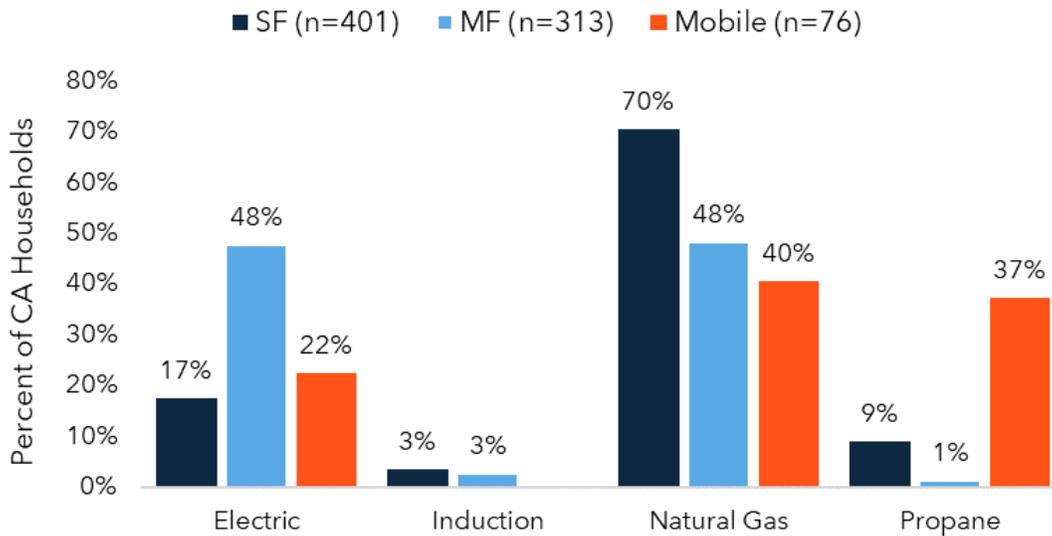
Studies show that a large proportion of existing households (over 32% of SF housing units and over 59% of MF units) have electric panels with intermediate capacity (100 amps) or less, posing an immediate obstacle to electrification that either requires panel optimization strategies (for many homes) or panel upgrades (for homes with small capacity panels). Typical panel upgrades range between \$2,500 and \$5,000 for SF homes (not including any utility-side service upgrades),<sup>23</sup> with much higher costs for MF buildings. The majority of SF and MF homes use gas cooking fuel, but MF properties have significantly more coil cooktops and ranges.

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<sup>23</sup> Utility-side upgrades could include underground or overhead service connections and new transformers. These costs vary significantly by the service required, and a report by the Association for Energy Affordability and StopWaste found that utility service upgrades could range between \$300 and \$80,000.



**Figure 7. Cooking fuel type among California residents by housing type**



Source: Residential Survey QC4. “What type of fuel does your cooktop use?” (n=790). Some percentages may not total exactly 100% due to rounding. Differences in cooktop fuel type across SF and MF segments were statistically significant,  $p < 0.05$ .

## 4.2 Target market overview

Table 5 below summarizes the targeted residential market, as well as who makes, buys, uses, and sells induction products, and what influences purchasing decisions.

**Table 5. Target market overview**

<b>Target market</b>	Existing and newly constructed SF and MF households.
<b>Who makes the product?</b>	All major kitchen appliance manufacturers as well as several new start-up firms focused on technology innovations and battery-equipped products.
<b>Who buys the product?</b>	Homeowners, developers and builders, property managers or building owners, and PAs.
<b>Who uses the product?</b>	Residential consumers who use a cooktop or range.
<b>How is product sold?</b>	Online through e-commerce websites, in stores (big box as well as independent appliance retailers), and direct from manufacturer.
<b>Who influences purchase decision?</b>	Customers are influenced by a variety of concerns and market factors; market actors like builders and property managers are influenced by their perspective of consumer preferences for appliance types and fuel types.



## 4.3 Market actor and end-user insights

### 4.3.1 Awareness and value propositions

A large number of survey respondents had either never heard of induction products at all (24%) or had heard of them but didn't know very much about them (60%). Focus group participants were also largely unaware of how induction technology worked, and unaware of the fact that induction cooktop surfaces stay cool as a result of electromagnetic technology instead of radiant heat. When explained, group participants were often heavily drawn to this benefit. Many respondents felt this was particularly appealing for homes with small children or senior citizens.

The reaction to this information among consumers in the focus groups aligned with survey findings: "safety" was cited as a top reason for purchasing the cooktop among induction users surveyed (second only to cooking experience), along with respondents who didn't already have induction but said they would prefer it if they were going to purchase a new cooktop. Over 80% of the customers who stated that induction would be their preferred technology cited safety as a top reason. Property managers also cited safety as a valuable feature, rating the lowered risk of burns as the most important benefit. However, despite this being a strong value proposition for consumers and property managers, CalMTA's secret shopping research found that safety was not promoted as a feature of induction products. The findings instead found most brands touted efficiency, faster cooking time, and easy clean-up.

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"All our generations have been cooking this way for many years and nothing happened. Maybe some people got sick, but it hasn't been proven." -Focus group participant with a gas cooktop

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Focus groups revealed that there is a low awareness of the health risks and the corresponding benefits to IAQ that come from switching from gas to an efficient electric cooking appliance. Furthermore, the focus group research found a general skepticism about negative impacts on IAQ when participants were asked about this topic. Many participants felt that if there were such health risks, they certainly would have already known about them. Some questioned the credibility of the information.

Survey findings on this topic revealed that health concerns were not a top factor for induction cooktop users in the purchase of their induction cooktop, and when gas cooktop users were presented briefly with information about IAQ, this information did not meaningfully change their likelihood to purchase. These results showcase an opportunity for more information and education on the benefits of cooking electrification on IAQ and health, but careful attention should be paid to how these messages are presented and the credibility and authority of the sources of information about health impacts.



### 4.3.2 Consumer attitudes and preferences

The sentiment of Californians, who were aware of induction but did not currently own an induction cooking product, toward induction is positive, with 58% (n=585) of respondents reporting *somewhat* or *very positive* impressions of the technology and 25% of households reporting they would prefer induction over other fuels if they were to purchase a new cooktop. Gas cooking product users specifically stated a preference to switch to induction 19% of the time. Stakeholder interviews and literature review both supported the fact that providing direct experience to cooking with induction cooktops and ranges can mitigate concerns around adoption and support positive experiences with the technology. The majority of stakeholders and subject matter experts shared that customers overwhelmingly had a positive response to cooking on induction once they were able to test the technology and became comfortable. Multiple stakeholders cited the power of induction loaner programs and in-person demonstrations to shift customer perceptions of induction. When asked about their interest in this type of program in the CalMTA residential survey, 68% (n=415) of homeowners reported they would be interested in trying out an induction product via a loan program. This concept was particularly appealing to MF households.

### 4.3.3 Multifamily property managers

MF property managers saw benefit of installing induction cooking products and many were open to installing induction in their buildings in the future, with 42% reporting they would be “very likely” to install induction cooking products if undergoing a future renovation or needing to replace an appliance in their managed units. The key benefits of induction technology for property managers were safety and the ability to improve property value and rentability of their units. However, the research uncovered key barriers for property managers that included the perception that tenants prefer gas cooking appliances (50% of property managers surveyed stated this); concerns about durability and the possibility of repairs, and concern about potential electrical upgrades. In the in-depth interviews, respondents caveated their openness of installing induction with the fact that the cost of doing so would need to be supported by the ability to increase rents, with some mentioning they felt it would only be the right fit in higher-end properties. Property managers were cautious and conservative until knowing more about tenant preferences and what switching to induction cooking products could really mean for their bottom line.

### 4.3.4 New construction sector

During in-depth interviews, manufacturers reported that builders represent a large portion of their appliance sales, but also that most of the cooking appliances purchased by builders are not induction. One respondent estimated that builder sales make up 25-30% of the industry - but noted that induction occupies a smaller percentage due to its higher price point. Another manufacturer echoed this, saying that induction sales to builders were “minimal,” and that builders were “a less progressive channel” and more focused on radiant or gas options. Other feedback noted that overall cost-sensitivity among builders seemed to be increasing. However, some production builders reported that even if they wanted to install induction, it can be difficult to get induction at the scale needed. One respondent stated, “We just couldn’t get enough of what we needed to broadly offer it in some areas,” making it challenging to offer induction



cooking products as a standard feature in their homes. Builders and remodelers also reported cost as a barrier to installing induction cooking products, along with the perception that customers prefer gas.

## 5 External program alignment & coordination

**Following guidance provided in the Market Transformation (MT) Framework attached to CPUC D.19-12-021, CalMTA intends for the Induction Cooking MTI to complement, add value to, and minimize overlap with existing programs serving the target market for the technology. Throughout MTI development, the team pursued and will continue to pursue substantial coordination, outreach, engagement, and collaboration with key groups and intends to identify points of alignment that: 1) eliminate duplication or redundancy in market activities; 2) ensure that the MTI adds value to the market and fills any gaps needed to drive long-term market change; and 3) increase scalability and the efficiency with which desired results are achieved by leveraging existing work .** Following guidance provided in the Market Transformation (MT) Framework attached to CPUC D.19-12-021, CalMTA intends for the Induction Cooking MTI to complement, leverage, and add value to existing programs serving the target market for the technology. Specifically, CalMTA's approach to engaging key parties working in this market seeks to facilitate mutually beneficial cross-program coordination – ranging from ongoing information-sharing to more formal co-creation or partnerships – with the outcomes of: 1) limiting customer and market confusion, 2) enhancing the ability of programs to achieve their goals, 3) overcoming barriers to a program serving a unique market segment, and 4) ensuring effective use of program and CalMTA resources by aligning activities.

As described below, CalMTA engaged PAs at key stages throughout the MTI development process to create a foundation for the future delivery of a plan for coordination in addition to engagement with other important entities whose work aligns with the target market of this MTI. Collaborating with PAs prior to finalization of the MTI Plan allowed CalMTA to share and receive feedback on the proposed approach to aligning MTI activities with the PAs' energy efficiency (resource acquisition, market support, equity) programs, codes and standards activities, and additional programs such as the Energy Savings Assistance (ESA) offerings. This also included the goal of this coordination and support the MTI could provide to benefit those programs:

Over the course of 2026<sup>5</sup>, CalMTA will continue to work with PAs and other programs that are well-suited to promoting induction cooking technologies in order to identify areas of collaboration, mitigate duplication of efforts, and inform content related to external program coordination in the future Request for Proposals (RFP) for MTI implementation. Coordination with external programs will continue throughout the lifecycle of the MTI.



Important aspects of CalMTA’s approach to achieving these coordination and alignment goals with external programs are summarized below. A more detailed description of this work can be found in Appendix E: External Program Alignment & Coordination.

## 5.1 Collaboration at all phases of MTI development

Engagement with key parties in support of collaborative development of the Induction Cooking MTI occurs throughout CalMTA’s three-phase development process (see the purpose section of this document for a graphic) with Phase II activities ongoing in 2025 and Phase III collaboration commencing after the MTI Plan is approved.

- **Request for Ideas (RFI) to Phase I MT Idea Selection** (Aug. 2023 - Feb. 2024): After identifying a preliminary set of local, state, and national programs for future coordination, CalMTA 1) conducted a series of introductory briefings to cultivate awareness of the market transformation program and maximize participation in the inaugural RFI; 2) shared MTI development updates and solicited feedback at MTAB meetings and through the CPUC’s Public Document Area website; and(3) held recurring meetings with the IOU energy efficiency portfolio directors, IOU Codes and Standards working group, and CalNEXT to maximize alignment and identify additional areas of coordination.
- **Phase II Advancement Plan Research to MTI Plan finalization** (Feb. - Dec. 2024): To gain deeper knowledge about other program efforts and their potential impact on the development of the MTI, CalMTA: 1) completed additional research to expand the list of overlapping programs and activities; 2) met directly with key parties to secure at least preliminary agreement on the potential extent of overlap and approach to program alignment; 3) conducted structured interviews with important stakeholders and subject matter experts to inform our market characterization report; and 4) held a series of listening sessions with ESJ community representatives to inform the equity approach outlined in this plan.

Ongoing updates were also shared by CalMTA at MTAB meetings scheduled during this phase of activity. In late 2024, CalMTA also recruited members for an Evaluation Advisory Group and Equity Sounding Board, whose insight will inform future activities related to the Induction Cooking MTI.

- **Post-application collaboration and Phase III** (Jan. - Oct. 2025): After submitting the CPUC application requesting approval for the Induction MTI Plan and throughout Phase III implementation, CalMTA will continue to engage external programs and entities in this market, which are offering or planning to offer incentives or other aspects related to the MTI, to minimize conflicts and create opportunities for collaboration. Critically, CalMTA will conduct ongoing meetings with IOUs and third-party implementers of related programs to define activities that will avoid market confusion, ensure points of alignment are maintained and leveraged, and identify any need to adjust MTI strategies.



Explicit needs for coordination with existing resource acquisition programs and codes and standards activities will be addressed and prioritized in the RFP used to solicit an implementation contractor for this MTI, as well as the subsequent contract, implementation plan, and in the Market Progress Evaluation Reports used to measure progress toward MTI objectives. These activities, in tandem with work to align with the PAs on savings goals and attribution as defined in the MTI Evaluation Plan, will result in implementation work plans co-created with PAs and be shared with the CPUC for approval prior to MTI market deployment.

## 5.2 Related programs for potential alignment

As described in Appendix E, CalMTA identified more than 30 programs or organizations with potential relevance to the Induction Cooking MTI’s target market. **In Phase III: Market Deployment, CalMTA will prioritize MTI coordination with existing multifamily decarbonization/electrification programs, including those targeting ESJ communities, as well as new programs that focused on whole building and zonal electrification efforts through inclusion of 120V products.**

Table 6 below, which is also included in Appendix E, summarizes the programs with aspects that relate to the Induction Cooking MTI.

**Table 6. Induction cooking-related programs**

Program/Organization name	Program description
<b>Statewide Codes and Standards Advocacy Programs</b>	The statewide Codes and Standards Advocacy programs seek to influence agencies that are involved in the development of appliance and building codes at the state and national level by: <ol style="list-style-type: none"> <li>(1) Developing Codes and Standards Enhancement studies in support of Title 20 and 24 building code improvements and submitting comments on federal standards,</li> <li>(2) Supporting the implementation of recently adopted versions of the energy code,</li> <li>(3) Participation in public rulemaking proceedings for both state and federal standards and test procedures, and</li> <li>(4) Facilitating discussions with the CEC and across utilities regarding impacts of codes and standards on future gas and electric operations.</li> </ol>
<b>CalNEXT</b>	The statewide electric emerging technologies program identifies, tests, and improves electric energy technologies and delivery methods. Project categories include research and development addressing appliances, HVAC, lighting, process loads, water heating, and whole buildings. Selected projects are tested and potentially incorporated into IOU programs.



Program/Organization name	Program description
<b>Electric Program Investment Charge Program (EPIC)</b>	The CEC’s EPIC program invests in scientific and technological research to accelerate the transformation of the electricity sector to meet the state’s energy and climate goals.
<b>Building Initiative for Low-Emissions Development (BUILD)</b>	The CEC’s BUILD program provides incentives and technical assistance to support the adoption of advanced building design and all-electric technologies, including ranges and cooktops, in new, low-income all-electric homes and MF buildings.
<b>California Electric Homes Program (CalEHP)</b>	Designed as a market-rate counterpart to BUILD, the program provides incentives for the construction of all-electric residential buildings and installation of energy storage systems to encourage deployment of near-zero-emission building technologies.
<b>California Energy Smart Homes</b>	The statewide residential new construction and alterations program provides incentives to adopt advanced energy measures and transition to all-electric construction, offering incentives for SF homes, duplexes, townhomes, MF low-rise buildings, alteration projects, and additional dwelling units.
<b>Golden State Rebates</b>	The statewide midstream plug load and appliance program provides instant rebates on efficient water heaters, smart thermostats, and other measures to residential customers at participating retail locations and could potentially expand to include induction cooktops or other products.
<b>Main Energy Savings Assistance (ESA) Basic/Plus Program</b>	Implemented in each IOU territory, this trade-ally-driven program offers no-cost energy-saving measures to income-qualified homeowners and renters.
<b>ESA Building Electrification Program</b>	This targeted offering helps eligible homeowners and renters electrify their homes by replacing natural gas and propane appliances with high-efficiency electric equipment at no cost.
<b>ESA Whole Home Pilot</b>	Targeting deeper energy savings than the standard ESA program, this pilot is implemented in each IOU territory and offers a holistic package of no-cost energy-efficiency and decarbonization measures.
<b>CEC Equitable Building Decarbonization Statewide Direct Install Program</b>	<b>The Equitable Building Decarbonization (EBD) Statewide Direct Install Program provides and installs energy-efficient electric appliances, energy efficiency measures, and related upgrades at no cost to low-income households in under-resourced communities.</b>



Program/Organization name	Program description
<b>Self-Generation Incentive Program (SGIP)</b>	Relevant to our exploration of battery-equipped induction products, SGIP provides financial incentives for installing clean, efficient, on-site distributed generation, including small residential storage.
<b>The Switch is On</b>	The statewide education and awareness campaign provides information, resources, and tools to help homeowners and renters electrify their homes, as well as tools for contractors.
<b>Air quality policymakers</b> , specifically the California Air Resources Board (CARB), Bay Area Air Quality Management District (BAAQMD), and (SCAQMD)	At the state and local level, these entities develop emissions standards and ordinances for space and water heating measures in addition to other appliances like cooktops and ranges.
<b>Local and regional incentive programs</b> such as 3C-REN Home Energy Savings, BayREN’s Bay Area Multifamily Building Enhancements Program, BayREN Efficiency and Sustainable Energy Home program, Marin Clean Energy’s Marin Clean Energy’s Multifamily Energy Savings and Low-Income Families and Tenants programs, <b>PG&amp;E Powerful Neighborhoods program</b> , SCP Appliance Rebates, Silicon Valley Clean Energy FutureFit Homes Rebates, and SMUD Appliance Rebates	While each program is structured differently, these offerings reduce the upfront cost of adoption through rebates on qualifying products, including electric cooking technologies.
<b>Local induction cooktop loaner programs</b> , including SCE’s Induction Lending Program, the PG&E Induction Cooktop Loaner Program, the City of San Jose Induction Cooktop Checkout Program, Sonoma Clean Power’s Induction Cooktop Check Out, and the Electric Home Cooktop Program offered by U.S. Green Building Council - California in the San Diego area	While each program is structured differently, these offerings reduce the upfront cost of adoption through rebates on qualifying products.
<b>Local utility online marketplaces</b> like the PG&E Energy Action Guide, Los Angeles Department of Water and Power’s Efficient Product Marketplace, and the Southern California Edison Marketplace	These online marketplaces allow utility customers to shop for energy-efficiency products online and apply instant rebates to qualifying models. They also highlight energy-efficiency financing options, including solutions for income-qualified consumers.
<b>ENERGY STAR</b>	Administered by the EPA, ENERGY STAR is a voluntary labeling program for products that meet energy efficiency specifications set by the EPA. Initial engagement will support the ENERGY STAR Residential Cooking Products V1.0 specification; CalMTA plans to work with ENERGY STAR on V2.0



Program/Organization name	Program description
	which will continue to improve efficiency of induction cooking.
<b>Induction Stove Challenge</b>	Led by the New York Power Authority, NYSERDA, and NYCHA, this competitive innovation challenge calls on appliance manufacturers to design and produce product designs and prototypes for new induction stoves that can be installed in older buildings using standard 120-V/20-amp outlets.

This table does not include programs that have not yet launched or are still in early stages of development. However, CalMTA recognizes the importance of coordination with the CEC Equitable Building Decarbonization Direct Install Program, the CEC-administered and IRA-funded High-Efficiency Home Rebate Program and Home Efficiency Rebate Program, the Wildfire and Natural Disaster Recovery Rebuild Program and equity-focused residential electrification programs like PG&E’s zonal equity electrification pilot. We will continue outreach leading up to Phase III delivery to identify points of alignment and potential coordination with these programs as they evolve.

**Recent California legislation related to decarbonization may create additional opportunities for alignment and coordination outside of the external program landscape, such as pilots in the priority-neighborhood decarbonization zones identified through SB 1221. CalMTA will continue to track this work and will proactively engage as voluntary pilot program scopes are developed.**

More detailed information regarding our analysis of the existing program landscape and approach to engagement/coordination with these stakeholders can be found in Appendix E.

## 6 Data management

CalMTA will implement a comprehensive data collection and management strategy throughout the MTI’s life that includes collection and ongoing management and analysis of these data:

- MTI program data and materials
- Secondary data and information on population characteristics, market trends, and other programs
- Product category sales and shipment data - either purchased or negotiated as part of the MTI
- Data collected via primary research
- MPis



Data will be securely stored, allowing for both longitudinal tracking and efficient access to data for analysis activities. This data will support market progress evaluation and updates/true-up analyses to MTI incremental impacts and CE, as well as assessment of market trends and progress toward MTI goals.

## 6.1 MTI program data and materials

CalMTA will create a repository of program data and materials that includes a detailed record of stakeholder and market actor communications, program data including agreements and data provided by market partners, market adoption and CE models and forecasts with fully documented inputs, assumptions, and calculations, MTI MPIs, and market and product research data and reports.

CalMTA team members log communication with stakeholders, partners, and clients to enable a comprehensive tracking and reporting of activities, outreach, and events. This will act as a record of CalMTA's interventions and their timing and be a resource for evaluators to monitor MPIs and investigate the causal relationship and impact of interventions.

The CalMTA website also includes a Resources and Reports section that catalogues program material and public communication from CalMTA.

CalMTA will conduct market and product research in support of specific MTIs, and regularly true up the cooking products market adoption forecast by incorporating actual sales or shipment data as it becomes available. These program data, market and technology data, summary findings and other work products resulting from research conducted by CalMTA and third-party evaluators will be securely stored as part of CalMTA's ongoing data management activities.

### 6.1.1 Secondary data and information

CalMTA will collect data from secondary sources regarding population characteristics (such as California household demographic characteristics, home ownership, building types, and equipment saturation), market trends, and other programs. Secondary data and information sources may include:

- U.S. Census American Community Survey (Source US Census, Accessed Annually)
- Energy Information Administration's Residential Energy Consumption Survey data
- California Residential Appliance Saturation Study
- PA Program and California Energy Data and Reporting System data
- Evaluation reports from related California programs



### 6.1.2 Product category sales and shipment data

Data on cooking product sales and shipments will be critically important for evaluating the MTI incremental impacts, yet such data can be difficult to obtain. Given how crucial it is, CalMTA will negotiate agreements with market partners that include sales or shipment data, whenever possible. CalMTA will supplement what can be obtained from market partners with other sources of sales and shipment data that can be purchased or acquired via primary research.

Appendix F provides a detailed description of the sales, programs, and shipping data the MTI will maintain, including:

- ESRPP retailer stocking and sales data (source: CalMTA ESRPP data)
- Circana data (source: Circana, purchased data)
- Other sources of shipment data, such as such as ENERGY STAR, Association of Home Appliance Manufacturers (AHAM)

### 6.1.3 Data collection via primary research

CalMTA will collect primary data through a variety of market research and evaluation activities that generate ongoing market insights to inform MTI strategy and tactics, and support market progress evaluation, including longitudinal tracking of MPIs, and assessment of progress toward milestones and outcomes. Appendix F: Evaluation Plan provides detailed descriptions of data collection activities, which include:

- Residential consumer surveys
- MF property manager interviews
- Property manager (SF and MF) survey
- Manufacturer interviews
- ~~Homebuilder and remodeler interviews~~
- Stakeholder, SMEs, and MTI staff interviews
- Brick-and-mortar and online retailer data collection (including retail staff interviews)

### 6.1.4 Market Progress Indicators

MPIs correspond with the induction cooking MTI's theory of market transformation, as represented in the Logic Model, and are critical to ongoing market and MTI performance tracking. The data collection described above will enable CalMTA and evaluators to assess progress against these metrics.

For example, CalMTA will track the market share of induction cooking products as a percent of full category sales in California via sales and shipment data from sources that include ESRPP Retailer Stocking and Sales Data, sales data purchased from Circana or others, ENERGY STAR, or AHAM, and manufacturer and distributor data, among others. Appendix F: Evaluation Plan



provides a detailed description of data sources and the MPI assessment and other evaluation activities the MTI will conduct.

