Building Decarbonization Coalition

Roadmapping Session (1/3)
October 25, 2018
Remote Access:
http://www.uberconference.com/gridworks

Agenda:

- 10:00-10:15 - Introductions and Purpose Outlining
- 10:15-10:45 - Roadmap Goal Introduction
- 10:45-12:00 - Facilitated Group Discussion on Goals
- 12:00-12:45 - Lunch
- 12:45- 1:15 - Roadmap Barrier Introduction
- 1:15 - 2:45 - Facilitated Group Discussion on Barriers
- 2:45 - 3:00 - Next Steps for the Coalition

Introduction:

Goals of today's meeting:

Identify goals and barriers for inclusion in the Coalition Roadmap

Goals of future meetings:

- Meeting 2 - Options to overcome barriers
- Meeting 3 - Prioritize what action the Coalition will take

Building Decarbonization Roadmap

Draft Outline

For Today, Key Structure to Understand:

1. Overarching Goals (e.g., more heat pumps, fast)
    a. Supporting Goals (e.g., better value for customer)
2. Overarching Barriers (e.g., inexperience)
    a. Contributing Barriers (e.g., the three-prong test)

Today

3. Potential Solutions to Barriers (e.g., a better incentive policy)
    a. Potential actions to take by who (e.g., PUC adopts rate design X)
    b. How to implement those solutions (e.g., pro-heat pump, not anti-natural gas)

November 9

4. BDC Prefered Solutions to Barriers (e.g., your wisdom here)
    a. ditto

December 18

Strawman Goals for the Coalition

Umbrella Goal

By 20__ all California Buildings will be decarbonized.

Note:

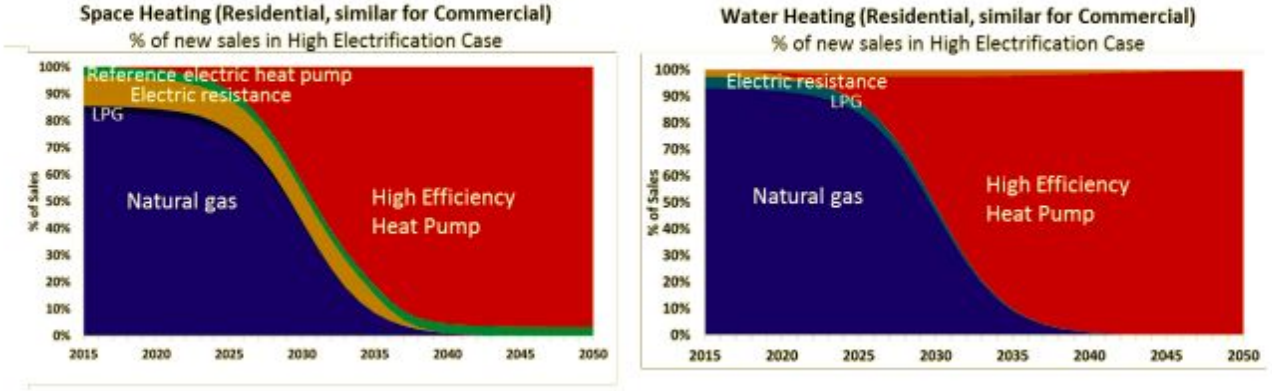
- This goal includes action which must necessarily be beyond the scope of the BDC (e.g., lots of renewables added to the grid)
- What follows are the parts of the building decarbonization puzzle that BDC will focus on.

Strawman Goals for the Coalition

Overarching goals: Heat Pumps and Induction Cooking

- *Increase the percent of high efficiency heat pumps for space heating from __% of sales in 201__ to 50 % in 2030.*
- *Increase the percent of high efficiency heat pumps for water heating from __% of sales in 201__ to 50 % in 2030.*
- *Increase the percent of induction cooking from __% of sales in 201__ to __% in 2030.*

Figure 8: Percent of New Sales by Technology Type for Residential Space Heating and Water Heating in the High Electrification Case (2015–2050)



Source: E3

Strawman Goals for the Coalition

Supporting Goals: New Building Construction

Goal: By 20__ all new building construction in California will be all electric.

Includes coordinated actions:

- Adoption of progressively more pro-electric building codes
- Strategic enhancements to supply-chain
- Targeted R&D

Strawman Goals for the Coalition

Supporting Goals: Customer Retrofit Cost/Benefit

Regarding customer cost/benefit for retrofits:

> *Goal: By 20__ the financial benefit of choosing high efficiency space and water heat pumps outweigh the costs within 3 years of purchase.*

Includes coordinated actions:

- Incentives to spur customer retrofits, tailored to customer class and type
- Rationalizing rate design
- Seeding the market with increasingly progressive codes and standards
- Reductions in technology and delivery costs
- Targeted R&D

Strawman Goals for the Coalition

Supporting Goals: Delivery

Goal: Organized and engaged contractor work force marketing high-quality, high efficiency heat pumps by 202__.

