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



LIESL EICHLER CLARK
DIRECTOR

MICHIGAN COUNCIL ON CLIMATE SOLUTIONS MEETING
Meeting Minutes

Tuesday, July 27, 2021 – 3:00 to 5:00 p.m.
Virtual Meeting via Microsoft Teams
Find meeting information at Michigan.gov/Climate

Attendees

Paul Ajegba	Quentin Messer
Niles Annelin	Jonathan Overpeck
Liesl Eichler Clark	Tanya Paslawski
Mary Draves	Cynthia Render-Williams
Kerry Duggan	Joseph Rivet
Rachel Eubanks	Phillip Roos
Meghan Groen	Dan Scripps
James Harrison	Derrell Slaughter
Brandon Hofmeister	Samuel Stolper
Phyllis Meadows	Ron Voglewede

MEETING GOALS

- Introduction of the Energy Intensive Industries workgroup co-chairs.
- Build a shared understanding (high level) on the topic of Energy Intensive Industries.

Meeting Notes

- **Welcome, Introductions (Liesl Clark, Director, EGLE)**
 - The meeting commenced at 3:00 p.m.
 - Attendance was taken.
 - Council members received pre-read materials prior to today’s meeting.
 - Introduction of new Council Member: Quentin Messer (MEDC)
- **Council Business (Liesl Clark, EGLE)**
 - Mary Draves moved and Derrell Slaughter seconded a motion to approve the agenda. The agenda was approved unanimously by voice vote.

- Phil Roos moved and Dan Scripps seconded a motion to approve minutes from the June 22 council meeting. The minutes were approved unanimously by voice vote.
- Governance procedures: Proposed modification to governance language to allow the council to continue operating virtually.
 - Derrell Slaughter moved and Quentin Messer seconded a motion to approve the proposed change. The change was approved unanimously by voice vote.
- **Introduction of the Energy Intensive Industries Workgroup (Steven Holty, Hemlock Semiconductor and Robert Jackson, EGLE)**
 - They have broken the workgroup into two topical subgroups:
 - Fuel Switching
 - Manufacturing Technology
 - A primary assumption of this workgroup is decarbonized electricity.
 - We need to collaborate to break out reliance on fossil fuels, specifically natural gas.
- **Presentation: Energy Intensive Industries Overview (Ed Rightor, American Council for an Energy-Efficient Economy (ACEEE))**
 - Energy Intensive Industries are important not just economically but in GHG emissions.
 - Landscape of energy related CO₂ emissions (not including process emissions)
 - Nationally, five energy-intensive sectors account for 70% of CO₂ emissions
 - In Michigan, industry accounts for 22% of GHG emissions.
 - Metals and minerals play a large role in Michigan followed by pulp & paper and chemicals
- GHG reduction strategies: Three primary approaches – technology, markets, and policy
 - Decarbonize power inputs and feedstocks
 - There's an immediate opportunity to transition to lower carbon fuels
 - There need to be incentives to use lower carbon energy sources
 - Heavy hydrocarbons account for roughly 50%. This is an opportunity to transition to lower carbon products.
 - Natural gas and electricity account for the other 50%
 - Decarbonizing processes, process heat, make every energy unit count
 - Energy Efficiency

- This is the place to start because there are also non-energy benefits and it is a relatively low capital solution Energy substitution
- Energy Substitution: changing the way we use energy and using lower carbon sources
 - Transitioning to the technologies that allow industries to do that
- Low-carbon fuels and Feedstocks
- Carbon Capture Utilization and Storage (CCUS)
 - Large scale and pilots haven't been used very much in industry—this is a great opportunity
- By 2030, energy efficiency will contribute the greatest reduction in GHG emissions, the other solutions require more infrastructure.
- All the solutions are needed to achieve decarbonization – in 2050, even with all the decarbonization strategies, there are still some remaining emissions
- Pursuing the pillars
 - Across all emissions sectors, energy efficiency can reduce about half of the emissions
 - Energy substitution by 2050 would be delivering 85-98% of energy generation
 - Zero carbon hydrogen could reduce GHGs for key chemical syntheses by more than 200 million metric tons per year by 2050 at 30% adoption
 - Carbon Capture Utilization and Storage could store 1.8 billion metric tons per year
- Decarbonizing the supply chain
 - Manufacturing is key to an array of supply chain interactions and there are multiple points and opportunity for cross-cutting solutions
 - Can work with energy efficiency and renewable power
 - Michigan examples include:
 - Auto supply chain partnerships
 - Renewable power
 - Relationship between energy and water
- Increase market pull for low-carbon products
 - Important for industry to see there is a demand for low-carbon products