## 7 Evaluation & market research

Ongoing evaluation and market research are essential to the development and successful management of market transformation programs. CalMTA and the CPUC's Energy Division will oversee implementation of rigorous and strategically focused evaluation, measurement, and verification (EM&V) practices, which will enable CalMTA management and stakeholders to gauge the performance of CalMTA and MTIs, verify incremental impacts, and improve the design and success of future MTIs. Ongoing program evaluation that provides timely feedback to support program decision-making, which is also known as "real-time" or "embedded" evaluation will provide MTI program managers and implementers with continual feedback, allowing them to pivot strategies as needed to maximize the value delivered to California ratepayers.

Per the Decision and the MTI Evaluation Framework, CalMTA and an independent third-party evaluator each have important evaluation roles in MTI Evaluation. CalMTA will conduct ad hoc market research and developed forecasts of MTI incremental impact and CE, while an independent third-party evaluator is responsible for evaluating market progress and causal influence of the MTI, and for reviewing estimates of MTI incremental impacts and CE. CalMTA developed a preliminary plan for third-party evaluation of the Induction Cooking MTI with input from the Evaluation Advisory Group, a group of three independent evaluation experts, the CPUC project manager, and the CalMTA market research and evaluation lead (see Appendix F: Evaluation Plan for details).<sup>24</sup> Final evaluation plans will be developed by an independent third-party evaluator to be selected via a competitive RFP process after the MTI advances to Phase III.

### 7.1 Evaluation approach overview

CalMTA and its third-party evaluator will employ a theory-based evaluation (TBE) approach to evaluating the cooking products MTI, which is widely accepted as a best practice for market transformation program evaluation.<sup>25</sup> TBE uses the induction program theory as the point of reference for market progress evaluation - assessing market progress against the theorized short-medium- and long-term outcomes and corresponding MPIs, and the extent to which the market interventions addressed the market barriers identified and caused the outcomes theorized in the Logic Model (shown in Appendix A).

The evaluation will address these high-level objectives:

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<sup>24</sup> The purpose and roles of the Evaluation Advisory Group are detailed in CalMTA Market Transformation Initiative Evaluation Framework April 2024, <https://calmta.org/wp-content/uploads/sites/263/Market-Transformation-Evaluation-Framework-FINAL.pdf>.

<sup>25</sup> For more about TBE and references, please see Appendix F: Evaluation Plan.



- Monitor market dynamics and characteristics; assess market developments.
- Review and assess the MTI Logic Model and program theory.
- Measure market progress and equity, per the MPIs.
- Assess MTI causality per the Logic Model, using evidence-based assessments that use a “preponderance of evidence” approach and established market transformation evaluation best practices.
- Identify opportunities to adjust MTI strategy and tactics, to improve MTI effectiveness.
- Review CalMTA’s baseline and total market adoption forecasts, and TSB and CE model inputs and assumptions.
- Assess ancillary benefits and costs.

## 7.2 Market Progress Indicators

The cooking products evaluation plan identifies ~~223~~ MPIs that correspond with the MTI program theory. While the ultimate market progress indicator is market adoption of MTI cooking products (CalMTA will track this metric from the outset), this metric can be a misleading indicator of success during the first several years of MTI implementation because market share and adoption will accelerate only after the MTI addresses critical market barriers, such as reduction in incremental cost difference and supply chain delays affecting builders, improved awareness of the health and safety benefits of induction cooking, and increased availability of affordable 120V battery-equipped **and non-battery-equipped** products. Therefore, to appropriately evaluate market progress and ensure accountability, the evaluator must assess short- and medium-term MPIs that align with the Logic Model, including these:

- Number of manufacturers engaging with CalMTA
- Number bulk purchase agreements in place
- ~~Brands offering in-suite induction models in the majority of builder packages~~
- Availability of competitively priced 120V battery-equipped **induction cooking** products
- Incremental cost of MTI products versus alternatives
- New ENERGY STAR specification 2.0 includes battery-equipped products and increased efficiency
- Share of MTI cooking products stocked in stores
- Consumer and property manager awareness of induction health and safety benefits
- Market share of MTI products in new construction and existing homes

Appendix F: Evaluation Plan provides a complete list of MPIs and how they will be assessed. It also describes data sources, and evaluation approaches that the third-party evaluator can use to assess market progress, MTI causality, equity, and CalMTA’s estimates of MTI incremental impacts



and CE. The evaluator will conduct ongoing market monitoring via secondary data analysis and primary research to evaluate market progress and causality and, importantly, to provide ongoing market insights that provide real-time information to inform MTI strategy and improve performance.

CalMTA identified these primary and secondary data collection activities and associated analysis tasks that would allow the third-party evaluator to evaluate the induction MTI, which are described in Appendix F.

- Secondary data and literature review
- Residential consumer surveys
- Property manager **and building owner** surveys and interviews
- Retailer and manufacturer surveys and interviews
- ~~Homebuilder/remodeler surveys and interviews~~
- PA, SME, CBO, and other stakeholder interviews
- Retailer data collection and in-store and online stocking studies
- Retailer interviews
- Sales and shipment data collection

CalMTA anticipates that the independent third-party evaluator will have suggestions for how to improve upon this plan.

### 7.3 Ad hoc market research

The planned evaluation activities include a breadth of planned market research activities that will provide ongoing market insights to support refinements to the MTI strategy and tactics. CalMTA expects there will also be a need for ad hoc research to help support timely implementation decisions and program effectiveness. For example, the induction initiative includes a strategic intervention to build market awareness of the health and safety benefits of induction cooking. The market research conducted for the Baseline Market Characterization study revealed that consumers are largely unaware of these health and safety benefits and concluded that focused research will be necessary to identify compelling messaging on this topic. CalMTA has included a modest budget for ad hoc research needs and will identify specific research studies over the initiative lifetime.

## 8 Risks & mitigation

This section details the potential risks that could negatively impact the Induction Cooking MTI and CalMTA's plan to monitor and mitigate the risks. The risks listed in the table below have been



identified as key risks to track. Please see Appendix G for a full list of possible risks for this MTI. We are defining “high,” “medium,” and “low” for each risk as follows.

For “Probability of Occurring” in the second column, CalMTA is defining:

- **High:** Through our research and discussion with market actors, CalMTA deems this risk having a high probability of occurring. The program needs to monitor closely and identify a solid backup plan with resources that can be deployed to mitigate the risk if it comes to fruition.
- **Medium:** This risk has a medium probability of occurring given what we know about the market. The MTI needs to track and have a mitigation plan.
- **Low:** The probability of this risk occurring is low based on what know about the market to date. It could have some impact on the need for resources and timing, so the MTI needs to track.

For “Severity” in the third column, CalMTA is defining:

- **High:** If this risk plays out and our mitigation approach is unfeasible, then the success of the MTI may be in jeopardy.
- **Medium:** This may have an impact on the timing or overall success of the MTI, but the MTI will be able to pivot with more time or resources.
- **Low:** This level of risk will likely require a program intervention adjustment, but it will not jeopardize the timing or resources needed level.

**Table 7. Risks and mitigation**

<b>Risk</b>	<b>Probability of occurring (H, M, L)</b>	<b>Severity (H, M, L)</b>	<b>Possible mitigation approaches</b>
<p><b>Large enough demand signal for manufacturers:</b> MF building owners do not agree to purchase enough units of the product described in the Tech Challenge, resulting in a smaller than needed demand signal for manufacturers to invest in further product development.</p>	M	<b>M H</b>	<ul style="list-style-type: none"> <li>• Work with MF building owner trusted partners to get additional signed agreements in place.</li> <li>• CalMTA could pay a portion of the product costs to reduce cost to building owners or CalMTA develops bulk purchase pricing with manufacturers to help reduce costs.</li> <li>• CalMTA couples promise to purchase with another program such as ESA to help offset costs.</li> </ul>



Risk	Probability of occurring (H, M, L)	Severity (H, M, L)	Possible mitigation approaches
<p><b>Multifamily building owners' willingness to overcome initial price/upfront costs associated with induction:</b> Owners of MF may not be willing to pay the additional costs likely to be associated with purchasing and installing induction cooking products in their units.</p>	M	M	<ul style="list-style-type: none"> <li>• CalMTA subsidizes incremental costs for some buildings in MF building owner portfolio.</li> <li>• Negotiate bulk purchase agreements with manufacturers to drive down unit costs.</li> <li>• Demonstrate induction's substantial benefits in terms of resilience, load shifting, and operating costs for tenants.</li> </ul>
<p><b>Manufacturer response to product that meets California needs:</b> Manufacturers do not respond to Tech Challenge with product roadmaps that meet 120V electrical needs of California market and at a reasonable price point for low-income.</p>	M	H	<ul style="list-style-type: none"> <li>• Show market that it can be done through <del>two</del><b>four</b> manufacturers that we know have already done it.</li> <li>• Facilitate and support the expansion of the IP for the battery-equipped <b>and non-battery-equipped product</b> from one of the startup manufacturers to other manufacturers.</li> <li>• Reward the <del>four</del><b>two</b> known manufacturers that currently have the products with the entire MF order to stimulate competition and other manufacturers to join.</li> <li>• Build a larger demand signal with California programs and other partners targeting a broader set of MF building owners.</li> <li>• Explore alternatives solutions that mitigate the need for electrical panel upgrades for consumers switching from gas to electric cooking.</li> </ul>
<p><b>Consumer and builder perception about induction:</b> Consumers continue to perceive gas cooking as superior and are not willing to make the switch to electric cooking.</p>	M	H	<ul style="list-style-type: none"> <li>• Deploy targeted information campaign on health benefits of induction cooking with trusted health advocates.</li> <li>• Deploy additional "Chefluencer" events <del>to consumers and builders</del></li> </ul>



Risk	Probability of occurring (H, M, L)	Severity (H, M, L)	Possible mitigation approaches
			<p>coupled with a more direct marketing campaign from CalMTA (not just through the hands of others).</p> <ul style="list-style-type: none"> <li>Expand loaner programs to get induction into the hands of consumers.</li> <li>Incentivize builders for including induction in model homes even if gas remains an option for buyers.</li> <li>For builders/new construction, if the range is the lone gas appliance, emphasize the cost of running a gas connection for just one appliance.</li> </ul>
<p><b>Market perception about health impacts of gas cooking:</b> The market does not believe the messages that gas cooking negatively impacts the health of occupants.</p>	M	H	<ul style="list-style-type: none"> <li>Identify and work with additional third-party, credible partners (universities, public health advocacy partners, foundations) to develop trusted data and messages on impacts of gas cooking on occupant health.</li> <li>Expand marketing tactics to focus on this message.</li> <li>Deploy health advocates to deliver message on benefits of induction cooking on improved IAQ.</li> </ul>
<p><b>Induction cooking and culture wars:</b> The negative publicity and culture wars around regulating cooking products dampens policymakers' motivation to regulate the sale of gas cooking products.</p>	M	M	<ul style="list-style-type: none"> <li>Support policy makers with data, builder and market partners support to counter negative publicity.</li> <li>Continue to focus on benefits and price declines of induction as alternative to gas cooking.</li> <li>Expand influencer campaign with celebrity chefs.</li> </ul>
<p><b>Electrification rates in California:</b> California utilities roll out electrification enabling rate structures, especially for ESJ communities,</p>	L	M	<ul style="list-style-type: none"> <li>Across all CalMTA consumer product MTIs (HPWH, RHPs, and Induction Cooking) support policy makers and advocates in the movement towards electrification friendly rates through</li> </ul>



Risk	Probability of occurring (H, M, L)	Severity (H, M, L)	Possible mitigation approaches
<p>slower than anticipated. Without these rates, consumers will not be able to tap into the energy benefits of moving to induction cooking and adoption will be slowed.</p>			<p>bill impact information, avoided costs, and other non-energy benefit for the consumer.</p>
<p><b>Consumer price:</b> The price of induction cooking products does not decline enough to compete with gas cooking.</p>	M	H	<ul style="list-style-type: none"> <li>• Develop a new specification to manufacturers that targets basic models of induction cooking that does not include features that drive costs up.</li> <li>• Continue to push for induction inclusion in other types of programs to help bring down costs.</li> </ul>

## 9 Cost estimates

Table 8 contains annual cost estimate by major program activity for the full 20-year program period, representing all Phase III costs required to achieve full market transformation and to validate all impacts. Additional detail, including estimated annual investment by year, can be found in Appendix H.



**Table 8. Phase III Cost estimate**

<b>Activity</b>	<b>Total Phase III cost estimate**</b>
Program implementation including the following line items: <ul style="list-style-type: none"> <li>• MTI oversight, strategy, and management</li> <li>• Marketing and awareness building</li> <li>• Policy development and support</li> <li>• Supply chain management</li> </ul>	\$20,098,000 <b>\$21,473,000</b>
Market Research including the following line items: <ul style="list-style-type: none"> <li>• Market research</li> <li>• Data collection</li> </ul>	\$1,835,000 <b>\$1,741,000</b>
Mid/Upstream Incentives including incentives to retailers or builders that are “upstream in the market”	\$8,700,000 <b>\$8,725,000</b>
Downstream incentives include a CalMTA incentive that would be provided to consumers	\$0
Program evaluation	\$2,529,000
<b>Total Phase III cost estimate</b>	<b>\$33,477,000</b> <b>\$34,468,000</b>

\*Cost estimates in Appendix B and used in all cost-effectiveness calculations include costs incurred during Phase II: Program Development. Total investments for Phase II and Phase III are estimated to total ~~\$37,427,000~~ **\$39,094,000**.



# 10 Appendices

Link to <https://calmta.org/resources-and-reports/induction-cooking-mti-plan/> to access the appendices below.

## Appendix A: Logic Model Packet

This appendix includes the MTI's full Logic Model. The Logic Model is a systematic and visual way of presenting CalMTA's understanding of the interventions necessary to remove barriers, expected outcomes of those interventions, and a pathway to the desired end state.

## Appendix B: Market Forecasting and Cost-Effectiveness Modeling Approach

This appendix details the inputs, sources and methods used to develop the market forecasting, TSB, and CE model for this MTI.

## Appendix C: Product Assessment Report

This appendix presents the findings on the technology research conducted in Phase II and on behalf of the MTI.

## Appendix D: Market Characterization Report

This appendix includes the baseline assumptions and a thorough assessment of the market state, supply chain, market actors, and other programs that support the MTI.

## Appendix E: External Program Alignment & Coordination

This appendix describes how CalMTA will communicate and collaborate with key market actors and program stakeholders.

## Appendix F: Evaluation Plan

This appendix describes the plan to track the progress and assess the impact of the MTI over time.

## Appendix G: Risk Management Plan

This appendix documents the potential risks and obstacles to the MTI and CalMTA plans to mitigate the risks.

## Appendix H: Budget

This appendix details the budget requirements for the MTI.

## Appendix I: MTAB Feedback

This appendix contains feedback on the MTI Plan from the Market Transformation Advisory Board.



Attachment B:  
Market Forecasting and Cost Effectiveness MEMO  
SUMMARIZING UPDATES to Appendix B



## INDUCTION COOKING MARKET TRANSFORMATION INITIATIVE

REVISED MARCH 6, 2026 IN COMPLIANCE WITH CPUC DECISION 25-11-023

### ADDENDUM TO APPENDIX B: MARKET FORECASTING & COST EFFECTIVENESS MODELING APPROACH

## 1 Document purpose and scope

In Ordering Paragraph (OP) 1 of D.25-11-023, the CPUC directed CalMTA to narrow the Induction Cooking MTI to focus market interventions on 120V products. OP 1 of D.25-11-023 states that the MTI for Induction Cooking is conditionally approved, subject to CalMTA's submission of a Tier 2 advice letter by no later than April 3, 2026, that does the following:

- a) Narrows the Induction Cooking MTI focus to 120 Volt technologies, with or without battery backup;
- b) Related to the narrower technology focus, specifies changes to the logic model, intervention strategies, market progress indicators, milestones, and cost-effectiveness forecast and schedule;
- c) Modifies logic model to account for market and policy environment changes since the MTI was developed; and
- d) Modifies the MTI deployment budget to reflect the narrower technology focus and discusses how changes related to items (a), (b), and (c) above are reflected in the budget revisions.<sup>1</sup>

As part of compliance with item (b), CalMTA modified the cost-effectiveness forecast and schedule for the Induction Cooking MTI to reflect the narrower technology focus and modified logic model, intervention strategies, MPIs, and milestones presented in the MTI Plan, and detailed in the updated and revised logic model and evaluation plan - Attachment D<sup>2</sup> and Attachment F<sup>3</sup>, respectively in this Advice Letter package.

This addendum to Appendix B. Induction Cooking Market Forecasting and Cost Effectiveness Modeling Approach describes the following updates and revisions that CalMTA made to the cost-effectiveness forecast, in compliance with OP 1 of D.25-11-023. Note that details and rationale for each adjustment are discussed in the sections that follow:

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<sup>1</sup> D.25-11-023, OP 1, at pp. 85-86.

<sup>2</sup> Appendix A: Induction Cooking Logic Model - REDLINE

<sup>3</sup> Appendix F: Evaluation Plan - REDLINE

- 1) Modified three forecasting model **inputs**:
  - a. Market adoption forecast
  - b. Incremental measure cost (IMC) forecast
  - c. MTI Phase II and Phase III program costs
- 2) Updated the forecasting model **outputs** resulting from the modified inputs above:
  - a. Total System Benefit (TSB)
  - b. Total Resource Cost (TRC) test benefit-cost ratio
  - c. Program Administrator Cost (PAC) test benefit-cost ratio
  - d. Cost-effectiveness schedule

This addendum focuses on *updates* to the original Appendix B and is not a complete revision of the Appendix B document originally submitted.<sup>4</sup> CalMTA chose this “addendum” approach because the forecasting model and approach, documented in Appendix B and reviewed as part of the CPUC proceeding initiated by the Application (A.24-12-009), remains the same. Specifically:

- CalMTA changed *only* the three key inputs listed above
- All other inputs, sources, and assumptions were part of the A.24-12-009 submission and were reviewed and considered as part of the proceeding initiated by that application

Complete information on the market forecasting and cost-effectiveness modeling approach is available in the original Induction Cooking MTI Plan, Appendix B. Induction Cooking Market Forecasting & Cost Effectiveness Modeling Approach together with this addendum.

## 2 Market adoption forecast

CalMTA updated the market adoption forecast to align with the revised focus on 120V induction cooking products, including non-battery-equipped cooking products. While the underlying modeling methodology remains consistent with the original Appendix B, the following key input assumptions were modified to reflect this shift:

- Reduced forecast adoption of 240V induction products to reflect lower investment in promotion of 240V units.

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<sup>4</sup> CalMTA conducted sensitivity analyses as part of the originally submitted MTI Plan (Appendix B: Market Forecasting & Cost-Effectiveness Modeling Approach). Additional sensitivity analysis is outside the scope of this update and therefore is not reproduced here. The original sensitivity analysis remains informative for the updated forecast, because the principal sources of uncertainty are unchanged and are addressed through the mitigation and contingency framework in Appendix G (Risk Management Plan).

- Included adoption of 120V non-battery-equipped units in the 120V induction product type, beginning in 2028, when qualified products are expected to become available.

The forecasting model segments market adoption by home type (single family - SF, multifamily - MF, new construction - NC) and by existing cooktop fuel (electric or gas). Segment forecasts have been revised as follows:

- Incremental adoption of 240V units (induction and ENERGY STAR radiant) decreases by 13%, reflecting the reduced focus on promoting 240V technologies
- Incremental adoption of 120V units (battery-equipped and non-battery-equipped combined) increases by 28%, reflecting the focus on 120V technologies
- Adoption of 120V non-battery products, which were not part of the original MTI, grows for SF and MF homes with existing gas-fueled cooktops, because this equipment makes fuel substitution more affordable.

Table 1 summarizes the overall result of these updates. Overall the revisions are forecast to result in an overall 4% reduction in incremental adoption of qualified products (2.7 million incremental units, down from 2.8 million).

**Table 1. Forecast incremental adoption of MTI cooking products for all Segments, Original vs. Updated (in thousands of cooking appliances, 2024-2045)<sup>a</sup>**

Thousands of units	Single-family households			Multifamily households			All households		
	BMA <sup>b</sup>	TMA <sup>c</sup>	TMA-BMA <sup>d</sup>	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA
120V induction original	32	494	462	25	184	159	57	678	621
120V induction updated	32	623	591	25	228	203	57	851	794
240V induction original	356	1,765	1,409	255	899	644	611	2,664	2,053
240V induction updated	356	1,553	1,197	255	841	586	611	2,394	1,782
ENERGY STAR radiant original	1,221	1,479	258	918	809	(109)	2,139	2,287	148
ENERGY STAR radiant updated	1,222	1,451	229	918	819	(99)	2,140	2,270	130
Total	1,610	3,738	2,128	1,198	1,892	694	2,807	5,629	2,822
<b>Total updated</b>	<b>1,610</b>	<b>3,627</b>	<b>2,017</b>	<b>1,198</b>	<b>1,888</b>	<b>690</b>	<b>2,808</b>	<b>5,515</b>	<b>2,707</b>

<sup>a</sup> Numbers in this table equal the sum of the individual housing type segments shown in Tables 2, 3, and 4. Slight differences in sums are the result of rounding.

<sup>b</sup> Baseline market adoption (BMA) refers to the cumulative statewide units of adoption forecast to occur over the period, in the absence of the MTI.

<sup>c</sup> Total market adoption (TMA) refers to the cumulative statewide units of adoption forecast to occur over the period, if the MTI is funded and implemented as described in this advice letter.

<sup>d</sup> Incremental market adoption (TMA - BMA) refers to the difference between TMA and BMA, and represents the cumulative statewide units of adoption forecast to occur as a result of the MTI being implemented.

## Market adoption by segment

The next three sections of this document present the forecast of MTI incremental market adoption by existing cooktop fuel (gas versus electric) and by newly constructed housing units.

The existing household market segment is dominated by gas cooking appliances, which account for 9.3 million households – roughly 67% of the 13.86 million total households in scope. Electric cooking households (combining coil-based and radiant/induction appliances) make up 27%, totaling 3.7 million households, with coil-based households (1.5 million) and radiant or induction households (2.2 million) representing broadly similar shares within that electric segment. New construction, at 0.86 million cumulative units, is the smallest segment at just 6% of the total.

## Existing households with gas cooking equipment

Table 2 provides the updated adoption of induction cooking products for households currently using gas-fueled cooking appliances. The updated MTI plan is forecast to result in an overall 4%

reduction in incremental adoption among these households (2,308 thousand incremental units, down from 2,412 thousand). The primary changes are:

- Incremental adoption of 120V induction units increases by 36%, reflecting the increased focus on 120V technologies.
- Incremental adoption of 240V units (induction and ENERGY STAR radiant combined) decreases by 14%, reflecting the reduced emphasis on promoting 240V technologies.

**Table 2. Forecast incremental adoption of MTI cooking products, Households with Gas Cooking Equipment in the base year, Original vs. Updated (in thousands of cooking appliances, 2024-2045)<sup>a</sup>**

Thousands of units	Existing single-family households			Existing multifamily households			All households		
	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA
120V induction original	32	413	381	7	112	105	39	525	486
120V induction updated	32	542	510	7	156	149	39	698	659
240V induction original	102	1,085	983	23	294	271	125	1,379	1,254
240V induction updated	102	895	792	23	255	232	125	1,149	1,024
ENERGY STAR radiant original	303	819	516	66	222	156	369	1,041	672
ENERGY STAR radiant updated	303	775	472	66	218	152	370	994	624
Total original	437	2,317	1,880	96	628	532	533	2,945	2,412
<b>Total updated</b>	<b>437</b>	<b>2,212</b>	<b>1,775</b>	<b>96</b>	<b>629</b>	<b>533</b>	<b>533</b>	<b>2,841</b>	<b>2,308</b>

<sup>a</sup> Slight differences in sums are the result of rounding.

## Households with electric cooking equipment

Table 3 provides updated adoption forecasts of MTI products by households with existing electric products (i.e., coil, radiant or induction). The updated MTI plan results in a 23% reduction in incremental adoption for this segment (222 thousand incremental units, down from 288 thousand). The updated forecast includes these changes:

- Incremental adoption of 240V induction units decreases by 5%, from 655 thousand to 622 thousand incremental units.
- The decline in 240V induction adoption is accompanied by a 5% increase in forecast market adoption of ENERGY STAR radiant units. This increase occurs because the lower adoption of 240V induction units is assumed to come from households that otherwise would have chosen ENERGY STAR radiant units. Even though total market adoption of ENERGY STAR radiant units is forecast to be higher than in the original forecast,

incremental adoption of ENERGY STAR units in this segment is still forecast to be negative because the total market adoption forecast is less than the baseline market adoption forecast.

