

Denver Strategic Building Electrification Implementation Plan

Contractor Roundtable Agenda

Wednesday, April 7th, 1 pm-2:30 pm

Virtual Meeting Room:

<https://zoom.us/j/91929159160?pwd=RnF0UC9DVjNUYXQyUkZqUG15c2pyUT09>

CONTRACTOR GREEN JOBS ROUNDTABLE, 4-7-2021

TODAY'S INTENT AND OUTCOMES

- Provide an overview of Denver's green jobs strategy.
- Introduce the Energize Denver Task Force mission, workforce workgroup, and the resulting Building Performance Policy.
- Understand contractors' baseline knowledge about green jobs and building electrification.
- Understand the current state of workforce skills, gaps, and training pathways.
- Discuss how Denver can support contractors to include electrification into business models.
- Better understand what a Just Transition might look like.

TODAY'S OUTCOMES

- Initiate the discovery phase of Denver's workforce development.
 - Understand the current state of the industry and workforce needs.
 - Learn how Denver can support businesses thrive in Denver's low carbon future, while creating high-quality jobs.
 - Understand how to make these career pathways accessible for women and BIPOC.

AGENDA

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|----------------|---|
| 1:00 PM | Welcome and Introductions
Project team and participants will introduce themselves. |
| 1:10 PM | Agenda and Ground Rules
We will provide information useful for today's conversation. |
| 1:15 PM | Introduce Denver's Green Jobs Strategy
We will provide background information on Denver's climate goals, equity goals, Energize Denver and Workforce Workgroup and Green jobs strategy. |
| 1:25 PM | Current State of Workforce Overview and Discussion
We will establish a baseline understanding and discuss the current state of workforce. |
| 2:20 PM | Overview of Themes Developed
We will share themes that came up regarding the current state of workforce and will determine we captured participants thoughts. |
| 2:30 PM | Adjourn
We will share next steps and adjourn. |

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MEETING NOTES

Attendees:

- Diane Ernst, Lotus
- Emily Artale, Lotus
- [Stephen Shepard](#), BOMA
- [Don Pittsner](#), JEDI Balancing
- Mike Missimer, MGI Mechanical Services
- Rebecca Snelling, JE Dunn Construction
- Jan Keleher, CASR
- [Chester Campbell](#) Energy Resource Center
- Dave Joslyn, Tolin Mechanical
- [Jenny Willford](#), Sierra Club
- Tyler Pouslon, BEI
- James Roina, Denver Workforce Services
- Jarrett Vigil, CASR
- [Luke Ilderton](#), EOC
- Katrina Managan, CASR
- Tom Poeling, US Engineering Corporation
- Brook Pike, EOC
- [Jodi Pincus](#), Inclusive Economics
- Jason White
- [Eddie Bustamante](#), LiUNA 720
- Sergio Cordova, Pipefitters Union
- Jennie Gonzales, IBEW 68

Theme One: What do you know about Denver's low-carbon future and specific programs, like building electrification?

Some experience with electrification, but little work in Denver.

Public interest in electrification is growing.

Need building engineers to operate commercial buildings efficiently.

- Working on all electric projects, but not in Denver. It was a shift for them to do electric. In general, not drastically different from typical high efficiency furnace.
- Working with the state to do pilot projects on LMI homes. Hard to find home candidates, concerns with electrical upgrades. Concerns with increased electric cost over gas. Trying to find someone with solar. Tough to find the right house.

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- We don't do much in Denver, but have been installing ASHPs in other areas. Seeing more people who want electrification. Seeing a big uptake in ASHP and HPWP. Current also involved in passive house community. More people want 100% electric. Homes and buildings needs to be the right fit. Need to work with trade partners. Need the envelope to be in good shape. Different aspects related to services that need to be considered. Need to help air sealing a little better. Homes are working with Epic Loan program and it's been helpful to fund electrification projects. People have been getting loans for efficiency upgrades.
- City does a good job of putting out information on their programs. Aware that different programs are under development.
- Commercial folks are doing economic reviews of different systems, and electric stuff is falling out pretty early. ASHPs have been pretty stable for awhile but other technologies are gaining traction.
- Denver has a lot of commercial buildings that are already electric, but not sure they can be effective as can be. Question if they can even be retrofitted due to original design and size.
- Building engineers are hard to find. Need to make sure there is a workforce that is trained to operate the buildings as they need to be to operate efficiently when electrified -- BIG concern.
- Seen systems change over the years, systems are getting smaller, spaces are smaller (less oversizing) and everyone is trying to save energy.
- Concern: in the retrofitted -buildings there are significant hurdles to electrify, easy in new buildings. Concerned that building owners are pushing back because of costs. Hoping parties that are resistant are not larger than those who want to join the transition.
- 120 Denver buildings are steam, economics may make sense now. Many of these are hotels and City-owned.

