PROJECT NARRATIVE / WORKPLAN for EPA Climate Pollution Reduction Grant - Implementation Phase

Kane County, Illinois Coalition

The Kane County Coalition ("coalition") is applying for the Environmental Protection Agency's (EPA) Climate Pollution Reduction grant (CPRG) – implementation phase. The coalition is led by Kane County, Illinois, and consists of coalition members: DuPage and Will Counties, Cities of Aurora, Batavia, Elgin, Naperville, Waukegan and Village of Downers Grove, Illinois. Implementation partners are: Kendall County; Yorkville; City of Highland Park; and the Indian Prairie School District (District 204). The distinction between a coalition member and an implementation partner is detailed in this application in the roles and responsibilities section. All these organizations are located within the Chicago-Naperville-Elgin, IL-IN-WI Metropolitan Statistical Area (MSA).

The coalition area for calculations is defined as DuPage, Kane, Kendall, and Will Counties and Cities of Highland Park and Waukegan (Lake County). Census data, along with data from the Illinois Department of Motor Vehicles, are utilized in the emission reductions calculations. If data were not available at the municipal level, county level data was used. Reduction calculations are conservative because stakeholders residing in the region but not in the coalition area may attend public education events. Rebate and group buy discounts will be limited to residents in the coalition area; however, residents outside the coalition area may reduce their emissions using existing federal and state financial incentives detailed in the education program.

According to the 2020 census data, the population encompassed by the coalition area is approximately 2,395,762 residents[1] living in 814,131 households[2]. There are approximately 859,044 housing units[2] within the coalition area, with 73% occupation by owners. There are about 66,130 employers[2]. There are about 34,790 commercial, industrial, and institutional buildings in the member counties (Kane, DuPage, and Will). Approximately 7% of people live in poverty[2]. Portions of DuPage, Kane, Kendall, Lake, and Will Counties contain disadvantaged census tracts – specifically in Cities of Aurora, Elgin, Joliet, and Waukegan. Within the coalition area, about 433,356 people resided in low-income and disadvantaged communities (LIDAC), representing about 18% of the population.

The overall objectives of this workplan are to meet the initiatives provided in the Priority Climate Action Plans (PCAP) for the Chicago MSA and the state of Illinois; achieve the goals listed in the CPRG implementation phase Notice of Funding Opportunity (NOFO); and achieve strategies from EPA's Strategic Plan (FY22-26). Secondary, this workplan strives to meet the goals set forth in the Metropolitan Mayors Caucus' (MMC) 2021 Climate Action Plan for the Chicago Region, Kane County's 2024 Climate Action Implementation Plan, and Sustainability Plans and Climate Action Plans adopted by municipalities within the MSA. These plans recognize that local governments, residents, and businesses will collectively contribute to effectively reducing greenhouse (GHG) emissions and collaborate to achieve emissions reduction targets.

In addition to regional efforts, local governments and residents have benefited from state actions. The State of Illinois has led in setting targets for clean power generation, providing renewable energy and electric vehicle (EV) financial incentives, and creating workforce initiatives for underserved populations by passing the Climate and Equitable Jobs Act (CEJA) in 2021. CEJA programs include Illinois Shines, Illinois Solar for All, solar for public schools, and a Community-Driven Community Solar program for local governments. Additional details on eligibility for these programs will be detailed in the reduction measures section of this workplan. CEJA provides funding for clean energy workforce hubs and contractor development focused on training and employing disadvantaged individuals through the

[1] https://data.census.gov/

[2] www.census.gov/quickfacts/fact/table

Illinois Energy Navigator Program and the Equitable Energy Future Grant Program. There will be multiple hubs located within the Coalition area (Aurora, Joliet, and Waukegan). Because the state clean energy workforce initiatives are currently underway, the coalition will benefit directly from the newly trained workforce and will not attempt to duplicate these efforts.

CEJA allowed for the first ever statewide stretch codes, requiring higher levels of energy efficiency and electric equipment readiness in new and substantially renovated commercial and residential properties. The 2024 Stretch Codes are under development now and will be available for adoption by June 2024. The state of Illinois passed the Electric Vehicle Charging Act in 2023, requiring new construction and substantially renovated residential properties must install electric vehicle (EV) infrastructure. Local permitting departments are tasked with enforcing the EV Charging Act. CEJA required the largest electric utilities to create a Beneficial Electrification Plan. The electric utility that serves the majority of the coalition area will release their plan soon. The Illinois Finance Authority administers the Illinois Climate Bank; forthcoming initiatives include the climate bank bridge loan program for solar and energy efficiency.

Section 1: Overall Project Summary and Approach

This workplan is intended to implement ambitious measures to reduce cumulative emissions significantly by 2030 and beyond. To eliminate the emissions associated with burning fossil fuels that generate electricity, heat our buildings with methane gas, and power our vehicles with petroleum products, lies with the transformative adoption of energy efficient, electric appliances and electric vehicles (EVs) that are powered by renewable energy. Switching to renewable energy sources is necessary when electrifying to reach emissions targets by 2050. Powering electric equipment by renewable energy will greatly reduce air pollution.

The coalition is committed to reducing greenhouse gas emissions in the power, buildings, and transportation sectors, as they comprise the majority of emissions in the MSA. The emissions associated with these sectors are: stationary energy (building's use of both grid electricity and methane gas) - 65%; and transportation - 32%. Together, these comprise 97% of the emissions in the MSA, according to the Chicago Metropolitan Agency for Planning's (CMAP) "Regional Greenhouse Gas Emissions Inventory, Updated with 2019 Data".[3] The remaining 3% of emissions is attributed to the waste sector. Many communities already have or are pursuing comprehensive recycling and composting services, which is why the waste sector is excluded from this application. Per CMAP, the 2019 Greenhouse Gas Inventory calculated 34.8 MMT CO_2e of greenhouse gas emissions from the transportation and buildings (electricity and gas use) sectors within the coalition area.

In this workplan, emission reductions are expressed in terms of carbon dioxide equivalent (CO_2e), utilizing EPA's conversion tools. Greenhouse gas critical air pollutants (CAPs) generated from burning fossil fuels that will be reduced by this workplan are methane gas (CH_4); carbon dioxide (CO_2); sulfur hexafluoride (SF_6); and nitrous oxide (N_2O). Co-pollutants and hazardous air pollutants (HAPs), such as ozone (O_3), particulate matter ($PM_{2.5}$), carbon monoxide (CO), lead (Pb), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2), will also be reduced when fossil fuels are no longer burned. Hydrofluorocarbons (HCFC-, HFC-, and R-gases) and perfluorocarbons (CF- and C-gases), typically utilized as refrigerants, insulation, propellants, and in manufacturing processes, will not be directly calculated for reductions or reported on by the implementation of this workplan.

[3] www.cmap.illinois.gov/data/greenhouse-gas-inventory

Electrification can reduce emissions by nearly 90% for buildings and 77%[4] for vehicles. A study by the National Renewable Energy Laboratory found that carbon emissions from electric vehicle charging can be reduced by up to 53% if charged with renewable energy.[5] Increasing distributed and utility-scale renewable energy generation will further reduce emissions of buildings and vehicles to net zero. **The approach to implementing this grant award will consist of deploying proven, available zero emissions technology to the extent possible through electrification and efficiency improvements by providing: 1.** additional direct hire **staff** for Kane County; **2. subawards** to counties, including Kane, and participating municipalities and local agencies; **3.** a contract for a **financial auditor** to ensure all funds are spent appropriately**; 4.** contract for **technical assistance for** creating a voluntary energy and greenhouse gas emissions buildings benchmarking training program; **5. technical assistance cohorts** for staff of municipalities and counties, parks, libraries, and school districts on funding resources and incentives, fleet transition planning, renewable energy, EV charging, building efficiency and electrification and recent legislation and regional programs; **6. rebates** for electric exterior building maintenance equipment, cold climate air source heat pumps, and heat pump water heaters; **7. group buys** for electric vehicle (EV) chargers for existing multi-family buildings and cold climate air source heat pumps; **8. communitywide education and outreach programs** lead by contracted staff with a program lead; technical managers (power, transportation, and buildings); data manager; financial manager; education/outreach managers; and community managers. Contracted staff will be responsible for collecting metrics data and submitting semi-annual reports to EPA.

Programs, projects, education, and outreach are intended to work together with the support of staff and coalition members and partners. Financial incentives describe any and all tax credits, rebates, and discounts that reduce the total cost of installing and purchasing emissions reducing equipment. Available incentives are noted under each measure and listed in the detailed budget if utilized. Emissions reduction calculations are reduced by the percentage from existing federal credits, as detailed in the assumptions document. Milestones and timeline of these approaches are provided in section 3c and metrics in section 3b. **A detailed explanation of each item is provided in the budget narrative attachment and summarized below.** Italic text in the descriptions below is duplicated in the budget narrative for ease of review.

1. Implementation Plan Approach – Hire Additional Staff and Existing Staff Time for Coalition Lead

Kane County will require three additional staff and hours for existing staff to manage the award as the lead applicant and their subaward projects.