No change is expected for 120V induction cooking products in this segment because household that already have 240V electric ranges are not expected to adopt non-battery 120V technology.

**Table 3. Forecast incremental adoption of MTI cooking products, Households with coil, radiant and induction products in the base year, Original vs. Updated (in thousands of cooking appliances, 2024-2045)<sup>a</sup>**

Thousands of units	Existing single-family households			Existing multifamily households			All households		
	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA
120V induction original	0	72	72	14	55	41	14	127	113
120V induction updated	0	72	72	14	55	41	14	127	113
240V induction original	232	602	370	178	463	285	410	1065	655
240V induction updated	232	583	351	178	449	270	410	1032	622
ENERGY STAR radiant original	842	570	-272	670	464	-206	1512	1033	-479
ENERGY STAR radiant updated	842	583	-259	670	475	-196	1513	1058	-455
Total original	1,074	1,243	169	862	982	120	1,936	2,224	288
<b>Total updated</b>	<b>1,074</b>	<b>1,238</b>	<b>164</b>	<b>862</b>	<b>978</b>	<b>116</b>	<b>1,936</b>	<b>2,216</b>	<b>280</b>

<sup>a</sup> Slight differences in sums are the result of rounding.

## Newly built housing units

Table 4 provides the updated adoption forecasts of MTI products in newly built housing units. The new-construction market segment is relatively small; it represents only 4% of total incremental market adoption resulting from the MTI. The updated plan has a minimal impact on overall incremental adoption in this market segment (119 thousand incremental units, down from 121 thousand, roughly a 2% reduction):

- The updated forecast assumes no change to adoption of 120V induction cooking products in this segment.
- The MTI updates result in a 5.5% reduction in adoption of 240V induction products, due to the removal of builder-specific MTI market interventions. Note, however, that the new-construction segment is less sensitive to the reduced 240V induction incentives since builders and developers often make appliance decisions based on code compliance, cost, and availability.

- Similar to the electric cooking market segment, the reduced MTI impact on adoption of 240V induction cooking equipment adoption results in less negative incremental adoption of ENERGY STAR radiant units (i.e., less cannibalization by 240V induction units). Combined, the overall net change to adoption of 240V products in the new construction segment is negligible.

**Table 4. Forecast incremental adoption of MTI cooking products, newly built housing units, Original vs. Updated (in thousands of cooking appliances, 2024-2045)<sup>a</sup>**

Thousands of units	Newly built single-family units			Newly built multifamily units			All newly built units		
	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA	BMA	TMA	TMA-BMA
120V induction original	0	9	9	4	17	13	4	26	22
120V induction updated	0	9	9	4	17	13	4	26	22
240V induction original	22	78	56	54	142	88	76	220	144
240V induction updated	22	75	53	54	137	83	76	213	136
ENERGY STAR radiant original	76	90	14	182	123	-59	258	213	-45
ENERGY STAR radiant updated	76	92	16	182	126	-55	258	219	-39
Total original	98	177	79	240	282	42	338	459	121
<b>Total updated</b>	<b>98</b>	<b>176</b>	<b>78</b>	<b>240</b>	<b>281</b>	<b>41</b>	<b>338</b>	<b>457</b>	<b>119</b>

<sup>a</sup> Slight differences in sums are the result of rounding.

### 3 Incremental Measure Cost (IMC) forecast

Non-battery-equipped 120V induction cooking products are forecast to become widely available in the market by 2028. CalMTA revisited the IMC forecasts in anticipation of these more affordable products representing a considerable share of all 120V induction cooking products by 2045. For this update, CalMTA did not adjust any existing trends in incremental measure costs from the original Appendix B for any product other than 120V induction ranges.<sup>5</sup>

For price trends of the 120V induction range products, CalMTA developed annual blended prices by the following:

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<sup>5</sup> As described in Appendix B, CalMTA adopted price trends estimated in an analysis of the nationwide impact of ENERGY STAR specifications for cooktops [U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program. (2022). Technical support document: Energy efficiency program for consumer products and commercial and industrial equipment: Consumer conventional cooking products. Retrieved October 24, 2024, from <https://www.regulations.gov/document/EERE-2014-BT-STD-0005-0090>]

- 1) **Product size.** CalMTA considered a blended price of 24" and 30" products.<sup>6</sup>
- 2) **Battery enablement.** CalMTA considered a blended price of battery-equipped versus non-battery-equipped products.

CalMTA did not adjust the blended price of 120V induction products based on product size as part of this addendum; however, CalMTA factored in a blended price based on battery enablement. To estimate a blended incremental measure cost of 120V induction products, CalMTA considered both the price of 120V induction products individually and the relative share of 120V induction products over time.

As in the original Appendix B, CalMTA assumed the price of 120V battery-equipped products will decline to 1.25 times the price of 240V induction products by 2045, with linear interpolation used in the intervening periods. For 120V non-battery-equipped products, CalMTA assumes these products will be the same price as the 240V induction products based on early market intelligence.

For assessing relative share of 120V induction products, CalMTA leveraged results from the updated market adoption forecast. The updated market adoption forecast indicates that the cumulative share of 120V non-battery-equipped induction cooking is about 35% of all 120V induction cooking products from 2024 to 2045. The IMC forecast incorporates this result as well as the following assumptions:

- Non-battery-equipped 120V induction cooking products will not become broadly commercially available until after 2028. This assumption is based on information from product manufacturers.
- Adoption of non-battery-equipped 120V induction cooking products will increase slowly in the initial years after becoming available and will continue to grow through 2045 until it reaches 50% of total 120V induction products adopted. This assumption reflects the expectation that non-battery-equipped 120V products will only meet the needs of certain households, such as those that do a limited amount of cooking.

Table 5 includes the original and updated assumed price trends for 120V induction cooking ranges from 2024 to 2045. As mentioned, only the blended price trends for 120V induction ranges have changed.

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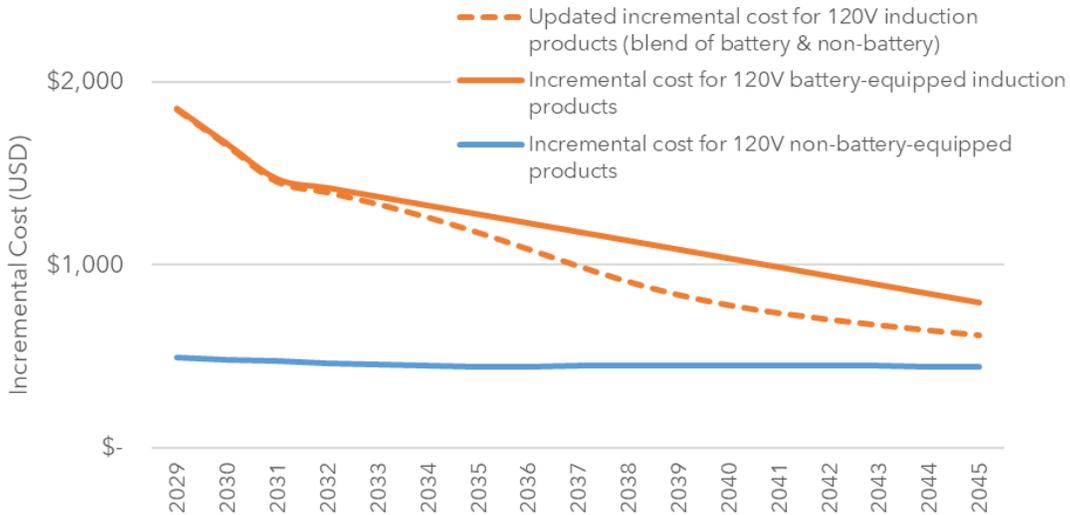
<sup>6</sup> For the base year, CalMTA assumed a price of \$5,999 for the 30" product based on current retail price of Copper's 30" range, and \$3,000 for the 24" product as quoted by Copper to the NYC Housing Authority <https://heatmap.news/sparks/nycha-induction-stoves-copper>. Assumes adoption of 24" units by MF households and 30" units by SF households.

**Table 5. Original and updated assumed trends in prices of 120V induction ranges**

Equipment	Price in Base Year (2024)		Price in 2045	
	Original	Updated	Original	Updated
120V induction ranges	\$4,612	\$4,612	\$1,783	\$1,605

Figure 1 shows the updated IMCs for 120V induction products, which is modeled using a blend of battery-equipped and non-battery-equipped products. The IMC for 120V non-battery-equipped products (blue line) is much lower than the IMC for battery-equipped products (orange line). Non-battery induction IMC begins at a lower level and declines by approximately 10 percent over time.

**Figure 1. Incremental costs for 120V induction ranges (battery-equipped and non-battery-equipped) compared to gas ranges.**



## 4 Updated program costs

The total investment needed to achieve the TSB forecast over 20 years (2024-2045) increases to \$39,096,000 (up from \$37,427,000). This increase is modest in magnitude and is justified by the market realities of the revised strategy. Specifically, the plan now supports two distinct 120V product pathways – battery-equipped and non-battery-equipped – which effectively requires parallel market-building efforts. Because both pathways remain emergent, additional investment is needed to support manufacturers, distributors, retailers, and other market actors in developing product availability, familiarity, and confidence across the supply chain. The revised budget therefore reflects the practical costs of building a durable market foundation for the 120V products prioritized by the Decision.

# 5 TSB and cost-effectiveness results

## Updated benefits and cost effectiveness

CalMTA updated the original cost-effectiveness modeling tool described in Appendix B: Market Forecasting and Cost-Effectiveness Modeling Approach, using the updated forecast inputs detailed above. Specifically:

- **Incremental Measure Cost (IMC):** Updated to reflect the lower cost profile of non-battery-equipped 120V products.
- **Market Adoption:** Revised to align with the updated forecasts detailed in Section 2 of this document.
- **Program Administration Cost:** Updated to reflect higher program spending associated with the shift in focus toward 120V induction cooking products, which requires additional market intervention.

Table 6 provides the updated estimates for each TSB component (energy, grid, and GHG benefits) for the MTI over the period 2024-2045:

- The updated TSB forecast declines to \$495 million, reflecting the reduction in MTI investment to promote 240V products and the shift in focus to 120V products.
- Greenhouse gas (GHG) avoided costs due to reduced gas consumption are the largest component of TSB - roughly five times greater than the negative grid benefits from increased electricity demands. In the updated MTI plan, there is a reduction of about 4% in avoided GHG benefits, owing primarily to the decreased forecast adoption of 240V ranges. This result is a net reduction since the increased adoption forecast for 120V ranges (cooktop with oven) is lower than the decrease in adoption forecast for 240V ranges, resulting in a net reduction of GHG benefits for fuel substitution of ranges.
- Energy benefits for the MTI are a relatively small component of TSB (5%) because net energy impacts are small for all MTI products other than battery-equipped ranges. Energy impacts from adoption of non-battery-equipped products can be slightly positive or negative due to the offsetting effects of gas and electric energy and depending on baseline equipment assumptions. In contrast, energy benefits for battery-equipped 120V products are quite positive due to differences in hourly consumption profiles. Energy benefits forecast for the revised MTI drop by about \$11 million, driven primarily by lower forecast adoption of 120V battery-equipped units - which compete with the more affordable non-battery 120V product.

**Table 6. Updated Induction Cooking TSB estimates, 2024-2045**

	<b>TSB (\$M)</b>	<b>Energy (\$M)</b>	<b>Grid (\$M)</b>	<b>GHG (\$M)</b>
Original	537	36	(125)	626
Updated	495	25	(131)	601

Table 7 provides the updated TRC and PAC ratios and Table 8 provides further details on the main drivers of reduced TRC.

**Table 7. Updated MTI cost-effectiveness estimates, 2024-2045**

	<b>TRC</b>	<b>PAC</b>
Original	1.12	14.36
Updated	1.05	12.68

**Table 8. Drivers of reduction in updated TRC**

<b>#</b>	<b>Drivers of reduction</b>	<b>Original</b>	<b>Updated</b>	<b>Delta (Updated - Original)</b>
<b>A</b>	<b>Incremental Measure Cost</b>	\$442,978,373	\$431,002,227	\$(11,976,146)
<b>B</b>	<b>MTI Cost (Excluding Flowdown Incentives)</b>	\$37,426,967	\$39,095,873	\$1,668,906
<b>C</b>	<b>MTI Flowdown Incentives</b>	\$0	\$0	\$0
<b>D</b>	<b>Total TRC Costs [A + B]</b>	\$480,405,340	\$470,098,101	\$(10,307,239)
<b>E</b>	<b>Total PAC Costs [B + C]</b>	\$37,426,967	\$39,095,873	\$1,668,906
<b>F</b>	<b>TSB</b>	\$537,372,633	\$495,861,211	\$(41,511,422)
<b>G</b>	<b>TRC [F / D]</b>	1.12	1.05	
<b>H</b>	<b>PAC [F / E]</b>	14.36	12.68	

As shown in Table 7, the forecasted TRC ratio for the updated MTI declines from 1.12 to 1.05, reflecting the combined effect of lower IMCs (a reduction of nearly \$12M) and TSB (a reduction of \$42M), and higher program costs (an increase of \$1.7M) over the 20-year period.

The forecasted PAC ratio declines from 14.36 to 12.68, reflecting the combined effect of lower TSB and higher program costs over the 20-year period. The PAC is a narrower test than the TRC – it measures cost-effectiveness purely from the program administrator's perspective, meaning incremental measure costs borne by customers are excluded from the calculation entirely. This makes the PAC more sensitive to changes in TSB and program spending, with no offsetting reduction in IMCs. The \$41.5M decline in TSB reduces the benefits the program is credited with delivering, while the modest \$1.7M increase in program costs reflects the additional investment required to support the updated 120V focused strategy. Together, these produce a roughly 12% drop in PAC – twice the relative decline seen in TRC.

## Updated cost-effectiveness schedule

Table 9 shows the updated cost-effectiveness schedule. The updated MTI schedule has a similar profile to the original schedule; the MTI delivers the bulk of incremental impacts in later years –

following the majority of MTI market investment. This investment profile is visualized in Figure 1 of Attachment H<sup>7</sup> of this Advice Letter filing package.

**Table 9. Updated cost-effectiveness schedule**

<b>Forecast metric</b>	<b>2030 Original</b>	<b>2030 Updated</b>	<b>2035 Original</b>	<b>2035 Updated</b>	<b>2045 Original</b>	<b>2045 Updated</b>
TSB	\$34M	\$33M	\$142M	\$135M	\$537M	\$495M
TRC ratio	0.29	0.28	0.56	0.53	1.12	1.05
PAC ratio	1.04	1.04	3.90	3.56	14.36	12.68
Estimated incremental investment required	\$33 M	\$32M	\$3M	\$6M	\$1M	\$1M

Source: CalMTA estimates.

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<sup>7</sup> Appendix H: Phase III Cost Estimate - REDLINE

Attachment C:

Product Assessment MEMO SUMMARIZING UPDATES to  
Appendix C



## INDUCTION COOKING PRODUCT ASSESSMENT UPDATE

REVISED MARCH 6, 2026 IN COMPLIANCE WITH CPUC DECISION 25-11-023

### 1 Document purpose and scope

This Induction Cooking product assessment report update provides additions to the original [Appendix C: Product Assessment completed by CalMTA](#) in December 2024. The original Product Assessment Report covers induction and ENERGY STAR certified radiant cooktops and ranges that are permanently installed, whether they are 120V or 240V products. Cooktops are rectangular surfaces that drop in to an existing countertop, up to a certain depth. Ranges are cooktops with an integrated electric resistance oven below them in the same chassis. Most modern cooktops and ranges plug into a dedicated 240V circuit. However, there are 120V cooktops and ranges that are battery-enabled and new non-battery enabled that are powered by a more common 120V wall outlet. Given this MTI's refocus on both battery-enabled and non-battery-enabled 120V products, we are updating product information to include these developments and align with the MTI's reframed strategy.

### 2 Product definition

This MTI focuses on permanently installed, **electric cooktops and all-electric ranges** using either induction or radiant electric technology. Cooktops and ranges that use radiant technology must be certified to the current version<sup>1</sup> of the ENERGY STAR specification. The only addition to the original product definition is the addition of 120V non-battery-enabled products. Details include:

- This definition includes **freestanding electric ranges**, which can be installed between cabinets, or stand alone as well as **slide-in electric ranges**, which can only be installed between cabinets.
- This definition also includes 240V standalone electric cooktops designed for permanent installation in a countertop.
- 240V products - and new 120V induction cooktops and ranges that are battery-enabled and non-battery enabled are part of the product definition, but cooktops and ranges with coil-style heating elements are excluded, as are standalone wall ovens. Induction cooking products that

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<sup>1</sup> At the time of publication, products must meet the requirements of ENERGY STAR 1.0 for Residential Electric Cooking Products to achieve ENERGY STAR certification and labeling. "Residential Electric Cooking Products

sit on top of a counter and are meant to move around, are not included in the product definition as these are typically considered temporary appliances.

- The CalMTA product team expanded the current definition for this MTI to include all induction products and any radiant products that meet the current ENERGY STAR 1.0 specification and new 120V products, both battery-enabled and non battery-enabled. This addition from the Advancement Plan is to provide a broader selection of affordable electrification options, especially for the multi-family market. Overtime as the ENERGY STAR specification for efficiency ratchets down in future versions, we expect that most of the products that meet that specification will be induction technology, including both 120V battery-enabled and non battery-enabled products.
- The 120V non battery-enabled induction product is the newest market entrant and still in product development. CalMTA will work closely with manufacturers to support market introduction and key technical and market considerations to better understand the best market fit for this product.

Attachment D:

Appendix A: Induction Cooking Logic Model - REDLINE



# Induction Cooking Market Transformation Initiative

## Appendix A: Logic Model

**Revised March 6, 2026 in compliance with CPUC Decision 25-11-023**

~~December 18, 2024~~ March 6, 2026

Prepared by:

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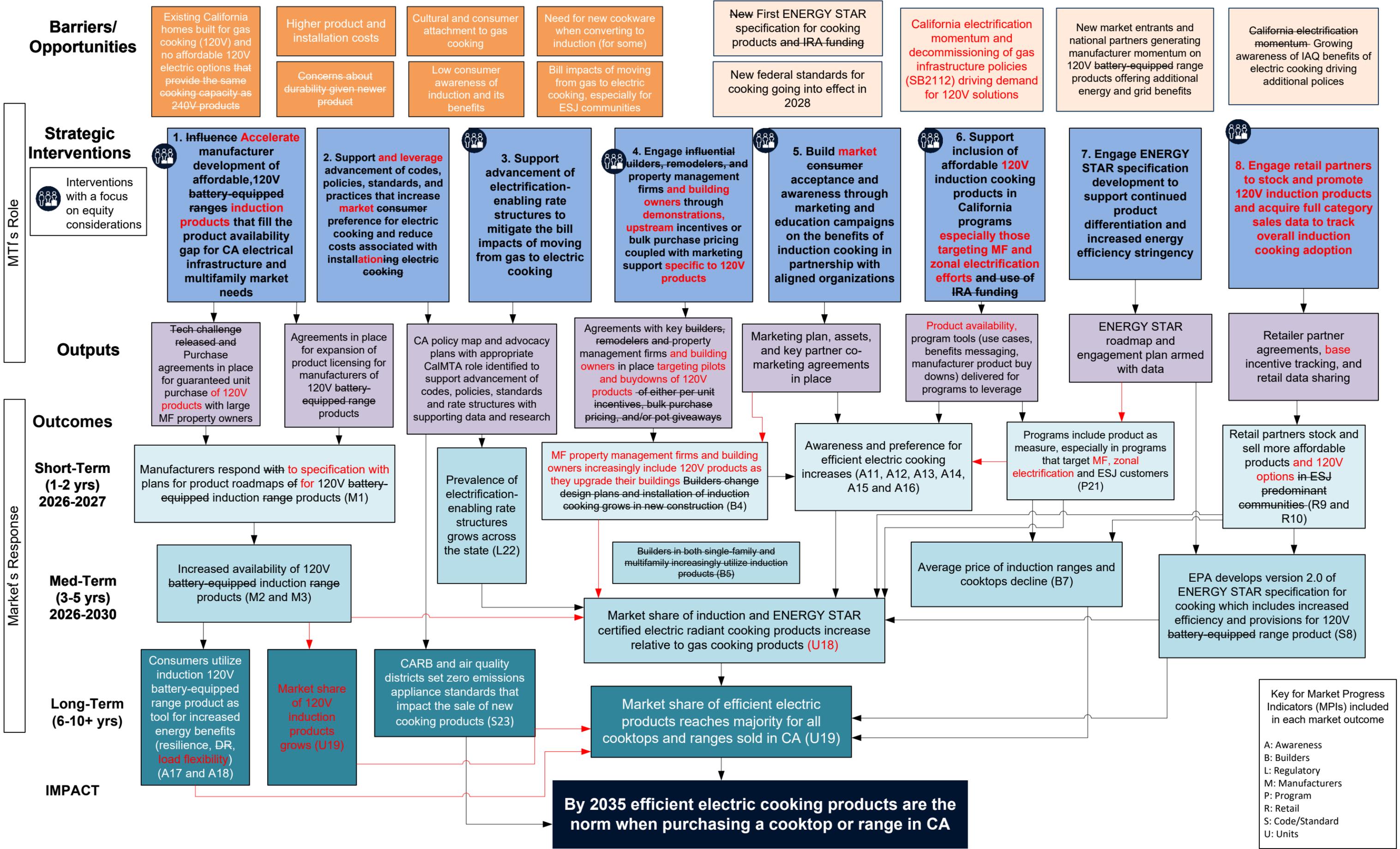
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Attachment E:

Appendix E: External Program Alignment & Coordination

- REDLINE



# Induction Cooking Market Transformation Initiative

## Appendix E: External Program Alignment & Coordination

Revised March 6, 2026 in compliance with CPUC Decision 25-11-023

~~December 18, 2024~~ **March 6, 2026**

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**Appendix E: External Program Alignment & Coordination for Induction Cooking**

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### List of Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
BAAQMD	Bay Area Air Quality Management District
BUILD	Building Initiative for Low-Emissions Development
CA	California
CalMTA	California Market Transformation Administrator
CARB	California Air Resources Board
CEC	California Energy Commission
CEE	Consortium for Energy Efficiency
CPUC	California Public Utilities Commission
C&S	Codes and Standards
EPA	Environmental Protection Agency
EPIC	Electric Program Investment Charge Program
ESA	Energy Savings Assistance
ESJ	Environmental and Social Justice
ESRPP	ENERGY STAR Retail Products Platform
IOU	Investor-Owned Utility
MT	Market Transformation
MTAB	Market Transformation Advisory Board
MTI	Market Transformation Initiative
NEEA	Northwest Energy Efficiency Alliance
NYSERDA	New York State Energy Research and Development Authority
PDA	Public Document Area
PG&E	Pacific Gas and Electric
RA	Resource Acquisition
REN	Regional Energy Network
RFI	Request for Idea
RFP	Request for Proposal
SCAQMD	South Coast Air Quality Management District

### Appendix E: External Program Alignment & Coordination for Induction Cooking

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# 1 Introduction

The Market Transformation (MT) Framework attached to the California Public Utilities Commission (CPUC) D.19-12-021, which established the California Market Transformation Administrator (CalMTA), called for MT ideas that are developed to “carefully consider” potential impacts on resource acquisition (RA) program(s) and codes and standards (C&S) implementation. Notably, CalMTA and “any impacted [program administrator(s)], 3P implementers (3PIs) of RA programs, and C&S teams each have a role in charting a course that enhances the efficiency outcomes [...] of the proposed MTI [market transformation initiative] as well as of RA and C&S programs. Each may also have a role in eliminating or minimizing and mitigating any conflict between the MTIs and RA/C&S programs (Section 8, page 133).”

In addition to the entities identified above and listed in the decision, CalMTA recognizes other types of activities that require coordination with potential MTIs, including California Energy Commission (CEC) programs such as the Electric Program Investment Charge (EPIC) program, and market transformation or standard setting efforts outside of California, such as programs at the Northwest Energy Efficiency Alliance (NEEA) or national collaboratives at the Consortium for Energy Efficiency (CEE). CalMTA also understands that many interested parties not currently active in related markets want to monitor or be engaged with the formation of market transformation initiatives in California.

