



**PRESIDENT'S
COMMISSION ON
CARBON NEUTRALITY**
UNIVERSITY OF MICHIGAN

**Spring 2020 Interim Progress Report
Executive Summary**

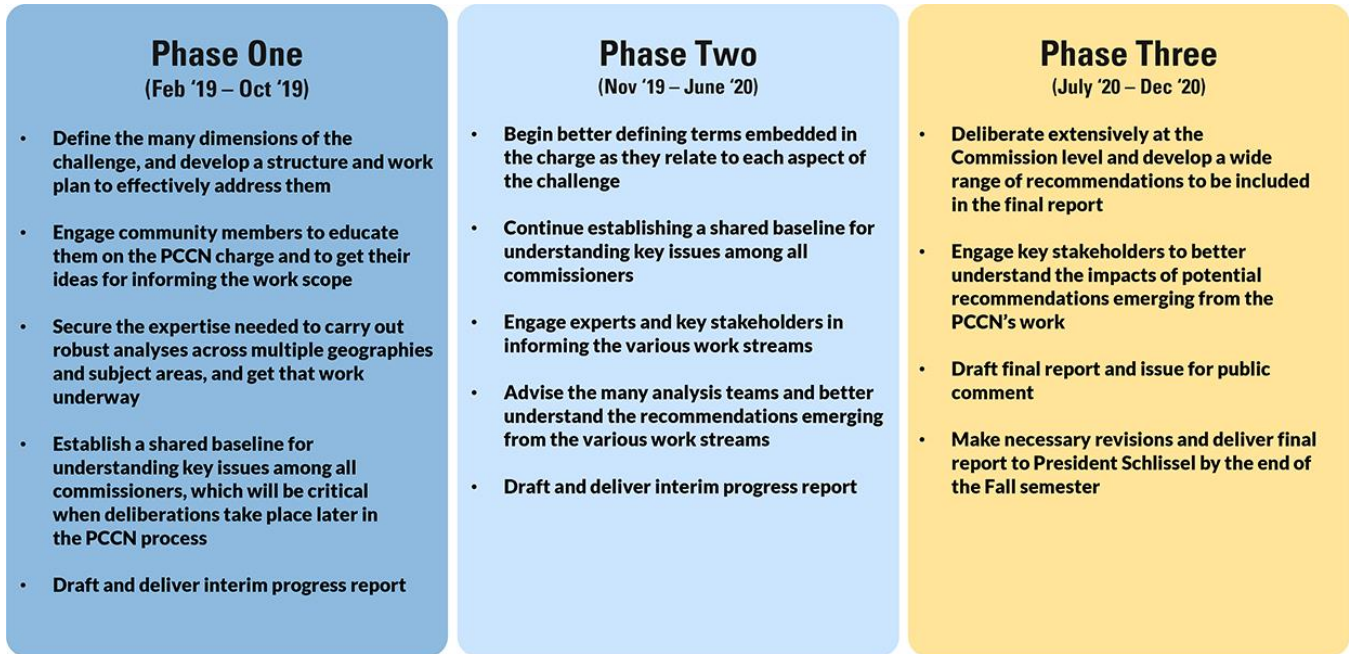
June 4, 2020

Introduction

In February 2019, University of Michigan President Schlissel formed the [President's Commission on Carbon Neutrality](#) and issued a [charge](#) to recommend pathways for U-M to achieve carbon neutrality. This second interim progress report provides an overview of work streams that took place during the Commission's second phase. Various analyses spanned scope 1, 2 and 3 emissions categories, demand-side management, behavior and collaboration strategies, carbon sequestration and evaluation of carbon offsets, and carbon measurement. In addition, this report provides an overview of Commission meeting topics, public engagements during the period, and next steps for the final phase.

Phases of the Work

The following diagram summarizes the three phases of the PCCN's work:



Commission Meetings

Commission meetings during Phase Two focused on establishing a shared baseline for understanding key issues among all commissioners and on guiding and overseeing the analysis teams. Meetings focused on U-M's budget model, interim updates from the various analysis teams, utility and state policy trends in renewable energy, carbon offsets, goal setting frameworks, and key findings from the various analysis teams. The chart below includes a detailed description of these meetings, with links to summary documents.



