

State of Illinois

# PRIORITY CLIMATE ACTION PLAN

Illinois Environmental Protection Agency

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# Definitions and Acronyms

**[Climate and Equitable Jobs Act \(CEJA\)](#)**: an Illinois law which, among other things, set a statewide target of 100% clean energy by 2050. It was passed by the General Assembly and signed into law by Governor Pritzker on September 15, 2021.

**Comprehensive Climate Action Plan (CCAP)**: a narrative report that provides an overview of the grantees' significant GHG sources/sinks and sectors, establishes near-term and long-term GHG emission reduction goals, and provides strategies and identifies measures that address the highest priority sectors to help the grantees meet those goals.

**Greenhouse gas (GHG) inventory**: a list of emission sources and sinks and the associated emissions quantified using standard methods.

**[Inflation Reduction Act \(IRA\)](#)**: a 2022 federal law which supports clean energy and climate investments.

**Low Income / Disadvantaged Communities (LIDACs)**: communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens. Although the Inflation Reduction Act does not formally define LIDACs, EPA strongly recommends grantees use the [Climate and Economic Justice Screening Tool](#) and the [Environmental Justice Screening and Mapping Tool](#) to identify LIDACs in their communities. These tools identify LIDACs by assessing indicators for categories of burden: air quality, climate change, energy, environmental hazards, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.

**MTCO<sub>2e</sub>**: metric tons of carbon dioxide equivalent.

**MMTCO<sub>2e</sub>**: million metric tons of carbon dioxide equivalent.

**Priority Climate Action Plan (PCAP)**: a narrative report that includes a focused list of near-term, high-priority, and implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions.

**SIT**: US EPA's State Inventory Tool.

**US EPA**: United States Environmental Protection Agency.

**US EIA**: United States Energy Information Administration.



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# Executive Summary

Illinois has already been hard at work to address the problem of climate change.

The centerpiece of that work is the Climate and Equitable Jobs Act (CEJA), signed into law in 2021, which commits the state to 100% carbon-free power by 2045 while also supporting energy efficiency, electric vehicles, and building electrification, and reforming utility planning and regulation.

The state has been a national leader on climate:

- Governor Pritzker signed an executive order in 2019 committing the state to the principles of the Paris Climate Agreement.
- The Illinois Capital Development Board will approve the state's first-ever stretch energy code in June 2024.
- The Illinois Commerce Commission is set to begin proceedings on the Future of Gas, to explore pathways towards a decarbonized buildings sector, in the first half of 2024.
- Since being named the Climate Bank in CEJA, the Illinois Finance Authority, in partnership with the Illinois Environmental Protection Agency, mobilized approximately \$627 million in private capital for climate finance projects, 54% of which are in or benefit low-income and disadvantaged communities.
- The state has set a goal of having 1 million electric vehicles on the road by 2030.

## Emissions

Illinois' annual greenhouse gas emissions today are estimated at 228 MMTCO<sub>2e</sub>, with transportation (60 MMTCO<sub>2e</sub>) accounting for the largest share, followed by power (52 MMTCO<sub>2e</sub>). This represents a nearly 20% decline from 2005 emissions, which were 283.6 MMTCO<sub>2e</sub>. Power was the largest sector by emissions in 2005 with 94 MMTCO<sub>2e</sub>, and also saw by far the biggest decline of any sector between 2005 and 2021. The second-largest source of emissions in 2005 was transportation with 72 MMTCO<sub>2e</sub>.

Meeting Illinois' commitment to the Paris Climate Agreement would require cutting emissions about 39% from current levels to 139 MMTCO<sub>2e</sub>.

## PCAP

This Priority Climate Action Plan (PCAP) proposes a path towards broad emissions reductions in every large-emitting sector of the economy. It also explores specific series of potential actions within those measures, with an emphasis on filling gaps in existing federal and state programs, and catalyzing projects that also leverage other sources of funding. Nearly all measures explore the workforce development efforts that will be necessary to achieve them, and the benefits they can provide to low-income and disadvantaged communities (LIDACs).

The Plan also draws from and builds upon the work of many entities in our state that have developed their own climate action plans: the [City of Chicago](#), the [Chicago metropolitan region](#), the [Illinois Department of Natural Resources](#), and the University of Illinois in both [Chicago](#) and [Urbana-Champaign](#).



# Introduction

## CPRG overview

The U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) program provides funding for states to develop and implement climate action plans that aim to reduce greenhouse gas (GHG) emissions.

Under the planning phase of CPRG, the U.S. EPA has provided funds to interested states, metropolitan areas, tribes and territories to design climate action plans that incorporate a variety of measures to reduce GHG emissions. A Priority Climate Action Plan must be submitted to USEPA by March 1, 2024, with a Comprehensive Climate Action Plan due two years after the planning grant award.

Additional information on the PCAP process can be found in EPA's [CPRG: Formula Grants for Planning, Program Guidance for States, Municipalities, and Air Control Agencies](#).

## Illinois Approach

The State of Illinois recognizes the harm that climate change causes to its people and to those who live outside its borders. It recognizes that climate change is primarily caused by humans and by the burning of fossil fuels, and that the harms from pollution and climate change are disproportionately borne by our most vulnerable people and communities.

Addressing the problem of climate change is urgent and necessary to protect the health and well-being of our people. It is necessary to protect our livelihoods, our economy, our rich farmlands, our vibrant cities, and our natural wonders.

Our actions to address climate change not only help us to avoid the bad, but to promote the good: creating jobs and opportunities, growing the clean energy economy in our state, and leaving us with cleaner air to breathe and water to drink.

Despite our progress, there is still much work to be done to meet the goals of the Paris Agreement and avoid the worst impacts of climate change. Rising to this challenge will require resources, and extensive collaboration between states, municipalities, and the federal government.

We hope this plan can be a tool to coordinate and catalyze climate action in businesses and communities across our state, and to unlock critical opportunities for climate action that we could not pursue alone without the support of federal Climate Pollution Reduction Grant resources.



## How to read this Priority Climate Action Plan

The Priority Climate Action Plan includes the following main components:

- **Greenhouse Gas (GHG) Inventory:** An analysis of Illinois' existing GHG emissions by sector.
- **Priority GHG Reduction Measures:** A detailed description of proposed priority measures and initiatives to meet gaps in achieving the state's climate and equity goals.
- **Low Income / Disadvantaged Community Benefits Analysis:** An overview of the process to identify LIDACs and Climate Impacts and Risks, engage with LIDACs to understand community priorities, and estimate potential benefits of GHG emission reduction measures to LIDACs.
- **Review of Authority to Implement:** A summary of the analysis of the authority to implement the proposals contained within each Priority GHG Reduction Measure.
- **Intersection with Other Funding Availability:** A summary of the analysis of the intersection with other state, utility, and federal funding opportunities for each Priority GHG Reduction Measure.
- **Workforce Planning Analysis:** A summary of the workforce development components of the Priority GHG Reduction Measures.

The bulk of the Plan includes detailed description of Priority GHG Reduction Measures. Included in the Priority Climate Action Plan are five Priority GHG Reduction Measures: Clean & Efficient Buildings, Clean Transportation & Freight, Clean Industry, Clean Agriculture, and Clean Power.

Each measure is organized to provide information on:

1. A measure summary with a description of need identified by stakeholders
2. Topline Outputs and Greenhouse Gas Emission Reduction Estimates
3. Implementing Authority
4. Implementing Agencies
5. A list of distinct Measure Initiatives that include:
  - a. A summary of the initiative
  - b. Initiative elements
  - c. An analysis of complementary funding
  - d. A projected implementation schedule and milestones
6. Geographic Location
7. A summary of complementary funding sources
8. Metrics for Tracking Progress



## Development of the Priority Climate Action Plan

**This Priority Climate Action Plan was developed by the Illinois Environmental Protection Agency to specifically address the obstacles and challenges in meeting the state’s GHG emission reduction targets, co-pollutant targets and goals, and community benefits goals, by targeting gaps in funding for critical pathways to achieve those goals.**

The scope of this plan encompasses all major greenhouse-gas emitting sectors: power, transportation, buildings, industry, and agriculture.