To ensure California’s MTIs effectively leverage and align with other programs and efforts, CalMTA has pursued and will continue to pursue substantial coordination, outreach, engagement, and collaboration with key groups focused on four objectives:

- Maximize understanding of the MT idea development process among key groups and share relevant aspects of the ideas being developed.
- Seek to create opportunities for collaboration through briefings, discussion, and formal mechanisms to receive and resolve feedback.
- Collaboratively identify and work to eliminate or minimize any conflicts between the programs.
- Collaboratively identify leverage opportunities that ensure resources are deployed efficiently across programs that complement each other.

The “conflicts” or “overlaps” described in the decision between potential MTIs and programs are identified and described in the MTI Plan as “points of alignment” that need to be reviewed and resolved in the case of a conflict. Additionally, these points of alignment may result in opportunities for leveraging activities that will benefit both programs. These specific and defined points of alignment explain how an MTI will work synergistically with an existing program and will be critical to successful market transformation implementation in order to: 1) limit customer and market confusion, 2) enhance the ability of programs to achieve their goals, 3) overcome barriers to a program serving a unique market segment, and 4) ensure effective use of program and

## Appendix E: External Program Alignment & Coordination for Induction Cooking

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CalMTA resources by aligning activities. Because the MT ideas under development vary, their relationship and need for alignment with established or emerging programs in the energy efficiency portfolio vary as well. However, our approach and process for minimizing overlap of these MTIs with existing efforts and optimizing alignment for the benefit of both the MTI and the established program are for the most part consistent across all MTIs under development.

This document describes our approaches to engaging with identified external entities in order to align development activities and future implementation planning for the Induction Cooking MTI with existing programs and other efforts in California as well as nationally. These approaches include the types of engagement undertaken to date and plans for formalizing the ways in which the MTI and current programs will align in during delivery for leverage and enhanced outcomes.

## 2 Alignment in each development phase

Engagement activities for each MTI are conducted throughout [CalMTA's three-phase development process](#). Recognizing that Phase III activities will commence after the application requesting their approval is completed, we have described below in Section 2.3, "Post-application collaboration and Phase III delivery," the activities that will be undertaken at that time. While Phase I activities and preliminary outreach on Phase II activities have been completed, ongoing engagement will take place to further evolve collaborative relationships and understand points of alignment between the MTI and current efficiency programs as the CPUC considers its approval.

At every phase, this coordination intends to identify points of alignment that: 1) eliminate duplication or redundancy in market activities; 2) ensure that the MTI adds value to the market and fills any gaps needed to drive long-term market change; and 3) increase scalability and the efficiency with which desired results are achieved by leveraging existing work.

### 2.1 RFI to Phase I MT Idea Selection (Aug. 2023 – Feb. 2024)

The Induction Cooking idea was identified through a Request for Ideas conducted by CalMTA during summer of 2023. This idea was officially prioritized by staff in collaboration with the Market Transformation Advisory Board (MTAB) through review, two stages of scoring, and approval to move forward to Phase I.

During Phase I, a preliminary set of local, state, and national programs were identified for future coordination and summarized in Table 8 of the [Induction Cooking Advancement Plan](#) that concluded Phase I development.

Channels to engage directly with these and other interested parties during the development and review of the Advancement Plan included direct collaborative meetings that allowed for an exchange of information, as well as formal opportunities to provide feedback on the plan through

#### Appendix E: External Program Alignment & Coordination for Induction Cooking

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public meetings and public comment through the CPUC Energy Division's Public Document Area (PDA). These engagements sought to identify additional programs or activities to consider for coordination as well as to assess the extent of potential overlap between the MT idea with current energy efficiency and other related programs. Specifically, CalMTA's external engagement activities included the following:

- **Briefings for interested parties.** To begin cultivating market awareness of CalMTA and maximize participation in the inaugural request for ideas (RFI), CalMTA conducted a series of introductory briefings in 2023 with key energy efficiency organizations in California. CalMTA's engagement team continues to schedule these briefings as new organizations are identified or as requested by interested parties.
- **Market Transformation Advisory Board (MTAB) meetings,** which are open to the public, allow CalMTA to share information about developing MT ideas. MTAB members can ask questions and make comments; public attendees can also do so at a designated time and via an online form. CalMTA [discussed the planning of the Induction Cooking MTI](#) at eight MTAB meetings: Oct. 13, 2023; Nov. 30, 2023; Jan. 25, 2024; April 25, 2024; July 12, 2024; Sept. 19, 2024; Oct. 25, 2024; and Nov. 20-21, 2024.
- **Official opportunities to comment** on the Induction Cooking Advancement Plan were offered via the CPUC's PDA site in Dec. 2023. A total of 78 comments were received on the plan from 14 submitters, including investor-owned utilities (IOUs) and other interested parties. [CalMTA provided a formal response to these comments](#) and integrated feedback into the Advancement Plan when possible.
- **Quarterly meetings with IOU energy efficiency portfolio directors** solicited input on the developing Induction Cooking MTI and identified projects/programs with potential overlap or alignment. Energy efficiency directors were briefed on the development of the Induction Cooking MTI during three meetings. Additional meetings were also held in some cases with third-party implementers.
- **Regular meetings with the IOU Codes & Standards working group** include representatives of the Statewide Codes and Standards Advocacy Program and related subprograms. These meetings allow CalMTA to identify relevant C&S activities that can be leveraged in each market, ensure alignment and consistency with market actors, and support CalMTA's goal of solidifying MTI-focused technologies in future C&S. In addition, we determined areas where potential MTI efforts such as data gathering for targeted products, could support the working group's goals.
- **Bi-weekly coordination calls with CalNEXT** inform participation in CalMTA's RFI and public comment processes and collaboration related to CalNEXT's Technology Priority Maps and focused pilot scoping. CalNEXT plans to share results from an active study of 120V battery-equipped induction ranges installed at the Cher-Ae Heights Indian Community of the Trinidad Rancheria, which investigates power usage in standby and cooking modes, cooking patterns and collecting qualitative feedback from users. CalMTA

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solicited feedback from CalNEXT on plans for a behavioral study with Eden Housing that will document how users interact with a battery-equipped 120V induction range and will continue maintaining the relationship, sharing data, and looking for any future opportunities for collaboration.

## 2.2 Phase II Advancement Plan research to MTI Plan finalization

Under Phase II, activities described in Section 2.1 continued but expanded to gain deeper knowledge about other program efforts and how they relate to the developing MTI. These activities include the following:

- **Expanded research.** The initial list of potentially overlapping energy efficiency programs was expanded through additional research and discovery. These programs and related organizations are currently active in the target market for this MTI and offer opportunities for potential leverage, need for alignment, or co-creation/partnership. Related programs with potential alignment needs are described in Section 3 of this Appendix.
- **Direct meetings.** The CalMTA team met directly with identified stakeholders with the goal of raising awareness about the MTI and securing at least preliminary agreement on the extent of the overlap and approach to alignment of programs that informed the final MTI Plan. These near-term engagements are further described in Section 4 of this Appendix.
- **Market characterization work.** Structured market characterization interviews with key stakeholders and subject matter experts, including program administrators and implementers, helped inform CalMTA’s understanding of the current market as summarized in Appendix D: Market Characterization Report.
- **An equity lens.** The CPUC decision intended that MTIs should integrate strategies to maximize equity and should consider transformational efforts that maximize “energy savings, health, affordability, and job access for disadvantaged communities (Section 10.2 page 103).” To better understand how to align potential MTIs with environmental and social justice (ESJ) community needs, CalMTA held a series of listening sessions with ESJ representatives in November 2023.

These 90-minute sessions yielded important insight into past experiences and attitudes of participants about energy efficiency program engagement and technologies like induction cooktops and ranges. Participant feedback was distilled into key takeaways that subsequently informed the final logic model and strategic market interventions included in this MTI Plan. A [report summarizing key takeaways from the listening sessions](#) is available on CalMTA’s website.

- **Formation of an Equity Sounding Board.** To further our ability to apply an equity lens in the development of a market transformation portfolio for California, CalMTA is establishing a new Equity Sounding Board comprised of professionals who advocate for, or work within, ESJ communities. Sounding Board members’ participation will result in MTIs that positively impact ESJ communities by guiding outreach activities, identifying

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actions that may cause unforeseen harm, and serving as a resource of equity-oriented feedback on CalMTA's work.

- **Formation of an Evaluation Advisory Group.** Through an open solicitation, CalMTA identified qualified energy efficiency evaluation professionals with expertise in market transformation to serve as members of the program's newly formed Evaluation Advisory Group. The Evaluation Advisory Group, which is not a decision-making body, provides expertise and unbiased recommendations to CalMTA's evaluation management team regarding evaluation plans for upcoming MTIs as well as planning, selection, and review of third-party MTI evaluation activities.
- **Idea to Initiative Educational Campaign.** To help educate MTAB members, program representatives, and other interested parties about the Induction Cooking MTI Plan, CalMTA undertook a four-month educational campaign with a series of presentations to share vital aspects of the plan. Individual sessions focused on the MT theory and logic model, product assessment, market characterization research, market progress indicators, market forecasts, cost-effectiveness analysis, and other vital components. Information delivered through the Idea to Initiative educational campaign can be found at <http://www.calmta.org/idea-to-initiative>.

Although CalMTA did not have a formal process for public comment leading up to the application submission of the Induction Cooking MTI Plan, a public comment period will be part of the CPUC application process, as described below. Official feedback from MTAB members is appended to the MTI Plan.

### 2.3 Post-application collaboration and Phase III delivery

CalMTA's coordination with programs and organizations and response to feedback will be ongoing while the CPUC application requesting approval for the Induction Cooking MTI Plan is under consideration. These future activities will continue to inform approaches that will minimize conflicts and create opportunities for collaboration, with a goal of enhancing outcomes for both the MTI and other active programs, bringing more certainty to the IOUs and third-party implementers, and providing the greatest value for program investment to California and its ratepayers. These activities include the following:

- **Response to comment.** Through the CPUC application process, interested parties will have the opportunity to formally comment on the Induction Cooking MTI Plan. CalMTA will consider and respond to any feedback and requests for information received on the MTI Plan through this process. All comments and responses will be publicly available.
- **Ongoing monitoring and tracking.** CalMTA recognizes that the California energy efficiency market will evolve before this MTI moves into Phase III and will closely monitor planned future programs with potential alignment/overlap to supplement the list of currently identified programs found in Section 3.1. In addition, current programs with potential overlap with the Induction Cooking MTI that may be renewed or rebid before

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the contract term ends will be added to this watchlist. As new programs launch or existing programs re-launch, we will meet with program administrators and implementation teams to ensure early alignment on implementation planning and coordinate related activities between that program and the MTI. This engagement may result in deeper collaboration that allow for co-creation or co-delivery of mutually beneficial activities, such as workforce development, product testing, or standard setting.

- **RFP planning.** After approval of the application in 2025, CalMTA will issue a request for proposals (RFP) to solicit an implementation contractor for the MTI. Leading up to that event, CalMTA will use the regular meetings with key stakeholders to further develop details related to the points of alignment between the MTI and energy efficiency programs. Ultimately, this coordination will surface and provide transparency on issues that may need to be addressed in the future.
- **MTI contracting and implementation.** As described in the MT Framework, the future RFP for Induction Cooking MTI implementation will include descriptions of current program incentives and other aspects related to this market and will require bidders to “include a discussion of how their potential MTIs would dovetail with existing RA/C&S implementation effort(s)” (Section 15.4, page 136).
- **Ongoing collaboration.** Once the MTI is active in the market, we will continue to monitor the points of alignment to ensure they are addressing all potential overlaps between the MTI and existing energy efficiency programs. These efforts will be reported and discussed through ongoing, regular meetings with IOUs and third-party implementers of related programs, especially for activities that involve end-use customers that may be solicited by or participating in a statewide or local efficiency program. These milestones and ongoing touchpoints will help avoid market confusion, ensure points of alignment are holding, and provide an opportunity to adjust strategies, if needed. In addition, coordination with CalMTA will allow us to support external programs as described in the “Reciprocal support from MTI and CalMTA” column in Table 2 below. Potential support for these programs may include:
  - 1) CalMTA messaging research and subsequent marketing materials that can be shared with and customized for other parties to utilize
  - 2) Increased product availability and product enhancements through CalMTA’s market actor engagement
  - 3) Data-sharing, including the full category market data that CalMTA will access
- **Market progress evaluation.** As part of the MTI implementation, a third-party implementer will also be secured to review ongoing activities and measure progress toward MTI objectives. These Market Progress Evaluation Reports are public documents and will be shared with efficiency program leads and other interested parties. If the case should arise that a strategic intervention as described in the logic model does not result in

## Appendix E: External Program Alignment & Coordination for Induction Cooking

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the expected outcomes, the MTI may change course. In that case, CalMTA program managers will work with energy efficiency program leads to adjust as needed.

### 3 Related programs for potential alignment

Beginning in Phase I of the MTI development process, CalMTA conducted an investigation to understand the ecosystem of programs and market activities with potential relevance to induction cooking. While prioritizing California-based programs and organizations, this section also documents efforts to scan for national and regional efforts that could support the MTI's scalability and long-term impact on the market. This market scan sought to capture active programs or projects in the following key areas:

- **IOU codes and standards programs** provide a critical point of coordination and leverage as CalMTA seeks to align MTI activities with code development/enforcement and collaborate on engagement with the U.S. Department of Energy's test procedures, the ENERGY STAR® designation process, and the CEE's product qualification list. Additional policy-making entities working in the residential electrification market are also important engagement targets.
- **Existing research and development projects/programs** provide leverage for CalMTA to develop and launch the MTI more quickly. This includes CalNEXT, the CEC's EPIC program, and work from partners outside of California like NEEA and the New York State Energy Research and Development Authority (NYSERDA).
- ~~**Statewide or regional incentive programs** that include efficient cooking measures can be encouraged to incentivize specific induction products and lower the upfront cost of adoption. These include programs serving low-income customers that focused on deeper energy savings or electrification, which can help make induction technology more accessible to the Californians facing the greatest energy burden.<sup>1</sup>~~
- **Online energy efficiency marketplaces and the ENERGY STAR Retail Products Platform (ESRPP)** can make this technology more readily accessible to consumers across the state and yield important market data to track adoption as the MTI develops.

In addition, CalMTA understands that in many cases organizations and programs identified below have established relationships with the market actors (i.e., manufacturers, distributors, retailers) that this MTI will also seek to engage. We will work to complement or leverage these interactions whenever possible, thus minimizing the time and effort requested of any individual entity working

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<sup>1</sup> According to Assembly Bill 1550, low-income communities and households are defined as those who live in census tracts or households at or below 80% of the statewide median income or meeting the threshold designated as low-income by the California Department of Housing and Community Development's Revised 2021 State Income Limits. CalMTA uses the term "low-income" to describe individuals or households whose income status poses a barrier to adoption of the technology.



#### Appendix E: External Program Alignment & Coordination for Induction Cooking

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in the induction cooking target market. For more information about CalMTA’s engagement with market actors see Appendix A: Logic Model and Appendix D: Market Characterization Report.

**Recent California legislation related to decarbonization may create additional opportunities for alignment and coordination outside of the external program landscape, such as pilots in the priority neighborhood decarbonization zones identified through SB 1221. CalMTA will continue to track this work and will proactively engage as voluntary pilot program scopes are developed.**

While this should not be considered a comprehensive list of all work in California or nationwide, research identified more than 30 programs or organizations with potential relevance to the Induction Cooking MTI’s target market as of October 2024. Table 1 below summarizes the preliminary list of programs or organizations developed by CalMTA to engage with during our development of the Induction Cooking MTI.

**Table 1. Induction cooking-related programs**

<b>Program/Organization name</b>	<b>Program description</b>
<b>Statewide Codes and Standards Advocacy Programs</b>	The statewide Codes and Standards Advocacy programs seek to influence agencies that are involved in the development of appliance and building codes at the state and national level by: (1) Developing Codes and Standards Enhancement studies in support of Title 20 and 24 building code improvements and submitting comments on federal standards, (2) Supporting the implementation of recently adopted versions of the energy code, (3) Participation in public rulemaking proceedings for both state and federal standards and test procedures, and (4) Facilitating discussions with the CEC and across utilities regarding impacts of codes and standards on future gas and electric operations.
<b>CalNEXT</b>	The statewide electric emerging technologies program identifies, tests, and improves electric energy technologies and delivery methods. Project categories include research and development addressing appliances, HVAC, lighting, process loads, water heating, and whole buildings. Selected projects are tested and potentially incorporated into IOU programs.
<b>Electric Program Investment Charge Program (EPIC)</b>	The CEC’s EPIC program invests in scientific and technological research to accelerate the transformation of the electricity sector to meet the state’s energy and climate goals.
<b>Building Initiative for Low-Emissions Development (BUILD)</b>	The CEC’s BUILD program provides incentives and technical assistance to support the adoption of advanced building design and all-electric technologies, including ranges and cooktops, in new, low-income all-electric homes and multifamily buildings.

**Appendix E: External Program Alignment & Coordination for Induction Cooking**

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<b>Program/Organization name</b>	<b>Program description</b>
<b>California Electric Homes Program (CalEHP)</b>	Designed as a market-rate counterpart to BUILD, the program provides incentives for the construction of all-electric residential buildings and installation of energy storage systems to encourage deployment of near-zero-emission building technologies.
<b>California Energy Smart Homes</b>	The statewide residential new construction and alterations program provides incentives to adopt advanced energy measures and transition to all-electric construction, offering incentives for single-family homes, duplexes, townhomes, multifamily low-rise buildings, alteration projects, and additional dwelling units.
<b>Golden State Rebates</b>	The statewide midstream plug load and appliance program provides instant rebates on efficient water heaters, smart thermostats, and other measures to residential customers at participating retail locations, and could potentially expand to include induction cooktops or other products.
<b>CEC Equitable Building Decarbonization Statewide Direct Install Program</b>	<b>The Equitable Building Decarbonization (EBD) Statewide Direct Install Program provides and installs energy-efficient electric appliances, energy efficiency measures, and related upgrades at no cost to low-income households in under-resourced communities.</b>
<b>Main Energy Savings Assistance (Basic/Plus) Program</b>	Implemented in each IOU territory, this trade-ally-driven program offers no-cost energy-saving measures to low-income homeowners and renters.
<b>ESA Building Electrification Program</b>	This targeted offering helps eligible homeowners and renters electrify their homes by replacing natural gas and propane appliances with high-efficiency electric equipment at no cost.
<b>ESA Whole Home Pilot</b>	Targeting deeper energy savings than the standard ESA program, this pilot is implemented in each IOU territory and offers a holistic package of no-cost energy-efficiency and decarbonization measures.
<b>Self-Generation Incentive Program (SGIP)</b>	Relevant to our exploration of battery-enabled induction products, SGIP provides financial incentives for installing clean, efficient, on-site distributed generation, including small residential storage.
<b>The Switch is On</b>	The statewide education and awareness campaign provides information, resources, and tools to help homeowners and renters electrify their homes, as well as tools for contractors.
<b>Air quality policymakers,</b> specifically the California Air Resources Board (CARB), Bay Area Air Quality Management District (BAAQMD), and (SCAQMD)	At the state and local level, these entities develop emissions standards and ordinances for space and water heating measures in addition to other appliances like cooktops and ranges.

## Appendix E: External Program Alignment & Coordination for Induction Cooking

*CalMTA is a program of the California Public Utilities Commission (CPUC) and is administered by Resource Innovations*



Program/Organization name	Program description
<p><b>Local and regional incentive programs</b> such as 3C-REN Home Energy Savings, BayREN's Bay Area Multifamily Building Enhancements Program (BAMBE), BayREN Efficiency and Sustainable Energy (EASE) Home program, Marin Clean Energy's Marin Clean Energy's Multifamily Energy Savings and Low-Income Families and Tenants programs, <b>PG&amp;E Powerful Neighborhoods program (the zonal electrification pilot)</b>, SCP Appliance Rebates, Silicon Valley Clean Energy FutureFit Homes Rebates, and Sacramento Municipal Utility District Appliance Rebates</p>	<p>While each program is structured differently, these offerings reduce the upfront cost of adoption through rebates on qualifying products, including electric cooking technologies.</p>
<p><b>Local induction cooktop loaner programs</b>, including SCE's Induction Lending Program, the Pacific Gas and Electric (PG&amp;E) Induction Cooktop Loaner Program, the City of San Jose Induction Cooktop Checkout Program, Sonoma Clean Power's Induction Cooktop Check Out, and the Electric Home Cooktop Program offered by USGBC-CA in the San Diego area</p>	<p>While each program is structured differently, these offerings reduce the upfront cost of adoption through rebates on qualifying products.</p>
<p><b>Local utility online marketplaces</b> like the PG&amp;E Energy Action Guide, Los Angeles Department of Water and Power's Efficient Product Marketplace, and the Southern California Edison Marketplace</p>	<p>These online marketplaces allow utility customers to shop for energy-efficiency products online and apply instant rebates to qualifying models. They also highlight energy-efficiency financing options, including solutions for low-income consumers.</p>
<p><b>ENERGY STAR</b></p>	<p>Administered by the U.S. Environmental Protection Agency (EPA), ENERGY STAR is a voluntary labeling program for products that meet energy efficiency specifications set by the EPA. Initial engagement will support the ENERGY STAR Residential Cooking Products V1.0 specification; CalMTA plans to work with ENERGY STAR on V2.0 which will continue to improve efficiency of induction cooking.</p>

**Appendix E: External Program Alignment & Coordination for Induction Cooking**

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Program/Organization name	Program description
<b>Induction Stove Challenge</b>	Led by the New York Power Authority (NYPA), New York State Energy Research and Development Authority (NYSERDA) and the New York City Housing Authority (NYCHA), this competitive innovation challenge calls on appliance manufacturers to design and produce product designs and prototypes for new induction stoves that can be installed in older buildings using standard 120-volt/20-amp outlets.

### 3.1 Emerging programs for future consideration

In addition to the active programs listed above, several new or planned programs are in the early stages of development but offer valuable future coordination potential. CalMTA will monitor these programs leading up to Phase III deployment of the Induction Cooking MTI and will include an updated list of all relevant programs in RFP materials. Programs currently being monitored include:

- The CEC **Equitable Building Decarbonization Direct Install Program**, which will provide low-or no-cost retrofits for low- and moderate-income households living in single-family, multifamily, and manufactured homes in under-resourced communities throughout the state, administered separately in Northern, Central, and Southern California.
- The CEC-administered and IRA-funded **High-Efficiency Home Rebate Program and Home Efficiency Rebate Program**, the first of which will offer point-of-sale rebates for purchase and installation of qualified ENERGY STAR appliances and qualifying building materials, and which will target low-income households; the second of which will provide project funding or performance-based rebates for whole-home energy retrofits for single-family homes and multifamily buildings, with enhanced rebates for eligible low-income households.
- The statewide **Wildfire and Natural Disaster Recovery Rebuild Program** (RISE Homes), which will provide incentives and support owners of residential and multi-family properties in rebuilding lower carbon, all-electric homes post-wildfire and other natural disasters.
- PG&E's recently awarded **Powerful Neighborhoods Program Pilot** (zonal equity electrification pilot) and **Residential Equity Program** will both help accelerate residential building electrification and energy efficiency improvements among historically underserved communities.

## 4 Priority programs for alignment

In developing the market transformation theory for the Induction Cooking MTI, CalMTA identified several priority programs for direct coordination. As explained in Section 2, Phase III: Market Deployment includes strategies to enable the MTI team to work synergistically with these organizations during MTI implementation.

### Appendix E: External Program Alignment & Coordination for Induction Cooking

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Over the course of Phase II engagement, the CalMTA team has already established collaborative relationships with many of the entities and organizations listed to provide insight into the approaches for the MTI development and gain their feedback along the way. Outcomes of the discussions helped inform refinements to the MTI logic model and proposed market interventions including foundational conversations with entities such as ENERGY STAR, the California Energy-Smart Homes Program, BUILD, the California Electric Homes Program, Golden State Rebates, the ESA Building Electrification Program, and Whole Home Pilot, and CARB, BAAQMD, and SCAQMD. Attachment 1 provides a report of all stakeholder engagement activities conducted to support development of the Induction Cooking MTI Plan.

Below is a summary of points of alignment, targeted programs that the Induction Cooking MTI is seeking to align with, and reciprocal support that the program may expect from the MTI. In addition to ongoing meetings as described in Section 2.1, the CalMTA team held personal meetings with representatives from most of these targeted programs from August-December 2024.