- Two types of carbon
 - Embodied carbon: manufacture, transport and installation of construction materials
 - Operational carbon: building energy consumption
 - Procurement by public entities
 - Proposed policies: Buy Clean – public entities exhibit a preference for low-carbon products. The government is the largest purchaser of goods and materials in the US.
 - Private procurement
 - Low-carbon product stands (understanding embodied carbon)
 - Support innovation
 - Opportunity to invest in the workforce
 - Climbing Barriers
 - Industry is complicated and heterogeneous
 - Incumbent technology and practices with long turnover windows
 - High technology costs and low current energy costs (natural gas)
 - Scaling up demonstration to reduce risk (working out complications to integration)
 - Generation of market demand for low-carbon products
 - Landscape of opportunities
 - There are a suite of opportunities across the four pillars that can be acted on in the next five years, and other solutions that are less certain or less developed.
 - There are investments and incentives that can be made now, and investments that are needed for the longer term
 - Leveraging lessons from clusters
 - Clusters are a linchpin for reducing energy and GHGs
 - Crossroad of multiple supply chains and partnerships
 - Key for addressing competitiveness, workforce, and environmental justice
 - Policy layers
 - Federal: RD&D, transformation incentives, infrastructure, and workforce
 - State: Energy management, RPS, permitting, codes, policy framework, etc.
 - Local: Economic development, workforce, waste reduction
- **Q&A for Ed Rightor:**
 - Can you talk about solutions across industries that would help drive reductions?

- The biggest bang for the buck, especially early on, would be energy efficiency. Some of the technologies that are coming are more expensive, so energy efficiency is important to do early on, because then you would be paying less for higher cost energy. It is low-cost and can open people's eyes to transition needs.
 - Electrification – as the grid becomes lower carbon, industries can tap into the benefits of the grid.
 - Hydrogen – in some spaces, example of Cleveland Cliff. It won't work for everyone and location matters.
 - Transformation actions along processes. It is important to consider or rethink efficiencies and substitutions in processes.
 - Ask yourself, how can we make this differently?
- Regarding Buy Clean, do you have data on what the take rate is? What incentives are used to boost the take rate of the buy clean materials?
 - Ed doesn't know the numbers off the top of his head. It's relatively new and is mostly focused on buildings and construction materials.
 - Trying to get the accounting and labeling information in place – creating standard protocols for life cycle analysis.
 - Wisconsin and Washington state are looking to build on California Buy Clean example
- Public health considerations: As we lay out various strategies, are there any considerations around water and air quality?
 - Yes, there a number of environmental justice issues in the space that need to be addressed in addition to community assistance.
 - Parallel emissions: in addition to GHG emissions, there are also hazardous materials that are left behind from industry. Energy efficiency can help, buy the perspective of looking at the broader landscape is important. This is where clusters can help.
- As you laid out the strategies, how do we help communities grow into this space? Can you speak more to workforce at the local level and the extent to which there would be economic opportunities for local communities?
 - From a competitiveness perspective, it is important that there are shared partnerships between industries and communities
 - Retraining/training for the workforce of the future – particularly in the area of smart manufacturing and infrastructure.
- What responsibility does the government have to model what we want to see in industries? Or where should the state be investing to see the actions we want from industry?

- Infrastructure is the first thing that comes to mind that the state can do, but workforce is another prime area where the state can model and engage.
 - Partnerships will be important for the transition to occur quickly and efficiently.
 - When there is an extreme weather event, it is not just one failure, it is a cascade (energy, healthcare, etc.). Communities can help on this front and building back a more agile, resilient, and flexible infrastructure.
 - How do we balance the struggle with the “need for speed” in the transition with what we don’t know? The faster we go the more challenges we have with cost and a just transition.
 - Simulations (pilots and modeling) so that we understand how the impact of various factors and the potential unintended consequences.
 - Failure loads and effects analysis
 - We also can’t wait for all the simulations, so pilots and demonstrations are important so we can see the impacts early on.
 - Communication and involvement with disadvantaged communities to listen to needs and get their buy in. They are a detection methodology for impacts. With them on board it allows for speed.
- **Council Discussion**
- **Next Steps (Liesl Clark, EGLE)**
 - Process
 - Timeline:
 - August 24 presentation on equity and beginning to review workgroup recommendations
 - September 28 – November 23: continue reviewing recommendations
 - Extending the remaining meetings to two hours
 - Proposed adjusted timeline:
 - December 28 (proposing to reschedule to Dec. 14) – reviewing outside of draft plan
 - January meetings: reviewing and releasing draft plan for public comment
 - February: deliver final plan to Governor
 - Proposed meeting dates will be adopted at the next meeting
 - General support for the longer meetings, and suggest additional or small group meetings