### **Building on the Legacy of CEJA**

The plan builds upon extensive work already done in the state to identify and pursue climate action, including the Climate and Equitable Jobs Act, which included months of stakeholder process around electricity generation, energy efficiency, utility planning and regulation, just transition, and incorporating equity and environmental justice considerations into climate action; several workshop processes convened by the Illinois Commerce Commission, including Multi-Year Integrated Grid Plan Workshops, Beneficial Electrification Workshops; and several stakeholder outreach processes convened by the Illinois Finance Authority, on topics including electric vehicles, energy efficiency, distributed generation, and building electrification.

### **Coordination across Government**

The plan was developed in coordination with many agencies within the state including the Illinois Finance Authority / Illinois Climate Bank, Illinois Department of Commerce and Economic Opportunity, the Illinois Department of Transportation, the Illinois Department of Agriculture, the Illinois Finance Authority and the Illinois Department of Natural Resources.

The state consulted extensively with local and municipal entities including the City of Chicago, the Chicago Metropolitan Agency for Planning, the Metropolitan Mayors Caucus, and others.

### **Rooted in Stakeholder Consultation**

Development of the plan also included consultation on the CPRG with multiple stakeholders, including: community organizations, including organizations representing disadvantaged communities; non-governmental organizations with expertise in climate mitigation; private businesses; higher education institutions; and trade associations.

To identify market barriers to the equitable GHG emission reductions in Illinois, the Illinois Climate Bank, in partnership with other state agencies, held a series of stakeholder meetings, small group meetings and workshops, and virtual presentations, throughout 2023 and early 2024, with more than 150 different entities to get a broad perspective on market gaps.

In 2023, the state collected stakeholder inputs through Climate and Equity Surveys to gain additional perspectives on program design under CPRG, GGFR, and complementary federal funding opportunities.



The stakeholder engagement produced valuable data on continued barriers to low-income and disadvantaged community participation in and benefit from climate and clean energy strategies that could be addressed through additional funding and thoughtfully-designed programs. Key market gaps identified included:

- the high number of walk-aways from low-income single-family and multi-family households due to the need for health & safety upgrades, such as roof repair, mold and asbestos abatement, or electrical upgrades;
- the lack of low-cost, easy-to-access finance for low-income households and the desire to create long-term wealth-building opportunities through solar;
- reliability and resiliency risks for the most vulnerable during extreme weather/outages;
- the high demand for low-income community solar projects that reach program capacity;
- challenges for community-driven community solar projects to compete with national developers;
- difficulty by developers in braiding and coordinating different funding streams;
- difficulty by small, DBEs to access capital and expand beyond a cash businesses; and
- a lack of trust in the marketplace driven by more than a decade of bad actors in the retail electric supply market.

In late 2023, Illinois EPA created an area on its website for individuals and stakeholders to share information and solicit feedback about the PCAP and CPRG, through which staff received and responded to many additional public comments.

Also in late 2023, Illinois EPA collaborated with partners from the Chicago MSA, the Metropolitan Mayors Caucus (MMC) and Chicago Metropolitan Agency for Planning (CMAP), to present a virtual CPRG Town Hall. The session offered over 175 attendees information about the CPRG process and the state and MSA approaches to developing priority measures; the panelists included representatives from Illinois EPA, MMC, CMAP, the City of Chicago, and the Northwest Indiana Regional Planning Commission.

In early 2024, Illinois EPA held two online public listening sessions to solicit feedback on the draft Plan. One was held during the work day and another was held in the evening to facilitate attendance by community leaders and people with work obligations. More than 130 people participated in the two public listening sessions on the draft Plan.



# Greenhouse Gas (GHG) Inventory

## Scope, Accounting, and Methodology

The greenhouse gas inventory for Illinois presented here was created using US EPA's State Inventory Tool (SIT). Detailed methodology of the tool's accounting methods are available in the tool's user guides, [available on US EPA's website](#). The data was drawn from the sources directed by the tool.

The inventory is broken out by sector and gas, and includes emissions from the following areas:

1. CO<sub>2</sub> from Fossil Fuel Combustion
2. CO<sub>2</sub> from Electricity Consumption
3. Stationary Combustion
4. Mobile Combustion
5. Coal Mining
6. Natural Gas and Oil Systems
7. Industrial Processes
8. Agriculture
9. Land Use, Land-Use Change, and Forestry
10. Municipal Solid Waste
11. Wastewater

The comprehensive inventory produced by the SIT is an Excel file that should be available wherever this document is posted. If you cannot locate this file, contact [epa.cprg@illinois.gov](mailto:epa.cprg@illinois.gov).

### **Base Year and Current Emissions**

Emissions for the base year and current estimated emissions are in the sections to follow.

The state's primary economy-wide greenhouse gas target is its commitment to the Paris Climate Agreement. 2005 is a "base year" insofar as it determines the emissions reductions necessary by 2030 for the state to fulfill this commitment.

GHG emissions reductions for measures in this Plan were calculated using RMI's Energy Policy Simulator, unless otherwise noted. The emissions methodology from the SIT varies slightly from the business as usual case in the Energy Policy Simulator. The emissions derived from the SIT methodology for 2021 show 228 MMTCO<sub>2</sub>e whereas the Energy Policy Simulator shows 239.9 MMTCO<sub>2</sub>e for that year, declining to 230.9 MMTCO<sub>2</sub>e in 2022.





This has no practical impact on the emissions reductions estimates for the measures, because they are all forward-looking. Emissions reductions are expressed as a reduction from the business-as-usual emissions case in the Energy Policy Simulator, and begin measuring reductions against that case beginning in 2025 – not against 2005 or any other past levels. Measuring against a past baseline would be misleading because, in many cases, even the business-as-usual case today represents a reduction from 2005-level emissions. Accurate representation of measures’ impact requires measuring against business as usual, and that is the approach here.

### **Organization of GHG Inventory and Charts**

This section includes tables with high-level summaries of state emissions by sector. Indirect CO<sub>2</sub> from electricity consumption is listed, but not included in the total, in keeping with the methodology of the US EPA SIT. The “Energy” section as calculated in the SIT is broken out by individual sectors: Residential, Commercial, Industrial, Transportation, and Electric Utilities. “Other Fossil Fuels” includes non-CO<sub>2</sub> GHGs from Stationary Combustion and Mobile Combustion, Coal Mining, and Natural Gas and Oil Systems.

This section includes charts that display a breakdown of emissions by sector. While it uses data from the SIT unless otherwise noted, for ease of comprehension, it groups together industrial and industrial process emissions as “industry,” and residential and commercial emissions as “buildings.” These charts exclude indirect CO<sub>2</sub> from Electricity Consumption, per SIT methodology.



