From: Industrial Innovation Initiative, I^3
To: Michigan Department of Environment, Great Lakes, and Energy
EGLE-ClimateSolutions@Michigan.gov
Date: March 14, 2022

Re: Draft MI Healthy Climate Plan

Background

The draft Michigan Healthy Climate Plan marks a critical first step in putting Michigan on a path toward 100% economywide carbon neutrality by 2050. The State of Michigan has a crucial role to play in advancing the suite of strategies and solutions needed for decarbonization of the Midwest industrial and manufacturing sector. The Industrial Innovation Initiative (I^3) has prepared the following document in response to the draft Michigan Healthy Climate Plan.

About I^3

The Industrial Innovation Initiative (I^3) is an ambitious coalition that aims to advance solutions key to decarbonizing the industrial sector by midcentury through policy development and implementation, technology demonstration and adoption, and demand-side market development at state, regional, and federal levels. While each industrial sector possesses unique opportunities for emissions reductions, I^3 has identified several solutions in the Initiative's recent Federal and State Policy Blueprint, which cut across industries to advance industrial decarbonization.

I^3 builds on years of stakeholder engagement and work by Great Plains Institute (GPI) and World Resources Institute (WRI) with state officials in the Midcontinent region and extensive work advancing decarbonization solutions essential to the industrial sector. The Initiative convenes key industry, environmental, labor, and other stakeholders, together with state officials, to advance cross-cutting strategies, policies, and programs for achieving industrial decarbonization by midcentury.

Introduction

The path toward industrial decarbonization by midcentury is challenging but feasible; however, we need to spur meaningful action in the next ten years if we are to stay on track for that goal. The *Energy Production* and *Leadership and Innovation* sections of the draft Michigan Healthy Climate Plan offer an opportunity to build out a more comprehensive set of recommendations for reducing industrial sector emissions in Michigan, particularly as the Industrial sector represents the state's third largest source of greenhouse gas emissions. Recommendations outlined by the Michigan Council on Climate Solutions Energy Intensive Industries Workgroup offer a robust framework to build out existing recommendations in the plan, to ensure the full suite of solutions necessary to decarbonize the industrial sector. I^3 supports elevating the Workgroup's recommendations more explicitly throughout the Michigan Healthy Climate Plan, to ensure the necessary level of detail is present to enact timely and meaningful results.

The below comments emphasize specific recommendations made by the Energy Intensive Industries Workgroup which I^3 has identified as opportunities to strengthen strategies to address industrial emissions in the draft Plan.

Responding to Key Focus Areas for 2022-2030

ENERGY PRODUCTION

Regarding holistic statewide energy planning (p.10).

As the energy system transitions, it is imperative to consider all the moving pieces holistically. In addition to the series of measures listed in the draft Plan, this recommendation could be strengthened by including industrial energy use considerations in the integrated energy system planning. It is critical to account for the potential increased electricity demand that could result from effective electrification of industrial processes and the impact that would have on the electric system. Additionally, there should be considerations of the potential impact that increased renewable energy penetration will have on the industrial sector. Given the increased demand and impact of renewables, it may be important to focus on clean energy requirements, instead of having a primary focus on renewable energy requirements. In implementing a net-zero target, most recent studies demonstrate that employing an "all-of-the-above" suite of clean energy technologies will likely be necessary to achieve deep decarbonization at least cost. This includes technologies such as advanced nuclear reactors and carbon capture, utilization, and storage/sequestration (CCUS).

In addition, it is critical that the plan include more specific measures to address methane, which is already warming the Earth by 0.5 °C. Near term reductions in methane emissions from the natural gas production, processing, transmission, and distribution sector are essential if Michigan plans to act where the biggest, and most readily impactful, gains can be made.

To further support a holistic and inclusive energy planning process, the Governor should direct the Michigan Public Service Commission (MPSC) to initiate a stakeholder process to engage the state's utilities and explore means to deliver carbon-neutral fuels and clean energy to Michigan's industrial sector by 2050. Further emphasis on the role of the industrial sector, as well as a timeframe for implementation, would provide important context for this recommendation.

LEADERSHIP & INNOVATION

Regarding clean industry (p.12).

Industrial decarbonization is a challenge that is being met with both established and nascent solutions. As a sector home to some of the hardest to abate industries and processes, continued state funding and support for research, development, demonstration, and deployment (RDD&D) will be critical to reduce greenhouse gas emissions and ensure the state and local co-benefits that come with pollution and emissions reductions are achieved. Leveraging federal policies and block grants can support RDD&D with minimal impact on state budgets.

When it comes to innovation, the Governor should direct the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and the MPSC to convene a stakeholder workgroup focused on strategies to achieve carbon neutrality by midcentury in the industrial sector. Such a group should include participation from locally relevant industrial, energy, and technology companies; environment, clean energy, environmental justice, and community organizations; and labor unions. This will allow the workgroup to identify local opportunities and challenges in planning clean energy infrastructure,

synergies or overlap between nearby industrial facilities, and where benefits to local communities are most needed.