Theme Two: What is the difference between the work that they are doing now and the work that will be required of them during Denver's low-carbon transition?

We need to change industry perspective that gas is the only answer.

Need to implement comprehensive educational campaign with the community. This drives changes.

Market will adapt!

- Doesn't see this transition as causing much of a shift. We are familiar with boilers, etc, going to ASHP, there is still hydronic piping. Still have challenge of finding qualified tradespeople.
- Waiting for lifecycle of equipment to end to make next remodel, a bit of a challenge to wait.
- Waiting for technology to catch up.
- Worry about the most -- central comfort availability. Can we sell this technology to our customers? There is an environmentally acceptable solution, but need economic solution as well. How do we sell this? Working to trying to figure out how to pivot our sell when it comes to technology.
- What would it take to get the contractors and industry educated that this is coming down the pike?
Challenges?
 - End of life? So you are prepared.
 - Educational piece is largest part. In our industry you still have a large group of people who are not on board with the transition -- the electrification aspect of it. We have been told that ASHP

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are not a good technology in our climate, but we know that is changing. People are afraid of the technology.

- Happy that the general consumers is getting educated. They are asking questions that they never asked before. It's starting to change the minds of the nonbelievers. Need an educational piece that promotes to the consumers, then the industry has no choice but to move in that direction. It will have a cascading effect on the distributors. Needs to start with the community.
- 30% of residential calls are ASHPs. Consumers are hearing it from local utilities and municipalities.
- We are going to adapt to the market. It's hard to sell something that the customer doesn't want. It's hard to change consumers' minds. In commercial side, only saw 1 customer asking for ASHPs.
- We have 2000 electricians that are ready to electrify Denver. We do have training, it's guaranteed. They come out with their electrical licenses.

Theme Three: How can businesses adapt to be part of and benefit from Denver's low-carbon transition?

Set standards that level the playing field: create pre-qual list of contractors, wages, etc.

Need partnerships between tradespeople.

Need to partner electrification with weatherization.

Need to educate consumers.

- Building CX needs to plan -- how do you do this and how do you do it at scale? CX gets in the weeds, how do you scale up?
- Ties into service contractor industry. Need more partnerships here.
- No skills lacking, but it depends on new technology.
- New training might have to be created.
- How can we help contractors remain competitive?
 - Set the standards. make the rules for everyone. Start with review. Level the playing field. The folks that aren't willing to invest to do the job properly and are going to figure out that they can stay in the industry.
 - Set standards and expectations for installation and test and balance side and make everyone follow that.
 - Pre-qualified list of contractors.
 - Set prevailing wages.
 - Keep work local. Keep local contractors working in their city. No out of state contractors to do local work.
 - Implement a best value employment matrix: local contractors, industry standard wages, access to benefits, access to bona fide training opportunities with track record of graduation rates, etc.
- Pair ASHP with weatherization. Look at buildings holistically. Thoughts on more holistic building model offerings?

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- Educate on the house is a system approach. We go in with great intentions, we cannot create the efficiencies or comfort levels with poor envelope levels. Use resources to educate different contractors on system approach. It's good to build relationships with other trades people.
- Apprenticeship programs are designed to look at buildings and homes at the system levels.
- BOMA is working on building engineers training with Denver.
- Some programs require a full energy audit to reap benefits from incentives tied to electrification, but some have moved away from the audits. Educate the homeowner on how to create a good roadmap.
- With LMI, need a full audit. Goes back to education, they don't understand why audits take so long, they just want someone to fix furnace but they don't necessarily want whole house approach.
- How will the grid hold up to electrification?
 - We have to focus on lowering use. It may not make sense to do ASHP if the efficiency is not there.
 - We have headroom on the grid. When we do it a managed transition, we are in good shape.
- Is it reasonable to expect older homes to become zero carbon? You can only get so far.
 - Aspirational goal. Some homes might be challenging.
 - Whole grid will be moving towards 100% RE so not all homes need deep shell retrofits.
 - Historical buildings will have challenges. Most buildings this will be achievable, we will focus here first.
 - Energy performance is not always correlated with building age.

