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STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



LIESL EICHLER CLARK
DIRECTOR

**MICHIGAN COUNCIL ON CLIMATE SOLUTIONS
Draft Meeting Minutes**

Tuesday, Apr 27, 2021 – 3:00 to 4:30 p.m.
Virtual Meeting via Microsoft Teams
Find meeting information at Michigan.gov/Climate

Attendees

Niles Annelin
Steve Bakkal
Frank Beaver
Liesl Clark
Mary Draves
Kerry Duggan
Rachel Eubanks
Meghan Groen
James Harrison
Judson Herzer
Brandon Hofmeister
Marnese Jackson

Phyllis Meadows
Josh Neyhart
Jonathan Overpeck
Tanya Paslawski
Cynthia Render-Williams
Phillip Roos
Dan Scripps
Derrell Slaughter
Samuel Stolper
Ronald Voglewede
Scott Whitcomb

MEETING GOALS

- Introduction of the Building and Housing workgroup co-chairs.
- Build a shared understanding (high level) on the topic of Buildings and Housing.

Meeting Notes

- **Welcome, Introductions (Liesl Clark, Director, EGLE)**
 - The meeting commenced at 3:00 p.m.
 - Attendance was taken.
 - Recording of the first listening session on the MI Healthy Climate Plan is available for viewing at Michigan.gov/Climate; the second listening session will be held on May 5 at 6:00 p.m.
 - Workgroup co-chairs are meeting with the Climate Justice Brain Trust on April 28.

- **Council Business (Liesl Clark, EGLE)**
 - Derrell Slaughter moved and Phil Roos seconded a motion to approve the agenda. The agenda was approved unanimously by voice vote.
 - Mary Draves moved and Derrell Slaughter seconded a motion to approve minutes from the March council meeting. The minutes were approved unanimously by voice vote.

- **Introduction of the Building and Housing workgroup co-chairs (Charlotte Jameson, Michigan Environmental Council; and Karen Gould, MPSC)**
 - A brief overview of the arc of work for the workgroup and the goals that the group hopes to accomplish was provided.
 - Focus on:
 - Enhancing public health
 - Saving customers money
 - Enhancing the energy system
 - Creating jobs

- **Presentation: Building Decarbonization Pathways (Dan Aas, Energy and Environmental Economics (E3))**
 - About E3: They are a technical consulting firm related to energy transition – headquarter in California, but have also worked in the northwest, northeast, and Minnesota
 - Decarbonized Gasses (renewable natural gas, hydrogen, etc.)
 - Advantages:
 - Can repurpose existing infrastructure
 - Minimal consumer disruption (can use existing appliances)
 - Potential drawbacks:
 - Cost
 - Not commercial at scale
 - Electrification (heat pumps, induction stoves)
 - Advantages:
 - Commercially available
 - Complementary to decarbonized electricity
 - Potential drawbacks:
 - Upfront consumer costs
 - Requires building retrofits
 - Peak load impacts
 - Potential for stranded assets
 - Workforce impacts

- Hybrid (heat pump for most of the year paired with gas backup during peaks)
 - Advantages:
 - Utilizes existing infrastructure
 - Mitigates grid impacts
 - Potential drawbacks:
 - Not well studied in the US
- District heating (geothermal micro district):
 - Advantages:
 - Multiple input sources enable a diversified decarbonization
 - Potential drawbacks
 - Partially requires new infrastructure
 - Not well studied in US, though there is a case study in MA
- Decarbonized Gasses:
 - Biomethane
 - Is the lowest cost form of decarbonized gas, but is limited in quantity
 - Hydrogen:
 - “Green” Hydrogen: electrolysis with zero carbon energy
 - “Blue” Hydrogen: carbon capture on steam methane reforming
 - Cost to produce hydrogen is expected to fall over time
 - Limited ability to blend into pipelines
 - Synthetic Natural Gas (SNG) Production:
 - Requires a combination of climate neutral hydrogen and climate neutral CO₂
 - The least advanced technology
 - Supply curve: These gasses are all more expensive than natural gas is today
- Electrification:
 - Focus on air-source heat pumps
 - Very efficient performance of COPs of 3 or higher, but their efficiency falls as the climate gets colder
 - At scale, electrification natural gas end-uses could have large impacts on electricity system
- Conclusion:
 - Decarbonized gasses will play a role
 - Heat pumps are great during most of the year
 - Energy efficiency is needed in all cases