Date	Topic	Meeting Objectives
November 15, 2019	PCCN Process and Timeline	To achieve a broad understanding of the PCCN timeline and three phases of work, and to kick off phase two of the work.
December 13, 2019	U-M Budget Model	To gain a baseline understanding of how the U-M budget model works and how investment decisions related to capital projects and operations are made at the unit level.
January 10, 2020	Conversation with President Schlissel and Phase Three Planning	To obtain President Schlissel's perspectives on the PCCN's work thus far, and to begin gathering input to inform the Commission's deliberation, decision-making, and report writing processes that will commence in summer 2020.
January 24, 2020	Heat & Power Infrastructure Analysis Interim Update	To receive an update from an outside consultant, Integral Group, on its interim progress.
February 7 & 21, 2020	Internal Analysis Team Interim Reports	To consult with internal analysis teams regarding their interim progress reports. The internal analysis teams described their work to date, and fielded questions from commissioners.
March 27, 2020	Utility & Policy Trends in Renewable Energy	To understand CMS Energy and DTE Energy plans for utility-scale renewable energy development, including perspectives on transitioning away from natural gas as a heating fuel, and critical state and local policy considerations.
April 17, 2020	Carbon Offsets	To gain familiarity with the various types of carbon offsets, allowances, and credits, including how the market is changing over time, considerations in deciding whether to use offsets, quality variability, co-benefits, and other key issues.
April 23, 2020	A2Zero Plan	To understand the contents of the City of Ann Arbor's draft plan for carbon neutrality
April 24, 2020	Goal Setting Framework	To explore a carbon accounting framework across all emission scopes that could support the Commission in its decision-making process, and garner feedback to enhance model development.
May 1, 2020	Internal Analysis Team Reports Discussion	To consult with the campus culture & communication team and the internal energy consumption policies team regarding their final reports, which will ultimately inform Commission recommendations.
May 8, 2020	Internal Analysis Team Reports Discussion	To consult with the bio sequestration team and the commuting team regarding their final reports, which will ultimately inform Commission recommendations.
May 15, 2020	Internal Analysis Team Reports Discussion	To consult with the food team and the university-sponsored travel team regarding their final reports, which will ultimately inform Commission recommendations.
May 22, 2020	Commission Sub Group Findings Discussion	To consult with the mobility electrification sub group and the environmental justice sub group regarding their findings, which will ultimately inform Commission recommendations.
June 5, 2020	Internal Analysis Team Reports Discussion	To consult with the building standards team and the external collaboration team regarding their final reports, which will ultimately inform Commission recommendations.
June 26, 2020	Heat & Power Infrastructure Report Discussion	To consult with Integral Group regarding the contents of their final report and recommendations, which will ultimately inform Commission final recommendations.

Areas of Analysis

A wide range of teams completed analyses during Phase Two including: internal analysis teams led by U-M faculty and staffed by U-M students, two external consulting firms, and three sub groups which included commissioners, U-M students, faculty and staff. More details on these analysis teams are available [here](#).

Analysis teams submitted their draft final reports and associated recommendations in spring 2020 and subsequently engaged with the Commission to discuss their reports in more detail and to identify necessary revisions. The PCCN's areas of analysis are summarized in the table below.