Theme Four: What are the most effective training pathways?

Not as easy to install ASHPs.

Not worried about training. Worried about finding the right people.

There are workers -- need to make sure there are jobs.

Lots of training opportunities, need to get students to sign up, convince them to join.

Barrier - high schools won't let apprentice programs share their offerings. They only want college level options advertised.

- Starting to change training -- focusing on ASHPs. ASHPs are not as easy.
 - Rely on training pathways: first education yourself on the product, then educate your team, third sizing it properly and understanding load requirements, M&V, installation practices. Training is in-house. Every distributor has training programs. Some technology cannot sell until you have been through training. Distributors are very concerned about contractors doing it right and very concerned about training.
- Entry-level positions are available if the work is available. Less worried about the training, but more worried about how to get entry level positions into the trades. How do we get this message out there? To the community?
- Help community colleges and technical schools -- a lot of people who enter the trades can make a really solid wage. Set up internships with these schools with contractors -- from a boots on the ground standpoint.

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- Less worried about training. More concerned about finding the right people. Message needs to start in high school. People think that you only have to go four-year school. Need to tell people that they can make a really good wage going into this field.
- Unless we can get some folks in the school who have experience in underserved neighborhoods to share story of going into trades. Especially people who look like them. These young people need to see that this is an option for them and it provides a good wage. How do you get access to these communities?
- Go to training programs: Pipefitters have an apprenticeship program, there is a lot of opportunities for training with Pipefitters and IBEW. Does not cost anything to the apprenticeships. Who do they partner with?
 - They work with technical colleges to recruit students, and also have own apprenticeship program. Get college credits through apprenticeship program.
 - IBEW has started apprenticeship program in Sheridan High School. Along with completing the program they are guaranteed a spot in the apprenticeship. They start their jobs immediately and start making money right away with no debt. Focus on individuals in inner cities. Really hard to get into DPS, easier to get into Sheridan High School. Given the opportunity to join these programs, they take them! Good money.
 - Need ideas on how to get more young students. How to get apprenticeship programs into DPS?
 - Many high schools won't even let apprenticeship programs have a booth or share opportunities with students.
- What kind of participation and commitment has anyone received from DPS? The construction industry and tradeworkers different 5 years ago from today. It's a broad opportunity from trade level to technical level. SO many opportunities across the spectrum to recruit from.
 - DPS is stuck on only allowing college level education in career fairs. Through apprenticeship programs you don't get a college degree.
- Can the City support distribution training or other training practices?
 - Training for residential on specifics on what are trying to get out.
 - Distributors have good, big picture overview, but focused on product. Macro level.
 - Contractors were frustrated that they had to be certified to work in new field. But at the same time, leveled the playing field and employed due process for all.
 - Denver can support technical colleges.
 - Talking to local experts -- air balancers, building automation people.
 - Work with inspectors, one thing to have codes, but sometimes codes are not being enforced, need more teeth behind enforcement level. Contractors would then pay more attention and this flow through.
 - What kind of certainty can provide on this process. Ends with inspection.
- Can Denver help increase the Denver for business?
 - Perk the consumers ears up. Incentives? If there is money to provide rebates to help people do more work. Also need to figure out the right rebates. The biggest expense is to upgrade service -- that could blow away the whole idea! Helping electricians upgrade the service, offset that cost.
 - More advertising on rebates and other support. Gets the word out quick.
 - Pilot programs that show technology works. There is a lot hesitation especially from retrofit commercial perspective. If you had programs that show this works, that could go a long way. Concerns on operating costs, lifetime, operation, efficiency, etc. Address these with pilot programs.
 - Need different programs for residential and commercial.

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Theme Five: How can we help support a Just Transition?

- Level the playing field.
- When going into schools to promote trades, have it be done by a diversity of presenters (women and BIPOC).
- Get apprenticeship programs in schools in underserved neighborhoods.
- Taking a lot of work away from Xcel gas workers, other gas workers. Can we get training to these workers first?
- Denver could facilitate honest communication between Xcel and trades. This happening, get prepared.
 - 2030 energy codes are coming. This grabs people attention.