2. Implementation Plan Approach – Subawards

Subawards for the counties, municipalities, and a school district are requested in the budget to install renewable energy systems, EV charging stations serving both the public and government fleet, and energy efficiency and zero emissions equipment and improvements in buildings. Not only will these projects reduce emissions, but they will also reduce on-going operating and maintenance costs; reduce taxpayer burdens; and set a positive example. Subaward projects must be bid out in accordance with the EPA Subaward Policy, Build America, Buy America (BABA), and Davis Bacon Prevailing Wage requirements. All building equipment must meet federal energy efficiency standards. Building equipment must meet federal energy efficiency standards as listed on the Department of Energy webpage. All projects will be required to acquire local permits.

3. Implementation Plan Approach – Contract for a Financial Auditor

[4] https://emp.lbl.gov/news/efficiency-flexibility-and-electrification

[5] https://www.nrel.gov/docs/fy22osti/82081.pdf

Kane County will hire a financial auditor through a contract to ensure that all funds are spent in accordance with federal policies.

4. Implementation Plan Approach – Technical Assistance for Buildings Benchmarking Training Program
Budget is requested for a contract to assist the coalition participants with building energy and greenhouse gas benchmarking program, laying a foundation for future Building Performance Standards. The number of existing buildings far exceed the number of new buildings that will be constructed, which is why existing buildings must be retrofitted to become net zero energy. Participation in the benchmarking program will be voluntary as mandatory measures may be beyond reach, the voluntary nature of this program will bring positive change to the coalition members and partners. *The deliverables of this contract are: training events for nonresidential building owners for benchmarking energy and greenhouse gas emissions and voluntary submission of benchmarking data to the Data Decarbonization Manager.*

Training will be provided to county/municipal participants on how to use software tools, such as Energy Star's Portfolio Manager, Audit Template, Standard Energy Efficiency Data (SEED) Platform, and Unique Building Identifier (UBID). The contractor will use the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Building Performance Standards (BPS) Library and Better Buildings as resources. In addition to software training, deliverables include gathering energy use data from each participant's buildings and providing an estimate of emissions reduction possible if a BPS policy is enacted. The contractor will work with knowledgeable nonprofits and agencies. Applying for certification will be encouraged. Scores will be shared with the decarbonization data manager annually for inclusion in reporting.

5. Implementation Plan Approach – Technical Assistance Cohorts for Local Government and Agencies
A technical assistance (TA) program to administer cohorts for local government facilities and eligible agencies to assist them in moving forward on projects to decarbonize their buildings and transportation by installing solar systems, installing EV chargers, fleet electrification planning, communitywide public EV charging readiness plans, electrification of buildings, resources to increase knowledge of available stretch codes, and improving the efficiency of buildings. Some communities need assistance with accessing federal elective pay, grants, or rebates that are available. Participants may need guidance to take advantage of the state's Community-Driven Community Solar program. Within our coalition, we recognize that some communities may require support in updating permitting forms to enhance the efficiency of EV charger installations or in gathering comprehensive data on solar system installations. With a shared commitment among the coalition, strides towards improvements and streamline permitting procedures will be made by the technical assistants and community managers to assist and enhance the regional efforts to reducing our greenhouse gases and standardize data collection metrics.

Further education on technical subjects, such as the new statewide stretch codes, benefits of a voluntary building energy benchmarking program for nonresidential buildings, how to promote public EV chargers, and/or municipal fleet transition planning will be provided by contracted technical managers to assist municipal staff and elected officials with planning and constructing projects. Contracted staff will collaborate with existing regional organizations that target audiences; for example, Councils of Government, Mayors and Managers Conferences, and the Illinois Municipal League. Contracted staff will collaborate with reputable regional, state, and national nonprofit and professional organizations to leverage existing educational resources and training content and their networks and events to support the coalition's outcomes. Examples include Illinois Green Alliance (state chapter of the U.S. Green Building Council), Midwest Energy Efficiency Alliance, New Buildings Institute's Advanced Water Heating Initiative, Illinois Solar Energy Association, Illinois Alliance for Clean Transportation, and Commonwealth Edison (ComEd) electric utility. The contracted Transportation Decarbonization

Manager will assist municipal staff with writing and adopting new ordinances and fleet electrification planning, if requested. New ordinances may be desired to require EV chargers in new construction or renovation of offices as an amenity for employees and corporate fleets.

Municipal, County, Forest Preserve, and park district public facilities can provide signage to educate visitors about demonstration projects. A local example is a real-time display of the energy produced from the solar system on the roof and a project description in the lobby of a local net zero energy park district activity center. Public libraries can host educational events and provide a kiosk of handouts on financial incentives and rebate and group buy programs.

Focused engagement is planned with school district superintendents, administrators, county regional education offices, city education commissions, and community colleges. There are opportunities to engage with administrators, boards, educators, service providers, parents, and students on zero emissions technology such as building electrification, electric school buses, and solar panels through grant recommendations and career days. In many school districts, their energy costs are one of their biggest on-going expenses. Reducing their energy needs through efficiency improvements and generating their own electricity with solar systems will provide a return on investment of less than ten years. Reducing expenses creates financial stability for the district and the greater community. Most schools need assistance identifying available federal elective pay, grants, or rebates. An expanded no idling campaign within the coalition area could be initiated with the parents, with support of the school administrators. Uniform signage could be provided in the parent pick up areas. Educating students in decarbonized technologies may inspire their career path. For example, outreach could be provided to teachers and students on how the newly installed solar panels work to produce electricity. Students may take home this new knowledge to share with their parents, encouraging them to decarbonize their homes and businesses. Resources from the federal government and other institutions such as EPA's "Energy Efficiency Programs in K-12 Schools Guide", New Buildings Institute's "The Building Electrification Technology Roadmap for Schools", and Climate Jobs Illinois' Carbon Free Healthy Schools program can be shared with educational institutions. Grant and federal technical assistance opportunities can be shared with the network of schools in the coalition. Engagement is planned with high school students via events and guidance counselors on trade programs.

Collaboration with community colleges that have trade programs, such as HVAC and electrician programs, is planned. Trade school representatives will be invited to workforce training events. Local universities will be contacted as part of outreach activities to share benefits and financial incentives for emissions reduction technologies.

6. Implementation Plan Approach – Rebates

Rebate programs will incentivize the transition to efficient electric alternative equipment communitywide. Contracted staff will administer rebate programs and will be designed in the first two quarters*. Funding is requested to offer rebates for electric exterior building maintenance equipment, both residential and commercial ($300 each for 2,000 rebates per year).* Not only will emissions be reduced, but noise pollution as well. Home equipment can typically plug into standard outlets for charging, while commercial equipment may require medium-duty chargers and 240V outlets. Some municipalities participating in the coalition have piloted successful electric equipment rebates that were expended within a month due to popularity. *Rebate programs for residential heat pump water heaters ($1,000 each for 1,000 rebates per year) and residential cold climate air source heat pumps ($1,000 each for 1,000 rebates per year) are budgeted. Rebates will financially incentivize stakeholders to switch to efficient, electric equipment, reducing their emissions.* Rebate programs will run continuously and issue rebates to disadvantaged residents as a priority.

7. Implementation Plan Approach – Group Buys

Group buys will incentivize the transition to efficient electric alternative equipment communitywide. Contracted staff, likely a regional nonprofit who has organized group buy events previously, will administer group buys. *Separate budget items are requested for the administration of group buy programs and discounts provided to participants. Funding is requested for group buys for residential cold climate air source heat pumps ($800 discount for 600 residents per year) and EV chargers for multi-family properties ($1,000 discount for 10 properties per year), prioritizing environmental justice areas.* Group buy programs will be designed in the first two quarters. Group buys provide education, a financial discount, and connect participants with knowledgeable contractors.

8. Implementation Plan Approach – Communitywide Education and Outreach Programs Staff

To support all coalition participants, staff will be contracted: a decarbonization program lead; technical decarbonization managers specializing in each of the sectors (power i.e. renewable energy, buildings, and transportation); education/outreach, data, and financial managers; and community managers assigned to communities. Because education/outreach is a substantial task, multiple managers will be hired to focus on 1. residential, low-income, and multi-family; 2. businesses and workforce organizations; 3. tax exempt organizations such as municipalities, park, school, and library districts, and nonprofits. Descriptions of each position and their responsibilities are provided in the resume attachments. Community managers will measure, gather, and report metrics for reporting from subrecipients. Community managers will assist municipalities and counties with promoting events and providing educational materials on their website or a shared program website.

The coalition lead will contract staff to support greenhouse gas emissions reduction programs. **The coalition will support education/outreach programs to overcome low adoption rates of solar panels, EVs, and electric home appliances. Straightforward information on the available financial incentives (federal tax credits, state rebates, income-based programs), state and utility support programs, total costs of ownership, and financing options (green banks) will be provided to each audience.** Clear, positive marketing is planned to engage the community. Contracted staff will be prepared to respond to late adopters in a meaningful way.

