Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: Climate Committee
From: CMAP Staff
Date: Thursday, October 24, 2024
Subject: Clean Energy to Communities
Purpose: Provide update on Clean Energy to Communities
Action Requested: Discussion

CMAP seeks to update the Climate Committee on the progression of the Clean Energy to Communities project by providing an overview of the project, a status update, and how it aligns with the Climate Action Plan. This memo provides a brief overview of the project and updates regarding stakeholder engagement and strategy development.

Project overview

Commonwealth Edison (ComEd), CMAP, and the Respiratory Health Association (RHA) have partnered to participate in the Clean Energy to Communities (C2C) In-Depth Partnerships Program. This is a competitive opportunity run by the National Renewable Energy Laboratory on behalf of the US Department of Energy. It offers local governments, community-based organizations, and utilities the chance to receive in-depth technical assistance from the national laboratories. CMAP applied for this program in 2023 and was selected as one of five communities in the inaugural cohort for this program. This initiative pairs us with Argonne and Oak Ridge National Laboratories to conduct cross-sectoral research into how the region can decarbonize the transportation sector, in line with federal decarbonization goals, by 2050. Equally as important, this program will allow us to analyze how transportation decarbonization will impact the region's electric grid.

This project is titled Reaching Net Zero: Transport-Energy Scenarios for Northeastern Illinois. It began in February and will last until 2027. ComEd, CMAP, and RHA will use Argonne and Oak Ridge's technical assistance to conduct a scenario planning exercise investigating how the CMAP region can decarbonize the transportation sector in a way that allows for the electric grid to adapt and respond accordingly. This project will be the first of its kind to conduct a joint transportation-electric grid planning exercise.

As part of this process, the C2C team will engage an array of stakeholders, model transportation decarbonization strategies, and create a final deliverable to communicate results to relevant stakeholders and implementers. The project's goal is to inform conversations (and decisions) around the benefits and tradeoffs inherent in the region's commitment to a net zero transportation sector.

CMAP's C2C initiative will harness the stakeholder engagement activities occurring as part of the development of the Comprehensive Climate Action Plan (CAP) for the greater Chicago area. As the CAP engages stakeholders in identifying GHG reduction strategies and corresponding assumptions on

implementation rates from all major emissions sources and sinks, C2C will be much more focused. Building on the CAP's findings and conclusions, C2C will benefit from Argonne and Oak Ridge's complex transportation and electric grid modeling capacity to answer detailed questions about how to best decarbonize the transportation sector.

Once complete in 2027, CMAP intends to use C2C results to advance and refine the agency's climate action planning efforts. This could include updating reduction targets and recommendations first developed in the CAP to reflect C2C modeling findings. It could also inform the agency's legislative agenda on the state and federal actions needed to reach the region's goals. Similarly, the C2C project could inform the priorities and investments of the region's long range transportation planning process.

Project updates

To date, the C2C project team has completed several key tasks including emissions scoping, attending the 2024 NREL C2C Summit, and completing a strategy development and prioritization process.

Emissions scoping. Unlike the CAP's inclusion of all GHG sources and sinks, the C2C project will focus on a subset of transportation emissions:

- On-road vehicles: passenger cars, light duty trucks, motorcycles, buses, medium- and heavy-duty trucks.
- Off-road transportation: Passenger and freight rail, rail yards and other freight associated facilities, marine vessels, and aviation.
- EV charging, alternative fuel, and petroleum/gas fuel infrastructure.

2024 NREL C2C Summit. As part of the C2C program, CMAP and its partners attended an annual C2C Summit hosted by NREL at their Colorado campus. These summits are an opportunity for all C2C In-Depth Partnership recipients to provide project updates, to exchange ideas with one another, and to receive feedback from other participating community organizations and national laboratories. Staff had a chance to learn from other participating agencies such as the Delaware Valley Regional Planning Commission, build relationships with project partners, and to explore NREL's campuses and learn more about the important work being done there.

Strategy prioritization and development. Working in tandem with the CAP process, CMAP developed a list of transportation decarbonization strategies and enhanced its understanding of Argonne's transportation modeling capabilities (Table 1). The C2C team is currently prioritizing a list of strategies to investigate in a first model run. A similar process is underway on the electric grid side. CMAP will soon begin to develop specific dimensions of each strategy and evaluation criteria for measuring the effectiveness of a given strategy on achieving the project's goals.

Table 1. Modeling categories and sample levers

Categories	Sample levers
Freight	Off-hours delivery, electrification, costs, etc.
Delivery	Service time, EVSE deployment, demand density, etc.
ITS & TDM	Congestion pricing, managed lanes, V2I/V2X, etc.
Electrification	Vehicle range and characteristics, EVSE deployment, costs, and charging time/speed
Transit / Multimodal	Service improvements, BRT, fare incentives, electrification, etc.
Land use	Zoning policies, growth boundaries, TOD, parking management, etc.
Traffic / Vehicles	Adaptive signal control, curb management, autonomous driving, etc.
Demand	Telecommutes, e-commerce, new mode adoption, long distance travel choices, etc.

Ride share	Pooling incentives, FMLM, fares and subsidies, etc.