EGLE should also develop partnerships with educational institutions, industrial companies, and trade unions to roll out curricula and apprenticeships and reach out to communities. I^3 finds that state governments are the most effective implementors and funders of workforce training programs and Industrial Assessment Centers. Such programs can engage affected and disadvantaged communities, targeting programs at communities with the potential for high workforce development opportunities, that incorporate deeper engagement and partnerships aiming to improve the community as a whole.

Additionally, while I^3 commends the plan for including organics diversion, such programs can never fully divert all organic material from landfills, and they are not able to mitigate methane emissions from trash already in place in landfills. Therefore, we suggest considering the adoption of landfill methane regulations at least as stringent as the Landfill Methane Regulations adopted by Oregon in 2021, since a reduction in methane emissions from landfills will be a necessary step to achieve economy-wide carbon neutrality.

Regarding development of clean industrial hubs (p. 12, 31).

As noted in the plan, the industrial sector presents a unique decarbonization challenge. Not only due to the variety of products and emissions, but also due to the capital-intensive nature of industrial facilities. Emerging technologies such as carbon management (here meaning carbon capture, utilization, and storage/sequestration), low- and zero-carbon hydrogen, and advanced nuclear reactors have significant potential to decarbonize the hardest to abate industrial processes. These solutions possess significant impact in the near- and medium-term. Carbon management is especially useful for mitigating process emissions which are the product of chemical reactions within an industrial process itself. The substitution of fossil fuels for clean hydrogen is ideal for processes which require on-site fuel combustion to generate high-temperature heat, or in certain sectors, as a feedstock. I^3 sees carbon management and clean hydrogen as the emerging decarbonization technologies over the coming decades.

This is in line with the establishment of direct air capture carbon and clean hydrogen hubs across the US under the Bipartisan Infrastructure Law. The hydrogen hubs will demonstrate viable production through a diversity of feedstocks, including nuclear energy, renewable energy, and fossil fuels with carbon capture. The development of these hubs marks a significant investment in the future of these technologies and the infrastructure necessary to transport captured carbon and low-carbon hydrogen from the production facility to the end user or storage site. Michigan is uniquely well suited for the establishment of such hubs due to its high concentration of carbon-intensive industries and the presence of two existing hydrogen production facilities within the state. Additionally, the Detroit area houses extensive rail infrastructure, while lower Michigan's geology has been assessed as a low-cost saline storage opportunity. Further research into Michigan's suitability for carbon and hydrogen hubs should be explored if the state seeks to invite infrastructure investment.

This recommendation could be strengthened by elaborating on the innovative ideas and actions the energy intensive industries working group recommended. There are linkages between the working group recommendations and fulfilling the goals of the other key focus areas for 2022-2023, and other

sectors of Michigan's economy. For instance, infrastructure and a clean fuels standard create an opportunity for increased industrial activity to make those fuels – and supports the energy-intensive work group recommendation for industrial hubs.

Industrial hubs also provide Michigan an opportunity to be a national leader in setting precedents for responsible and equitable project development. Michigan has the opportunity to leverage existing federal policies, such as the 45Q tax credit, to deploy these technologies without significant additional fiscal impact for the state. More specificity in this recommendation would add clarity to the implementation. For example, asking the governor to direct the Michigan Economic Development Cooperation to issue a report on the policies, investments and executive action the state could take to accomplish this goal would provide direction, while a timeline starting in mid-2023 would set the stage for legislative or executive implementing action in 2023 or 2024.

Regarding recycling and recycled materials (p. 12).

While I^3 supports the recommendation that Michigan should strengthen public and private sector procurement programs to favor the use of low-carbon and circular economy products, the metrics used to establish such programs are critically important to their impact and success. This recommendation would be strengthened with more detail, such as a timeframe and clear next steps. For example, the Governor could set a goal of having such a policy in place in 3-5 years, and establish a work group to craft, assess, and model the potential impacts of a procurement program for low-carbon products. It is fundamental that these programs are supported by a clear and comparable data set to accurately measure emissions intensity across the range of product types. Technical assistants and financial support should be made available to help small and medium manufacturers complete environmental product declarations (EPDs) or other independently verified reporting mechanisms to ensure an apples-to-apples comparison of a product's carbon intensity.

Thoughtfully developed procurement programs will help accelerate market transformation and establish Michigan as a leader in the creation of a low-carbon economy. I^3 recognizes the importance of procurement policies in advancing deployment of new market-ready and lower-carbon technologies through incentives or requirements for the public sector market. Furthermore, procurement programs not only support the decarbonization of industrial policies but can also help to meet the goals of other sectors, such as decarbonizing building materials.

I^3's coalition of industry stakeholders are here to connect

The information contained within this document represents a small fraction of the collective knowledge and expertise of our participants. Members of I^3 are ready and willing to connect with the Michigan Department of Environment, Great Lakes, and Energy (EGLE), through its Office of Climate and Energy to provide key industry, labor, environmental, and business perspectives from our stakeholder group. The Initiative meets monthly and is happy to schedule ad hoc meetings to facilitate vital discussions such as these. If you would like to connect with us directly, please reach out to Angela Anderson, WRI's Director of Industrial Innovation and Carbon Removal, at angela.anderson@wri.org, and we will gladly arrange a meeting.