Area of Analysis	Category	Scope of Work	Potential Pathways
Heat & Power Infrastructure <i>External Consultant (Integral Group)</i>	Scope 1 Emissions	Evaluate potential pathways for evolving U-M's heating and power generation infrastructure, including natural gas, toward carbon neutrality across all three U-M campuses.	Customized solutions for each of the campus districts. Potential solutions include: geo-exchange, high-, mid- and low- temperature hot water systems, thermal energy storage, bio fuels, and sequestration.
Mobility Electrification <i>Commission Subgroup</i>	Scope 1 Emissions	Identify strategies for converting internal combustion engine vehicles to grid-connected electric vehicles (EV) and for encouraging EV commuting.	Investments in new electric vehicles and associated campus infrastructure.
Electricity Purchasing <i>Commission-level Discussions</i>	Scope 2 Emissions	Will evaluate opportunities, timelines and costs to procure all grid-supplied electricity from renewable sources.	Power Purchase Agreements and Virtual Power Purchase Agreements.
Carbon Neutral Building Retrofits <i>External Consultant (SmithGroup)</i>	Demand-side Management	Deep-dive building retrofit analyses of two distinct buildings on U-M's Ann Arbor campus to inform what would be required to drive building-level emissions down as far as possible.	Specific energy reduction measures/strategies (e.g., electrical and mechanical systems and the building envelope), with estimated capital investment needs and return on investment (ROI).
Building Standards <i>Internal Analysis Team</i>	Demand-side Management	Best practices regarding the adoption, implementation, and long-term efficacy of building codes to drive carbon emissions reductions.	Building performance minimums; timeframes for economically feasible net-zero emissions outcomes relative to new standards; holistic algorithm to determine optimal solutions in terms of cost per emission.
Internal Energy Consumption Policies <i>Internal Analysis Team</i>	Demand-side Management	Evaluate potential budget & finance mechanisms to decrease energy usage across U-M's campuses.	Internal price on carbon, and revolving energy fund to be used for energy efficiency projects.
Commuting <i>Internal Analysis Team</i>	Scope 3 Emissions	Measure the carbon impact of the commute to the three U-M campuses, and explore strategies to reduce the commute's carbon footprint.	Parking pricing system reform, enhanced rideshare and car-sharing programs, improved cycling infrastructure, emphasized central areas for future growth, on-campus housing development.



<p>University-Sponsored Travel <i>Internal Analysis Team</i></p>	<p>Scope 3 Emissions</p>	<p>Evaluate GHG emissions associated with university-sponsored travel, and recommend approaches to reduce the carbon intensity.</p>	<p>Changes for travel-related data management systems; strategies to educate U-M community on the carbon footprint of travel; mechanisms to reduce the amount of university travel, including internal price on travel emissions.</p>
<p>Food <i>Internal Analysis Team</i></p>	<p>Scope 3 Emissions</p>	<p>Evaluate approaches to decrease the GHG footprint associated with food consumption on U-M's three campuses.</p>	<p>Changes to food (especially protein) sourcing through certifications, volume reduction, plant-forward and other beef consumption reduction mechanisms, and other strategies; improved food disposal mechanisms; behavior change through education strategies.</p>
<p>Campus Culture <i>Internal Analysis Team</i></p>	<p>Behavior & Collaboration</p>	<p>Evaluate existing structures and explore strategies to raise awareness, enhance personal investment, and drive behavioral change relating to carbon neutrality.</p>	<p>Institutional leadership office; carbon neutrality training and literacy programs; visible carbon neutrality culture on campus; sustainability strategic plans for individual units.</p>
<p>External Collaboration <i>Internal Analysis Team</i></p>	<p>Behavior & Collaboration</p>	<p>Evaluate opportunities for collaborations focused on scaling and replicating high-impact solutions.</p>	<p>Engagement framework outlining how the university should engage, and which stakeholders it should engage, as it moves towards carbon neutrality.</p>
<p>Environmental Justice <i>Commission Subgroup</i></p>	<p>Behavior & Collaboration</p>	<p>Explore social equity impacts arising from potential recommendations, and how these may be addressed.</p>	<p>Insights and example principles to guide the PCCN in incorporating justice considerations into the final recommendations.</p>
<p>Bio sequestration <i>Internal Analysis Team</i></p>	<p>Carbon Sequestration & Offsets</p>	<p>Evaluate approaches for potential large- and small-scale bio sequestration projects on and off-campus.</p>	<p>Protecting existing natural lands as passive carbon sinks; restoring and enhancing natural lands in lieu of external offsets; prioritizing environmentally and ecologically friendly landscaping practices on campus.</p>
<p>Carbon Offsets <i>Commission Subgroup</i></p>	<p>Carbon Sequestration & Offsets</p>	<p>Will evaluate various options and decision-making criteria for investing in offsite mechanisms to offset emissions not yet mitigated directly.</p>	<p>Third-party validated project credits, cap-and-trade program credits, direct partnerships to develop new projects, offset project decision matrix.</p>
<p>Carbon Accounting <i>Commission Subgroup</i></p>	<p>Measurement</p>	<p>Model various targets and timelines, energy demand reduction and supply decarbonization strategies, emission permits/offsets, and implications of carbon prices.</p>	<p>A multi-dimensional model spanning all emission categories that will allow the Commission to evaluate various scenarios to inform recommendations and administrators to make decisions after the PCCN completes its work.</p>