- **Presentation: Midcontinent Power Sector Collaborative Buildings Roadmap Modeling Results (Jessi Wyatt, Great Plains Institute)**
 - Energy efficient building design in new construction and retrofits
 - Alternatives to fossil fuels
 - Advancing and deploying decarbonization technologies
 - The group explored:
 - Rapid heat pump technology
 - Linear heat pump performance
 - Low investment hurdle rate (barriers to adoption of technology)
 - All three: a combination of all three levers
 - Results:
 - Share of technologies installed
 - Each lever in isolation impacted heat pump adoption, particularly the rapid heat pump technology and lowering the hurdle rate – the most impactful was all three
 - Total energy consumed
 - The greatest reduction comes from stacking all three
 - Conclusion:
 - Electric heat pumps provide the most promising strategy available, but they don't get all the way there. Need to consider other technologies such as hydrogen, RNG (renewable natural gas), and SNG (synthetic natural gas)
 - Energy efficiency (EE) is a no regrets strategy
 - Reducing barriers to heat pump adoption is key
 - Need backups in cold climates
- **Open Discussion**
 - Discussion notes are appended to these meeting minutes.
- **Next Steps (Liesl Clark, EGLE)**
 - The next meeting is May 25 (fourth Tuesday of every month) and will focus on Transportation and Mobility.
 - Meeting materials are available at Michigan.gov/Climate.
- **Adjournment**
 - The meeting adjourned at 4:32 p.m.

Michigan Council on Climate Solutions

4/27/2021

WHAT IS YOUR TOP PRIORITY/OPPORTUNITY OR QUESTION WITH REGARD TO DECARBONIZING BUILDINGS AND HOUSING?

NOTE: Comments have been organized into themes and are listed alphanumerically for reference purposes only; these do not indicate a ranking or priority. Some Council Members provided multiple different comments.

1. Equity/environmental justice

- a. Need to start transitioning to a clean and healthy Michigan as soon as possible, especially with regard to impacts on black and brown communities.
- b. Decisions need to come from the communities that will be affected.
- c. All of this has policy implications. Hope that for something this big, we will incorporate the voices of people who are typically not asked for their opinion.

2. Workforce

- a. Be mindful of workforce development – capture the skillsets that will be needed and engage groups that are typically not in these discussions. In other words, who will get paid to do this work, and can we ensure equity in that?
- b. Need to pay attention to workforce and ensure black and brown folks are included in workforce solutions.

3. Energy efficiency and load flexibility

- a. How do we look at not only energy efficiency, but flexible demand. Flexibility will be required for a system with higher renewable generation.
- b. If energy efficiency is really important, what are the binding constraints to people actually investing in energy efficiency in homes and buildings? (e.g., education and awareness, incentives/rebates, addressing split incentives for rental and multifamily housing, etc.)
- c. If we're ultimately going to decarbonize electricity, we don't need to over-invest in energy efficiency.
- d. Need to take a whole systems view with regard to energy efficiency – need homes that are efficient, healthy, safe, etc. Accordingly, would like to see the council focus on residential energy efficiency because it's a kitchen table issue.
- e. How can we include demand response in this conversation?

4. Affordability and managing costs

- a. How do we ease the consumer into the transition, including market transformation and financing tools to manage consumer costs?
- b. We should have a range of technologies from which folks can choose, based on income.
- c. Single biggest concern is how to we maintain affordability and equity as we transition?
- d. Need to make sure we're making the best use of dollars in the transition – workforce, employment, and tax base are all very important.

5. Electrification

- a. Don't think we should be focusing on biogas, and instead focus on heat pumps.
- b. There is some misalignment with our current policies and the expansion of heat pumps.
- c. Need to work with landlords and understand the barriers that are preventing communities from electrifying their homes.
- d. Would like to know where the bottlenecks are in moving to full electrification as soon as possible, including what the peak load and cost impacts would be.
- e. Heat pumps are not being presented to people as a viable option when they need to replace their heating system.
- f. Electricity system peak demand is a major challenge

6. Process

- a. Concerned about prioritizing – are there some low hanging fruits that we need to be thinking about in an actionable way?
- b. Concerned about multiple workgroups – how will this come together as a cohesive whole?
- c. Need to develop metrics of success, so that we can track progress.

7. Other

- a. Behavior change is vital to all of this.
- b. There are a host of products we can use in the process of decarbonization, such as low-carbon building materials.
- c. Suggest “The Energy Gang” podcast as a resource. Did a show on building decarb a few weeks ago.
- d. Are we talking about buildings, or housing, or both?
- e. Dan Aas (presenter from E3) mentioned hydrogen gas pilots in MA – can we get an update on those pilots? Would like to understand the potential impact of that in Michigan.
- f. Overall, what's the biggest challenge? For example, is it financial tools and incentives to help people make the investments that need to be made?
- g. Where can decarbonization technologies have the biggest impact on the things that matter to people in Michigan, such as affordability, health, safety, etc. Do we know that yet today, or do we need to figure it out?
- h. What are the safety needs of the gas system, which will still be running for some time?

Approved at May 25, 2021 Council on Climate Solutions meeting.