A community engagement program will be led by technical and community managers for existing community-sponsored events (e.g. farmers markets, festivals); educational events with speakers at libraries and local government facilities; video streaming and recordings of events to ensure equal access for those not able to attend in-person; handouts shared at events and on websites; and promotion of group buys and rebates on participants' websites, social media, press releases, and newsletters. Handouts will list all financial incentives, such as tax credits, rebates, group buys, and financing options available from federal, state, and regional sources. Links to state energy office rebates, electric utility rebates, and educational materials will be made available in multiple languages. Technical managers will create lists of qualified service providers for the website and as an event handout to streamlined access to knowledgeable professionals and ensure that individuals receive expert guidance in installing and maintaining these cutting-edge technologies. Engagement will focus on these groups: communitywide (residents, businesses, and nonprofits); municipal staff and elected officials; special districts (schools, libraries, and parks); and service providers (installation and maintenance contractors).

Outreach efforts will be tracked to ensure disadvantaged populations are participating in communitywide programs. The Climate and Economic Justice Screening Tool (CEJST) and EPA's EJScreen shows a number of environmental justice (EJ) areas within the coalition area. Low-income populations will be targeted by contracted staff for engagement of specific income-based programs, such as Illinois Solar for All, Department of Energy / State Energy Office home appliance and equipment rebates, and existing weatherization and energy assistance programs. Detailed materials will be created specifically

for low-income households. A barrier for low-income households may be needing structural or electrical upgrades before zero emissions equipment can be installed. Contracted staff may identify and provide available information to assist these households overcome these issues. Events will be held in and near EJ census tracts to ensure accessibility.

Contracted technical and community managers will be a resource for local elected officials and government staff. Community managers will pass technical information to staff, collect metrics, assist with subaward projects, and participate in community education/outreach events. They will work with their assigned municipality's citizen environmental / sustainability / climate action taskforce / commission / committee / board, if one exists, as one means of community engagement. Citizens that participate in their local government citizen environmental organizations may be early adopters and supporters of electrification and energy efficiency; they can assist with sharing information in their newsletters and networks. Citizens that have already switched to electric alternatives such as vehicles, heat pumps, induction cooking, and solar panels may influence their families, neighbors, and employers to switch too.

Technical managers will be knowledgeable on regional workforce available to install and maintain electric equipment, such as licensed electricians who can upgrade a building's electric service and install new 240V outlets; Illinois certified EV charging station installers; HVAC contractors who are knowledgeable in cold climate air source and geothermal heat pumps; plumbers who install heat pump water heaters; building raters who can perform energy audits, and solar panel installers. Targeted outreach to service providers is planned to ensure they are providing consumers with the benefits and financial incentives to encourage the switch to electric alternatives. Workshops for HVAC contractors in other states have been successful in encouraging heat pump adoption. Technical managers will create and maintain a directory of qualified service providers. Outreach to state and regional jobs coalitions, local CEJA workforce hubs, trade unions (IBEW Renewable Energy Fund, PowerForward DuPage), and community colleges and trade schools that train electricians, plumbers, and HVAC contractors will strengthen workforce collaboration. The regional workforce has the capacity to take on projects without long delays and gain access to equipment for installation.

Businesses can be reached through business chambers and economic development organizations. A portion of the 85,961 employers[2] within the coalition area may be eligible for federal and state financial incentives for energy efficiency improvements, solar systems, EV chargers, and EVs for corporate use. Information will be provided to support Business owners awareness of the total cost of ownership and return on investment of equipment and vehicles. Alternatives typically cost less to operate and maintain, reducing businesses' on-going costs. When businesses are aware that high performing buildings may reduce their utility bills, they will look for them. Businesses may not be aware of the Commercial Property Assessed Clean Energy (C-PACE) financing program for improvements. Citizens who have embraced decarbonized technologies in their personal life may influence or be a decision-maker in the workplace. Contracted staff will share resources with established local nonprofit organizations such as Sustainable DuPage[6], who educates businesses on sustainable practices and product certifications as well as offers a green business assessment with the Smart Energy Design Assistance Center (SEDAC) at University of Illinois at Urbana-Champaign. The coalition can collaborate with resources such as University of Illinois at Chicago, which has an industrial assessment center that conducts energy and pollution assessments[7].

[6] www.choosedupage.com/sustainable-dupage/

[7] https://iac.uic.edu/

Education and outreach can create advocates within the community who will further educate their clients. One example is outreach with regional realtor associations by recommending the National Association of Realtors' GREEN designation[8]. Realtors can educate both buyers and sellers. They may utilize data from the voluntary nonresidential building energy benchmarking program for buildings to assist their clients with decision-making. This plan seeks to increase the number of buyers who inquire about energy efficiency or average monthly utility bills when looking at properties. Realtors can encourage Energy Efficient Mortgages, HomeStyle Energy mortgages, and GreenCHOICE mortgages[9].

The program lead and managers will seek to partner with businesses that can accelerate the adoption of decarbonized technology, such as new home builders. Builders can go beyond existing base building codes or new stretch codes to offer a "green upgrade" package, which could include solar panels, electrical outlets for level-2 EV chargers in garages, air source heat pumps, heat pump water heaters, and induction or electric cooking appliances, electric or heat pump clothes dryers, envelope sealing, and higher rated insulation and windows. A model home can showcase all of these items to potential buyers and allow them to experience these features before investing in them. Salespeople can provide potential buyers with information on the immediate benefits of lower utility bills, avoiding the costs and disruptions of future retrofits, and Energy Efficient Mortgages to offset the higher upfront costs.

Multi-family buildings – apartments and condominiums – are a portion of the community with a low rate of adoption of electric technologies. Multi-family buildings may house disadvantaged households more frequently than single-family homes. Outreach will target property owners through regional Housing Authorities to learn about the incentives and benefits of installing solar panels, EV chargers, and electric appliances. Because roof layouts may be complex or parking areas limited, contracted technical managers will create and maintain lists of qualified electrification contractors specializing in multi-family buildings to assist these stakeholders. Renters will also be targeted on how they can purchase portable electric appliances, sign up for community solar, and use public EV chargers if their building does not currently offer them.

Coalition Roles and Responsibilities

Coalition members will be responsible for roles and commitments listed in this workplan. The distinction between a coalition member and an implementation partner is that coalition members will implement all the initiatives. An implementation partner will only implement specific initiatives and may or may not receive a subaward to complete the work. All subaward projects and programs will occur within the coalition area consisting of: DuPage, Kane, Kendall, and Will Counties and municipalities within these Counties; and Cities of Highland Park and Waukegan , which are located in Lake County, Illinois.

All coalition members will participate in all the initiatives; they will be responsible for administering subaward contracts, providing metrics data, and contributing to the implementation of programs (rebates, group buys, technical assistance, and education/outreach). Coalition members will make their logos, website, and communications available for advertising programs and events. Coalition members and partners are expected to share information with their networks including, but not limited to, residents, school districts, business chambers, and low-income building owners. Both members and partners are expected to share notices of events, group buy and rebate programs, and educational materials on their websites, social media accounts, newsletters, and push notifications. Stakeholders of coalition members that have similar rebate programs will not be eligible for a duplicate rebate. The coalition will not limit who may or may not attend public education events; however, only stakeholders

[8] www.nar.realtor/education/designations-and-certifications/green

[9] www.energystar.gov/newhomes/mortgage_lending_programs/energy_efficient_mortgages

who reside in the coalition area will be eligible for programs financial incentives (i.e. rebates and group buy discounts).

Coalition members will be responsible for submitting a signed Memorandums of Agreement (MOA). A subrecipient is an entity that receives a subaward to carry out a measure, typically to construct an emission reducing project. Signed Notices of Intent, stating their intent to sign a MOA by July 1, 2024, are attached. If a coalition member does not sign a MOA by the deadline, they will be removed from the coalition and will not receive subawards. Kane County staff is working with participants to have their attorneys review the MOA and their municipal or county board go through their process to sign it.

As part of risk mitigation, if a coalition member is unable to complete the requirements of the grant, the coalition lead will reallocate funding to other members, at EPA's discretion. To mitigate risk, the coalition lead will provide subaward funds as reimbursements when projects are completed and approve rebates and group buy discounts after equipment has been installed.

This workplan depends upon stakeholders within the coalition area participating in education/outreach events, technical assistance programs, and following through with utilizing the incentivized equipment. The coalition lead will propose additional strategies to increase participation if it is low after the first year of implementation in the pursuit of widespread engagement.

Specific reduction measures are provided below by each sector, including existing financial incentives, unmet financial needs, and limited workforce development considerations. Workforce considerations are discussed in detail in other sections of this workplan. Assumptions for communitywide adoption rates and emissions reductions are detailed in the appendix.