## 2005 GHG Emissions: Base for Paris Target

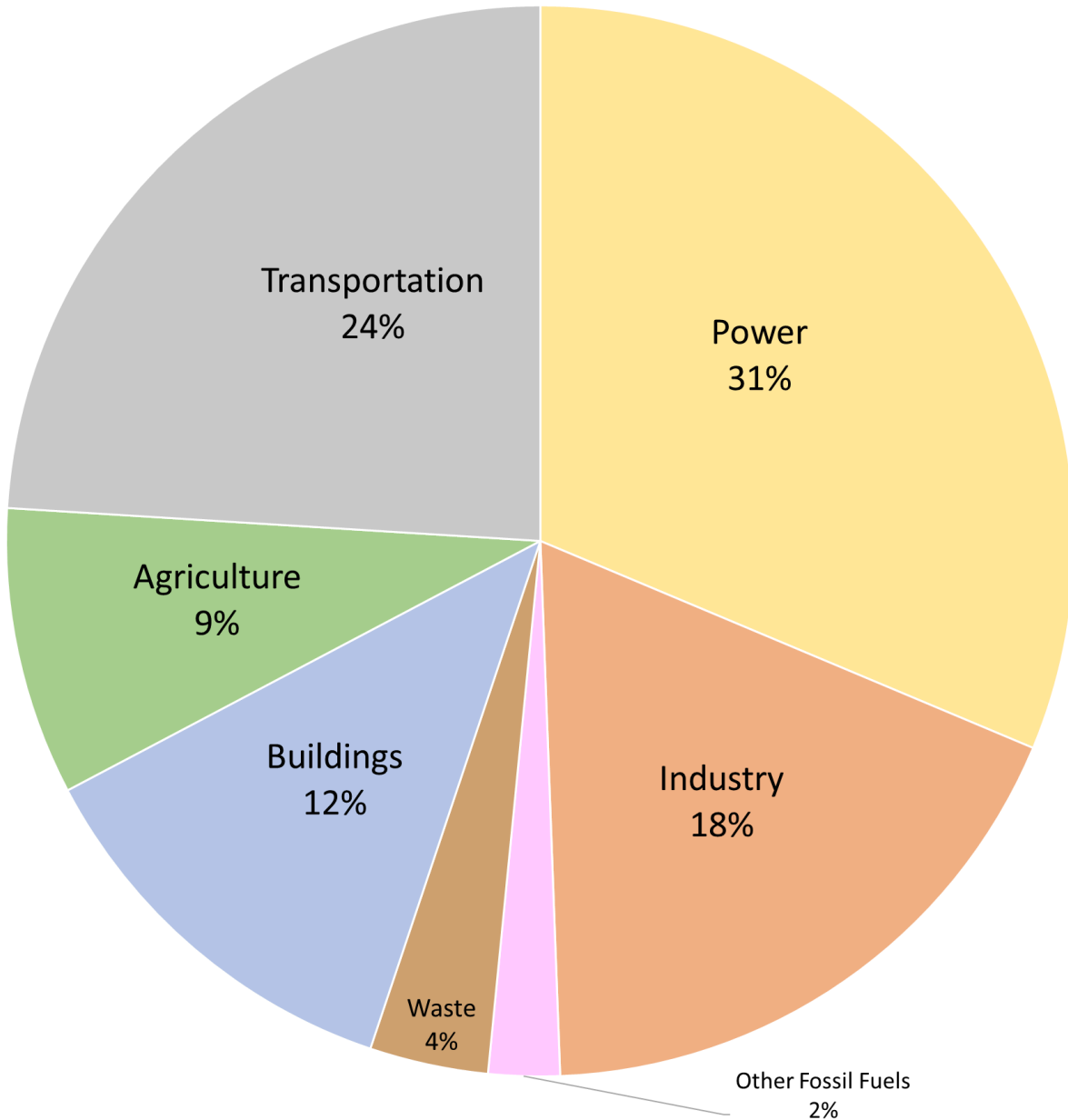
2005 emissions were 283.62 MMTCO<sub>2</sub>e and were relatively representative for the era. They are used to calculate 2030 emissions goals under the Paris Climate Agreement, to which Illinois has committed.

**Table 1: 2005 GHG emissions, by sector**

Sector	Emissions in MMTCO <sub>2</sub> e	Percentage
Transportation	72.47	31.21%
Electric Utilities	94.49	40.69%
Industrial	42.82	18.44%
Industrial Processes	11.77	5.07%
Residential	24.76	10.66%
Commercial	11.85	5.10%
Agriculture	26.23	11.29%
Other Fossil Fuels	6.51	2.80%
Waste	10.83	4.67%
Land Use, Land-use Change, and Forestry (LULUCF)	-18.10	-7.80%
<b>Total</b>	<b>283.62</b>	
<i>Indirect CO<sub>2</sub> from Electricity Consumption</i>	<i>79.14</i>	



**Figure 1: 2005 GHG emissions, by percentage and sector**



*For simplicity, industrial and industrial process emissions are combined as “industry,” and residential and commercial emissions are combined as “buildings” above. Emissions from Land Use, Land-use Change, and Forestry (LULUCF) are excluded.*



## Current GHG Emissions: Base for Reduction Calculations

Current greenhouse gas emissions are estimated for 2021 below. US EPA SIT output concludes with 2020, but this inventory estimates 2021 for “current” emissions in order to avoid a potentially skewed picture of emissions in 2020 resulting from the COVID-19 pandemic. 2020 was not a representative year for emissions in most sectors. Per US EIA, energy consumption [fell](#) a record 7% that year, and state emissions data shows that many sectors’ emissions were between 20 and 40 percent lower than recent years. Illinois’ energy emissions grew more than 10% between 2020 and 2021, and it is likely that other sectors similarly rebounded.

2021 US Energy Information Administration data for state carbon dioxide emissions from fossil fuels was [available](#) at the time this plan was developed. This dataset is the same one used by SIT, so the 2021 emissions remain methodologically consistent with all other years. Emissions for transportation, electric utilities, industrial, residential, and commercial sectors below are taken from this dataset, representing nearly 80% of the 2021 figure below.

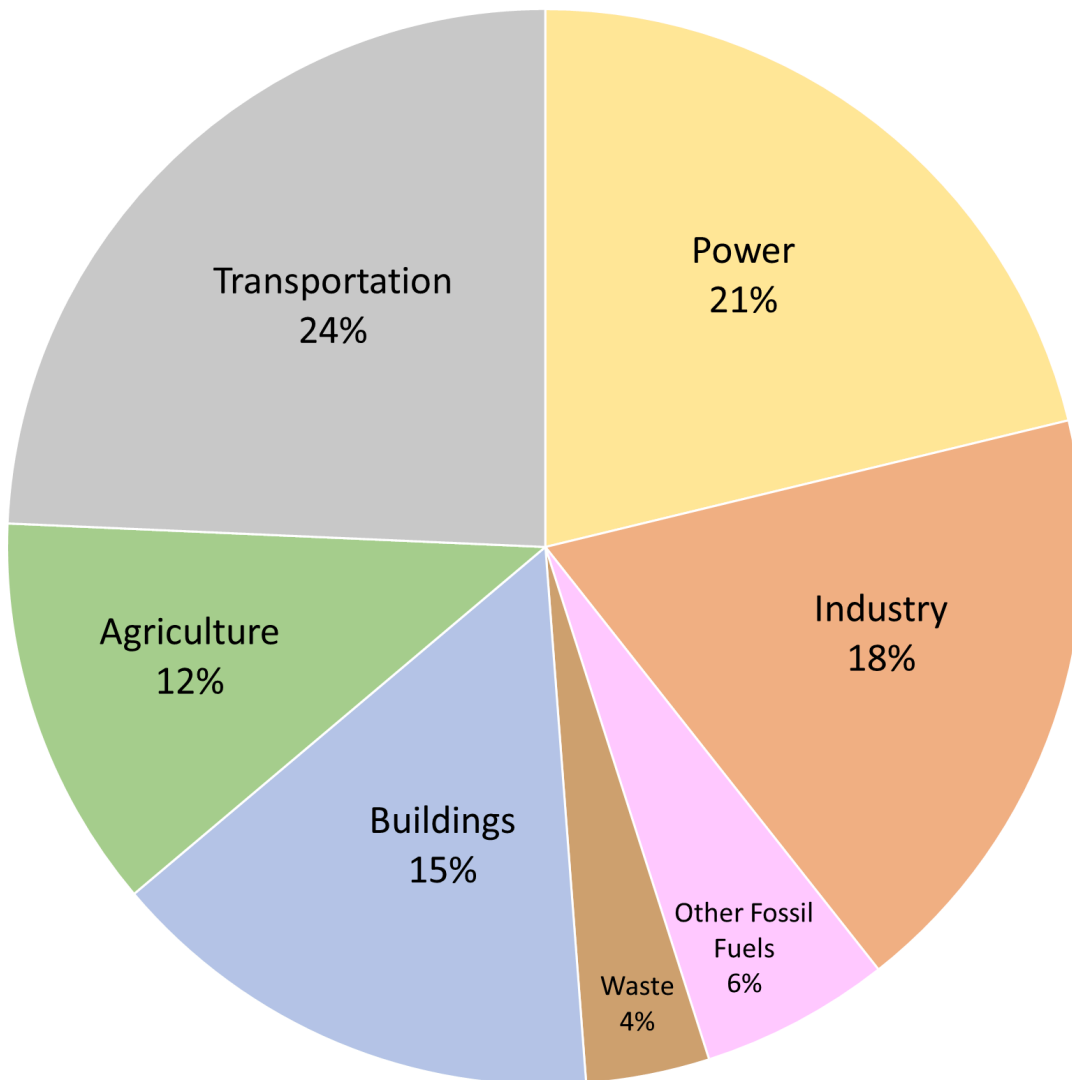
Emissions for industrial processes, agriculture, other fossil fuels, waste; land use, land-use change, and forestry; and Indirect CO<sub>2</sub> from Electricity Consumption were taken from an average of the inventory emissions from 2016-2019.