- General support for moving the meeting on Dec. 28
- Concern about timeframe for review during a busy time of the year
 - We can be open and flexible in the process and will need to remain iterative.
- What does the schedule look like after Feb 2022?—the implementation process
- Small groups for issues that fall between workgroups
 - Anything that happens in the small group will come back to the council
- The next meeting is August 24 (fourth Tuesday of every month)
- Meeting materials and recordings are available at Michigan.gov/climate
- **Adjournment**
 - The meeting adjourned at 5:02 p.m.

Michigan Council on Climate Solutions

7/27/2021

WHAT IS YOUR TOP PRIORITY/OPPORTUNITY OR QUESTION WITH REGARD TO ENERGY INTENSIVE INDUSTRIES?

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. Presenters answered some of the questions asked.

1. Partnerships/Collaboration

- a. The partnerships with trade unions and communities will help the speed of the transition. This needs to be built into the plan, and not an afterthought.
- b. Agree with the comments on collaboration. We want to capitalize on this to present Michigan as a leader. The question is how to create these collaborations quick enough and understanding the barriers in the markets. What are the various metrics to consider for solutions?
 - i. It is all about the “attractiveness” of Michigan – the council’s work is very broad. The recommendations from the council don’t have to go down the project level.
 - ii. The state can lead by example such as efficiency and purchasing.
- c. This is a challenging sector, which also presents a lot of opportunity. The areas of hydrogen and CCUS, will take planning and collaboration. We are setting up a new value chain with many players involved and it is hard for any one entity to do this on their own. If we lean into this, the state can be an example for nationally and globally.
 - i. What kind of regulatory structure would we need in place for these new industries? There are a lot of questions that can be addressed before deployment.
- d. Very interested in this body of work – Industrial investment centers in MI just won an award: <https://www.energy.gov/articles/doe-announces-new-60-million-investment-increase-energy-efficiency-manufacturing>
 - i. Industrial Investment Centers: four-year commitment from DOE in partnership with universities – going into industry and identifying energy efficiency solutions on-site. Great workforce implications.
- e. Regarding Carbon Capture, Utilization, and Storage (CCUS), outside of research and development (R&D), there needs to be a market demand for the products. This helps to pull the technology forward. The industrial sector is where the greatest opportunities are for CCUS.
 - i. Partnerships across industry, government, communities, universities are key for workforce considerations.
 - ii. There is an opportunity to increase awareness and education about the solutions.

2. Public Health Impacts

- a. Prioritization will be a challenge. We want to make sure the solutions are balanced with environmental justice concerns. Would be interested in a presentation on examples of impacts with public health.

3. Incentives

- a. Relative to transportation and electrification, we haven't gone nearly as far down the cost curve, which means we will need more incentives.
 - i. To whatever extent we have state/federal investments in new technology, we can target those investments toward communities that have been historically impacted by environmental issues.
- b. Since this is such a broad area, we can think creatively about incentives.

4. Equity

- a. As we move into the equity space in August, we should have a baseline of where/what the inequities are. Advocating for partnerships with communities. We should start building out the lists of who to engage early on.

5. Economic/Job Strategies

- a. Is it possible for us to consider the state and federal levers to see the best economic/job producing strategies that reduce emissions?
 - i. We're asking the council to think about the levers the state doesn't have. Thinking about the intersection of all the levers and how best to use them.
 - ii. The workgroups have a template for their recommendations, and then the council will assess the recommendations within their priorities.
- b. Want to emphasize the outsized importance of economic development strategies of this topic. Is there an opportunity to model the economic growth/jobs impact?

Approved at August 24, 2021, Council on Climate Solutions meeting.