



Technology TAC Subgroup

Report-out to Stakeholders
2/4/2021

Subgroup Members

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Discussion Spotlight

**Promoting electrification
technology is more about adoption
than innovation**

Topic 1 – Technology

Contractors (and other supply channels) are the key link to implementing electrification

Contractors (and other supply channels) are the key link to implementing electrification. Things to know:

- Workforce training and bandwidth
- Customer training is a role for contractors (how to use products)
- Heat pumps are the primary focus, with cross lessons for other trades.
- Chicken and egg issue between demand for the electric technology from consumers and knowledge/confidence in selling the product from vendors

Topic 2 – Technology

Different strategies and approaches would help under-resourced communities have access to electrification

Different strategies and approaches would help under-resourced communities have access to electrification

- Model electrification on (or combine with) other targeted initiatives
 - district geothermal loops, demand response, TOU rates, PV, community solar, microgrids, deep weatherization, early replacement program models
- Some technologies can be promoted at the neighborhood scale
- Care to not add burdens with complicated program requirements
- Electrification doesn't guarantee cheaper costs – carefully assess value
- Targeted workforce training initiatives

Topic 3 – Technology

New construction electrification offers unique opportunities (compared to existing buildings)

New construction electrification offers unique opportunities

- Cost and technology barriers are much lower for New Construction
 - Integrated design reduces cost across systems (HVAC, hot water, envelope, etc)
 - Ex: Cost savings from not installing a gas meter
 - Lower cost to build a high-performance homes
- Barrier is that people are not building/buying all-electric homes.
 - Is there a role for utilities and others to play changing this market demand?
 - Chicken/egg issue around customer perception

Topic 4 – Technology

**Cost (installation, operating, and system costs)
has been identified as a key barrier to
electrification**

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- If it's not cheaper by some metric, it's not going to grow widely
- Focus on lifecycle costs
- *Communicating* about electrification costs is complex
 - People don't have visibility into monthly costs, and there are a lot of variables toward actual performance costs for homes
 - Ties back to contractor training – how to explain value
 - Familiarity with expected costs
- Replacement on failure is expensive and the hardest time to electrify

The barriers to adoption

The real barriers to electrification (beyond policy)

- 1) Contractor awareness/expertise
- 2) Customer awareness/demand
- 3) First cost vs. lifetime cost
 - Especially for New Construction
- 4) Perceptions of the technologies (or lack of)

Note that R&D and market readiness are not major barriers



Key Recommendations

1. Utility and workforce programs should start by focusing on contractor engagement, awareness, and training. Especially for ASHPs at first.
2. Stakeholders should consider under-resourced community access to electrification (utilities, regulators, contractors, others)
3. Develop tools to help customers evaluate electrification cost/value proposition in their unique situation
4. Communication about value and increasing familiarity among consumers should be a goal of all stakeholders

Additional Documentation

Research Needs, Policy Implications, and Recommendations
as identified by the Technical Advisory Committee

Topic 1: Contractors (and other supply channels) are the key link to implementing electrification

Research needed	Survey of contractor proficiency and technology support
Policy issues	CIP fuel switching
Recommendations	Contractor engagement with ASHPs is underway - additional technologies might benefit from a similar approach (and lessons learned from ASHP outreach could be transferred).

Topic 2: Different strategies and approaches would help under-resourced communities have access to electrification

Research needed	What are specific barriers/issues for under-resourced communities.
Policy issues	
Recommendations	Dedicated effort needed - We recommend a study (or a component of a study) be focused on electrification opportunities and barriers for under-resourced communities.

Topic 3: New construction electrification offers unique opportunities

Research Needed	Better understand barriers to all-electric home buying
Policy issues	Electric heating rate structure New construction codes/standards
Recommendations	Develop tool to compare lifecycle costs of technology choices for end users

Topic 4: Cost (installation, operating, and system costs) has been identified as a key barrier to electrification

Research Needed	Explore financing like a Green Bank (look into NEEA's preliminary work)
Policy issues	Carbon price or incentive likely improves value
Recommendations	Deliberate market transformation efforts required Improve communication about costs/benefits Solving the issue of upfront cost will need to be multi-faceted