**Table 2: 2021 GHG emissions inventory, by sector**

Sector	Emissions in MMTCO <sub>2</sub> e	Percentage
Transportation	60.06	25.86%
Electric Utilities	52.43	22.58%
Industrial	34.55	14.88%
Industrial Processes	10.34	4.45%
Residential	22.99	9.90%
Commercial	14.21	6.12%
Agriculture	29.30	12.62%
Other Fossil Fuels	9.88	6.07%
Waste	9.17	3.95%
Land Use, Land-use Change, and Forestry (LULUCF)	-14.92	-6.43%
<b>Total</b>	<b>228.01</b>	
<i>Indirect CO<sub>2</sub> from Electricity Consumption</i>	49.27	-



**Figure 2: 2021 GHG emissions, by percentage and sector**



*For simplicity, industrial and industrial process emissions are combined as “industry,” and residential and commercial emissions are combined as “buildings” above. Emissions from Land Use, Land-use Change, and Forestry (LULUCF) are excluded*



## Existing State GHG Reduction Targets and Policies

Illinois has two primary, existing greenhouse gas (GHG) reduction targets.

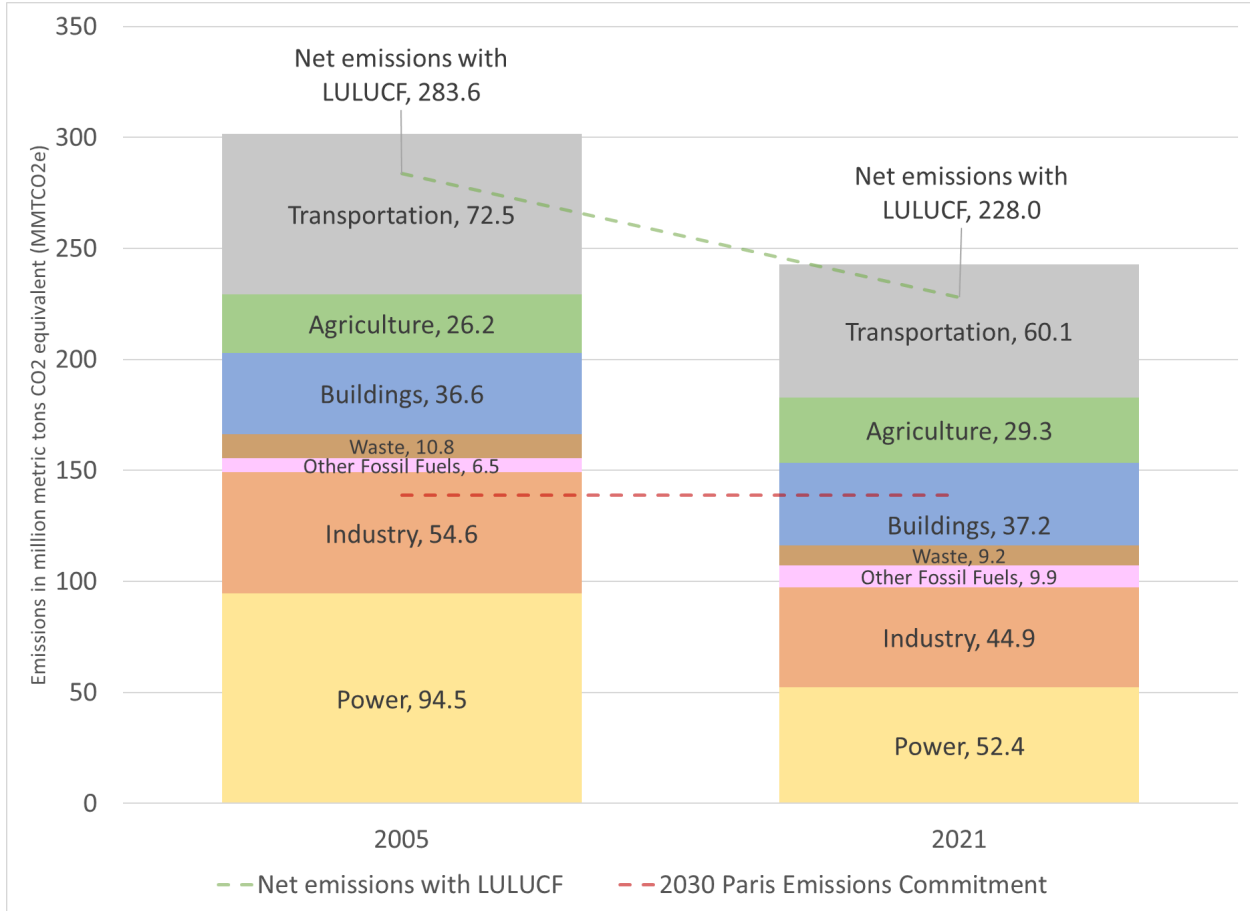
- First, the state is committed to the principles and goals of the Paris Climate Agreement, as established in [Executive Order 2019-06](#). Practically speaking, this means adhering to the United States' [emissions target](#) under the agreement: reducing greenhouse gas emissions 50-52% below 2005 levels by 2030, and to net zero no later than 2050.
- Second, under [Public Act 102-0662](#), colloquially known as the Climate and Equitable Jobs Act ("CEJA"), it is the policy of the state to rapidly transition to 100% clean energy by 2050. Among other policies intended to achieve this target, the bill includes a binding emissions reductions schedule for the power sector, which is described in detail in [415 ILCS 5/9.15](#) in the Illinois Compiled Statutes. These emissions reductions will proceed unless implementing them would reduce reliability or resource adequacy below acceptable levels.

Using 2005 emissions as calculated in this inventory as a base year, and given a 50-52% emissions reduction in keeping with the United States' nationally determined contribution (NDC) under the Paris Agreement, **the state's commitment to the Paris Agreement means reaching annual emissions between 136.1 and 141.8 MMTCO<sub>2e</sub> per year by 2030.**

This plan contains a number of additional, sector-based measures. Potential emissions reductions proposed in these measures do not constitute not binding commitments or mandates. They represent identified opportunities and pathways for emissions reductions that may serve as tools for Illinois to achieve its climate goals as articulated in Executive Order 2019-06 and elsewhere. The ability for Illinois to realize these targets will depend on many factors including economic trends, consumer behavior, receipt of federal funding, cost reductions in clean energy technologies, market and supply chain development, and development of private and public infrastructure.