**Table 2. Induction cooking external program coordination approach**

MTI alignment goal	Targeted program(s)	Reciprocal support from MTI and CalMTA
Understand and encourage opportunities to solidify induction cooking technology as a code or standard, including collaboration on national standards, test procedures, and messaging	Statewide Codes and Standards Advocacy Program  CARB, BAAQMD, SCAQMD  U.S. Department of Energy/ENERGY STAR	Support product development/enhancements and messaging at the manufacturer level, particularly action that supports policymaking (i.e., indoor air quality, health and safety)  Provide market data as MTI moves into implementation  Support product availability through retailer engagement  Increase consumer awareness and acceptance through CalMTA’s marketing efforts
Collaborate on research, including pilots, to better understand product performance and necessary enhancements	CalNEXT  EPIC	Share market and pilot data  Support product development/enhancements at the manufacturer level
Encourage addition of incentives of induction cooking products in existing all-electric new construction programs	California Energy-Smart Homes Program  California Electric Homes Program	Facilitate manufacturer connections  Coordinate on bulk purchase agreements or layered

**Appendix E: External Program Alignment & Coordination for Induction Cooking**

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MTI alignment goal	Targeted program(s)	Reciprocal support from MTI and CalMTA
	BUILD	<p>incentives for builders and remodelers</p> <p>Communicate program participant and implementer feedback to manufacturers to influence product enhancements</p> <p>Provide marketing support (i.e., benefits messaging, educational content, manufacturer assets, collateral templates)</p>
Support equity program efforts to drive induction adoption in ESJ communities	<p><b>Equitable Building Decarbonization Statewide Direct Install Program</b></p> <p>Main ESA Program</p> <p>ESA Clean Energy Homes Program</p> <p>ESA Building Electrification Program</p> <p>ESA Whole Home Pilots</p>	<p>Engage with manufacturers to increase availability and accessibility (including lower cost) of 120V product</p> <p>Collaborate on technology demonstrations with an emphasis on preparation of traditional recipes in diverse communities</p> <p>Coordinate on bulk purchase agreements or layered incentives</p>
<p>Encourage addition of induction cooking incentives into existing midstream retail channel and marketplace programs</p> <p>Encourage retail stocking and assortment practices that make induction cooking products more visible and accessible</p>	<p><del>Golden State Rebates</del></p> <p>Online utility marketplaces</p> <p>ENERGY STAR</p>	<p>Facilitate manufacturer connections</p> <p>Coordinate on bulk purchase agreements</p> <p>Offer stocking incentives/spiffs in retail channel that can be layered with midstream consumer incentives, potentially supplemented by retailer training</p> <p>Work at the national level with ENERGY STAR to encourage product differentiation tools for programs</p>

**Appendix E: External Program Alignment & Coordination for Induction Cooking**

*CalMTA is a program of the California Public Utilities Commission (CPUC) and is administered by Resource Innovations*



MTI alignment goal	Targeted program(s)	Reciprocal support from MTI and CalMTA
Support existing programs offering induction incentives, <b>including zonal electrification programs</b> , to motivate consumer adoption	Local and regional incentive programs  SCAQMD	Engage with manufacturers to increase availability and accessibility of qualifying products  Provide marketing and messaging support  Share market and pilot data  Promote layering with midstream and other incentives
Leverage technology loaner programs to accelerate the path to purchase	Local induction cooktop loaner programs	Provide consumer-facing information on product availability and available incentives  Promote loaner programs as a bridge to full adoption in interactions with active programs and community partners  Promote loaner programs via expanded Chefluencer marketing efforts
Incorporate incentives for battery-equipped induction cooking technology into demand response programs	SGIP	Partner on pilots and share data related to performance/user acceptance  Engage with manufacturers to increase availability and accessibility (including lower cost) of battery-enabled 120V product
Educate the market on benefits of induction cooking technology and promote available incentives	The Switch is On	Provide messaging support and case studies  Facilitate requests for information and assets from manufacturers  Promote Chefluencer events through website and social media channels

**Appendix E: External Program Alignment & Coordination for Induction Cooking**

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Attachment F:

Appendix F: Evaluation Plan - REDLINE



# Induction Cooking Market Transformation Initiative

## Appendix F: Evaluation Plan

**Revised March 6, 2026 in compliance with CPUC Decision 25-11-023**

~~December 18, 2024~~ March 6, 2026

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## List of Abbreviations

<b>Abbreviation</b>	<b>Definition</b>
AHAM	Association of Home Appliance Manufacturers
BMA	Baseline Market Adoption
CalMTA	California Market Transformation Administrator
CBO	Community-Based Organization
CEDARS	California Energy Data and Reporting System
CPUC	California Public Utilities Commission
EIA	Energy Information Administration
EM&V	Evaluation, Measurement, and Verification
ESJ	Environmental and Social Justice
ESRPP	ENERGY STAR Retail Products Platform
LI	Low-Income
MF	Multifamily
MPI	Market Progress Indicator
MTAB	Market Transformation Advisory Board
MTI	Market Transformation Initiative
PA	Program Administrator
RECS	Residential Energy Consumption Survey
SF	Single-Family
SME	Subject Matter Expert
TBE	Theory-Based Evaluation
TSB	Total System Benefit
TMA	Total Market Adoption
TRC	Total Resource Cost
TRM	Technical Reference Model
UEI	Unit Energy Impacts



# 1 Introduction

Market transformation initiatives (MTIs) seek to accelerate market adoption by deliberately inducing structural market changes that produce sustained market effects. CalMTA will adhere to well-established approaches to evaluating market transformation programs, as described in the [CalMTA MTI Evaluation Framework](#).<sup>1</sup> California Public Utilities Commission (CPUC) Decision 19-12-021 (the Decision), which authorized funding for and the creation of a statewide Market Transformation Administrator (CalMTA), includes guidance regarding evaluation of MTIs and the overall market transformation portfolio. It calls for setting clear savings goals and other MTI metrics at the time the CPUC initially approves the MTIs to ensure a high level of accountability, and ongoing evaluation to reduce program performance risk. The Decision also establishes market research and evaluation roles for CalMTA, modeled after the successful approach created by the Northwest Energy Efficiency Alliance (NEEA).

Evaluation is essential to the development and successful management of market transformation programs. CalMTA and the CPUC's Energy Division will oversee implementation of rigorous and strategically focused evaluation, measurement, and verification (EM&V) practices, which will enable CalMTA management and stakeholders to gauge the performance of CalMTA and MTIs, verify incremental impacts, and improve the design and success of future MTIs. The Decision calls for "real-time" market evaluation, which will provide MTI program managers and implementers with continual feedback, allowing them to pivot strategies as needed to maximize the value delivered to California ratepayers.<sup>2</sup> Tracking of proximate and longer-term market progress indicators (MPIs) that are tightly aligned with the MTI's market transformation theory will reduce MTI performance risk and support timely decisions regarding ongoing investment or termination of investment in MTIs.

Per the Decision and the MTI Evaluation Framework, CalMTA and an independent third-party evaluator each have important roles in MTI evaluation. CalMTA conducts market research and develops forecasts of MTI incremental impact and cost-effectiveness, while an independent third-party evaluator is responsible for evaluating market progress and causal influence of the MTI, and for reviewing estimates of MTI incremental impacts and cost-effectiveness. The Decision states that EM&V Plans should be developed with the support of an independent EM&V subject matter expert (evaluator) that is not financially interested or otherwise involved in program implementation. It also states that during Phase III of CalMTA's [three-phase development process](#),

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<sup>1</sup> The [CalMTA MTI Evaluation Framework](#) includes discussion of and references to these established approaches.

<sup>2</sup> The term "real-time" evaluation has been widely used in California and elsewhere to refer to ongoing program evaluation that provides timely feedback to support ongoing program decision-making, even if it is not literally delivered in "real time." This term encompasses all evaluation activities that provide timely insights to inform ongoing program management and is also sometimes referred to as "embedded evaluation."



the MTA will actively administer each MTI and will provide real-time evaluation and feedback (to the implementers, as NEEA does for its market transformation programs.<sup>3</sup>

This document describes CalMTA’s preliminary plan for third-party evaluation of Induction Cooking Market Transformation Initiative (MTI). Per the MTI Evaluation Framework, CalMTA developed this preliminary evaluation plan with input from the Evaluation Advisory Group, a group of three independent evaluation experts; the CPUC CalMTA project manager<sup>4</sup> and the CalMTA market research and evaluation lead. Final evaluation plans will be developed by an independent third-party evaluator to be selected via a competitive bidding process after the MTI advances to Phase III: Market Deployment. CalMTA expects that the third-party evaluator may recommend refinements to the approaches and metrics described in this document.

## 1.1 Overview

The approach described in this Induction Cooking MTI Evaluation Plan employs theory-based evaluation (TBE), which is widely accepted as a best-practice for market transformation program evaluation.<sup>5,6</sup> TBE relies upon the MTI to have a program theory that clearly identifies the specific theorized market outcomes associated with the MTI strategic market interventions, along with their approximate timing. TBE also assesses causality between the market interventions and observed outcomes.

In addition to the proposed MPIs, this preliminary evaluation plan identifies data sources and evaluation approaches that the third-party evaluator can use to assess market progress, MTI causality, and CalMTA’s estimates of MTI incremental impacts and cost-effectiveness. This plan focuses on third-party evaluation activities over the first five years of Phase III (that is, through CalMTA’s initial funding period). It does not describe ad hoc market research studies, which will be conducted or managed by the CalMTA MTI team in a timely manner to inform “real-time” strategy decisions.

## 1.2 Evaluation objectives

The third-party evaluator will employ a TBE approach to assess observed market outcomes in relation to what was anticipated in the Induction Cooking MTI Plan. It will use the MTI program

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<sup>3</sup> California Public Utilities Commission. Decision 19-12-021 December 5, 2019. “Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues.” Date of issuance December 12, 2019. 321507615.PDF (ca.gov).

<sup>4</sup> CalMTA Market Transformation Initiative Evaluation Framework April 2024, <https://calmta.org/wp-content/uploads/sites/263/Market-Transformation-Evaluation-Framework-FINAL.pdf>.

<sup>5</sup> Prahl, Ralph, and Ken Keating. November 2011. *Planning and Evaluating Market Transformation: What the Industry has Learned, and Possible Implications for California*.

<sup>6</sup> Rosenberg, Mitchell (KEMA, Inc.), and Lynn Hoefgen (Nexus Market Research). March 2009. *Market Effects and Market Transformation: Their Role in Energy Efficiency Program Design and Evaluation*. Prepared for California Institute for Energy and Environment Market Effects Program. [Microsoft Word - Market Effects and Market Transformation White Paper.doc \(escholarship.org\)](#).



theory as the point of reference, assessing market progress against the theorized short-, medium-, and long-term outcomes and corresponding MPIs, and the extent to which the market interventions addressed the market barriers identified and caused the outcomes theorized in the logic model. The evaluator will conduct ongoing market monitoring via secondary data analysis and primary research to evaluate market progress and causality and, importantly, to provide ongoing market insights that provide real-time information to inform MTI strategy and improve performance. The evaluation will address these high-level objectives:

- Monitor market dynamics and characteristics; assess market developments
- Review and assess the MTI Logic Model and program theory
- Measure market progress and equity, per the MPIs
- Assess MTI causality per the logic model, using evidence-based assessments that use a “preponderance of evidence” approach and established market transformation evaluation best practices<sup>7</sup>
- Identify opportunities to adjust MTI strategy and tactics, to improve MTI effectiveness
- Review CalMTA’s baseline and total market adoption forecasts, and TSB and cost-effectiveness model inputs and assumptions
- Assess ancillary benefits and costs

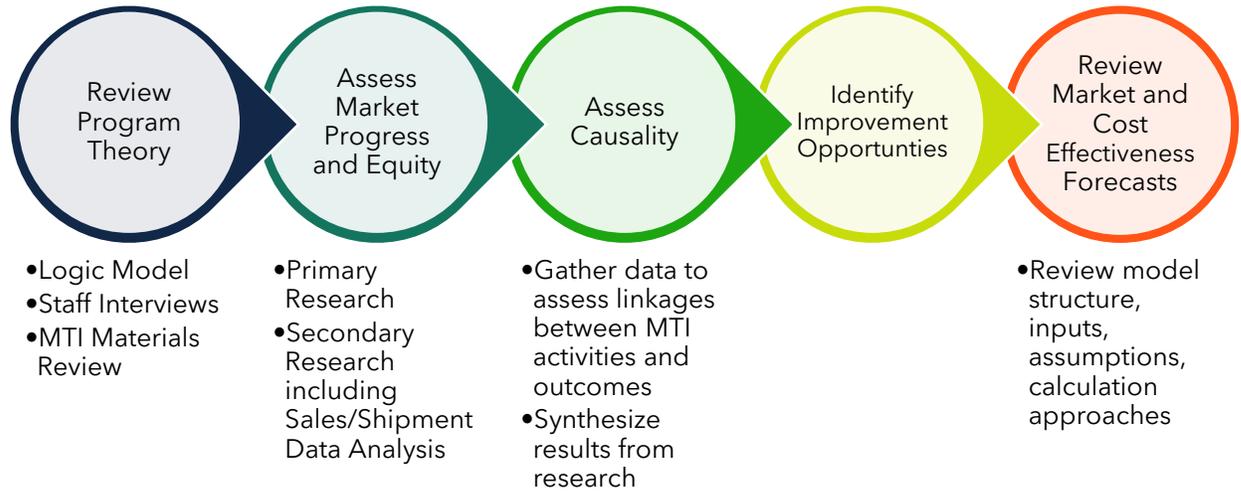
Figure 1 shows the evaluation approach for the first year. First the evaluator will review the program theory/logic model and assess whether the logic model accurately captures the implemented MTI interventions and outputs. During this step, the evaluator will also identify any gaps in MPI baseline data and determine the data needed to assess causality based on the MTI’s theory of market transformation. Next, the evaluator will conduct primary and secondary research to measure actual units of adoption and assess equity and other MPIs. Third, the evaluator will synthesize the evidence gathered through multiple lines of research to establish MTI causality and to identify opportunities to improve the MTI’s effectiveness. Lastly, the evaluator will review CalMTA’s models for calculating incremental impacts and cost-effectiveness and make recommendations for improvement.

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<sup>7</sup> TecMarket Works. April 2006. "California Energy Efficiency Evaluation Protocols: Technical, Methodological, and Reporting Requirements for Evaluation Professionals." <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/5212-caenergyefficiencyevaluationprotocols.doc>.



**Figure 1. Evaluation process**



### 1.3 Market Progress Indicators and Milestones

During Phase II: Program Development), the Induction Cooking MTI team (the team) created a program theory of market transformation and a logic model, informed by product and market characterization research.<sup>8</sup> The Induction Cooking theory of market transformation describes the strategic approach to achieving the long-term market outcome envisioned by this MTI:

*By 2035, efficient electric products are the norm when purchasing a cooktop or ranges in California.*

The MTI theory also describes strategies specifically designed to maximize equity.

During Phase II, the Induction Cooking MTI evaluation lead worked with the team to develop a set of MPIs against which market progress and MTI performance can be assessed, along with data sources that can be used to track progress against those MPIs. The team also completed a Baseline Market Characterization study, which established baseline values for many of the identified MPIs.<sup>9</sup>

Table 1 outlines the MPIs derived from the logic model interventions and outcomes, along with associated milestones, in the short, medium, and long term.<sup>10</sup> Equity-focused MPIs are *italicized* to

<sup>8</sup> See Appendix A: Logic Model and the Induction Cooking MTI Plan.

<sup>9</sup> See Appendix D: Market Characterization for Induction Cooking.

<sup>10</sup> Note that while some outcomes do not have associated milestones, all are linked to MPIs. In these cases, the evaluator will rely upon MPI tracking combined with ongoing research and analysis to assess market progress. For example, the evaluator will assess progress on awareness-building by tracking the trends in related MPIs rather than setting a specific awareness target.

highlight their relevance to the environmental and social justice (ESJ) goals of the MTI. Each of the 23 MPIs is numbered with a letter representing different categories of MPIs - as they pertain to the targeted market actor or impact (for example, "M" for manufacturer outcomes, "R" for retail outcomes, etc.). In addition to those classifications, Table 1 categorizes outcomes and MPIs as "Primary Influence" or "Secondary Influence." CalMTA made this distinction to distinguish between market interventions and outcomes that are a primary focus of the MTI and key to assessing MTI market progress and performance, versus those over which CalMTA may have less control. In the case of Induction Cooking, those that pertain to inclusion in California utility programs, electrification-enabling rate structures, and regulatory changes are categorized as "Secondary Influence."

CalMTA also created a comprehensive evaluability map (see the attachment at the end of this document) that includes the MPIs and milestones shown in Table 1, along with the associated data sources that will be used to evaluate the MPIs, Milestones, and causality.

#### **1.4 Data collection and analysis activities**

CalMTA identified primary and secondary data collection activities and analysis tasks that would allow the third-party evaluator to evaluate the Induction Cooking MTI. Table 2 lists the evaluation research objectives, along with associated data collection and analysis activities, which are described in the text that follows. We anticipate that the selected evaluator will have suggestions for how to improve this plan.



Table 1. Logic Model interventions, outcomes, MPIs, and milestones

Intervention	Logic Model outcome - primary influence	MPI #	Timeframe	Market progress indicator (MPI)	Market milestone
#1 Influence <del>Accelerate</del> manufacturer development of affordable, 120V <del>battery-</del> <b>equipped induction products</b> that fill the product availability gap for California's electrical infrastructure and multifamily market needs	Manufacturers respond to specification with plans for product roadmaps for 120V <del>battery-</del> <b>equipped induction range</b> products	<b>M1</b>	Short term	Number of manufacturers who respond with plans for product roadmaps	Two manufacturers engage with CalMTA Tech Challenge by 2027 <b>At least one major manufacturer (i.e., LG, Panasonic, GE) includes 120V in its roadmap by 2027.</b>
	Increased availability of affordable 120V <del>battery-</del> <b>equipped induction range</b> products	<b>M2</b>	Med. term	Number of 120V products available to purchase from major retailers either in-store or online (not only direct from manufacturer) - <b>Battery equipped</b> - <b>Non-battery</b>	At least two <del>competitively-priced</del> <b>MTI qualified</b> 120V products are available to purchase from major retailers either in-store or online (not only direct from manufacturer) by <del>2031</del> <b>2029</b>
		<b>M3</b>		Incremental cost of battery-equipped 120V induction compared to 240V induction	Average price of 120V battery products is no more than double the average price of <b>gas ranges</b> 240V induction by 2031
#4 Engage influential builders, remodelers, and property management firms <b>and building owners through demonstrations, upstream incentives</b> or bulk purchase pricing coupled with marketing support <b>specific to 120V products</b>	<del>Builders change design plans and installation of induction cooking grows in new construction</del> <b>MF property management firms and building owners increasingly include 120V products in electrification efforts</b>	<b>B4</b>	Short term	Number of bulk purchasing agreements in place with builders <b>Number of agreements in place with key/influential property owners or managers that include 120V products</b>	3 bulk purchase agreements in place with production builders <b>key property owners or managers</b> in California by 2027
	Builders in both single-family and multifamily increasingly utilize induction products	<b>B5</b>	Med. term	Number of appliance kitchen suites (standard order) that include induction models used by builders	At least 4 brands offer in-suite induction in the majority of their packages to builders with shipping timelines on par with gas and electric alternatives by 2029
#8 Deploy midstream stocking incentives that motivate retailers to target low-income (LI) consumers with more affordable induction products	Market share of Induction and ENERGY STAR certified electric radiant cooking products increase relative to gas cooking products	<b>B6</b>	Med. term	Market share in new construction and existing homes	No specific milestone; evaluator will track MPI over time to assess progress
	Average price of induction ranges and cooktops decline	<b>R5-B7</b>	Med. term	Incremental cost of 240V options above electric radiant	Incremental cost of 240V options above electric radiant shrinks to less than 10% by 2029
#7 Engage ENERGY STAR specification development to support continued product differentiation and increased EE stringency	EPA develops version 2.0 of ENERGY STAR specification for cooking which includes increased efficiency and provisions for 120V <del>battery-</del> <b>equipped range</b> product	<b>S6-S8</b>	Med. term	ENERGY STAR version 2.0 specification developed <b>and includes 120V products</b>	ES Spec is updated to <del>include battery-</del> <b>equipped 120V</b> products and reflects at least 10% increase in efficiency (reduction in IAEC) by 2030
#8 Engage retail partners to stock and promote 120V induction products and acquire full category sales data to track overall induction cooking adoption Deploy midstream stocking incentives that motivate retailers to target LI	Retail partners stock and sell more affordable products <b>and 120V options</b> in ESJ predominant communities	<b>R7 R9</b>	Short term	Share of efficient electric <b>Number of MTI-qualified 120V induction</b> products <b>available through retail</b> stocked in brick-and-mortar locations ( <b>same as M2</b> ) stocking trends are similar in stores in ESJ communities	Share of induction products in brick-and-mortar retailers participating in ENERGY STAR Retail Products Platform (ESRPP) increases; stores in ESJ communities (as defined by ESRPP for Equity Pilot) by 2027. <b>See M2</b>

Intervention	Logic Model outcome - primary influence	MPI #	Timeframe	Market progress indicator (MPI)	Market milestone
consumers with more affordable induction products		<b>R8</b> <b>R10</b>		Price of <b>120V</b> induction and ENERGY STAR electric radiant products in <b>retail</b> brick-and-mortar locations in ESJ communities	Average price of induction and ENERGY STAR electric radiant products are lower in ESRPP stores in ESJ communities compared to other stores by 2027 <b>No specific milestone; evaluator will track MPI over time to assess progress</b>
Outcomes resulting from all strategic interventions and awareness-building interventions	Awareness and preference for efficient electric cooking increases	<b>A11</b> <b>A9</b>	Short term	Percentage of LI and non-LI consumers who report they are knowledgeable about induction cooking	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A10</b> <b>A12</b>		Percentage of induction awareness among property managers	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A11</b> <b>A13</b>		Percentage of LI and non-LI consumers who state they would prefer to purchase induction type product	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A12</b> <b>A14</b>		Percentage of property managers who prefer to purchase induction type product	No specific milestone; evaluator will track MPI over time to assess progress
	Consumers utilize 120V battery-equipped induction products as tool for increased energy benefits (resilience, DR <b>load flexibility</b> )	<b>A13</b> <b>A15</b>	Long term	Percentage of LI and non-LI consumers for whom health or safety benefits of induction are a top consideration in their preference	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A14</b> <b>A16</b>		Percentage of property managers aware of health and safety benefits of induction	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A15</b> <b>A17</b>		Percentage of consumers indicating that resilience and demand response <b>load shifting</b> were influential in the purchase of 120V battery-equipped products	No specific milestone; evaluator will track MPI over time to assess progress
		<b>A16</b> <b>A18</b>		Percentage of consumers aware of resilience and peak shifting benefits 120V battery-equipped products	No specific milestone; evaluator will track MPI over time to assess progress
Outcomes resulting from all strategic interventions and awareness-building interventions	Sales of induction and ENERGY STAR electric radiant cooking products increase relative to gas cooking products	<b>U17</b> <b>U19</b>	Med. term	Efficient electric cooking appliance market share (% of full category sales) - <b>120V Battery</b> - <b>120V Non-Battery</b> - <b>240V Induction</b> - <b>240V ES Radiant</b>	Market share <b>of all efficient electric</b> is 10% by 2029 <b>Market share of 120V 10% by 2031</b>
Outcomes resulting from all strategic interventions and awareness-building interventions	Market share of efficient electric reaches majority of all cooktops and ranges sold in California		Long term		<b>Total efficient electric</b> Market share (% of full category sales) reaches 20% by 2033
Outcomes resulting from all strategic interventions and awareness-building interventions	Consumers adopt 120V battery-equipped induction products to realize additional benefits (i.e., resilience, DR <b>load flexibility</b> )	<b>U18</b> <b>U20</b>	Long term	Units of adoption	No specific milestone; evaluator will track MPI over time to assess progress
<b>Intervention</b>	<b>Logic Model outcome – secondary influence</b>	<b>MPI #</b>	<b>Timeframe</b>	<b>Market progress indicator (MPI)</b>	<b>Market milestone</b>



Intervention	Logic Model outcome - primary influence	MPI #	Timeframe	Market progress indicator (MPI)	Market milestone
#6 Support inclusion of affordable <b>120V</b> induction cooking products in California programs and Inflation Reduction Act (IRA) especially those targeting multifamily and zonal electrification efforts.	Programs include <b>120V</b> product as measure, especially in programs that target <b>MF, zonal electrification and</b> LI customers	<b>P19</b> <b>P21</b>	Short term	Number of California program administrators (PAs) who add <b>120V</b> induction cooktops to their programs	No specific milestone; evaluator will track MPI over time to assess progress
	<b>120V products increasingly used as solution in zonal decarbonization targeted gas infrastructure decommissioning efforts</b>	<b>P20</b>	<b>Med. term</b>	<b>Number of zonal projects that use MTI qualified products</b>	<b>No specific milestone; evaluator will track MPI over time to assess progress (increase)</b>
#3 Support advancement of electrification-enabling rate structures to mitigate the impacts of moving from gas to electric cooking	Prevalence of electrification-enabling rate structures grows across the state	<b>L21</b> <del>L12</del>	Med. term	The number of policies or new electrification-friendly rate structures that the MTI supported that are proposed/referenced by utilities, regulatory bodies, etc.	At least three policy forums, partnerships, or opportunities that CalMTA engages with support the change to electrification-friendly rate structures by 2029
Outcomes resulting from all strategic interventions and awareness-building interventions	California Air Resources Board (CARB) and air quality districts set zero emissions appliance standards beyond space and water heating to include the sale of new cooking products.	<b>S23</b> <b>S22</b>	Long term	CARB and air quality appliance standards	No specific milestone; evaluator will track MPI over time to assess progress



Table 2. Research objectives and evaluation activities

Research Objective	Secondary data/ literature review	Homeowner, property manager surveys	Market actor surveys, interviews	PA/SME/ stakeholder interviews	Retailer data collection	Distributor and Manufacturer sales and shipment data	PA program data review	CalMTA forecasting and C/E model reviews
Assess the theory of market change per the MTI logic model	X	X	X	X	X	X	X	
Monitor market dynamics and characteristics	X	X	X	X	X			
Track units of adoption	X	X			X	X	X	
Measure market progress, per MPIs and milestones		X	X	X	X	X	X	
Evaluate equity	X	X	X		X			
Assess MTI causality	X	X	X	X	X	X	X	
Assess incremental MTI impact	X				X	X	X	X
Assess ancillary benefits and costs	X	X	X	X				

**Appendix F: Evaluation Plan for Induction Cooking**

*CalMTA is a program of the California Public Utilities Commission (CPUC)  
and is administered by Resource Innovations*

## 2 Market characterization research

CalMTA conducted a 2024 Baseline Market Characterization study<sup>11</sup> of the induction cooking market. That study characterized the market baseline conditions and values for some of the market progress indicators listed above in Table 1. This evaluation plan includes data collection activities that build on the research conducted in that study.