Power Sector

Chicago MSA PCAP Strategies:

- DE2 Increase renewable energy supply and energy storage capacity for residential, commercial, municipal, and industrial electricity use.

a. Description of GHG Reduction Measures

Power sector goal: *Increase renewable energy generation through distributed solar systems through subaward projects, group buys, and communitywide education and outreach of financial incentives.* **Emissions reductions from the power sector will be achieved by generating additional renewable energy through installation of distributed photovoltaic (PV) solar panel systems.** Solar canopies over parking lots where roofs are not suitable for solar panels may be an option. **Providing electricity generated by renewable sources is the ultimate goal, as this will further reduce emissions of electric equipment to net zero.**

Solar systems are well-suited to the suburban setting and are likely to be utilized rather than wind turbines. Education and outreach is essential to foster community awareness of the financial incentives to install solar panels: federal tax credit (25D Clean Energy Tax Credit extended until 2032 by the Inflation Reduction Act) or direct (elective) pay (45Y Clean Electricity Production Tax Credit) for tax exempt organizations; Illinois Solar Renewable Energy Credits (SRECs); net metering offered by the regional electric utility; and income-based programs. Specific education will be provided to businesses, realtors, multi-family property occupants and owners, and low-income homeowners. Green electricity aggregation programs and utility-scale renewable energy systems (i.e. community solar) will be recommended to municipal leadership to provide additional options to underserved populations.

Subawards will be utilized to install solar systems on local government buildings, some of which are located in environmental justice areas. A contracted technical power/renewable energy manager will

provide guidance to subrecipients, businesses, organizations, and residents to further solar systems on suitable roofs and ground-mounted systems, including parking lot canopies.

b. Demonstration of Funding Need

Funding is requested to purchase equipment and install renewable energy systems on municipal facilities, as detailed in the budget. Only municipal facilities that have franchise agreements are eligible for the Community-Driven Community Solar program, so not all are eligible to participate. That program has limited funding – only about $5 million annually, resulting in only a few installations a year.

The detailed budget shows the breakdown of other incentives utilized such as federal direct pay, state solar renewable energy credits, and local utility rebates. Despite these other incentives, there remains a funding gap. Not only will this grant award reduce emissions, it will also lower local government's electric bills, which may exceed a million dollars annually. Savings from on-going operating costs allow taxpayer funding to be spent on other projects, such as flood control, road repairs, or essential services.

While the cost of installing solar panels has decreased, residents and businesses still pay about 30-50% out-of-pocket. This cost can be prohibitive - to overcome this issue, education and outreach of the available incentives, financing options, future availability of loans from the National Clean Investment Fund, and future state programs needs to occur. A pay-as-you-save (PAYS) program is under development by the utility company for 2024, creating another option for homeowners to pay for solar panels. Contracted staff will create awareness to low-income households who may not be aware that they are eligible for the Illinois Solar for All (SFA) program. The state of Illinois has applied for the federal Solar for All competition; if awarded, additional funding may be available in the Illinois SFA program. An education and outreach program is an unmet financial need for all the participants.

c. Transformative Impact

Funds will allow for the following renewable energy generation systems to be installed at local government buildings, residential properties, and multi-family properties. Adoption rates from outreach are listed in the reduction calculations assumptions attachment.

- 62 new solar systems will be installed on local government buildings from subaward projects
- 128,857 new solar systems will be installed on any building from education and outreach

With more than 850,000 housing units, there is large potential for increasing residential rooftop solar installations. According to Project Sunroof, on average, about 85% of roofs within the coalition area are viable for solar systems.[10] There are over a half a million viable roofs capable of producing 14,220,000 MWh (AC) of electricity per year, potentially reducing carbon dioxide emissions by 12,571,000 metric tons.[10] The Illinois Solar Energy Association estimates that approximately 2% of homes have installed solar panels. Per EPA's greenhouse gases equivalencies calculator website, an average home emits 5.067 metric tons (MT) of CO_2 per year, or 18.6 MT of CO_2e, from electricity, which could be reduced substantially if a household installed a solar system. Most households size their solar system to compensate for 100% of their annual electricity usage if roof space is available.

For households that struggle financially, consistent and low monthly utility bills will create stability and eliminate shut-offs for nonpayment. Community solar subscriptions lower utility bills by about 20% while utilizing renewable energy, which is an option for renters and multi-family households that do not have authority of the roof.

Education and outreach is essential to increasing the number of solar systems installed and the amount of electricity generated. Materials detailing financial incentives, financing options, and qualified service

[10] https://sunroof.withgoogle.com/

providers will be shared with residents, businesses, and other stakeholders. **Estimated emissions reduction from the power sector portion of this award are 50,401,279 MT CO_2e by 2050.**

Buildings Sector

Chicago MSA PCAP Strategies:

- BE1 Engage residential utility customers to optimize building efficiency leveraging residential energy assessments, energy efficiency rebates, incentives, tax credits and weatherization, housing rehab, and energy assistance programs.
- BE2 Engage residential utility customers to electrify space and water heating leveraging residential energy assessments, rebates, incentives and tax credits and weatherization and energy assistance programs.
- BE3 Engage commercial, institutional, and industrial utility customers to optimize building efficiency leveraging tools and programs such as facility assessments, energy management, retro commissioning, demand response, performance contracting, energy efficiency rebates, incentives, tax credits, and PACE financing.
- BE4 Engage commercial utility customers to electrify buildings leveraging tools and programs such as facility assessments, energy management, rebates, incentives, tax credits, direct pay and PACE financing.

a. Description of GHG Reduction Measures

Buildings sector goal: *Increase energy efficiency and electrification of buildings through subaward projects, group buys, rebates, and communitywide education and outreach of financial incentives.* **Emissions reductions from the buildings sector will be achieved by increasing energy efficiency and electrifying equipment to eliminate methane gas use, in both existing and new buildings, through education and outreach.** Funding is requested for local governments and agencies to retrofit their facilities to increase efficiency and replace equipment while setting an example for the community.

Group buys will be organized to provide education, a discount, and vetted contractors for residential cold climate air source heat pumps, solar systems for multi-family buildings, and EV chargers for multi-family buildings. Group buys will prioritize low-income properties by targeted outreach. Rebates are budgeted to incentivize switching to heat pump water heaters and cold climate air source heat pumps. There are thousands of residential and nonresidential buildings within the coalition area; appliances and mechanical systems are constantly being replaced, typically when they are at their end of useful life. Owners and contractors will benefit from education on incentives to choose the most efficient, electric equipment, as this new technology is always changing.

Communitywide education and outreach to residents, businesses, institutions, and service providers for existing available incentives, such as 179D Energy Efficient Commercial Buildings deduction, Energy Efficient Home Improvement tax credits (IRS form 5695), and 45L tax credits for builders of energy efficient homes, will occur. Education will provide financing options, future availability of loans from the National Clean Investment Fund, and C-PACE financing information to stakeholders who need additional financial assistance.

b. Demonstration of Funding Need

Despite existing financial incentives and financing options, costs remain to install new technology. Rebates and group buys create an opportunity for education and outreach, while engaging the workforce. For subaward projects, the detailed budget shows the breakdown of other incentives utilized, such as federal direct pay and local utility rebates.

c. Transformative Impact

Funds will allow for the following amount of efficient, electric equipment and building improvements to be installed at local government buildings and residential properties.

- 33 government building improvements from subaward projects
- 5,000 heat pump water heaters installed by 2030 from rebates
- 5,000 residential cold climate air source heat pumps installed by 2030 from rebates
- 3,000 residential cold climate air source heat pumps installed by 2030 from group buys
- 42,952 heat pump water heaters installed by 2030 from education and outreach
- 85,904 residential cold climate air source heat pumps installed by 2030 from education and outreach

Because the useful life of home appliances and equipment is typically ten to twenty years, it becomes imperative to prioritize emission reductions by transitioning to electric equipment upon replacements rather than continuing to use methane gas powered equipment for another decade or more. If the switch occurs to electric equipment when replacing, nearly all equipment will be electric by 2050. The ultimate goal is to power electric equipment from renewable sources, creating zero emissions operations.

A benefit of switching to efficient, electric equipment is that electricity tends to be less expensive than methane gas, which reduces monthly utility bills. Utilizing renewable energy for electricity can further reduce monthly energy costs. It is possible to eliminate a gas bill and only pay for grid connection fees and taxes for electricity when using on-site solar systems. Lower utility bills can benefit all stakeholders (residents, local governments, school, park, and library districts, and businesses), especially disadvantaged residents.

Per EPA's greenhouse gases equivalencies calculator, an average home emits 7.187 MT CO_2 annually from combined electricity (5.067 MT CO_2) and gas (2.12 MT CO_2) usage, or 26.4 MT CO_2e. With over one million housing units in the coalition area, housing contributes more than 29.8 MMT CO_2e annually. In the Chicago MSA, propane is rarely used as a heating fuel and therefore, is excluded from greenhouse gas emission calculations.

Education and outreach play a crucial role in enhancing building efficiency and promoting the adoption of electric appliances. Materials detailing financial incentives, financing options, and qualified service providers will be shared with residents, businesses, and other stakeholders. **Estimated emissions reduction from the buildings sector portion of this award are 16,601,984 MT CO_2e by 2050.**

<u>Transportation Sector</u>

Chicago MSA PCAP Strategies:

- DT15 Transition gas-powered landscaping equipment to low and zero emissions models.