**Figure 3: 2005 and 2021 GHG emissions comparison, including Paris commitment, in MMTCO<sub>2</sub>e**



*Emissions above are expressed in total MMTCO<sub>2</sub>e, not as percentages.*

*The upper dotted line in green shows net emissions for each year, including sinks from Land Use, Land-use Change, and Forestry (LULUCF), which account for -18.1 MMTCO<sub>2</sub>e in 2005 and -14.9 MMTCO<sub>2</sub>e in 2021.*

*The lower dotted line in red shows the 2030 emissions target in the Paris Climate Agreement: 139 MMTCO<sub>2</sub>e (a 51% reduction from 2005 levels).*



# Priority GHG Reduction Measures

Based on essential information gathered during the statewide stakeholder engagement process on obstacles, challenges, and gaps in equitable climate progress, the Illinois Environmental Protection Agency has put together a collection of Priority GHG Reduction Measures that:

- Make demonstrable progress on climate;
- Prioritize reductions in criteria pollutants, particularly in disadvantaged communities;
- Are not funded through other state, utility, or federal initiatives;
- Can be implemented quickly and without significant legislative or regulatory change;
- Establish replicable models that can support market liftoff; and
- Generate additional community benefits

The Priority GHG Reduction measures, as detailed in the sections below, are the following:

1. [Clean & Efficient Buildings](#)
2. [Clean Transportation & Freight](#)
3. [Clean Industry](#)
4. [Clean Agriculture](#)
5. [Clean Power](#)

The plan prioritized the sectors which offered the greatest opportunities for achievable emissions reductions which were viable economically and could deliver meaningful benefits to disadvantaged communities, with buildings and transportation (and freight in particular) demonstrating the greatest potential.

The agricultural and industrial sectors were also extensively explored, due to their large presence in Illinois and the potential for identifying replicable measures that can be scaled up and/or adopted more broadly, including outside of the state.

Illinois has extensive programming and policy in place in the power sector, so while that sector is included in the plan, there are very few strategies in that sector that are lacking funding elsewhere. Thus, the PCAP places more emphasis on other measures, in keeping with the CPRG's aim of resourcing emissions reductions opportunities that are otherwise under-resourced.





# Clean & Efficient Buildings

CEJA and the IRA support high levels of electric and transportation sector decarbonization, but additional efforts are needed to ensure the equitable achievement of building decarbonization. By 2050, Illinois will need to improve efficiency and install electric appliances in millions of homes and buildings to meet its commitment to the Paris Agreement.

While the state has made some progress and is building upon a strong policy foundation, efforts to make buildings cleaner and more efficient are being hindered by obstacles such as: lack of awareness about opportunities, programs and incentives to make buildings cleaner and more efficient, and difficulty navigating those programs where people are aware of them; a shortage of qualified contractors and customers' difficulty connecting with those contractors, especially in some geographic areas; a lack of resources to support uptake of lower-emitting building codes.

As the state embarks on the energy transition, it is essential to address these obstacles, and especially to identify pathways to support and prioritize vulnerable and low-income people and communities. Through its stakeholder engagement process conducted throughout 2023 and early 2024, the state identified significant gaps, obstacles, and challenges in carbon-free building efforts at the state and federal level that are essential to overcome through new efforts.

Outreach and programmatic support are particularly important to ensure that disadvantaged communities and people with low incomes can enjoy the benefits of energy efficiency and electrification. They stand to disproportionately benefit from the cost savings, given the higher percentage of their income that people with low incomes tend to spend on energy (referred to as "energy burden"). They may also be short on the time and social capital needed to navigate the various



program and incentive processes that would help them qualify for various forms of financial support to complete energy efficiency projects in their homes.

Measures for people with low incomes can be more expensive on a per-megawatt-saved or per-ton-of-CO<sub>2</sub>-avoided basis, in part due to housing stock that is often older and less well-maintained. However, these measures are often those most contingent upon policy and programmatic support – the projects might not happen *but for* these interventions – and the benefits to LIDACs and people with low incomes are substantial.

In pursuing this measure, the state proposes strategies including, but not limited to:

- **Filling in gaps and leveraging existing funds to ensure identified clean building projects get done.** Filling in gaps in state and federal efficiency and electrification efforts, including by providing strategic and targeted financial support that leverages existing funding and programmatic infrastructure and enables projects that would have failed but for additional support, particularly projects in low-income households which are harmed by high rates of “walk-aways” from projects that residents want.
- **Connecting more customers with clean building opportunities and easing the process of completing them.** Reducing administrative burdens for customers by helping them navigate programs, incentives, and qualified contractors; and increasing awareness about energy efficiency and electrification opportunities and incentives, particularly among vulnerable communities and building classes with high opportunities for decarbonization measures.
- **Preparing more contractors to do clean buildings work, and ensuring customers can find them.** Expanding workforce and contractor training and capacity to implement efficiency and electrification measures and supporting customers in connecting with contractors qualified to perform these measures, which today is difficult and impedes uptake of these measures.
- **Implementing building codes to support efficiency and decarbonization.** Supporting implementation of energy-efficient and low-carbon building codes, which can achieve significant, cost-effective emissions and cost savings but may be impeded in some cases by the difficulty of initial implementation and administration.

## Topline Outputs and GHG Emission Reduction Estimates

1. Improve building efficiency, reaching a 33% reduction in energy use in buildings by 2050.
  - a. Efficiency is the foundation of emissions reductions in the building sector. It increases the emissions and cost-saving impact of electrification measures, and in many cases is a prerequisite to other building decarbonization measures. In addition to GHG emissions reductions, it can reduce bills for customers, reduce exposure to criteria pollution, and make homes safer and more comfortable.
  - b. Achieving this target would reduce GHG emissions 2.9 MMTCO<sub>2</sub>e by 2030 and 118.7 MMTCO<sub>2</sub>e by 2050.
  - c. The 33% reduction in building energy use is drawn from a building decarbonization scenario in a [report](#) by Lawrence Berkeley National Laboratory.



2. Accelerate the use of efficient, all-electric heating and appliances in buildings, significantly increasing their share of new sales to between 50% and 90% by 2050.
  - a. In combination with efficiency, deployment of all-electric appliances (for heating, water heating) is an essential tool to reduce emissions in the buildings sector.
  - b. The modeled targets for this measure are set as a percentage of new sales for all-electric appliances, and steadily increase over time reaching the following levels: for residential heating, 90% by 2050 and 75% by 2030; for residential appliances and “other,” 85% by 2050 and 50% by 2030; for commercial heating, 66% by 2050 and 30% by 2030; and for commercial appliances and “other,” 50% by 2050 and 10% by 2030.
  - c. Achieving this target would reduce GHG emissions 7.9 MMTCO<sub>2e</sub> by 2030 and 317.9 MMTCO<sub>2e</sub> by 2050.
  - d. The modeled targets above are drawn from a building decarbonization scenario in a [report](#) by Lawrence Berkeley National Laboratory (LBNL). The scenario sets targets for residential and commercial heating and residential and commercial water heating, and the Energy Policy Simulator allows target-setting for residential and commercial heating, residential and commercial appliances, and residential and commercial “other.” The LBNL figures for water heating were used for both the appliance and “other” figures for the Energy Policy Simulator model.

## Implementing Authority

The Capital Development Board (CDB) has statutory authority to review and recommend periodic revisions to established building and construction codes to promote public safety and energy efficiency. Public Act 103-510 created the framework for the adoption of statewide building codes under CDB, to be implemented by July 1, 2025; units of local government retain authority until that date. CDB is also currently developing the Illinois Stretch Energy Code pursuant to a mandate under CEJA.

The Illinois Department of Commerce and Economic Opportunity operates a robust network of workforce development programs that includes more contemporary programs authorized under CEJA specific to building the clean energy pipeline - namely, the Clean Jobs Workforce Network Program and Clean Energy Contractor Incubator Program.

The Illinois EPA currently operates a growing number of energy efficiency assessment programs for municipal water systems and public housing, including programs implemented via intergovernmental agreement with Illinois public universities. Illinois EPA and other state agencies have existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilizing state and federal pass-through funds.

The Illinois Power Agency has statutory authority to implement the Solar for All program that provides incentives for low-income distributed generation and community solar projects; this includes the Bright Neighborhoods Pilot program.



The Illinois Climate Bank has broad authority to develop and implement new financial assistance opportunities, including grant and loan programs, to leverage existing funding programs, along with an ability to efficiently obtain necessary board approvals for new initiatives.

Illinois state agencies require annual appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds.