### 2.1 Secondary data and literature review

The Baseline Market Characterization study included an extensive literature review, drawing from various secondary data sources including the U.S. Census' American Community Survey, the U.S. Energy Information Administration (EIA)'s 2020 Residential Energy Consumption Survey (RECS), and the 2019 California Residential Appliance Saturation Study (RASS). These sources provided insights into appliance saturation levels, behaviors, and other insights relevant to single-family and multifamily California households.

The team also reviewed publicly available technical and market research documents, California regulatory filings, dockets, the California Electronic Technical Resource Manual (eTRM), and conducted searches using tools including Google Scholar, Semantic Scholar, Science.Gov, and general internet research on induction cooking products. Lastly, the team analyzed pricing and product availability by reviewing manufacturer websites and online retailers.

The evaluator will use some of the same sources to inform the MTI Market Progress Evaluation. The evaluator will also, during the literature and secondary data review and throughout the course of their work, attempt to identify additional relevant data sources or literature, including new evaluations or market studies. The rest of this section discusses the data collection activities in more detail.

Data sources may include the following:

- **U.S. Census American Community Survey** (source U.S. Census, accessed annually): The evaluator will use U.S. Census data to develop and refine survey and interview sample designs to reflect California's population. This will ensure that key demographic groups, defined by income levels, geographic areas, and household type and ownership, are appropriately captured.
- **CalMTA MTI program data and materials:** The evaluator will review CalMTA's program-tracking data to measure MPIs and milestones. This data includes information on midstream incentives, engagement and outreach activities (e.g., retailer engagement in the CalMTA technology challenge), and other materials related to MTI activities. CalMTA

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<sup>11</sup> CalMTA Induction Cooking Market Characterization Report, 2024. <https://calmta.org/wp-content/uploads/sites/263/Market-Characterization-Report-Induction-1.pdf>.



and its eventual implementation contractor(s) will capture data that aligns with the activities outlined in the MTI logic model, such as incentives provided, and outreach and engagement conducted.

- **EIA RECS data:** The evaluator can assess broader market adoption trends for induction and other cooking technologies using RECS data. Because RECS is updated infrequently (approximately every five years), its use will be limited, although it should be examined, especially after updates to inform the evaluators' understanding of the market and serve as a broader reference point for long-term trends rather than immediate year-to-year shifts. RECS data will be used to:
  - 1) Analyze patterns of adoption for induction and other cooking technologies across various housing types (i.e., single-family homes and multifamily units).
  - 2) Track shifts in consumer preferences over time, offering insights into the market's progression toward induction cooking solutions.
  - 3) Compare the prevalence of induction cooking to other technologies, such as gas or cooking technologies, to understand market share and potential barriers to adoption.

## 2.2 Analyze California sales and program data

The evaluator will analyze sales data from multiple sources (i.e., ESRPP and point-of-sale data from Circana) and determine the scope and market coverage, areas of overlap, and any remaining gaps in retail channel data. The evaluator will make recommendations on how to use the data to determine market adoption of induction cooktops and ranges, as well as any other relevant MPIs. PA program data will also be analyzed to understand program-driven adoption levels.

- **ESRPP retailer residential cooking category stocking and sales data:** ESRPP retailers will provide full category sales and stocking data for all electric cooking technologies sold in their California stores. Data will include quarterly sales data, pricing, and market penetration of induction technology. The evaluator will have access to CalMTA's quarterly analysis including sales and price trends, and summary statistics.
- **Circana data:** Circana data sets are based on actual sales for many California retailers, but also include forecasted sales for major retailers, such as The Home Depot, Lowe's, and Best Buy. However, since ESRPP data includes actual sales for these same large retailers, the combination of Circana's forecasted data with ESRPP's actual sales data will provide a more complete and accurate representation of the overall market for cooking technologies in California. The evaluator will work with CalMTA to specify and potentially purchase these data to fill any gaps in retail sales data obtained through ESRPP. By merging these two datasets, the evaluator will be able to measure the total market for both gas and electric cooking technologies, with a particular focus on induction technology, across the entire state.



- **PA program and California Energy Data and Reporting System (CEDARS) data:** The evaluator will assess program participation by compiling program data and California Energy Data and Reporting System (CEDARS) data to account for market interventions by California program administrators that report their impacts in CEDARS. The evaluator will incorporate net-verified savings associated with program participation data into total market adoption estimates to avoid double-counting.
- **Other purchase or shipment data:** The evaluator will work with CalMTA to gather shipment and sales data to assess sales across all channels. This may involve sources such as ENERGY STAR, the Association of Home Appliance Manufacturers (AHAM), or CalMTA-negotiated data-sharing agreements with manufacturers and distributors or bulk purchase agreements.

### 2.3 Primary data collection: customer and decision-maker surveys

The evaluator will develop a sampling and research plan that allows for longitudinal tracking of key characteristics to measure progress toward achieving MPIs. The evaluator will clearly document data sources, the sampling strategy, and sample frame development so results can build on previous baseline and evaluation findings.

#### Residential Consumer Survey

The evaluator will field a residential consumer survey in the first year and in alternate years moving forward. The survey should build upon questions from the residential consumer survey used in the baseline market characterization research to allow statistically valid comparisons of changes in adoption, behaviors, attitudes, and knowledge of consumers regarding induction cooking technology. The evaluator will refine the sampling strategy developed for the baseline market characterization study to better align it with the MTI's focus on ESJ communities and incorporate California's Disadvantaged Communities (DAC) designations to enable market progress assessment in these communities.<sup>12</sup> The evaluator will also update the sampling plan to reflect observed changes in the customer segments from the U.S. Census or other data. Table 3 contains the sampling plan from the residential consumer survey conducted during the market characterization, with proportions based on segment quotas. The baseline residential consumer survey achieved 790 completed surveys across single family and multi-family decision-makers out of the planned sample size of 800.

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<sup>12</sup> Disadvantaged Communities (DACs), designated by the California Environmental Protection Agency (CalEPA) as per Senate Bill 535, are defined by CalEnviroScreen 4.0: <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>. The baseline residential consumer survey used census data to identify those who live in census tracts or households at or below 80% of the statewide median income. This sampling approach was expedient for the baseline study but the third-party evaluator should refine it, if possible, to better align with the MTI's focus on ESJ communities.

**Table 3. Baseline Market Characterization residential consumer survey sample plan<sup>13</sup>**

<b>Segment</b>	<b>Percentage</b>	<b>Survey targets</b>
<b>Home ownership status</b>		
Homeowners	55%	440
Renters	45%	360
<b>Income status</b>		
Below low-Income threshold <sup>14</sup>	36%	288
Above low-Income threshold	64%	512
<b>Housing type</b>		
Single-family homes	49%	392
Multifamily homes	49%	392
Other housing types	2%	16
<b>Region/climate zone</b>		
Coastal areas	50%	400
Inland areas	50%	400
<b>Total sample size</b>	<b>100%</b>	<b>800</b>

### Multifamily property manager interviews

The evaluator will interview multifamily property managers in the first year of MTI implementation and in alternate years following that, to build an ongoing understanding of perceived barriers and motivations to the adoption of induction cooking in multifamily housing. The interviews will include property managers that serve both priority and non-priority populations,<sup>15</sup> and will target both coastal and inland multifamily property managers.

<sup>13</sup> This same survey was used for both the RHP and Induction Cooking Baseline Market Characterization studies.

<sup>14</sup> “Low-income” is defined by CalMTA’s 2024 Baseline Market Characterization study as at or below 80% of the median area income. According to Assembly Bill 1550, low-income communities and households are defined as those who live in census tracts or households at or below 80% of the statewide median income or meeting the threshold designated as low-income by the California Department of Housing and Community Development's Revised 2021 State Income Limits.

<sup>15</sup> Priority populations, as defined by the California Air Resources Board, are census tracts categorized as either low-income or disadvantaged communities (DACs). See map here: [Priority Populations 2023 \(ca.gov\)](https://www.ca.gov/priority-populations-2023). DACs, designated by the California Environmental Protection Agency (CalEPA) as per Senate Bill 535, are defined by CalEnviroScreen 4.0: <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>.



CalMTA completed 15 interviews with property managers in coastal and inland territories as part of the Baseline Market Characterization study, using the sampling plan outlined in Table 4. For that study, which also informed the Induction Cooking MTI, the team was unable to complete any interviews with non-priority property managers in Inland regions.

**Table 4. Multifamily property manager interviews sampling plan**

Climate region	Coastal	Inland	Total
Priority population	5	5	10
Not priority population	5	5	10
<b>Total</b>	<b>10</b>	<b>10</b>	<b>20</b>

#### Property manager survey

The evaluator will conduct a survey of California-based multifamily ~~and single-family~~ building owners and property managers who own or manage five or more units during each program cycle. The objective of this survey is to determine adoption trends of induction technologies in the multi-family segment including awareness and attitudes towards induction. During the baseline market characterization, CalMTA used a stratified random sample of property managers, with quotas for climate zone, housing type, classes of properties, types of units (market rate or affordable housing) and utility. CalMTA completed surveys with builders and property managers who owned/managed single-family (n=77), multifamily (n=16) and both single-family and multifamily (n=7) properties. For the first evaluation, the evaluator should attempt to use a sampling strategy similar to the one CalMTA used during the baseline market characterization.

#### Homebuilder and remodeler interviews

The evaluator will conduct interviews to understand homebuilders' and remodelers' decision-making processes regarding the use and specification of induction cooking products in residential new construction and remodeling projects. The interviews will explore key factors, such as cost, demand, availability, familiarity with the technology, and barriers to adoption, as well as the influence of building codes and energy efficiency regulations.

For the baseline market characterization, CalMTA sampled from the National Association of Home Builders and the National Association of Minority Contractors, along with participant databases from the California Energy-Smart Homes Program and the California Electric Homes Program.

#### ~~Homebuilder and remodeler surveys~~

~~The evaluator should conduct a survey of builders and remodelers to understand:~~

- ~~• Market share of induction cooking products purchased by builders and remodelers~~
- ~~• How often appliance packages are offered to customers and whether packages are required or optional~~
- ~~• If appliance packages include options for induction cooking products~~



- Ease or difficulty of adapting electrical design for 240V induction stoves at the house- and development-level
- How sales staff influence customers' cooking appliance selection process
- Barriers to sales staff promoting induction cooking products

The evaluator should aim to gather a representative sample across California. It is expected that homebuyers or homeowners will be the decision-maker for some fraction of new construction and remodeling jobs, which should be covered under the consumer survey.

## 2.4 Primary data collection: stakeholder and manufacturer interviews

### Stakeholder, subject-matter experts, and MTI staff interviews

The evaluator will conduct interviews with stakeholders and subject matter experts to inform the market characterization of induction cooking products. These stakeholders and subject-matter experts will include PAs and implementers of California programs that promote efficient cooking; organizations conducting research and development, standard-setting, and pilot efforts supporting deployment of the technologies; and community-based organizations (CBOs) and/or recipients of pilot funding or other programming. These interviews will inform an understanding of current program offerings and future program changes, customer perceptions and barriers to adoption, and market and technology trends.

### Manufacturer interviews

CalMTA conducted interviews with five manufacturers as part of the baseline market characterization study (out of nine identified in the sampling plan). During Phase III: Market Deployment, the third-party evaluator will conduct manufacturer interviews to keep current on manufacturer opinions and attitudes on induction cooking, plans for future products, and perceived barriers and opportunities for induction adoption. In addition, the evaluator will investigate the causal relationship and impact of interventions aimed at increasing product availability and innovation, especially around 120V battery-equipped induction products.

The third-party evaluator will attempt to reach the same nine manufacturers to track changes in attitudes or behaviors relative to the initial CalMTA manufacturer interviews and surveys. The evaluator will also explore if there are additional manufacturers who should be interviewed based on market share, market presence, innovative products, or pricing.

## 2.5 Primary data collection: retailer data collection

The evaluator should develop a sampling and research plan that will help build an understanding of stocking and promotional trends for induction cooking products in retail stores, as well as attitudes and perceptions of retail staff through interviews.



### Brick-and-mortar and online retailer data collection

The evaluator will conduct visits to brick-and-mortar stores and conduct interviews with retail staff to track product availability, as well as stocking, pricing, and promotional practices compared to the baseline study and any subsequent evaluations. CalMTA completed eight in-person visits to big box retail stores in northern and southern California, including The Home Depot (two stores), Best Buy (two stores), Lowe’s (one store), Costco (one store), Sam’s Club (one store, and IKEA (one store). The evaluator will expand the sample to include additional retailers (i.e., independent retailers participating in ESRPP through the Nationwide buying group); reflect other retailers participating in the MTI’s midstream incentive program; and include online retail stores, especially large online retailers like Amazon. Alternatively, the evaluator can recommend web-scraping to extract product information, augmented by retailer interviews, to assess consumer acceptance and stocking practices.

### Timeline for data collection and analysis activities

Table 5 outlines the preliminary recommended timing for evaluation activities over the first five years of Phase III: Market Deployment and shows which of these activities were completed in 2024, as part of the Baseline Market Characterization study. This timing reflects CalMTA’s current expectations regarding when each activity is likely to provide critical data and insights to inform evaluation of market progress and the ongoing need for MTI market strategy refinements. The third-party evaluator will update this preliminary schedule over time to address needs for ongoing market insights and progress evaluation, as CalMTA learns from experience and as the MTI implementation evolves.

**Table 5. Timeline for data collection activities**

Data collection activities		Conducted in Baseline Market Characterization	Year 1	Year 2	Year 3	Year 4	Year 5
Secondary data and literature review		X	X	X	X	X	X
Analyze sales and program data	Sales and shipment data <sup>16</sup>		X	X	X	X	X
	PA program and CEDARS data		X	X	X	X	X

<sup>16</sup> Anticipated data sources are described in the [California Sales and Program Data](#) section.



Data collection activities		Conducted in Baseline Market Characterization	Year 1	Year 2	Year 3	Year 4	Year 5
Primary data collection: customer and decision-maker surveys	Residential consumer survey	X	X		X		X
	Multifamily property manager interviews	X	X		X		X
	Property manager survey	X		X		X	
	Homebuilder and remodeler interviews	X		X		X	
	Homebuilder and remodeler survey		✖		✖		
Primary data collection: market actors	Stakeholder and manufacturer interviews	X	X	X	X	X	X
	In-store and online shopping/web-scraping)	X	X	X	X	X	X
	Retailer interviews	X	X		X		X

### 3 Program theory and program implementation review

The evaluator will conduct an initial review to compare the MTI program theory, logic model, and MPIs against the market interventions implemented by CalMTA and the resultant outputs. After conducting MTI staff interviews and reviewing program documents, the evaluator will make recommendations on how to improve the program theory, logic model, and MPIs.

After completing additional market evaluation activities, the evaluator will assess the extent to which the MTI interventions are addressing the market barriers and leading to the theorized outcomes. The evaluator will identify opportunities to improve the logic model and to refine market interventions to influence the market and make recommendations for doing so. CalMTA will provide the following information (where available) to the evaluator:

- Tools, factsheets, and other MTI outputs
- Implementation and Marketing Plans
- Specifications and manufacturer responses to the technology challenge
- List of key stakeholders with contact information
- List of MTI engagements and relevant Salesforce entries
- Forecast of incremental adoption



- Ex-Ante Impact Calculations
- Cost-effectiveness assumptions
- Any data or perspectives provided by program delivery contractors and partners to date
- Written agreements/contracts with market actors

The data will be reviewed to identify information needs to be addressed in primary and secondary research tasks.

## 4 Evaluating market progress

Market transformation experience has taught us that well-chosen and vetted MPIs are critical to MTI risk management and success. Yet there has been a tendency to judge market progress primarily on units of adoption. This metric can be a misleading indicator of success for MTIs in their early years because market share and adoption typically increase slowly and accelerate only after addressing critical market barriers, such as - in the case of induction cooking - availability of affordable battery equipped products and consumer awareness of the product's health and safety benefits. Therefore, to appropriately evaluate market progress and ensure accountability, the evaluator must assess short- and medium-term MPIs that align with the logic model. While market adoption of induction cooking is forecasted to take several years to accelerate and become a strong indicator of market progress, the evaluator will assess units of adoption from the outset because they are a primary input of paramount importance to estimating MTI incremental impact and cost-effectiveness.

### 4.1 Market adoption

Determining units of adoption is a key focus of the evaluation, because defensible measurement is essential for estimating the incremental energy impacts of the MTI. Market adoption estimation is also one of the most challenging components of the evaluation, because the induction and ENERGY STAR electric radiant cooking supply chain includes multiple sales channels including retail brick-and-mortar stores, online storefronts, and direct-to-consumer sales, as well as wholesale purchase pathways for builders and property owners and managers. To develop a complete picture of the market and calculate units of adoption across all sales channels, the evaluator must identify, procure, and "stitch" together information from multiple sources.

The evaluator will independently estimate market adoption through the following steps.

- **Identify all sales channels.** The evaluator will investigate and identify the complete set of sales channels for induction and ENERGY STAR electric radiant cooking products and competing cooking products.



- **Finalize data sources for each channel.** CalMTA has identified the data sources shown in Table 6 for each of the identified sales channels. The evaluator will investigate and finalize the best data sources for each channel.

**Table 6. Data sources by sales channel**

Retail sales data	Manufacturer/wholesaler data	Shipment data
ESRPP retailer stocking and sales data	Negotiated data sharing agreements with manufacturers and distributors or bulk purchase agreements with	ENERGY STAR data
Circana data		AHAM data

Descriptions of each data source follow:

- **Retail channel data.** The retail channel includes brick and mortar stores like Home Depot and online retail storefronts. The evaluator will estimate market adoption through this channel using sales data contractually provided to CalMTA from ESRPP-participating retailers - including data from big box retail stores, online retail storefronts, and independent retail stores through ESRPP partner Nationwide. The evaluator will supplement ESRPP data with purchased retail data, as needed, from additional sources like Circana - described in the “Secondary data and literature review” section.
- **Wholesale channel data.** Other sales channels may include wholesale distributors and/or direct online or bulk purchases from manufacturers. The evaluator may have access to data gathered through CalMTA negotiated data sharing agreements with manufacturer and distributor market partners or bulk purchase agreements to estimate data through this channel.
- **Supplementary shipment data.** CalMTA expects sales data from these sources to cover most of the California market, although there may be overlap and/or gaps across the datasets. We also expect some sources of data to include an estimate of their market coverage. To verify the total market size, the evaluator will coordinate with CalMTA to also gather shipment data from another source, such as AHAM, to serve as a point of comparison.

#### Collect data and identify gaps

The evaluator will assemble the available sales and shipment data, as described above. As with all data, there are expected to be gaps (e.g., non-reporting retailers). If the volume sold through non-reporting retailers as a percentage of the total market size as estimated based on shipment data is significant, the evaluator will identify non-reporting retailers and manufacturers and conduct interviews with a sample of them to estimate how many induction and ENERGY STAR electric radiant products are sold by them each year, to estimate the total sales from non-reporting vendors.



### Calculate total units of adoption

The total units of adoption will be calculated by combining the reported sales data analysis and the estimated units of adoption for the non-reporting vendors. The evaluator will review these market adoption estimates and update them annually to calculate market share to assess MPIs.

## 4.2 Evaluating equity MPIs

Prior to conducting data collection, the evaluator will become familiar with the induction cooking equity MPIs and plan to monitor progress over time. The evaluator will use both primary and secondary data collection to assess the equity Market Progress Indicators (MPIs) shown in Table 7 and will identify other equity MPIs it believes CalMTA should consider.

**Table 7. Equity MPIs and associated Data collection activities to evaluate equity MPIs**

<b>Market Progress Indicators</b>	<b>Data collection activities</b>
Number of California PAs who add induction cooktops to their programs	California PA interviews
Percentage of LI and non-LI consumers and property managers who prefer electric and induction fuel types (compared to gas)	Residential customer and property manager surveys, property manager interviews, interviews with CBOs
Percentage of LI and non-LI consumers and property managers aware of health and safety benefits of induction	
Share of induction and ENERGY STAR electric radiant products stocked in brick-and-mortar locations; stocking trends are similar in stores in ESJ communities	Retail data gathering (brick and mortar sites and online site visits, sales data analysis), manufacturer interviews
Price of induction and ENERGY STAR electric radiant in brick-and-mortar locations in ESJ communities	Retail data gathering (brick and mortar sites and online site visits, sales data analysis)
The number of policies or new electrification-friendly rate structures that the MTI supported that are proposed/referenced by utilities, regulatory bodies, etc.	Utility rate proposals at CPUC rate proceedings and codes and standards (C&S) proposals at the CEC and CARB proceedings; interviews with policy forums and partnerships
Market saturation in DAC communities, compared to non-DAC	Sales and shipment data, program partner data (such as bulk purchases, DAC-serving distributor shipment data, data from CBOs), future RASS data

The evaluator will refine the baseline survey instrument and sampling strategy to ensure market progress can be assessed and representative findings can be developed for low-income and DAC



populations.<sup>17</sup> The evaluator should additionally develop findings for populations residing in and stores located in disadvantaged communities (DACs), as defined by CalEnviroScreen<sup>18</sup> and assess equity metrics and report progress in DAC versus non-DAC areas. Disadvantaged communities refers to the areas throughout California which most suffer from a combination of economic, health, and environmental burdens. The evaluator will rely upon a combination of the data collection activities shown in Table 7 to assess changes in retail sales, stocking practices, consumer awareness, non-energy impacts among adopters in ESJ communities, supply chain engagement, and cost reductions.

### 4.3 Evaluating causality

Causality assessment in market transformation programs is required to firmly link incremental adoption and other changes in the market to MTI interventions. The program theory and logic model include theorized linkages between interventions and market outcomes. By conducting research to assess the MPIs, the evaluator will gather data from multiple lines of evidence to validate those linkages and establish causality between MTI activities and outcomes. The evaluator will assess causality for each MPI where practical to support the overall causality assessment.