State of Illinois PCAP Topline Outputs – Clean Transportation and Freight:

1. Support adoption of zero-emission light commercial, medium- and heavy-duty electric vehicles, reaching 30% of new sales by 2030, 60% by 2035, 65% by 2040, and 80% by 2050. Pursuing this measure could include strategies such as incentives for the purchase of vehicles, programmatic or financial support for charging infrastructure, workforce and operator training and development, outreach and planning efforts, and programs or rates to encourage smart charging, EV-to-grid technologies, or EVs as a distributed energy resource.

2. Support adoption of passenger electric vehicles, reaching 55% of new sales by 2030, 90% by 2040, and 95% by 2050. Pursuing this measure could include strategies such as incentives for the purchase of vehicles, shared mobility programs, programmatic or financial support for charging infrastructure, and

programs or rates to encourage smart charging, EV-to-grid technologies, or EVs as a distributed energy resource.

a. Description of GHG Reduction Measures

Transportation sector goal: *Support the switch to zero emissions vehicles and equipment by installing electric vehicle (EV) chargers through subaward projects, group buys, rebates and communitywide education and outreach of financial incentives.*

Emissions reductions from the transportation sector will be achieved by increasing and supporting the adoption of electric light-and medium-duty vehicles and exterior maintenance equipment through supporting equipment and education and outreach. Group buys will be organized to target multi-family properties to install electric vehicle (EV) chargers, prioritizing low-income households. Funding is requested for rebates for electric exterior building maintenance equipment (e.g landscape and snow removal). Funding is requested as subawards for local governments to install EV chargers for both public and fleet use.

Outreach will be provided to residents, businesses, and nonprofit organizations on available federal and state incentives to purchase new and used EVs (IRS form 8936, 45W Credit for Qualified Commercial Clean Vehicles, and Illinois EV rebate) and to install EV charging stations (30C Alternative Fuel Vehicles Refueling Property Credit for low-income and rural census blocks and utility rebates). Education for government staff, school administrators, businesses, and residents is needed to overcome EV myths[11], range anxiety, and changes to maintenance that limit people from purchasing EVs.

Local governments operate few electric vehicles currently; they need assistance with transitioning their fleets to EVs and installing chargers. Outreach will be provided to local governments and agencies on the available grants, tax credits, and rebates available for vehicles and chargers. Outreach will be conducted with school districts for available grants, rebates, and federal elective pay for zero emissions school buses and medium-duty chargers. School districts in the coalition area have been slow to adopt zero emissions buses as they require dedicated medium-duty chargers. Commercial properties without chargers will likely not purchase electric fleet vehicles. Many EV owners charge at their residence; for single family homes, it is relatively easy and inexpensive to install a level-2 charger. Occupants of multi-family residents must rely on property owners to install EV chargers. Most EV owners who live in multi-family or street only parking residences charge their vehicles at public chargers, which may be inconvenient. Without access to convenient and reliable chargers, stakeholders may not be willing to purchase an EV. Outreach will inform that charging EVs from renewable energy sources is preferred, as grid electricity creates approximately 1.16 MT CO_2e per electric vehicle per year according to EPA.

b. Demonstration of Funding Need

Despite existing financial incentives and financing options, significant costs remain for anyone to install EV chargers and/or purchase EVs. Electric exterior maintenance may cost more than gas-powered equipment, making it difficult to purchase for disadvantaged residents or small businesses. Group buys create an opportunity for education and outreach, while engaging the workforce, and providing a discount. For subaward projects, the detailed budget shows the breakdown of other incentives utilized, such as federal direct pay and local utility rebates. Local governments need assistance to become aware of federal and state grants and rebates, such as Charging Fuel and Infrastructure and National Electric Vehicle Infrastructure grants, forthcoming state rebates, and forthcoming local utility rebates.

It is assumed that school districts will not secure grants for school buses, as they are competitive and focused on environmental justice areas. Type C buses was utilized in the calculations, as it is purchased

[11] www.epa.gov/greenvehicles/electric-vehicle-myths

most often. Federal direct pay has been accounted for in the emission reduction calculations by reducing the reduction claimed by the percentage already funded by the federal government.

c. Transformative Impact
Funding will allow for the following number of EV chargers to be installed at local government buildings and at multi-family residential properties and electric exterior maintenance equipment to be in-service.

- 102 EV chargers installed from subaward projects by 2030
- 50 dual port EV chargers (100 ports total) installed at existing multi-family residential properties by 2030, prioritizing low-income households, from group buys
- 10,000 electric exterior building maintenance equipment in-service by 2030 from rebates
- 217,992 EVs purchased for personal use, replacing petroleum powered vehicles, by 2030 from education and outreach
- 3,307 EVs purchased for corporate fleets, replacing petroleum powered vehicles, by 2030 from education and outreach
- 1,944 EVs purchased for municipal fleets, replacing petroleum powered vehicles, by 2030 from technical assistance
- 361 electric school buses, replacing diesel powered buses, by 2030 from technical assistance

According to the Illinois Department of Motor Vehicles (DMV), there are approximately 18,844 passenger class EVs registered in the coalition currently, equating to about 1.3% of personal vehicles. Expected sales of EVs are forecast at 2% annually due to the availability of new models, replacing a portion of the 1,453,282 registered passenger vehicles. There is an opportunity to greatly increase the number of EVs operated – CEJA set the goal of one million EVs registered in Illinois by 2030. Although the Illinois DMV does not specify the number of municipal vehicles and school buses that are zero emissions, they provide the total number of vehicles registered – 19,436 municipal vehicles and 7,228 school buses within the coalition area. Replacing these vehicles at end-of-life with zero emissions models creates a substantial opportunity to reduce emissions. Taking advantage of federal direct pay and grants can lower the purchase costs for local governments and school districts to below the cost of a petroleum fueled vehicle.

Fueling electric vehicles from grid electricity has associated upstream emissions, which emissions were not calculated for reductions. As the grid adds more renewable energy sources, these emissions will continue to decrease. For vehicles to truly operate as zero emissions, they must be powered by renewable generated electricity. Opportunities to pair EV chargers with solar systems should be identified and pursued.

Education and outreach is essential to increasing the number of electric vehicles registered in the coalition area, the number of private and public chargers, and the number of electric exterior maintenance equipment. Materials detailing financial incentives, financing options, and qualified service providers will be shared with residents, businesses, and other stakeholders. **Estimated emissions reduction from the transportation sector portion of this award are 81,966,544 MT CO_2e by 2050.**

Section 2: Impact of GHG Reduction Measures

Subaward (construction) projects will result in total emissions reductions of 1,675,559 MT CO_2e by 2030 and 39,659,479 MT CO_2e by 2050. By sector, power: 1,289,580 and 31,107,580; buildings: 141,187 and 2,691,703; and transportation: 244,792 and 5,860,196 MT CO_2e by 2030 and 2050, respectively. Programs that involve stakeholders are broken down by measure and action in the output and outcomes sections.

a. Magnitude of GHG Reductions from 2025 through 2030

The durability of the measures will produce emissions reductions from when they are placed in-service through 2030 and longer. Solar systems typically last for 25 years, vehicles average 12 to 15 years on the road, and equipment associated with buildings can operate for 10 to 20 years. Once deployed, all of this equipment will not increase emissions, and emissions will be further reduced as the electrical grid incorporates more renewable energy sources or property owners install on-site solar systems. Once people have switched to this equipment, lowered their operating and maintenance costs, and experienced the benefits of improved air quality, they are unlikely to switch back to fossil fuel powered equipment.

Calculations of emissions reductions from 2025 through 2030 are provided in a spreadsheet attachment. Assumptions and referenced technical resources are provided in an attachment. Emission reductions by each sector by 2030 are estimated as power: 3,806,150; buildings: 1,955,571; and transportation: 1,713,822 MT CO_2e. **The cumulative emissions reductions from 2025 through 2030 are: 7,475,543 MT CO_2e.**

b. Magnitude of GHG Reductions from 2025 through 2050

The coalition recognizes that federal incentives from the Inflation Reduction Act will expire 2032, potentially slowing the adoption of renewable energy systems and electric equipment. It is the intention of the education/outreach program to accelerate adoption and overcome the short- and long-term barriers of using emissions reducing and zero emissions technology. Based on equipment lifespan, the durability of installed measures will produce emissions reductions from when they are placed in-service through 2050, such as solar systems and building equipment. As distributed energy production accelerates and the electric grid increases large-scale renewable energy generation and battery storage, the upstream emissions associated with operating equipment will be reduced to net zero energy. By 2050, it is expected that electric equipment will be the standard, as technological advances will continue to improve this equipment. For example, air source heat pumps have improved significantly over the past 10 years to function better in cold climates. EV batteries have improved range and shorter charging times.