## Implementing Agencies

- Illinois Commerce Commission
- Illinois Department of Commerce and Economic Opportunity
- Illinois Environmental Protection Agency
- Illinois Finance Authority / Illinois Climate Bank
- Illinois Capital Development Board
- Illinois Power Agency

## Measure Initiatives

### 1. Establish a Clean Building Gap Closing and Incentive Stacking Catalyst Fund

#### Summary

While there are significant new sources of federal funding to support building decarbonization efforts, the state has worked with stakeholders to identify persisting gaps in incentives and structures to enable electrification of all building types on the schedule needed to meet the state's 2050 economy-wide decarbonization goals.

Based on its stakeholder engagement, the state has identified the following gaps that require additional support in order to reach target populations:

- Delivery approaches that braid together available incentives to achieve full decarbonization of residential buildings for low-income and moderate income households, and households in disadvantaged communities.
- Deployment costs related to cold climate heat pumps, heat pump water heaters, and enabling investments for health & safety that prevent program walk-aways.
- Market segments of multi-family residential buildings, moderate income households, and small commercial buildings in low-income and disadvantaged communities where rebates may not make projects viable and a lack of tax liability prevents tax credit benefits.



- The state will coordinate efforts among state agencies and utilities to deploy gap-filling decarbonization investments and low-cost equitable loan and lease offerings, strategically coordinated with complementary program deployment across other programs. This coordinated approach will reduce administrative and participant recruitment costs, and support mutual achievement of program efforts.

## Elements

**Whole-building electrification incentive.** To support and encourage whole-home electrification investments, the state will deploy a whole-home decarbonization incentive of up to \$12,000 per household to cover the remaining gaps in decarbonization measures after existing state and federal incentives.

**Low-cost equitable financing.** The Illinois Climate Bank will launch a low-cost and easy-to access finance offering for residential and small commercial decarbonization investments, intentionally braided and offered at the point of sale of contractor and outreach engagement with households. The loan will partially serve as a bridge loan to cover cash needs of project investments until repaid by rebates and other grants, while also covering any remaining investment costs over a 5-10 year period.

**Lease-to-own.** Further, the Illinois Climate Bank will develop a lease-to-own offering that allows for projects in low-income households to gain the benefit of no-upfront cost installations, near- and long-term maintenance, federal tax credit monetization, and long-term ownership and wealth-building.

## Complementary Funding and Initiatives

The initiative is designed to leverage several distinct state, utility, and federal complementary funding sources and initiatives. This includes initiatives from the Illinois Department of Commerce and Economic Opportunity, which administers the Clean Jobs Workforce Network Program, Illinois Home Weatherization Assistance Program (IHWAPP), State Supplemental Low Income Energy Assistance Fund (LIHEAP), Energy Transition Navigator Program, Contractor efficiency and electrification certification programs; initiatives from the Illinois Environmental Protection Agency, which administers Home Efficiency Rebates, Home Electrification and Appliance Rebates, Energy Code Training and Technical Support, Energy Efficiency Trust Fund Grant Program, Energy Efficiency and Conservation Block Grants, Energy efficiency measures for public water infrastructure; initiatives from the Illinois Climate Bank, which administers the Energy Efficiency Revolving Loan Fund, State Small Business Climate Initiative, Commercial Property Assessed Clean Energy, Various climate finance products, Solar for All Enabling Upgrades Grant Program, Solar for All Energy Storage Grant Program; and federal funding sources such as energy efficiency and energy property tax credits.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA and the Illinois Climate Bank will expand its residential





grant program offerings, which currently include funding for energy efficiency, electrification, enabling upgrades, and energy storage rebates, to include additional program categories.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Timelines with the Illinois Climate Bank can be even more expeditious, with board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.
- New loan offerings by the Illinois Climate Bank can be established within 6 months of the start of the initiative at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 2. Navigator program providing consumer outreach and clean building project support

### Summary

Residential housing accounts for more than 10% of all greenhouse gas emissions in Illinois. Most of those emissions are associated with the burning of fossil gas for space heating, water heating, cooking and other end uses. These emissions can be dramatically reduced through investment in energy efficiency upgrades, electrification, and other clean energy investments that can provide environmental benefits as well as cost savings to families.

There is a wide range of support available that can help people access these investments, including rebates and programs from state, local, utility and federal sources.

Yet for a variety of reasons, many people are unaware of how these measures could benefit them. They may not be aware of the technologies, or the benefits they can provide; they may not know of contractors who are trained to install those technologies. They may not be aware of the programs and incentives to make those technologies more affordable, and if they are, they may not be able to navigate the process around how to apply to one program or incentive, let alone several.

The result of this lack of knowledge is a gap between the potential benefit that clean energy investments and incentives could provide, and the actual realized benefits.

Peer-reviewed research has [found](#) that disadvantaged communities face a number of barriers to accessing energy efficiency programs. This suggests that this gap is likely experienced most acutely by disadvantaged communities and people with low incomes, who would benefit most from the cost savings they could provide. This gap also represents unrealized emissions and climate benefits.



The Navigator program is intended to fill this gap, expand the number of people who know about and use clean energy incentives and programs, and deliver more environmental and emissions benefits to more people.

## Elements

**Navigator Program.** The state will support the development of a Navigator program that educates residential customers about efficiency and electrification opportunities for their homes; supports them in identifying projects, contractors, and incentives; and works to coordinate clean energy support services across currently uncoordinated program and incentive streams. The Navigator program would provide support to customers in connecting with programs including:

- Electric and gas utility efficiency programs.
- Electric utility programs that promote rooftop solar, community solar, energy storage, demand response and other distributed energy resources.
- Illinois Power Agency’s “Solar for All” program.
- Illinois Climate Bank’s enabling upgrades and energy storage grant programs, as well as low-cost loans.
- State and federal low-income weatherization program.
- Federal Inflation Reduction Act rebates for both efficiency and electrification measures.
- Municipal programs, such as the City of Chicago’s support for the installation of energy efficient electrification measures and solar panels.

## Complementary Funding and Initiatives

This effort will significantly build and expand on the Illinois Power Agency’s Bright Neighborhoods Pilot, launched in 2023, which works to provide targeted support to 3 target communities. The Bright Neighborhoods Pilot will provide important lessons learned to support the expansion and roll-out of the effort to all low-income and disadvantaged communities across the state.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA and Illinois Climate Bank will work with Illinois Power Agency to expand its Bright Neighborhoods Pilot, which is currently focused on rooftop solar, to include education, outreach, and coordination for energy efficiency and electrification.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



### 3. Clean Buildings Access Portal

#### Summary

Illinois Climate Bank will work with Illinois Department of Commerce and Economic Opportunity, utilities, and the Illinois Power Agency to develop a single portal targeted at supporting low-income and disadvantaged community access to state and federal solar, decarbonization, energy efficiency, energy storage, pre-weatherization, and weatherization assistance programs.

The contractor portal will be designed to share information across agencies (application and credential/accreditation information), track contractor support opportunities at different agencies and direct contractors to them, and manage low-cost and easy to access loans and working capital. The Portal will streamline application processes and reduce administrative burdens in accessing grant and loan offerings.

#### Elements

**Coordinated applications.** The carbon-free buildings portal will bring together the rebate and incentive applications from the Illinois EPA State Energy Office, Illinois Power Agency, Department of Commerce and Economic Opportunity, Illinois Climate Bank, and utilities to reduce duplicative

**Connect to finance.** The portal will coordinate household investments with new finance opportunities being launched by the Illinois Climate Bank on the back end to enable rebate and performance contract programs to achieve zero-upfront cost to the building owner/tenant on the front end. Typical incentive processing takes 30-180 days, leaving a cash gap that has blocked access to incentives for low-income households.

**Referrals to approved contractors.** The portal will enable first-touch contractors (i.e. the contractors supporting a retrofit or installation of the household's first carbon-free technology type or investment) to provide easy referrals to local approved contractors that can support additional retrofit investments, through the same account in the portal.