Includes coordinated actions:

- Improvements in quality and performance of manufactured heat-pump technology
- Engagement, training and certification of contractors
- Reductions in technology and delivery costs
- Targeted R&D

Strawman Goals for the Coalition

Supporting Goals: Messaging

Goal: Pro-heat pump message reaching government leaders, manufacturers, builders, contractors, and customers with increasing sophistication between 2019 and 2023.

Includes coordinated actions:

- Pro-heat pump policy “talking points” for government leaders
- Effective messaging to win the support of manufacturers, builders, and contractors
- Customer focused marketing emphasizing benefits of high-efficiency heat pumps
- Leveraged cooperation with like minded efforts (e.g., solar installation)
- Targeted research

Strawman Goals: Short, Medium, and Long Term

Short-Term	Medium-Term	Long-Term
Customer focused marketing emphasizing benefits of high-efficiency heat pumps	Incentives to spur customer retrofits, tailored to customer class and type	Rationalizing rate design
Pro-heat pump policy “talking points” for government leaders	Engagement, training and certification of contractors	Reductions in technology and delivery costs
??	??	??

Facilitated Discussion - Goals

Guiding Questions:

- Does the overarching goal focused on heat pump adoption meet the Coalition's needs? Does the Coalition want to adopt a comparable goal for other technologies (e.g., induction cooking)?
- Does categorizing goals around "new building construction," "cost/benefit," "delivery," and "messaging" provide a useful organizing framework? Are there missing categories?
- Have the "coordinated actions" parts been appropriately placed? What's missing? Can you help us detail them?
- What do you think of staging the coordinated actions across the short-, medium- and long-term?
- How would you fill in the various blanks?

Lunch Break

Strawman Barriers to Achieving Goals

Overarching Barriers:

- Understanding the emission profiles of a dynamic power supply relative to other energy sources, the contributions of building emissions to climate change, and why the building stock is a significant target for reductions.

  Barrier: Misunderstanding of data and analysis underscoring the importance of building decarbonization.

- Lack of experience in working with heat pumps and expectations for the technology in buildings
  - Low adoption rates and experience with older and less efficient heat pumps is likely coloring consumer perspective on heat pumps.
  - Contractor experience in effective installation may also be an issue.

  Barrier: Inexperience with heat pumps for space and water heating.

Strawman Barriers to Achieving Goals

Supporting Barriers: Customer Retrofit/Cost Benefit

Barrier: We lack a clear economic signal to adopting customers that high efficiency heat pumps are a good value for them.

Includes un-coordinated contributing problems:

- Rules against fuel switching artificially limit cost-effectiveness for heat pumps.
- Rate design has prioritized competing interests.
- Electric panel upgrades add to cost
- Costs reductions have been slowed by limits within R&D and manufacturing.

Strawman Barriers to Achieving Goals

Supporting Barriers: Delivery

Barrier: Customers wishing to adopt high-efficiency space and water heaters aren't presented with a consistent, high-quality solution, within 72 hours of their need.

Includes un-coordinated contributing problems:

- Product manufacturing pipeline insufficient
- HVAC and water heater contractors are not sufficiently aware or motivated to offer a heat pump solution, due in part to factors beyond their control (e.g., electric panel capacity) and in part due to factors within their control (e.g., open minds to new solutions)

Strawman Barriers to Achieving Goals

Supporting Barriers: Messaging

Barrier: Target audience has not received a consistent message about the importance and benefits of Building Decarbonization.

Includes un-coordinated contributing problems:

- Dispersed and diverse customer and partner base
- Mixed messages to government leaders
- Perceived competition with natural gas
- Celebrity chefs think they can only work with gas ranges!

Facilitated Discussion - Barriers

Guiding Questions:

- Do the fundamental barriers of misunderstanding and inexperience resonate? Or are their other fundamental barriers prevailing?
- Are the barriers of “clear economic signals,” “customers not consistently presented with quality solutions,” and “mixed messaging” accurate? What additions and clarifications are warranted?
- Have the “un-coordinated problems” been appropriately placed? What’s missing? Can you help us detail them?

BDC Next Steps

September 18	BDC Kickoff Meeting
October 25	BDC Roadmapping Session (1/3): Goals and Barriers for the BDC
October 29	Stakeholder Feedback Round 1 (“Roadmap Outline”) Due
November 2	Draft Roadmap #1
November 9	Roadmapping Session (2/3): Opportunities to Address Barriers
November 16	Stakeholder Feedback Round 2 Due
November 29	Draft Roadmap #2
December 7	Stakeholder Feedback Round 3 Due
December 18	Roadmapping Session (3/3): Trade-offs, Strategies, and Priorities
December 23	Draft Roadmap #3
January 1	Final Stakeholder Feedback Due
January 15	Final Roadmap

BDC Next Steps

- We'd like to the next two meetings (and Roadmap) to be curried with case studies. What do you suggest?

- Our next meeting will be in Los Angeles on 11/09
  - additional information will be posted on the Gridworks BDC landing page and distributed by email