Calculations of emissions reductions from 2025 through 2050 are provided in a spreadsheet attachment and listed in the outcomes section. Because equipment deployed over the period of 2025 to 2030 is expected to remain in place between 2030 and 2050, reductions are computed using 20 years in-service for the period 2030 to 2050, added to the 2025 to 2030 period for the cumulative reductions from 2025 to 2050. Although some equipment, such as water heaters, air source heat pumps, and electric vehicles may have a shorter lifespan than 20 years, it is assumed that when replaced, they will be replaced with electric equipment. **The cumulative emissions reductions from 2025 through 2050 are: 81,966,544 MT CO_2e.**

c. Cost Effectiveness of GHG Reductions

Calculations of the cumulative cost effectiveness of emissions reductions are provided in a spreadsheet attachment. **The cumulative costs per emission reductions (2025-2030) is: $114,387,908 / 7,475,543 MT CO_2e = $ 15.30 per MT CO_2e.**

d. Documentation of GHG Reduction Assumptions

Assumptions and referenced technical resources are provided as an attachment. The U.S. EPA's Greenhouse Gas Equivalencies Calculator was used to compute the emission reductions of electricity produced from renewables, decreased energy usage in buildings, and decreased volumes of fuels. Annual electricity production for local governments solar systems were provided by experienced contractors.

Section 3: Environmental Results – Outputs, Outcomes, and Performance Measures

a. Expected Outputs and Outcomes

Per the NOFO, the term "output" means an environmental activity, effort, and/or associated work product related to an environmental goal and objective that will be produced or provided over a period of time or by a specified date. Outputs may be quantitative or qualitative but must be able to be assessed during an assistance agreement funding period. Outputs will be quantified by the metrics listed in the performance measures.

By 2030, the following outputs are expected as a result of this funding opportunity.

- Subaward projects: 62 solar panel installations on public facilities; 102 EV chargers installed at public facilities; 33 government buildings improved energy usage.
- Technical assistance: 1,944 additional EVs registered by local governments; 361 electric school buses registered; 8,700 nonresidential buildings that have reduced their energy consumption by 10%.
- Rebates: 10,000 electric exterior building maintenance equipment in-service; 5,000 heat pump water heaters installed; 5,000 cold climate air source heat pumps installed.
- Group buys: 3,000 residential cold climate air source heat pumps installed; 50 EV chargers installed at multi-family buildings.
- Education/outreach program: 128,857 solar systems installed; 42,952 heat pump water heaters installed; 85,904 residential cold climate air source heat pumps installed; 217,992 additional EVs registered for personal use; 3,307 additional EVs registered for corporate fleets.
- Additional Kane County staff and existing staff contributions.
- Contracted staff: up to 14 full-time managers who will administer the programs.
- Contract for financial auditor.
- Contract for a technical assistance program for a building energy benchmarking program. Deliverables from contracts are training events for nonresidential building owners for benchmarking energy and greenhouse gas emissions and voluntary submission of benchmarking data to the Data Decarbonization Manager for inclusion in reporting.
- Contract for technical assistance cohorts to support local agencies; may be included in the staff contract.

Per the NOFO, the term "outcome" means the result, effect, or consequence that will occur from carrying out an environmental program or activity that is related to an environmental or programmatic goal or objective. Outcomes may be environmental, behavioral, health-related, or programmatic in nature but must also be quantifiable. The outcomes resulting from the implementation of this workplan expected are reductions of GHG emissions. Greenhouse gas critical air pollutants (CAPs) that will be reduced by this workplan are methane gas (CH_4); carbon dioxide (CO_2); sulfur hexafluoride (SF_6); and nitrous oxide (N_2O). Co-pollutants and hazardous air pollutants (HAPs), such as ozone (O_3), particulate matter ($PM_{2.5}$), carbon monoxide (CO), lead (Pb), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) will also be reduced. These air pollutants are the result of burning fossil fuels by buildings (stationary sources) and vehicles (mobile sources). The associated emission of CAPs and/or HAPs reductions are not calculated due to the varying mixes of fossil fuels used for grid electricity generation. Hydrofluorocarbons (HCFC-, HFC-, and R-gases) and perfluorocarbons (CF- and C-gases), which are associated with refrigerants, insulation, and manufacturing processes, will not be significantly impacted by the actions listed in this workplan. **The following is the breakdown of estimated emissions and air pollutants reductions.**

Power Sector Outcomes

Fossil fuels burned in the power sector are mainly coal and methane gas. Air pollutants are carbon dioxide and methane.

- New solar panel systems installed on local government buildings - 1,289.580 MT CO_2e reduction by 2030; 31,107,580 MT CO_2e reduction by 2050
- New solar systems installed on any building from education and outreach - 2,516,569 MT CO_2e reduction by 2030; 19,293,699 MT CO_2e reduction by 2050

Buildings Sector Outcomes

Fossil fuels burned in the buildings sector are coal and methane gas from grid electricity generation and methane gas in appliances. Air pollutants are carbon dioxide and methane.

- Efficiency and electrification improvements at local government buildings - 141,187 MT CO_2e reduction by 2030; 2,691,703 MT CO_2e reduction by 2050
- Heat pump water heaters rebates – 4,633 MT CO_2e reduction by 2030; 35,521 MT CO_2e reduction by 2050
- Residential cold climate air source heat pumps group buys – 23,693 MT CO_2e reduction by 2030; 181,643 MT CO_2e reduction by 2050
- Residential cold climate air source heat pumps rebates – 39,488 MT CO2e reduction by 2030; 302,738 MT CO_2e reduction by 2050
- Heat pump water heaters installed by 2030 from education and outreach – 39,801 MT CO_2e reduction by 2030; 305,143 MT CO_2e reduction by 2050
- Residential cold climate air source heat pumps installed by 2030 from education and outreach – 678,430 MT CO_2e by 2030; 5,201,297 MT CO_2e reduction by 2050

Transportation Sector Outcomes

Fossil fuels burned in the transportation sector are gasoline and diesel. Air pollutants are carbon dioxide, methane, and nitrous oxide.

- Electric vehicle chargers at local government sites - 244,792 MT CO_2e reduction by 2030; 5,860,196 MT CO_2e reduction by 2050
- Electric vehicle chargers for multi-family buildings group buys – 1,695 MT CO_2e reduction by 2030; 227,703 MT CO_2e reduction by 2050
- Electric exterior building maintenance equipment rebates – 129,000 MT CO2e reduction by 2030; 989,000 MT CO_2e reduction by 2050
- Additional personal EVs purchased by 2030 from education and outreach – 1,471,186 MT CO_2e reduction by 2030; 11,279,096 MT CO_2e reduction by 2050
- Additional corporate fleet EVs purchased by 2030 from education and outreach – 25,029 MT CO_2e reduction by 2030; 191,888 MT CO_2e reduction by 2050

Additional unquantified expected outcomes include, but are not limited to:

- Increased adoption of efficient, electric technologies (heat pumps) and improved building efficiency;
- An increase in the number of electric vehicles registered in the coalition area;
- An increase in the number of private electric vehicle chargers;
- An increase in the number of solar systems and an increase in the amount of electricity generated by renewable methods;
- Lower energy demand and residential and commercial energy expenditures;
- Reduced energy bills for residents in low-income and disadvantaged communities, and throughout the coalition area;
- Reduced exposure to hazardous air pollution or unhealthy ambient air quality;
- Increased staff capacity to implement emissions reduction measures;
- Enhanced level of community engagement and education, as measured by an increased number of on-going actions to engage with organizations and residents of disadvantaged communities, and other stakeholders;

- High-quality jobs created throughout the coalition area from staff, contractors, and service providers; jobs created in low-income and disadvantaged communities;
- Connecting contractors and service providers to continuing education for new electric technologies;
- Connecting trade schools and workforce hub participants to contractors, service providers, and stakeholders;
- A listing of qualified, knowledgeable contractors to install and maintain electric equipment;
- Increased number of renters or buyers who inquire about energy efficiency or average monthly utility bills when looking at buildings;
- Less noise from vehicles as EVs are quieter than internal combustion engines;
- Less noise from landscape equipment, as electric alternatives are quieter than gas powered;
- Increased adoption of electric technologies resulting from education efforts and financial incentives.

b. Performance Measures and Plan

To assess the adoption of decarbonization technologies and emission reductions, various data will be tracked and reported semi-annually by Kane County staff and contracted staff. Baseline data will be gathered in the first two quarters. Previous months and years data will be compared to account for variation of energy needs for heating and cooling demands due to the weather. Contracted staff will compile data for the reports, gather permitting data from each participating local government, and track outreach participation. A Quality Assurance Project Plan (QAPP) will be adhered to for data collection and/or use of environmental data. The following metrics will be gathered for reporting.