#### Complementary Funding and Initiatives

The initiative is designed to leverage several distinct state, utility, and federal complementary funding sources and initiatives. This includes initiatives from the Illinois Department of Commerce and Economic Opportunity, which administers the Clean Jobs Workforce Network Program, Illinois Home Weatherization Assistance Program (IHWAPP), State Supplemental Low Income Energy Assistance Fund (LIHEAP), Energy Transition Navigator Program, Contractor efficiency and electrification certification programs; initiatives from the Illinois Environmental Protection Agency, which administers Home Efficiency Rebates, Home Electrification and Appliance Rebates, Energy Code Training and Technical Support, Energy Efficiency Trust Fund Grant Program, Energy Efficiency and Conservation Block Grants, Energy efficiency measures for public water infrastructure; initiatives from the Illinois Climate Bank, which administers the Energy Efficiency Revolving Loan Fund, State Small Business Climate Initiative,





Commercial Property Assessed Clean Energy, Various climate finance products, Solar for All Enabling Upgrades Grant Program, Solar for All Energy Storage Grant Program; and federal funding sources such as energy efficiency and energy property tax credits.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Climate Bank will work with the Illinois Department of Commerce and Economic Opportunity, Illinois EPA, and Illinois Power Agency to develop and launch the portal, connecting the agencies' initiatives.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 4. Clean Buildings Contractor Training

### Summary

Illinois has existing robust clean workforce and business development programs, including the framework of The Future Energy Jobs Act (FEJA) and CEJA clean energy job workforce training, apprenticeship and job placement programs. With new investment types, however, come additional training needs that are currently being unmet by the state's workforce training and contractor accelerator efforts, which focus largely on solar installations and energy efficiency. Further, the state has identified contractor gaps where disadvantaged communities do not have a robust contractor network able to support the level of investment expected under CEJA and IRA investments.

### Elements

**Expand Clean Jobs Workforce Network Program.** The state will provide additional resources to the Clean Jobs Workforce Network Program to support additional skills needs around ground-source and air-source heat pump installation, heat pump water heat installation, roof replacement and repair, mold and asbestos abatement needs identified and remediation, electrical upgrades, energy storage installation, and more.

**Expand Clean Energy Contractor Incubator Program.** The state will provide additional resources to the Clean Energy Contractor Incubator program to support new contractor and subcontractor business development in communities not well served by an existing contractor base in ground-source and air-source heat pump installation, heat pump water heat installation, roof replacement and repair, mold



and asbestos abatement needs identified and remediation, electrical upgrades, energy storage installation, and more.

### Complementary Funding and Initiatives

Illinois Department of Commerce and Economic Opportunity currently administer the Clean Jobs Workforce Network Program and the Clean Energy Contractor Incubator Program, which will be expanded to include additional skills.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Department of Commerce and Economic Opportunity will expand their Clean Jobs Workforce Network Program and Clean Energy Contractor Incubator Program to focus on specific communities and to include new technology and service areas as described.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 5. Large Building Owner Outreach and Clean Buildings Concierge

### Summary

Many multi-family and commercial property owners lack the expertise, time, and resources necessary to make strategic clean energy investments in their properties, even when tenants are seeking to lower their bill or pursue decarbonization. This initiative aims to empower large building owners by providing them with the necessary resources and guidance to identify and implement energy efficiency, retrofit, and electrification solutions with a focus on owners that may not have the internal resources to access programs and incentives. Through targeted outreach and personalized concierge services, large building owners will be equipped to navigate the complexities of decarbonization, leading to a measurable reduction in GHG emissions across the sector. By also integrating load shifting opportunities, the initiative seeks to support these buildings in significantly reducing their GHG emissions while capturing financial benefits from enhanced energy management and operational efficiency.

### Elements

**Contractor Outreach.** Establishing networks between building owners and contractors experienced in decarbonization to facilitate successful transitions.

**Strategic Planning Assistance.** The state will fund experienced third parties to act as a dedicated point of contact for large building operators, offering tailored advice, access to the latest decarbonization technologies, and connections to financing options, ensuring that the companies are well-informed and



able to take full advantage of any and all available resources. This service will streamline the process of transforming large buildings into cleaner, more sustainable assets.

**Workforce Training.** Creating a feedback loop with established workforce training hubs to identify and address skill gaps, ensuring the workforce is equipped to support decarbonization of large buildings.

**Contractor Support.** Providing building contractors with tools and resources to better understand the benefits and incentives available to large building owners. This ensures that contractors can effectively support these owners in their transition to cleaner technologies, amplifying the impact of the concierge service.

**Building Planning and Stakeholder Engagement.** Facilitating communications between large building owners and planning coalitions including state agencies, municipalities, and community organizations to promote comprehensive support and engagement in building decarbonization efforts.

### Complementary Funding and Initiatives

The initiative is designed to leverage several distinct state, utility, and federal complementary funding sources and initiatives. This includes initiatives from the Illinois Department of Commerce and Economic Opportunity, which administers the Clean Jobs Workforce Network Program, Energy Transition Navigator Program, Contractor efficiency and electrification certification programs; initiatives from the Illinois Environmental Protection Agency, which administers Energy Code Training and Technical Support; initiatives from the Illinois Climate Bank, which administers the Energy Efficiency Revolving Loan Fund, State Small Business Climate Initiative, Commercial Property Assessed Clean Energy, Various climate finance products; and federal funding sources such as energy efficiency and energy property tax credits.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA and the Illinois Climate Bank will engage with third-party contractors to lead the effort, in coordination with the utilities administering the statewide energy efficiency programs.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



## 6. Public Building Decarbonization Assessment - Lead by Example

### Summary

The objective of this initiative is to conduct comprehensive energy efficiency and electrification assessments for local and state government buildings, public universities, and municipalities, aiming to significantly reduce energy consumption in line with the leading targets for commercial and public buildings. The assessment will require the planning for and anticipated cost-effective retrofit of facilities to reduce energy consumption by 35% by 2035, achieve zero emissions, and support the electrification of transport. The results of the assessments will be made publicly available to share best practices.

By leading through example, these efforts aim to inspire and accelerate similar decarbonization efforts among other large building owners. This proactive approach is expected to catalyze broader GHG reductions, demonstrating the feasibility and benefits of energy efficiency and sustainable practices on a wider scale.

### Elements

**Assessment of Public Buildings:** Perform detailed energy audits to pinpoint efficiency opportunities and electrification potentials across a wide range of public buildings.

**Leadership:** Shared lessons learned and models for energy-conscious practices and investments in the broader building industry, encouraging similar initiatives statewide.

**Financing Connection:** Facilitate access to retrofit financing for identified projects through the Illinois Climate Bank, including bridge loans for federal tax credit elective pay opportunities, as well as construction and term loans, ensuring actionable paths towards implementation.

### Complementary Funding and Initiatives

This initiative contributes directly to the state's ambitious objectives of achieving zero GHG emissions by 2050 and reducing public building energy consumption by 35% by 2035. Through the demonstration of effective energy assessments and best practices, this initiative serves as a beacon for sustainable development and energy efficiency statewide.

The initiative will provide support to public entities to leverage new federal tax credits under the Inflation Reduction Act, and specifically the elective pay and transferability provisions of applicable clean energy tax credits. Further, the program will align with new Bridge Loan offerings being created by the Illinois Climate Bank in 2024 to support public entities and non-profits with short-term capital needs to access and benefit from such tax credits.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA and the Illinois Climate Bank will engage with third-party



contractors to lead the effort, in coordination with the utilities administering the statewide energy efficiency programs.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 7. Community Geothermal Planning + Pilots

### Summary

Shared geothermal and thermal energy networks have been recognized by the Illinois General Assembly as a potential means to affordably decarbonize buildings at both the community-scale and utility-scale, while helping achieve the decarbonization goals of the Climate and Equitable Jobs Act (“CEJA”).

Geothermal energy is the thermal energy produced by and stored by the earth. This thermal energy is naturally and continuously occurring worldwide, which makes it an exceptional renewable energy source for heating, building climate control, and electricity generation.

Geothermal heat pump applications rely on the stable, moderate temperature conditions that are found within the subsurface layers of the earth’s crust. Once below the frost line, the temperature within the earth maintains an average temperature around 55-65°F. In geothermal heat pump applications, the thermal energy within the ground is transferred to a heat pump by a series of looped piping filled with a fluid energy exchange medium, most often water or a water-based solution. The heat pump converts this energy to provide heating or cooling in a building.