Community Engagement

Several engagement efforts took place during Phase Two and are summarized below.

- Co-chairs presented to faculty, staff and students at UM-Dearborn as part of their campus strategic planning process.
- Co-chairs presented to faculty, staff and students at UM-Flint and met with representatives of city government, facilities staff, interested students, and deans and faculty.
- Campus culture and communication internal analysis team hosted two town halls at U-M Ann Arbor and one at U-M Dearborn. The team surveyed the UM-Flint campus, as the planned town hall was cancelled due to the COVID-19 crisis.
- The commuting internal analysis team hosted two town halls for faculty, staff and students at U-M Ann Arbor and one at UM-Dearborn. The team surveyed the UM-Flint campus, as the planned town was cancelled due to the COVID-19 crisis.
- The external collaboration team distributed a survey which was completed by 187 stakeholders throughout the State of Michigan.
- The food internal analysis team hosted a U-M Ann Arbor town hall and presented at the Washtenaw County Local Food Summit. They hosted a town hall at U-M-Dearborn and surveyed the U-M-Flint campus after their planned town hall was cancelled due to the COVID-19 crisis.
- The university travel team surveyed to U-M faculty, staff and students who have travelled in the past year to inform the final recommendations to the Commission.
- All analysis teams engaged with a variety of internal and external experts throughout their work.
- The carbon accounting sub group hosted a teach-in on Charting a Path towards Carbon Neutrality at U-M Ann Arbor.
- The City of Ann Arbor was engaged throughout Phase Two. Six individuals working for the Commission directly supported the City in developing its own carbon neutrality plan.
- U-M's sustainability communications manager drafted several articles for the University Record on the teams' work to date. Links to these articles are available [here](#).
- The PCCN website serves to complement and reinforce the Commission's in-person engagement efforts with [a comments portal](#) that has received 175 submissions to date. The Commission has published [a synthesized and categorized summary of all public comments to date, co-chair summaries for all Commission meetings](#), and an [FAQ page](#) which answers questions frequently posed by students and community members.

Next Steps

The third and final phase of the PCCN's work will begin in July 2020 and will continue through December 2020. At this time, the COVID-19 crisis has not significantly altered the PCCN's timeline, but the Commission is planning for contingencies in the event that the crisis persists in a disruptive manner. Commissioners will begin Phase Three by discussing and deliberating on the many dimensions of potential carbon neutrality recommendations for U-M. As the PCCN's recommendations begin to take shape, there will be significant value in gaining the perspectives of U-M students, faculty, and organizational units, with each bringing a unique and important voice to inform the recommendations. There will be opportunities for the broader public to comment on PCCN recommendations prior to their being finalized.

Key PCCN activities during Phase 3 are expected to include:

- Thorough examination of the analysis team reports.
- Deliberating and deciding on preliminary recommendations.
- Firming up cost estimates associated with the various recommendations.
- Engaging key constituents to gain their perspectives on emerging recommendations.
- Periodically updating the U-M Regents, Executive Officers, and key university units on progress.
- Drafting a preliminary final report for public comment.
- Revising the report in response to public comments.
- Finalizing the PCCN report, delivering it to President Schlissel, and making it public.