Power

- Number of renewable energy (solar or wind) was installed (size and estimated annual production) – permitting data
- Amount of renewable energy generated from governmental operational systems – actual data from reporting software for large-scale systems, if available
- Number of battery storage capacity was installed – permitting data
- Number of policies, ordinances, or programs were created and implemented – actual data

Buildings

- Number of municipal/county projects completed– actual data
- Electricity usage – data from bills or meters
- Methane gas usage – data from bills or meters
- Number of cold climate air source heat pumps were installed – permitting data, number of group buy participants, number of rebates issued
- Number of heat pump water heaters were installed – permitting data, number of rebates issued
- Number of households weatherized – permitting data, if available
- Number of policies, ordinances, or programs were created and implemented – actual data
- Number of demonstration projects with builders – actual data
- Number of participants in the voluntary energy benchmarking program – actual data

Transportation

- Number of EV chargers were installed – actual data from subaward projects, permitting data, number of participants in group buy
- Number of gallons of petroleum products were reduced for municipal fleets – actual data
- Number of EVs were purchased for municipal fleets – actual data
- Number of municipal fleet transition plans were completed / adopted – actual data
- Number of communitywide EV charging readiness plans were completed – actual data

- Usage (hours and/or electricity) for EV chargers installed by subaward projects – actual data, if available; source of electricity for chargers (grid vs. renewable energy) – actual data, if available
- Number of EVs are registered with the DMV in the coalition boundaries – actual data from DMV
- Number of ordinances or policies were passed and implemented – actual data

Education and Outreach

- Number of events, type of event, and number of attendees – actual data
- Number of internal trainings, topic, and number of attendees – actual data
- Number of views on recorded trainings – actual data
- Number of views on webpages – actual data
- Number of materials distributed, including newsletters – actual data
- Outreach to low-income / disadvantaged households – actual data
- Number of occurrences of outreach to multi-family property owners (direct mailings, other contacts) – actual data
- Number of workforce training events held and number of attendees – actual data
- Number of occurrences of outreach to businesses – actual data
- Number of occurrences of outreach to schools, parks, libraries, and other tax exempt organizations – actual data
- Number of conferences, workshops, and webinars attended; number of presentations given at industry events – actual data

Financial

- Amount and number of rebates issued – actual data
- Number of participants in group buys – actual data
- Status and amount of funding spent for subaward projects – actual data
- Amount of funding spent on contracts (staff, technical assistance, auditor)

Data

- Hospital data (emergency room visits for asthma incidents) – actual data, if available
- Number of low-income or disadvantaged households impacted – actual data

c. Authorities, Implementation Timeline, and Milestones

As coalition lead, Kane County possesses the authority granted by County Board resolution to implement the workplan by providing subawards for projects and contracts to organizations to administer group buy and rebate programs, provide expertise for technical assistance programs, and provide staff for education and outreach and reporting. Contracted staff will arrange events at public facilities, such as libraries and schools. Kane County will oversee contractual staff to ensure that milestones are achieved. As lead of the coalition, Kane County and their agents will be responsible for communication among members, decision-making, and conflict resolution.

Kane County requests “pre-award authority” to prepare to implement the workplan ninety (90) calendar days before the official award begins. Work includes hiring new County personnel and bidding out contracts (prepare documents, review submittals, and contractual documents). Anticipated hours of existing Kane County staff are up to approximately 300 hours. County staff will track all time incurred for this award during this period. Kane County’s rates are included in the indirect charges budget item.

<u>Implementation Timeline and Milestones</u>

The following is a general overview of known milestones. Actual dates of quarters (Q) may be subject to revision as EPA will establish a final schedule after the grants are awarded. A detailed schedule for the upcoming two quarters will be provided in the semi-annual reports to account for any changes. **All programs will begin in quarters one or two, unless otherwise specified. All programs will continue in all quarters.**

Q0 (Jul24-Oct24) Kane County will review and sign award documents with EPA. Kane County will advertise positions, conduct interviews, and hire additional internal staff. Kane County will prepare documents and solicit bids for firms to provide contracted staff to administer programs and financial auditing.

Q1 (Oct24-Dec24) Distribution of award funds begin. Performance period begins.

Contract Administration: Kane County will bid out and/or purchase supplies. Contracted staff will create rebate programs. Contracted staff will create a webpage for the program. If group buy programs were not bid out as part of the staffing contract, Kane County staff will solicit bids for the group buys program. Contracted staff will reach out to municipalities, counties, and agencies to initiate the first technical assistance cohort.

Subawards: Kane County will prepare paperwork for FY25 distributions to subrecipients.

Outreach and Education: Contracted staff will begin creating content for the website; for example, links to existing state and federal financial incentives.

Power, Buildings, and Transportation Sectors: Community managers and technical managers will evaluate and revise permitting forms to collect metrics. Contracted staff will list topics to begin creating education and outreach materials.

Data Management: Contracted staff will create a template for semi-annual reporting and gather multi-family property owner contact information for low-income and disadvantaged census tracts.

Q2 (Jan25-Mar25)

Contract Administration: Kane County will solicit bids for the technical assistance contract for the building energy benchmarking program, if not included in a previous contract. The first technical assistance cohort begins. Outreach to disadvantaged residents and property owners begins.

Subawards: FY25 reimbursements begin.

Outreach and Education: Contracted staff will plan the schedule of events for FY25 and plan workforce events for cold climate air source heat pumps. Contracted staff will create municipal staff and education and outreach training materials.

Power, Buildings, and Transportation Sectors: Rebate programs open; group buy programs begin.

Data Management: Gather baseline data to use for comparisons. Contracted staff will establish connections with hospitals to obtain data. Contracted staff will establish a list of contacts for school districts and business organizations and identify their needs.

Q3 (Apr25-Jun25)

Outreach and Education: Contracted staff will begin conducting municipal staff training sessions. Contracted staff will create outreach materials for schools and businesses. Contracted staff will host community events.

Transportation Sector: Contracted staff will create a municipal fleet transition plan template, if requested.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report and create the first semi-annual progress report.

Reporting: Semi-annual report is due for the two previous quarters by 4/30.

Q4 (Jul25-Sep25)

Outreach and Education: Contracted staff will host community events.

Q5 (Oct25-Dec25)

Subawards: FY25 reimbursements end.

Outreach and Education: Contracted staff will plan the schedule of events for FY26 and continue hosting events.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 10/30 and will quantify low-income disadvantaged benefits.

Q6 (Jan26-Mar26)

Subawards: FY26 reimbursements begin.

Outreach and Education: Contracted staff will host community events.

Q7 (Apr26-Jun26)

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 4/30.

Q8 (Jul26-Sep26)

Outreach and Education: Contracted staff will host community events.

Q9 (Oct26-Dec26)

Subawards: FY26 reimbursements end.

Outreach and Education: Contracted staff will plan the schedule of events for FY27 and continue hosting events.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 10/30.

Q10 (Jan27-Mar27)

Subawards: FY27 reimbursements begin.

Outreach and Education: Contracted staff will host community events.

Q11 (Apr27-Jun27)

Outreach and Education: Contracted staff will host community events.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 4/30.

Q12 (Jul27-Sep27)

Outreach and Education: Contracted staff will host community events.

Q13 (Oct27-Dec27)

Subawards: FY27 reimbursements end.

Outreach and Education: Contracted staff will plan the schedule of events for FY28 and continue hosting events.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 10/30.

Q14 (Jan28-Mar28)

Subawards: FY28 reimbursements begin.

Outreach and Education: Contracted staff will host community events.

Q15 (Apr28-Jun28)

Outreach and Education: Contracted staff will host community events.

Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.

Reporting: Semi-annual report is due for the two previous quarters by 4/30.

Q16 (Jul28-Sep28)

Outreach and Education: Contracted staff will host community events.

Q17 (Oct-Dec28)

Subawards: FY28 reimbursements end.

Outreach and Education: Contracted staff will plan the schedule of events for FY29 and continue hosting events.
Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.
Reporting: Semi-annual report is due for the two previous quarters by 10/30.

Q18 (Jan29-Mar29)

Subawards: FY29 reimbursements begin.
Outreach and Education: Contracted staff will host community events.

Q19 (Apr29-Jun29)

Outreach and Education: Contracted staff will host community events.
Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.
Reporting: Semi-annual report is due for the two previous quarters by 4/30.

Q20 (Jul29-Sep29)

Subawards: FY29 reimbursements end.
Outreach and Education: Contracted staff will host community events.
Data Management: Contracted staff will gather metrics from projects, programs, and permitting for use in the report.
Reporting: Semi-annual report for the two previous quarters is due by 10/30 and/or final report is due by 12/30 (120 days). Clarification of funding available for the final report is requested from EPA.

Section 4: Low-Income and Disadvantaged Communities

a. Community Benefits

Historically, disadvantaged communities have received less beneficial investments while burdened with polluting industries. For example, home values tend to be lower near a factory that discharges into the air. There is likely to be odors associated with these air emissions and more incidences of respiratory conditions. While the outreach programs planned for this award will not target specific industries, businesses will be provided resources, such as the Department of Energy Better Buildings program, to assist them to reduce their emissions. Businesses that reduce their emissions will create a positive impact on the surrounding residents.

Nearly all buildings throughout the coalition region emit air pollutants from burning methane gas for space and water heating. Vehicles moving throughout the coalition area emit air pollutants from burning petroleum by-products. Switching equipment to electric alternatives which do not have direct air emissions and zero emissions vehicles will improve air quality in the region, especially in disadvantaged communities.

Disadvantaged residents will benefit from the switch to efficient, electric equipment, as it typically costs less to operate and maintain. Total cost of ownership studies have shown that fueling a vehicle by electricity is less expensive than petroleum products. Heat pumps are substantially more efficient than their gas powered counterparts, reducing energy consumption and monthly utility bills. Solar systems, coupled with net metering programs, can reduce a property owner's monthly electricity bill to only delivery and tax charges. In this region, a $14 monthly electric bill for a single family home is possible. The Illinois Solar for All program covers the upfront out-of-pocket costs for installing solar panels for low-income households.