The evaluator will conduct causality assessment based on a “preponderance of evidence” approach with methods including: document review; in-depth interviews with market actors, decision makers and stakeholders; and historical tracing. The evaluator will use empirical evidence from all data sources specified in the MTI Evaluability Map (see the attachment at the end of this document) to determine whether observed market outcomes (as measured by the MPIs) can be traced back to MTI interventions and non-MTI market drivers.

For example, to determine whether the Induction Cooking MTI accelerated and increased market adoption of efficient electric cooktops, the evaluator would consider all the available evidence that the MTI interventions the logic model led to the theorized outcomes as well as evidence that those outcomes increased and accelerated market adoption. In addition, the evaluator will consider alternative explanations and causes for the observed market outcomes. Consideration of evidence to support alternate explanations of change is important to avoid confirmation bias.

Table 8 provides examples of some of the questions the evaluator may consider.

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<sup>17</sup> Low-income was defined by the 2024 Baseline Market Characterization Study as at or below 80% of the median area income<sup>17</sup> and low-income segments were screened using customized income thresholds for each county, as defined by the California Department of Housing and Community Development.

<sup>18</sup> [CalEnviroScreen | OEHHA](#).

**Table 8. Causality assessment**

Causality question	Example data sources/evidence
Did the MTI lead manufacturers to develop affordable 120V battery-equipped products? How?	<ul style="list-style-type: none"> <li>• MTI salesforce documentation of meetings, conversations with manufacturers regarding Tech challenge</li> <li>• Signed manufacturer agreements</li> <li>• Manufacturer interviews - manufacturers indicate they were influenced by the MTI; didn't previously have firm plans or had different plans</li> </ul>
Did the MTI's demand aggregation strategy (builder bulk purchase agreements) increase the availability of standard appliance suites from major manufacturers?	<ul style="list-style-type: none"> <li>• <del>Manufacturer interviews - manufacturers indicate the bulk purchase commitments led them to include induction in more builder appliance packages</del></li> </ul>
Did the MTI's builder incentives and manufacturer engagement reduce the incremental cost to homeowners of induction cooking products, and lead to greater adoption in new construction?	<ul style="list-style-type: none"> <li>• <del>Builder interviews - builders indicate that the MTI incentives were passed onto homeowners and increased their interest</del></li> </ul>
Did the MTI interventions lead to increased availability of affordable induction models and increase adoption by lower income households?	<ul style="list-style-type: none"> <li>• <del>ESRPP data analysis shows increased sales in response to ESRPP engagement activities</del></li> <li>• Retailer interviews - retailers indicate the ESRPP incentives changed stocking and promotional practices</li> <li>• CBO interviews - CBOs indicate more affordable products and greater awareness of health and safety benefits influenced installations</li> </ul>
Did the MTI's efforts to build awareness of health and safety benefits of induction cooking lead to greater awareness and market adoption?	<ul style="list-style-type: none"> <li>• Program materials - messaging research identifies most compelling messaging on health and safety benefits</li> <li>• Awareness of health and safety benefits increases in sync with promotional efforts</li> <li>• Consumer and property managers indicate health and safety benefits affected their adoption</li> <li>• CBO interviews - CBOs indicate more affordable products and greater awareness of health and safety benefits influenced installations</li> </ul>
Were the observed market changes caused by non-MTI alternative market dynamics or interventions? What market results could have occurred in the absence of the MTI?	<ul style="list-style-type: none"> <li>• Historical tracing of observed market changes, including analysis of documentation, program materials, and timing</li> <li>• California program administrator interviews</li> <li>• Market actor interviews</li> </ul>

## 4.4 Forecasting, impacts, and cost-effectiveness review

### Incremental market adoption

During Phase II, the CalMTA Induction Cooking planning lead worked with the team to develop a forecast of incremental market adoption and energy impacts. CalMTA has developed forecasts for baseline market adoption (BMA) and total market adoption (TMA), along with estimates of unit energy impacts (UEI) and cost-effectiveness. CalMTA developed *ex ante* estimates of incremental MTI impacts (described in Appendix B of the MTI Plan) using the formula below.

$$\text{Net Incremental MTI impacts} = [(TMA \text{ units} - BMA \text{ units}) * UEI] - \text{utility verified impacts}$$

As part of ongoing evaluation efforts, the third-party evaluator will review model inputs, assumptions, data sources, and structure and will identify recommended revisions to improve the accuracy of impact estimates.

### Total Market Adoption forecast

CalMTA will develop and regularly update a TMA model, incorporating actual sales or shipment data as it becomes available and then forecasting into future years. The evaluator will use the most recent data available at the time to review TMA.

### Baseline Market Adoption forecast

The evaluator will review CalMTA's BMA forecast, including inputs and assumptions, and make recommendations for improvements, according to the guidelines in the CalMTA MTI Evaluation Framework. Specifically, the third-party evaluator will identify any evidence from its evaluation activities that could suggest the need to refine the original BMA forecast. For example, if the MTI causality assessment were to identify a previously unknown significant market influence that preceded or was otherwise wholly independent of MTI market deployment activities, it could indicate the need to re-estimate BMA or otherwise reconsider program attribution and calculation of incremental market impacts.

The BMA forecast is a major determinant of the estimated savings attributable to the program. Given the challenges inherent in forecasting a counterfactual scenario, the BMA forecast may constitute the most significant source of uncertainty surrounding estimated savings. As such, under certain circumstances it could make sense to consider revising the BMA forecast.

However, it can be counterproductive to revise the baseline forecast unless it is truly warranted. The data most readily available to the evaluator are the efficient units appearing in the market over time, and those may well reflect effects caused by the MT program itself. There is a risk, therefore, that evaluators may attribute observed acceleration in efficient market units to an acceleration in the BMA when it is really a result of MTI market interventions. Revising the baseline upward in such a case would lead to underestimation of the program's accomplishments.



### *Guidelines for considering BMA revision*

Recommending a revision to the BMA forecast requires the evaluator to balance the desirability of incorporating relevant new information with the risk of misattributing MTI market effects to extrinsic market changes. To serve the best interests of California, the BMA forecast should be revised only when evaluators have a high level of confidence that one or more initial assumptions were incorrect, or some crucial element of the market changed independently of the initiative and that the MTI did not significantly contribute to an observed change in market adoption. CalMTA identified three scenarios that warrant consideration of revising the BMA forecast and two guidelines for whether the revision should be made. These scenarios and guidelines are detailed in the MTI Evaluation Framework, and the third-party evaluator should review them carefully before reviewing the BMA Forecast.

In the first year, the evaluator will conduct a comprehensive review of the BMA forecasting model approach, along with inputs and assumptions. In subsequent years, the evaluator will revisit the BMA forecast only if it identifies evidence from its evaluation activities that could suggest the need to refine the original BMA forecast.

### *PA impacts*

The evaluator will review net verified impacts attributable to the PAs based on claimed and verified savings associated with claims data from CEDARS and evaluation findings. These impacts will be subtracted from incremental adoption (TMA-BMA) as shown in the equation at the start of this section, ensuring no double-counting of impacts between CalMTA and other PAs.

Per the MTI Evaluation Framework, verified PA impacts reported in CEDARS will be subtracted from incremental market adoption (TMA-BMA) to calculate incremental impacts attributable to the MTI and associated cost-effectiveness. CalMTA will, however, also report total incremental market adoption (TMA-BMA), because the Induction Cooking MTI Plan includes substantial interventions without which inclusion of these technologies in utility resource acquisition would not be possible. Although we have agreed to calculate incremental impacts without utility-verified impacts, it will be important for the third-party evaluator to qualitatively assess the MTI's influence on those PA impacts.

## 4.5 Cost-effectiveness model

As part of the ongoing evaluation, the third-party evaluator will review the cost-effectiveness model, and the model inputs, assumptions, and data sources, that CalMTA used to calculate cost effectiveness of the MTI. CalMTA's approach is fully documented in Appendix B of the MTI Plan and **Attachment B: Market Forecasting and Cost Effectiveness MEMO SUMMARIZING UPDATES to Appendix B**.

Evaluating cost-effectiveness involves outputs from the market forecasting model as well as initiative costs, incremental measure cost, avoided cost, load shape, and UELs. This application of inputs considers the baseline installation conditions, baseline and efficient technologies, fuel types, target sector, and costs incurred by all stakeholders in the MTI implementation. Moreover,



both the costs and benefits change over time, due to factors such as effective useful life, regulatory policy, electricity and gas rates, and initiative funding.

During the first evaluation year, the evaluator will review the inputs and assumptions, and the model used by CalMTA that inform the cost-effectiveness forecast, and in subsequent years, any updates made to the models. The review will include the following model inputs:

- **Incremental adoption forecast.** Incremental adoption will be forecasted as an input to the cost-effectiveness model. The evaluator will review this forecast and make recommendations for improvement.
- **Incremental measure costs.** Incremental measure costs reflect the difference in cost between the baseline cooking technology and induction cooktop and range technology. For the full discussion of how the incremental cost was forecasted see Appendix B of the MTI plan. The evaluator will review the incremental costs and cost trends applied in the CalMTA cost-effectiveness model. The evaluator will determine, given recent market data and market conditions, if the cost assumptions are reasonable or need to be adjusted.
- **Unit Energy Impacts.** The methodology to develop UEs for induction cooking technologies is detailed in Appendix B of the MTI Plan. The evaluator will review unit energy impacts (including savings estimates, load shapes, and effective useful life), and assumptions and methodology to make recommendations for improvements, such as appropriateness of hourly usage profiles used in modeling savings.

## 4.6 Ancillary benefits and costs

In addition to reviewing the benefits and costs assumed in the MTI cost-effectiveness model, the third-party evaluator should identify and summarize non-energy factors and quantify them where feasible without extensive additional investment in data collection. These may include factors such as changes to repair or service costs, improved indoor air quality and health, and improved safety (for example, from reduced fire or burn incidents), if they prove significant. Elements like service life will already be included in cost-effectiveness calculations.

## 4.7 Reporting

CalMTA anticipates that the third-party evaluator will produce an annual market progress evaluation report that summarizes findings from the prior year's evaluation research and analysis activities, along with recommendations to improve MTI effectiveness.



## Attachment: MTI Evaluability Map

The following definitions apply to the table below.

Primary influence: Primary focus of the MTI; keys to evaluating performance

Secondary influence: other orgs already working on this; the MTI had a hand in the change but different standard of causality

MPI categories:

A: Awareness

R: Retail

B: **Building Owners/Property Managers**  
Builders

S: Code/Standard

L: Regulatory

U: Units

M: Manufacturers

Logic Model outcome - primary influence	MPI #	Time-frame	Market progress indicator (MPI)	Market milestone	Baseline	Data source - MPI	Data source - causality
Manufacturers respond to specification with plans for product roadmaps of 120V <del>battery-</del> equipped induction range products	<b>M1</b>	Short Term	Number of manufacturers who respond with plans for product roadmaps	<del>2 manufacturers engage with CalMTA Tech Challenge by 2027</del> <b>At least one major manufacturer (ie, LG, Panasonic, GE) includes 120V in its roadmap by 2027</b>	0	Salesforce documentation; Manufacturer interviews	Manufacturer interviews
Increased availability of affordable 120V <del>battery-</del> equipped induction products	<b>M2</b>	Med Term	Number of 120V products available to purchase from major retailers either in-store or online (not only direct from manufacturer)	At least 2 <del>competitively priced</del> <b>MTI qualified</b> 120V products are available to purchase from major retailers either in-store or online (not only direct from manufacturer) by 2031	<del>2 products</del> <b>0</b>	Online shopping and shelf-stocking study	Manufacturer interviews; retailer interviews; Salesforce documentation
	<b>M3</b>		Incremental cost of battery-equipped 120V induction compared to 240V induction	Average price of 120 V battery products is not more than double the average price of <del>240V induction</del> <b>gas ranges</b> by 2031	Median price of a standard standalone induction cooktop is <del>\$1,380</del> <b>\$1,049</b> , while the median price of an induction range is <del>\$1,700</del> <b>\$1,329</b> . A 120V induction cooktop with a battery-(standalone cooktop or a range)- has a median price of <del>\$6,000</del> <b>\$4,612</b> .	Online shopping and shelf-stocking study; <b>ESRPP Data</b>	Manufacturer interviews; Salesforce documentation
<del>Builders change design plans and installation of induction cooking grows in new construction</del>	<b>B4</b>	Short Term	<del>Number of bulk purchasing agreements in place with builders</del>	3 <del>bulk purchase</del> agreements in place with production builders	0	Salesforce documentation; <del>builder</del> <b>property owner and manager</b> survey/manufacturer interviews	Manufacturer <del>builder</del> <b>interviews/property owner and manager survey</b> ; Salesforce documentation

Logic Model outcome - primary influence	MPI #	Time-frame	Market progress indicator (MPI)	Market milestone	Baseline	Data source - MPI	Data source - causality
<b>MF property management firms and building owners increasingly include 120V products in electrification efforts</b>			<b>Number of agreements in place with key/influential property owners or managers that include 120V products</b>	<b>key property owners or managers</b> -in California by 2027			
Builders in both single-family and multifamily increasingly utilize induction products	<b>B5</b>	Med Term	Number of appliance kitchen suites (standard order) that include induction models used by builders	At least 4 brands offer in-suite induction models in the majority of their packages to builders with shipping timelines on par with gas and electric alternatives by 2029	0	Manufacturers interviews and builder surveys	Manufacturer interviews
Market share of induction and ENERGY STAR-certified electric radiant cooking products increase relative to gas cooking products	<b>B6</b>	Med Term	Market share in new construction and existing homes	No specific milestone; evaluator will track MPI over time to assess progress	Unknown; to be measured	Manufacturer interviews; builder surveys; Salesforce documentation	Manufacturer interviews; builder surveys; Salesforce documentation
Average price of induction ranges and cooktops decline	<b>R5</b>	Med Term	Incremental cost of 240V options above electric radiant	Incremental cost of 240V options above electric radiant shrinks to less than 10% by 2029	Unknown; to be measured	Manufacturer interviews; builder interviews	Manufacturer interviews; builder interviews; Salesforce documentation
EPA develops version 2.0 of ENERGY STAR specification for cooking which includes increased efficiency and provisions for 120V battery-equipped range product	<b>S6 S8</b>	Med Term	ENERGY STAR version 2.0 specification developed <b>and includes 120V products</b>	ES Spec is updated to include battery-equipped <b>120V</b> products and reflects at least 10% increase in efficiency (reduction in IAEC) by 2030	N/A	ENERGY STAR data; Salesforce documentation	EPA Interviews; Salesforce documentation
Retail partners stock and sell more affordable products <b>and 120V options</b> in ESJ predominant communities	<b>R7 R9</b>	Short Term	<i>Share of efficient electric</i> Number of MTI-qualified 120V induction available through retail (same as M2) <i>stocked in brick-and-mortar locations; stocking trends are similar in stores in ESJ communities</i>	Share of induction products in brick-and-mortar retailers participating in ESRPP increases in stores in ESJ communities (as defined by ESRPP for Equity Pilot) by 2027	Analysis in progress. Not Available <b>0</b>	Online shopping and shelf-stocking study	Retailer Interviews; Salesforce documentation
	<b>R8 R10</b>		<i>Price of 120V induction and ES Electric Radiant in brick-and-mortar locations in ESJ communities</i>	Average price of induction and ES-Radiant products are lower in ESRPP stores in ESJ communities compared to other stores by 2027. <b>No specific milestone; evaluator will track MPI over time to assess progress</b>	Analysis in progress. Not Available-Expected to be introduced at/under \$1,800	Online shopping and shelf-stocking study	Retailer Interviews; Salesforce documentation
Awareness and preference for efficient electric cooking increases	<b>A9 A11</b>	Short Term	<i>Percentage of LI and non-LI consumers who report they are</i>	No specific milestone; evaluator will track MPI over time to assess progress	13% LI; 20% non-LI.	Consumer survey; analysis of LI vs. non-LI	Preponderance of evidence from all data sources



Logic Model outcome - primary influence	MPI #	Time-frame	Market progress indicator (MPI)	Market milestone	Baseline	Data source - MPI	Data source - causality
			<i>knowledgeable about induction cooking</i>				
	<b>A10 A12</b>		<i>Percentage of induction awareness property managers</i>	No specific milestone; evaluator will track MPI over time to assess progress	46%	Property Manager survey	Preponderance of evidence from all data sources
	<b>A11 A13</b>		<i>Percentage of LI and non-LI consumers who state they would prefer to purchase induction type products</i>	No specific milestone; evaluator will track MPI over time to assess progress	LI: 16% prefer induction Non-LI: 25% prefer induction	Consumer survey	Preponderance of evidence from all data sources
	<b>A12 A14</b>		<i>Percentage property managers who prefer to purchase induction type products</i>	No specific milestone; evaluator will track MPI over time to assess progress	- 50% of all property managers prefer electric or induction to gas	Property Manager survey	Preponderance of evidence from all data sources
	<b>A13 A15</b>		<i>Percentage of LI and non-LI consumers for whom health or safety benefits of induction are a top consideration in their preference</i>	No specific milestone; evaluator will track MPI over time to assess progress	LI Health: 2% & Safety 41% Non-LI Health: 10% & Safety: 37%	Consumer survey	Preponderance of evidence from all data sources
	<b>A14 A16</b>		<i>Percentage of property managers aware of health and safety benefits of induction</i>	No specific milestone; evaluator will track MPI over time to assess progress	8% health 32% safety	Property Manager survey	Preponderance of evidence from all data sources
Consumers utilize induction 120V battery-equipped range product as tool for increased energy benefits (resilience, DR load flexibility)	<b>A15 A17</b>	Long Term	Percentage of consumers indicating that resilience and DR load shifting were influential in the purchase of 120V battery-equipped products	No specific milestone; evaluator will track MPI over time to assess progress	Not available	Consumer survey	Consumer survey
	<b>A16 A18</b>	Long Term	Percentage of consumers aware of resilience and peak shifting benefits 120V battery-equipped products	No specific milestone; evaluator will track MPI over time to assess progress	Not available	Consumer survey	Consumer survey
Market share of induction and ENERGY STAR rated electric radiant cooking products increase relative to gas cooking products	<b>U17 U19</b>	Med Term	Efficient electric cooktop <b>cooking appliance</b> market share (% of full category sales) - <b>120V Battery</b> - <b>120V Non-Battery</b>	Market share <b>of all efficient electric</b> is 10% by 2029 <b>Market share of 120V 10% by 2031</b>	0%	ESRPP qualifying and full-category sales data	All sources
Market share of efficient electric reaches majority for all cooktops and ranges sold in CA		Long Term	- <b>240V Induction</b> - <b>240V ES Radiant</b>	Market share (% of full category sales) reaches 20% by 2033		ESRPP qualifying and full-category sales data	All sources
Consumers adopt induction 120V battery-equipped range product to realize additional benefits (e.g., resilience, DR load flexibility)	<b>U18 U20</b>	Long Term	Units of adoption	No specific milestone; evaluator will track MPI over time to assess progress	Not available	ESRPP qualifying and full-category sales data	
Logic Model outcome - secondary influence	MPI #	Time-frame	Market progress indicator (MPI)	Market milestone	Baseline	Data source - MPI	Data source - causality



Logic Model outcome - primary influence	MPI #	Time-frame	Market progress indicator (MPI)	Market milestone	Baseline	Data source - MPI	Data source - causality
Programs include <b>120V</b> product as measure, especially in programs that target LI customers	<b>P19 P21</b>	Short Term	<i>Number of California PAs who add 120V induction cooktops to their programs</i>	No specific milestone; evaluator will track MPI over time to assess progress	5	Salesforce documentation; PA Interviews	Salesforce documentation; PA Interviews;
120V products increasingly used as solution in zonal decarbonization targeted gas infrastructure decommissioning efforts	<b>P20</b>	Med Term	<i>Number of zonal projects that use MTI qualified products</i>	No specific milestone; evaluator will track MPI over time to assess progress (increase)	0	Program documentation	Zonal decarbonization program staff interviews; Salesforce data
Prevalence of electrification-enabling rate structures grows across the state	<b>L21 L22</b>	Med Term	<i>The number of policies or new electrification-friendly rate structures that the MTI supported that are proposed/referenced by utilities, regulatory bodies, etc.</i>	At least three policy forums, partnerships, or opportunities that CalMTA engages with, support the change to electrification friendly rate structures by 2029	N/A	Documentation of support from policy forums and partnerships, Interviews with policy forums and partnerships;, utility rate proposals at CPUC rate proceedings and C&S proposals at the CEC and CARB proceedings	Interviews with policy forums and partnerships; Salesforce documentation
California Air Resources Board (CARB) and air quality districts set zero emissions appliance standards beyond space and water heating to include the sale of new cooking products.	<b>S22 S23</b>	Long Term	CARB and Air quality appliance standards	No specific milestone; evaluator will track MPI over time to assess progress	N/A	Proceedings for CARB and standards setting bodies	Salesforce documentation



Attachment G:

Appendix G: Risk Management Plan - REDLINE



# Induction Cooking Market Transformation Initiative

## Appendix G: Risk Management Plan

**Revised March 6, 2026 in compliance with CPUC Decision 25-11-023**

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CalMTA is a program of the California Public Utilities Commission (CPUC) and is administered by Resource Innovations

## Introduction

This document details the potential risks that could negatively impact the Induction Cooking Market Transformation Initiative (MTI) and CalMTA's plan to monitor and mitigate the risks. Additional information is included to establish the severity of the risk, likelihood of occurring, indicators that the risk is occurring, and assumptions around the possible mitigation approach. If the risk is designed with an "\*", then the risk is listed in Section 9 of the Induction Cooking MTI Plan as part of the summary of key risks that could impact this MTI.

The risks are listed in the chronological order in which we expect them to become evident (assuming do they occur), generally corresponding to the timing of CalMTA's planned strategic interventions. For example, the first risk is associated with one of CalMTA's first interventions: engaging manufacturers and motivating them to invest in the development and commercialization of a 120V battery-equipped induction range that meet the needs of California's electrical infrastructure. We are defining "high," "medium," and "low" for each risk as follows.

For "Probability of Occurring" in the third column, CalMTA is defining:

- **High:** Through our research and discussion with market actors, CalMTA deems this risk having a high probability of occurring. The program needs to monitor closely and identify a solid backup plan with resources that can be deployed to mitigate the risk if it comes to fruition.
- **Medium:** This risk has a medium probability of occurring given what we know about the market. The MTI needs to track and have a plan to mitigate.
- **Low:** The probability of this risk occurring is low based on what know about the market to date. It could have some impact on the need for resources and timing, so the MTI needs to track it.

For "Severity" in the fourth column, CalMTA is defining these as follows:

- **High:** If this risk plays out and our mitigation approach is unfeasible, then the success of MTI may be in jeopardy.
- **Medium:** This may have an impact on the timing or overall success of the MTI, but a solid mitigation approach exists, and the MTI will be able to pivot with more time or resources.
- **Low:** This level of risk will likely require a program intervention adjustment, but it will not jeopardize the timing or resources needed level.