In the detailed budget spreadsheet, subaward projects that are located in environmental justice census tracts are noted; for example, solar panel projects on City of Aurora facilities. Few, if any, EV chargers are currently located in disadvantaged census blocks. A group buy program is budgeted to provide chargers for multi-family buildings, prioritizing disadvantaged census tracts and buildings that house

50% or more low-income households. Of the 143 EV chargers proposed in subaward projects (142 level-2 and 1 level-3), 43% of these will be located in CEJST communities.

Disadvantaged residents may seek workforce training for installing and maintaining renewable energy systems and electric equipment. This award will require skilled labor for projects, benefiting the workforce with prevailing wages and job stability. Low-income households that participate in income-based solar programs and home electrification rebates will substantially reduce their monthly utility bills. Another benefit is improved indoor air quality from not burning methane gas inside their residence. Improved outdoor air quality reduces emergency room visits for asthma incidents. In addition to tracking low-income household's participation in programs, air quality sensor data will be gathered, where available, in disadvantaged census blocks to show levels of particulate matter 2.5 micrometers or smaller ($PM_{2.5}$).

Within the energy sector, the principal concern listed in the screening tool was 22.4% had greater than 2.5 PM air quality issues, resulting in an impacted population of 66,153. In Kane County, the Air Quality Index (AQI) between January 2022-2023 consisted of 215 days excellent, 68 days moderate, and 3 days unhealthy to sensitive groups. Compared to Elgin, an environmental justice (EJ) community, which had 23 days excellent, 255 days moderate, 80 days poor, and 7 unhealthy as provided by PlumeLabs. In addition to the burden of high $PM_{2.5}$, where Waukegan had an annual average score of moderately polluted for 2023, the city has several superfund and hazardous waste proximity as well as toxic air which has drastically reduced their life expectancy to 68 compared to the average of Illinois at 79.

In summary, the expected benefits for disadvantaged households are: improved air quality; lower utility bills; lower vehicle operating and maintenance costs; multi-family buildings with lower energy burden; and accessibility to EV chargers at multi-family residences. Metrics will be tracked in regard to disadvantaged census blocks. A list of CEJST census tract IDs and/or block group IDs are included in the attachments.

b. Community Engagement

In addition to hosting events in disadvantaged areas, community engagement will utilize networks of existing trusted community organizations. Counties and municipalities have existing programs and community services offices that assist low-income households. Outreach will provide these offices with materials on incentives and programs for sharing with those that contact these offices. Specific outreach materials of programs available only to low-income households will be provided, such as Illinois Solar for All, Home Electrification rebates, and options for community solar. According to the CEJST, nearly half of the LIDAC communities have household linguistic barriers, as well as low high school diploma attainment. Materials and education would be provided in both English and Spanish.

Multi-family property owners within disadvantaged census tracts will be targeted by direct mailing for education and outreach on how to make building improvements, lower energy burdens, pass on the savings of a solar system, and participate in rebate and group buy programs. Outreach may include connecting these property owners with community-based organizations that can assist with needed repairs, if available, before emissions reducing equipment can be installed. Because disadvantaged multi-family buildings would otherwise be one of the last to install EV chargers for residential use, a group buy program will be created with this award. Ensuring residents have access to chargers will influence their decision to purchase an EV.

Low-income households and disadvantaged areas will be prioritized by issuing them rebates before other income groups. Disadvantaged households will provide their address in relation to census blocks and/or a form of income verification so that participation can be tracked. The coalition's goal is to provide at least 40% of the rebate funding to disadvantaged and low-income residents.

Section 5: Job Quality

To implement this workplan, experienced, skilled, and knowledgeable people are required. Additional staff will be hired by Kane County to administer and manage funding. Contractual staff, with at least ten years of experience, will provide technical experience to implement the education/outreach, technical assistance, and incentive programs. Experienced service providers and installers, including apprentices, will be employed through projects. Examples include, but are not limited to, solar system installers, HVAC providers, electricians, plumbers, and Illinois certified electric vehicle charger installers. Regional state workforce hubs may provide trained individuals to work on these projects. Illinois has prioritized disadvantaged residents to receive training through the workforce hubs. Workforce events with existing service providers and trade schools will provide access to continuing education of seasoned service providers. Outreach is intended to overcome the issue of some service providers as experienced installing new technology, such as heat pumps. These contractors tend to advise their customers to continue using gas powered equipment for familiarity. Contracted staff will compile a list of service providers for residents and businesses to ensure that knowledgeable contractors are installing equipment. These service providers will also receive financial incentive materials to pass along to their customers. The Kane County coalition intends to take advantage of the state workforce hubs and training initiatives, rather than attempting to duplicate these efforts. Regional community colleges will serve as the hubs.

Section 6: Programmatic Capability and Past Performance

a. Past Performance

Kane County recently has secured federal and state pass-through grants. A brief overview of each is provided below.

Name: FEMA HMGP-4489.39-P
Award amount: $63,500.00
Period of performance: August 2021 – February 2026
Description: To create a long-term Hazard Mitigation Plan.
Reporting: Required quarterly

Name: U.S. Department of Housing and Urban Development – Community Development Block Grant
Award amount: not available
Period of performance: Unknown
Description: Ogden Water System Replacement Project for 125 households.
Reporting: Unknown

Name: U.S. Department of Housing and Urban Development – Community Development Block Grant for Entitlement Communities; HOME Investment Partnership Program
Award amount: not available
Period of performance: 2021 and 2022
Description: Funds to administer the HOME program.
Reporting: Required and compliant

b. Reporting Requirements

Kane County staff have complied with reporting requirements associated with previous grants. As coalition lead, County staff will ensure that contracted staff will collect metrics and complete reporting for this award on time to EPA.

c. Staff Expertise

Kane County currently employs a Sustainability Manager, Department Manager, Auditor, Finance Manager, Treasurer, and State's Attorney; their rates are listed under indirect charges in the budget. Current staffs' resumes are provided as an attachment. Additional contracted staff has been budgeted

to increase capacity and to fully implement this workplan throughout the coalition region. Contracted community managers will collaborate with contracted technical experts in each sector, as well as education/outreach managers. A list of positions can be found in the detailed budget and position descriptions are included in the attachments.

Section 7: Budget

a. Budget Detail Spreadsheet

Below is a summary of the requested budget. A detailed budget and budget narrative are provided as attachments. Fiscal years are based on the federal fiscal year (FY); for example, FY2025 is October 1, 2024 through September 30, 2025.

Item	FY2025	FY2026	FY2027	FY2028	FY2029	Total
i. Personnel	$211,000	$219,440	$228,218	$237,346	$246,840	$1,142,844
ii. Fringe Benefits	$37,980	$39,499	$41,079	$42,722	$44,431	$205,712
iii. Travel	$2,589	$2,589	$2,589	$2,589	$2,589	$12,945
iv. Equipment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
v. Supplies	$14,760	$12,360	$12,360	$12,360	$12,360	***$64,200***
vi. Contractual	$6,178,000	$6,424,800	$6,681,472	$6,948,411	$7,226,028	***$33,458,711***
vii. Other (Direct Charges) - Participant Support Costs						
Rebates	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$13,000,000
Group buys	$490,000	$490,000	$490,000	$490,000	$490,000	$2,450,000
Kane County projects	$1,692,759	$15,796,949	$4,600,536	$1,237,012	$2,121,043	$25,448,299
Subawards	$17,190,663	$5,018,536	$6,046,827	$7,150,961	$1,702,095	$37,109,082
vii. Subtotal	*$21,973,422*	*$23,905,485*	*$13,737,363*	*$11,477,973*	*$6,913,138*	***$78,007,381***
viii. Indirect Charges	$276,223	$287,272	$298,763	$310,714	$323,142	$1,496,115
TOTALS:	***$28,693,975***	***$30,891,445***	***$21,001,844***	***$19,032,115***	***$14,768,528***	**$114,387,908**

b. Expenditure of Awarded Funds

Kane County will hire additional staff by the fall of 2024 and procure contractors to administer and implement the workplan. In order to ensure project subawards meet EPA's subaward policies, subparticipants will be reimbursed after the project is completed. Additional details on the expenditure of awarded funds are listed in the timeline.

c. Reasonableness of Costs

The coalition project and program estimates were compiled from previous consultant scopes of work, energy audits, salary surveys, and previous grant administration costs. Other financial incentives utilized as part of project costs are specified in the detailed budget spreadsheet.

None of this workplan is deemed to be confidential.

This implementation plan seeks to overcome barriers of lack of knowledge of all decision-makers of financial incentives, available financing, contrary service providers, and lack of choice for occupants of multi-family buildings. This implementation plan will accelerate the transition to emissions reductions technologies, while providing new economic opportunities in the region. This plan can serve as an example to other counties and municipalities who wish to scale up their adoption of electric equipment while reducing their emissions.