### Appendix G: Risk Management Plan for Induction Cooking

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Table 1. Risk assessment

	Risk	Probability of occurring	Severity	How will we know the risk is occurring?	Responsible & tracking <sup>1</sup>	Mitigation approach
1*	<b>Large enough demand signal for manufacturers:</b> Multifamily (MF) building owners do not agree to purchase enough units of the product described in the Tech Challenge, resulting in a smaller than needed demand signal for manufacturers to invest in further product development.	Medium	Medium high	Engagement with MF building owners  Engagement with manufacturers to better understand the development of products that serve the MF market	Strategy Manager and Program Manager	Work with MF building owner trusted partners to get additional signed agreements in place.  CalMTA could pay a portion of the product costs to reduce cost to building owners or CalMTA develops bulk purchase pricing with manufacturers to help reduce costs.  CalMTA couples promise to purchase with another program like Energy Savings Assistance (ESA) to help offset costs.
2*	<b>MF building owners' willingness to overcome initial price/upfront costs associated with induction:</b> Owners of MF may not be willing to pay the additional costs likely to be associated with purchasing and installing induction cooking products in their units.	Medium	Medium	Responses to Tech Challenge  Interviews with MF building owners	Strategy Manager and Market Research and Evaluation Lead	CalMTA subsidizes incremental costs for some buildings in MF building owner portfolio.  Negotiate bulk purchase agreements with manufacturers to drive down unit costs.  Demonstrate induction's substantial benefits in terms of resilience, load shifting, and operating costs for tenants.
3*	<b>Manufacturer response to product that meets California needs:</b> Manufacturers do not respond to Tech Challenge with product roadmaps that meet 120V electrical needs ( <b>both battery-enabled and non battery-enabled</b> ) of California market and at a reasonable price point for low-income consumers. <sup>2</sup>	Medium	High	Engagement with manufacturers and lack of response to Tech Challenge	Product Management	Show market that it can be done through <b>four two</b> manufacturers that we know have already done it.  Facilitate and support the expansion of the intellectual property for the battery-equipped <b>and non-battery-equipped</b> products from one of the startup manufacturers to other manufacturers.  Reward the <b>four two</b> known manufacturers that currently have the product with the entire MF order to stimulate competition and other manufacturers to join.  Build a larger demand signal with California programs and other partners targeting a broader set of MF building owners.  Explore alternatives solutions that mitigate the need for electrical panel upgrades for consumers changing from gas to electric cooking.
4	<b>Induction product quality and maintenance costs:</b> Being a newer, electronic product compared to gas cooking products, there is a risk associated with product quality and possible repair costs which are known to be higher for induction.	Medium	High	Consumer and builder surveys  Manufacturer engagement	Market Research and Evaluation Lead and Product Management	Engage manufacturers on product improvements that impact product quality and durability.  Require longer warranties and warranties that cover induction-specific issues, like electronics problems due to voltage spikes from manufacturers for induction products through Tech Challenge.  Work with ENERGY STAR to include increased warranty requirements.

<sup>1</sup> The roles listed under the column "responsible & tracking" will be on point to track and identify if the risk is something that needs attention. The team will then work to deploy the appropriate mitigation strategy.

<sup>2</sup> According to Assembly Bill 1550, low-income communities and households are defined as those who live in census tracts or households at or below 80% of the statewide median income or meeting the threshold designated as low-income by the California Department of Housing and Community Development's Revised 2021 State Income Limits. CalMTA uses the term "low-income" to describe individuals or households whose income status poses a barrier to adoption of the technology.



Appendix G: Risk Management Plan for Induction Cooking

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	Risk	Probability of occurring	Severity	How will we know the risk is occurring?	Responsible & tracking <sup>1</sup>	Mitigation approach
						Engage retailers on requiring increased warranties from their manufacturer partners.  Identify and then engage repair market actors in California and engage on ways to drive repair costs down (i.e., increase training, manufacturers engagement).
5*	<b>Consumer and builder perception about induction:</b> Consumers and builders continue to perceive gas cooking as superior and are not willing to make the switch to electric cooking.	Medium	High	Consumer and builder surveys	Market Research and Evaluation Lead	Deploy targeted information campaign on health benefits of induction cooking with trusted health advocates.  Deploy additional “Chefluencer” events to consumers and builders coupled with a more direct marketing campaign from CalMTA (not just through the hands of others).  Expand loaner programs to get induction into the hands of consumers.  For builders/new construction, if the range is the lone gas appliance, emphasize the cost of running a gas connection for just one appliance:  Incentivize builders for including induction in model homes even if gas remains a buyer option.
6*	<b>Consumer and builder Market perception about health impacts of gas cooking:</b> Consumers and builders The market does not believe or act on the messages that gas cooking negatively impacts the health of occupants.	Medium	High	Consumer and builder surveys	Market Research and Evaluation Lead	Identify and work with additional third-party, credible partners (universities, public health advocacy partners, foundations) to develop trusted data and messages on impacts of gas cooking on occupant health.  Expand marketing tactics to focus on this message.  Deploy health advocates to deliver message on benefits of induction cooking on improved indoor air quality (IAQ).
7*	<b>Induction cooking and culture wars:</b> The negative publicity and culture wars around regulating cooking products dampens policymakers’ motivation to regulate the sale of gas cooking products.	Medium	Medium	Engagement with policymakers in California	Strategy Manager	Support policymakers with data, builder and market partners support to counter negative publicity.  Continue to focus on benefits and price declines of induction as an alternative to gas cooking.  Expand influencer campaign with celebrity chefs.
8	<b>Perception of battery-equipped products by consumers and MF building owners:</b> Consumers and owners of MF properties do not understand and embrace the new functionality offered by battery-equipped products (resilience, cooking off peak).	Low	Medium	Consumer and builder surveys	Market Research and Evaluation Lead	Support additional pilots and demonstrations that can then be used as case studies and messaging on the benefits of battery-equipped products.  For MF building owners, document financial benefits of battery-equipped products (mitigation of electrical upgrades) and reduced operating expenses while charging off peak.  Partner with utilities offering demand response rates/incentives to demonstrate the cost-saving benefits of off-peak charging of induction cooking appliances.

**Appendix G: Risk Management Plan for Induction Cooking**

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	Risk	Probability of occurring	Severity	How will we know the risk is occurring?	Responsible & tracking <sup>1</sup>	Mitigation approach
						Target demonstrations in areas with frequent power outages to show the resilience benefits of battery-equipped products.
9	<b>Inclusion in California programs:</b> Programs that support environmental and social justice (ESJ) communities ( <b>zonal electrification</b> , energy efficiency, direct install, weatherization, electrification programs), fail to include this measure in their programs.	Low	Medium	Engagement with Program Administrators (PAs) and manufacturers, CEDARS database	Strategy and Program Manager	Support program inclusion through data and market support (manufacturers, retailer, community-based organizations (CBOs) and marketing support).  Support programs through bulk purchase agreements to bring down cost for <b>programs ESJ communities</b> .
10	<b>Building owners and battery-equipped technology:</b> Building owners, especially owners of MF buildings, do not allow the battery-equipped technology to be installed in their properties (due to possible fire hazard).	Medium	Medium	Building owner surveys	Market Research and Evaluation	Support development of research and white papers that detail low risk of the type of batteries included in induction cooking products.  Work with induction cooking and battery manufacturers to document low risk of the type of batteries included in induction stoves.  Partner with local health and safety leaders (fire departments, code officials, insurance providers) to educate MF building owners on low risk.
11	<b>Prices of batteries:</b> The price of batteries does not decline enough to help reduce the overall cost of 120V battery-equipped products for ESJ communities.	Medium	Medium	Manufacturer engagement	Product Management	<b>s</b>  Encourage utility programs to provide higher incentives targeting induction products that are battery-equipped.  Partner with induction manufactures who also produce batteries on price declines.
12	<b>Retailer stocking practices:</b> Retail partners do not change stocking practices to <b>include 120V</b> focus on more affordable induction cooking products in stores that are designated as serving predominantly ESJ communities.	Medium	Medium	Retailer sales and stocking data from ENERGY STAR Retail Products Platform (ESRPP) program, interviews with retail merchants	Strategy and Program Manager	Develop marketing plans <b>and special promotions that work to introduce 120V induction products through retail</b> some retailers at targeted stores that support ESJ communities to push for greater demand.  Provide bonus incentives and other marketing strategies at local independent retailers who focus <b>on 120V products exclusively on ESJ communities</b> .
13*	<b>Electrification rates in California:</b> California utilities roll out electrification enabling rate structures, especially for ESJ communities, slower than anticipated. Without these rates, consumers will not be able to tap into the benefits of moving to induction cooking and adoption will be slowed.	Low	Medium	Engagement with policymakers, advocacy groups, the CPUC, and utility partners	Strategy and Program Manager	Across all CalMTA consumer product MTIs (Heat Pump Water Heating, Room Heat Pumps, and Induction Cooking) support policy makers and advocates in the movement towards electrification friendly rates through bill impact information, avoided costs, and other non-energy benefits for the consumer.
14	<b>Impact of new administration on IRA funding rollout in CA:</b> The new administration discontinues tax credits that cover induction cooking products and/or they expire before this MTI is able to leverage them.	Medium	Low	Engage with <del>the DOE, EPA, manufacturers,</del> California Energy Commission, and PAs	Strategy and Program Manager	Continue to push for induction inclusion in other types of programs.  Provide layered bulk purchases of efficient cooking products.  Engage CBOs on layered bulk purchasing pricing for efficient cooking products.  Engage online energy efficiency platforms that offer financing options for ESJ consumers with targeted induction promotions.
15*	<b>Consumer price:</b> The price of induction cooking products do not decline enough to compete with gas cooking.	Medium	High	Sales data collection, interviews with manufacturers	Market research and evaluation	New specification to manufacturers that targets basic models of induction cooking that do include features that drive costs up.

**Appendix G: Risk Management Plan for Induction Cooking**

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	Risk	Probability of occurring	Severity	How will we know the risk is occurring?	Responsible & tracking <sup>1</sup>	Mitigation approach
						Continue to push for induction inclusion in other types of programs to help bring down costs.
16	<b>ENERGY STAR specification 2.0 for cooking products:</b> The Environmental Protection Agency (EPA) does not update the ENERGY STAR specification for cooking products within the medium term (3-6 years).	Medium	Low	Engagement with EPA and national stakeholders	Strategy and Program Manager	<p>Provide data and proof of market acceptance in California to EPA's ENERGY STAR program.</p> <p>Develop California induction specification.</p> <p>Continue to partner and expand efforts to support other voluntary standards and specifications.</p> <p>Ensure continued tracking of market share, awareness and other relevant data so that when EPA restarts ENERGY STAR efforts, they will be able to rapidly update specifications to capture gains acquired during previous period.</p>
17	<b>Additional policies and code changes:</b> California policy makers and code officials fail to pass additional policies and code changes for new construction that favor electric cooking over gas products (gas labeling, additional code requirements to include gas cooking).	Medium	Low	Engagement with policymakers and Codes and Standards Advocacy partners	Product Management and Strategy Manager	<p>Provide policymakers with data and results from demonstrations that show what is possible from a policy perspective.</p> <p>Influence and aggregate additional partners to support policy changes.</p>

Attachment H:

Appendix H: Phase III Cost Estimate – REDLINE



# Induction Cooking Market Transformation Initiative

## Appendix H: Phase III Cost Estimate

**Revised March 6, 2026 in compliance with CPUC Decision 25-11-023**

~~December 18, 2024~~ **March 6, 2026**

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# Introduction

The cost estimates contained in this appendix include only the estimated costs for Phase III: Market Deployment and do not include Phase II: Program Development costs. Market Transformation Initiative (MTI)-specific Phase II costs for conducting research, completing strategy pilots, and developing the MTI Plan were included in CalMTA's authorized start-up budget and reflected in the 2024 and 2025 Annual Budget Advice Letters, **and have been revised and updated to include 2026 Phase II costs.** Phase II costs are included in the total MTI lifecycle costs that were modeled to determine cost-effectiveness, as described in Appendix B: Market Forecasting and Cost-Effectiveness Modeling Approach.

This estimate is based on the MTI logic model and program strategy and was further informed by the experience of CalMTA team members who have delivered market transformation programs in other states. **Additionally, Ordering Paragraph (OP) 1 of D.25-11-23 (Decision) conditionally approved the Induction Cooking MTI subject to CalMTA revising the MTI to narrow the focus of the MTI to 120V technologies, with or without battery backup, and to modify the budget to reflect those changes. Further, D.25-11-023 extended the implementation period for the first funding cycle of the CalMTA program from five years to six years (i.e., 2026-2031).**

**CalMTA proposes a revised Phase III Induction Cooking deployment budget of \$29,672,000 over six years of deployment that is below the cap approved in the Decision (\$32,399,000). This does not include 3<sup>rd</sup> party evaluation costs, as that is a separate line item in the Decision. To align with the Decision, the budget has been updated to reflect the six-year deployment period with an approximately six-month delay in Year 1, which shifts the timing for releasing the RFP and for activities associated with selecting and onboarding a program implementer to support Phase III market development. The market for the 120V induction technology is more nascent in its market introduction compared to 240V products. This will require more time and engagement with supply chain market actors, especially in the early years of Phase III, and impacts the Phase III budget. Overall, this revised budget reflects itemized changes aligned with the updated logic model, interventions, indicators, and milestones over the six-year deployment period. Details on specific impacts to the individual intervention areas of supply chain engagement (manufacturers, retailers, and builders) and marketing are detailed in the next section.**

CalMTA acknowledges that no Phase III deployment funds may be spent until the approval of this Tier 2 Advice Letter by the Energy Division.

The estimate will be further refined as Phase III activities are launched and as the program strategy evolves over the life of CalMTA's market development activities. CalMTA's activities will focus on filling gaps not currently addressed by other programs; therefore, cost estimates may also change based on ongoing and future collaboration. Annual cost estimates will be refined in consultation with CPUC staff and the Market Transformation Advisory Board (MTAB) as part of



the annual operations planning process, which may include fund-shifting between and among activities, MTIs, and program years.

## Budget activity definitions

The following definitions describe the types of actions included in the Phase III cost estimate. Detailed descriptions of proposed market interventions for the Induction Cooking MTI Plan are included in Section 2: Market Transformation Theory & Opportunity.

- **MTI oversight, strategy, and management:** Activities required to manage MTI core deliverables such as subcontractor identification, onboarding and management, strategy development, stakeholder outreach, and metric reporting.
- **Awareness-building:** Awareness-building activities associated with the MTI strategy, including campaign strategy design and production, and campaign advertisements as required to build demand.
- **Policy development/support:** Activities required to support and influence relevant policies and standards as called out in the MTI strategy, such as federal and voluntary appliance standards (i.e., data-sharing, expert participation, and commenting on draft regulations or standards).
- **Supply chain engagement:** Activities along the full supply chain as defined in the MTI strategy, including workforce education and training (e.g., workforce outreach and recruitment, training material development and implementation), manufacturer outreach and engagement to support the development of products to better reflect the needs of California consumers, and retailer engagement on stocking practices, messaging, and program participation.
- **Market research:** Market research, as needed, to provide market insights that inform ongoing MTI strategy refinement and MTI effectiveness.
- **Data collection:** Continued collection of data over the course of the MTI to monitor the success of interventions as they progress and for future long-term monitoring and tracking.
- **Mid- or upstream incentives:** Manufacturer and retailer incentives to encourage product innovation and sufficient stocking practices.
- **Downstream incentives:** Consumer-facing incentives to encourage purchasing and adoption and create a meaningful market pull.
- **Evaluation:** Activities performed by the third-party evaluator as described in Appendix F: Evaluation Plan, including review of market adoption forecasts and cost-effectiveness, market progress evaluations, and long-term monitoring.



Table 1 contains annual cost estimates by major program activity for the first **six five** years of implementation, representing costs incurred over the initial CalMTA funding period authorized in D.25-11-023. A more detailed breakdown of these costs by CalMTA labor, CalMTA non-labor, third party-contracted labor, and incentives is included in the Application five-year budget.

**Table 1. Year 1-5-6 Phase III cost estimate**

<b>Activity</b>	<b>Year 1 cost estimate</b>	<b>Year 2 cost estimate</b>	<b>Year 3 cost estimate</b>	<b>Year 4 cost estimate</b>	<b>Year 5 cost estimate</b>	<b>Year 6 cost estimate<sup>1</sup></b>	<b>Six Five-year total</b>
<b>Program implementation</b>							
MTI oversight, strategy, and management	<del>\$1,094,000</del> <b>\$557,000</b>	<del>\$1,139,000</del> <b>\$1,214,000</b>	<del>\$1,173,000</del> <b>\$1,251,000</b>	<del>\$1,208,000</del> <b>\$1,288,000</b>	<del>\$1,245,000</del> <b>\$1,327,000</b>	<del>\$1,244,682</del> <b>\$1,434,000</b>	<del>\$7,104,000</del> <b>\$7,071,000</b>
Awareness-building	<del>\$1,850,000</del> <b>\$250,000</b>	<del>\$2,200,000</del> <b>\$2,000,000</b>	\$2,400,000	<del>\$2,000,000</del> <b>\$2,400,000</b>	\$1,500,000	<del>\$1,500,000</del> <b>\$500,000</b>	<del>\$11,450,000</del> <b>\$9,050,000</b>
Policy development/support	\$100,000	\$120,000	\$120,000	\$100,000	\$100,000	<del>\$100,000</del> <b>\$50,000</b>	<del>\$640,000</del> <b>\$590,000</b>
Supply chain engagement	<del>\$500,000</del> <b>\$800,000</b>	<del>\$500,000</del> <b>\$1,000,000</b>	<del>\$500,000</del> <b>\$1,000,000</b>	<del>\$200,000</del> <b>\$800,000</b>	<del>\$200,000</del> <b>\$400,000</b>	<del>\$200,000</del> <b>\$100,000</b>	<del>\$2,100,000</del> <b>\$4,100,000</b>
<b>Market research</b>							
Market research	\$108,000	\$99,000	\$102,000	\$105,000	\$108,000	<del>\$108,180</del> <b>\$111,000</b>	<del>\$630,360</del> <b>\$633,000</b>
Data collection	<del>\$100,000</del> <b>\$78,000</b>	\$125,000	\$150,000	\$150,000	\$125,000	\$125,000	\$753,000
<b>Incentives</b>							
Mid-/upstream incentives	<del>\$1,200,000</del> <b>\$225,000</b>	<del>\$2,000,000</del> <b>\$500,000</b>	\$2,000,000	\$1,500,000	<del>\$1,500,000</del> <b>\$1,750,000</b>	\$1,500,000	<del>\$9,700,000</del> <b>\$7,475,000</b>
Downstream incentives	-	-	-	-	-	-	-
<b>Sub-Total Implementation</b>	<del>\$4,952,000</del> <b>\$2,118,000</b>	<del>\$6,183,000</del> <b>\$5,058,000</b>	<del>\$6,445,000</del> <b>\$7,023,000</b>	<del>\$5,263,000</del> <b>\$6,343,000</b>	<del>\$4,778,000</del> <b>\$5,310,000</b>	<del>\$4,778,000</del> <b>\$3,820,000</b>	<del>\$32,399,000</del> <b>\$29,672,000</b>

<sup>1</sup> A sixth year was added by the CPUC in D.25-11-023 to the Phase III initial budgets, so an additional column in Table 1 above has been added. The 6<sup>th</sup> year replicated the Year 5 implementation budget.



Activity	Year 1 cost estimate	Year 2 cost estimate	Year 3 cost estimate	Year 4 cost estimate	Year 5 cost estimate	Year 6 cost estimate <sup>1</sup>	Six Five-year total
<b>Budget</b>							
<b>Evaluation</b>							
Program evaluation	\$237,000	\$244,000	\$251,000	\$259,000	\$267,000	\$207,000	\$1,465,000
<b>Total</b>	<del>\$5,189,000</del> <b>\$2,355,000</b>	<del>\$6,427,000</del> <b>\$5,302,000</b>	<del>\$6,697,000</del> <b>\$7,274,000</b>	<del>\$5,522,000</del> <b>\$6,602,000</b>	<del>\$5,045,000</del> <b>\$5,577,000</b>	<del>\$4,985,000</del> <b>\$4,028,000</b>	<del>\$33,925,000</del> <b>\$31,137,000</b>

Below are details on the main budget changes made in compliance with D.25-11-023. By OP 1 of D.25-11-23, the Commission directed CalMTA to narrow the focus of its originally proposed Induction Cooking MTI to 120V technologies, with or without battery backup. CalMTA now proposes a Revised Induction Cooking MTI Plan that complies with the Decision as follows:

- The largest principal implementation budget impacts and revisions to the now proposed Revised Induction Cooking MTI Plan in compliance with the Decision are driven by the strategic shift to focus on 120V induction products. Currently, there are two versions of these products: battery-enabled and non-battery-enabled. However, both are in early market development and made by different manufacturers. The 120V non-battery-enabled option is not yet available and, in early prototype phase, even farther behind than the battery-enabled products. Given this situation, the revised MTI needs to conduct manufacturer engagement on two distinct products. This almost doubles the revised MTI’s budget allocation for supply chain engagement to develop product roadmaps, conduct product and field testing, and develop a unique value proposition for consumers and building owners. As shown in the table above, the budget for the supply chain engagement intervention for the revised MTI increased from \$2,100,000 to \$4,100,000 over the six-year time period.
- This refocusing on 120V products in the revised MTI also impacted near-term retail engagement and midstream stocking incentives that originally targeted available 240V products. These incentives were removed in the early MTI years as there are no 120V products yet available through retail. As more 120V products (both battery-enabled and non-battery-enabled) become available and enter the retail market, this will change, so retailer incentives shifted into the latter part of Phase III. In addition, the refocus on 120V products resulted in removing any builder incentives for the new construction market, as this market can utilize currently available 240V products. Between these two changes, the budget for midstream incentives in the revised MTI was reduced from \$9,700,000 to \$7,475,000.



- **Consumer awareness of induction cooking and its benefits remains a barrier and will still require a significant investment. This awareness building still needs to be done before broad adoption of induction cooking products can take place. Yet, because 120V products are not yet broadly available, these costs are delayed somewhat and consequently reduced in the revised MTI. The 120V products, with their unique benefits to multifamily housing, will also require more targeted marketing towards building owners and renters. Over the six-year period, this budget item was reduced in the revised MTI from the \$11,450,000 proposed in the original MTI to \$9,050,000.**

Table 2 contains annual cost estimates by major program activity for the full 20-year program period, representing all Phase III costs required to achieve full market transformation and to validate all impacts.

**Table 2. Phase III cost estimate**

<b>Activity</b>	<b>Years 1-5-6 cost estimate</b>	<b>Years 7 6-10 cost estimate</b>	<b>Years 11-15 cost estimate</b>	<b>Years 16-20 cost estimate</b>	<b>Total Phase III cost estimate</b>
<b>Program implementation</b>					
MTI oversight, strategy, and management	\$7,104,000 <b>\$7,071,000</b>	\$1,405,000 <b>\$167,000</b>	<b>\$45,000</b>	-	\$7,108,000 <b>\$7,283,000</b>
Awareness-building	\$11,450,000 <b>\$9,050,000</b>	\$500,000 <b>\$400,000</b>	-	-	\$10,450,000 <b>\$9,450,000</b>
Policy development/support	\$640,000 <b>\$590,000</b>	\$100,000 <b>\$50,000</b>			\$640,000 <b>\$640,000</b>
Supply chain engagement	\$2,100,000 <b>\$4,100,000</b>	-	-	-	\$1,900,000 <b>\$4,100,000</b>
<b>Market research</b>					
Market research	\$630,000 <b>\$633,000</b>	-	-	-	\$633,000 <b>\$633,000</b>
Data collection	\$775,000 \$753,000	\$105,000	\$149,000	\$101,000	\$1,202,000 <b>\$1,108,000</b>
<b>Incentives</b>					



<b>Activity</b>	<b>Years 1-5-6 cost estimate</b>	<b>Years 7 6-10 cost estimate</b>	<b>Years 11-15 cost estimate</b>	<b>Years 16-201 cost estimate</b>	<b>Total Phase III cost estimate</b>
Mid-/upstream incentives	<del>\$9,700,000</del> <b>\$7,475,000</b>	<del>\$500,000</del> <b>\$1,250,000</b>	-	-	<del>\$8,700,000</del> <b>\$8,725,000</b>
Downstream incentives	-	-	-	-	-
<b>Sub-total Implementation Budget</b>	<del>\$32,399,000</del> <b>\$29,672,000</b>	<del>\$4,168,000</del> <b>\$1,972,000</b>	<b>\$194,000</b>	<b>\$101,000</b>	<b>\$31,939,000</b>
<b>Evaluation</b>					
Program evaluation	<b>\$1,465,000</b>	<b>\$314,000</b>	<b>\$448,000</b>	<b>\$302,000</b>	<b>\$2,529,000</b>
<b>Total</b>	<del>\$33,865,000</del> <b>\$31,137,000</b>	<del>\$3,479,000</del> <b>\$2,286,000</b>	<b>\$642,000</b>	<b>\$403,000</b>	<del>\$33,477,000</del> <b>\$34,468,000</b>



**Appendix H: Phase III Cost Estimate for Induction Cooking**

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Figure 1 contains Phase III cost estimates by year and estimated annual total system benefit (TSB). This illustrates the estimated spend over time, showing a slight ramp-up over the first two years of market development activities followed by a taper-down of program spend over an estimated six years. This highlights the long-term impacts of market transformation initiatives, with significant long-term impacts occurring after program activities have ramped down. The total cost associated with the remaining 14 13 years includes only program evaluation costs, data acquisition costs, and program administration costs.

**Figure 1. Phase III cost estimate and market impact by year**