The state will seek to pilot new replicable and scalable models of stand-alone or interconnected community-scale geothermal networks in the public right-of-way that enable residents and businesses to opt-in to connect to a shared geothermal ground loop to heat and cool their buildings. By leveraging the Earth’s temperature for energy, these systems can provide heat to buildings 5x more efficiently than gas heat, and help cool those buildings in the summer.

### Elements

**Competitive Community Geothermal Solicitation.** The state will conduct a competitive solicitation for community geothermal projects to cover the additional costs related to new technology deployment and market development.



**Leveraging Federal Funds and Loan.** The state community geothermal effort will position selected projects and partners to pursue additional federal funding under the IRA's updated Investment Tax Credit, and through the DOE's Loan Programs Office to develop and grow their efforts.

**Center Community Engagement.** Projects will be required to center community engagement, and develop systems that meet residents and businesses where and when they are at in their decarbonization efforts.

### **Complementary Funding and Initiatives**

The state does not currently have any funding or initiatives to support community geothermal projects. However, the Illinois Commerce Commission is currently considering the role of thermal energy network pilots within their jurisdiction, and the Sustainable Chicago Geothermal pilot project is currently being led in the state with funding from the U.S. Department of Energy.

### **Implementation Schedule and Milestones**

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Climate Bank will conduct a competitive solicitation for Community Geothermal projects to receive grant funding, and will create and develop a loan program offering.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## **8. Accelerate stretch building code adoption by local governments**

In 2021's CEJA, the Illinois General Assembly directed the state Capital Development Board to work with the Illinois EPA to create and adopt a new Illinois Stretch Energy Code that would achieve greater energy efficiency outcomes than the Illinois Energy Conservation Code. Once finalized, any municipality that is interested in achieving higher performance will be able to opt-in to the Stretch Energy Code without needing to undergo their own extensive code development process.

If Illinois local governments updated to the state's new stretch energy codes over the next decade, the state would be able to see a 75% reduction in site energy index (compared to the Illinois Energy Conservation Code).

To support this adoption, the state will provide implementation grants to local governments to support the transition to a stretch energy code.



## Elements

**Stretch Energy Code Implementation grants.** State Stretch Energy Code implementation grants will support local governments in adopting, implementing, and enforcing the latest state stretch energy codes, zero energy codes, or equivalent codes and standards, improving residential and commercial new construction and retrofits, and transitioning the building stock to more efficient, decarbonized buildings.

**Coordination.** The state will support coordination among local governments to reduce administrative burdens, share resources, and develop a common platform for sharing public information on code adoption by geographic area.

## Complementary Funding and Initiatives

Under its Solar for All proposal to US EPA, Illinois Climate Bank proposed a grant program for local governments to adopt SolarAPP+ to streamlining permitting of solar projects at the local level.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Climate Bank will make available grants to local governments through an open process. This would be made available in a manner similar to the upcoming grant program for local governments to adopt SolarAPP+.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## Geographic Location

**Statewide.** Some initiatives to meet this measure may be focused in 13 regions designated as hubs by the Illinois Department of Commerce and Economic Opportunity: Chicago (South Side), Chicago (Southwest & West Sides), Waukegan, Rockford, Aurora, Joliet, Peoria, Champaign, Danville, Decatur, Carbondale, East St. Louis, and Alton. Deploying additional resources in these areas provides good geographic coverage as the state as a whole, supports disadvantaged communities, leverages existing programmatic infrastructure, and centers expressed priorities of stakeholders, including those in disadvantaged communities.

## Complementary Funding and Initiatives

For the Clean & Efficient Buildings measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:



- **State Initiatives**

- a. Illinois Department of Commerce and Economic Opportunity. Administrators:
  - i. Clean Jobs Workforce Network Program
  - ii. Illinois Home Weatherization Assistance Program (IHWAPP)
  - iii. State Supplemental Low Income Energy Assistance Fund (LIHEAP)
  - iv. Energy Transition Navigator Program (for workforce, not associated with the navigator program initiative discussed above)
  - v. Contractor efficiency and electrification certification programs
- b. Illinois Environmental Protection Agency. Administrators:
  - i. Home Efficiency Rebates
  - ii. Home Electrification and Appliance Rebates
  - iii. Energy Code Training and Technical Support
  - iv. Energy Efficiency Trust Fund Grant Program
  - v. Energy Efficiency and Conservation Block Grants
  - vi. Energy efficiency measures for public water infrastructure.
- c. Illinois Climate Bank. Administrators:
  - i. Energy Efficiency Revolving Loan Fund
  - ii. State Small Business Climate Initiative
  - iii. Commercial Property Assessed Clean Energy
  - iv. Various climate finance products
  - v. Solar for All Enabling Upgrades Grant Program
  - vi. Solar for All Energy Storage Grant Program

- **Utility Initiatives**

- a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
  - i. Energy Efficiency Programs
  - ii. Beneficial Electrification Programs

- **Federal Funding**

- a. Energy Efficient Home Improvement Tax Credit
- b. US EPA Greenhouse Gas Reduction Solar for All Competition
- c. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
- d. IRA Investment Tax Credits





## Metrics for Tracking Progress

The State of Illinois has identified an initial set of tracking metrics to evaluate progress toward the achievement of its PCAP Clean & Efficient Buildings measure:

### CLEAN & EFFICIENT BUILDINGS METRICS

Metric	Description
Buildings-1	Reduction in project abandonment rates for energy efficiency, weatherization, and zero-emissions appliance measures, particularly in low-income households and disadvantaged communities
Buildings-2	Increased participation in energy efficiency and electrification measures among building owners and residents
Buildings-3	Increased awareness, training, capacity, and certification for efficiency and electrification work among HVAC contractors
Buildings-4	Increased deployment of efficiency measures and zero-emissions appliances in homes and buildings, particularly in low-income and disadvantaged communities
Buildings-5	Reduced total GHG and criteria pollutant emissions in homes and buildings
Buildings-6	Increased number of buildings emitting zero greenhouse gases and criteria pollutants
Buildings-7	Increased number of buildings served by networked geothermal heating systems
Buildings-8	Increased adoption of stretch energy codes by municipal governments
Buildings-9	Increased average efficiency of new buildings
Buildings-10	Reduced average emissions in new buildings
Buildings-11	Reduced energy burden in low-income and disadvantaged communities



# Clean Transportation and Freight

Transportation is the largest source for GHG emissions in Illinois, in addition to being a major source of criteria pollution that impacts environmental justice communities.

A strong foundation is already in place to reduce transportation in Illinois. Aside from a suite of federal tax credits, there is a state rebate for electric passenger vehicles and a process for utilities to develop and submit beneficial electrification plans, both established in CEJA.

Illinois is a central hub for the United States' logistic network, with between [one-quarter and one-third](#) of all U.S. freight originating, terminating, or passing through the region. Chicagoland in particular is a hub for freight: it contains the largest inland port in North America (in Will County), seven interstate highways, six of the seven Class I railroads in North America, O'Hare International Airport, and water terminals serving the Great Lakes and Illinois Waterway.

Recognizing its strategic importance, the shift to drive sustainable transportation and freight solutions is not only a regional priority but also a national imperative. Based on the [2021 GHG inventory](#), 25% of the state's overall greenhouse gas (GHG) emissions are from the transportation sector. Because of this, there is an urgent need for cleaner, more sustainable transportation methods. Investment in clean fleets and freight, with a focus on sub-sectors that typically are underserved in federal and state programs, directly tackles this challenge.



The integration of small and medium-sized freight operators is essential in achieving widespread GHG reductions across the logistics chain. These operators often face barriers to adopting zero-emission technologies, making targeted support crucial for their successful transition. The comprehensive suite of initiatives, including Local Fleet Charging Infrastructure, Railway Trackage Power Deployment, Medium and Heavy-Duty Vehicle Electrification, Clean Fleet and Freight Concierge, Freight Hub Data Collections and Analysis, Workforce Training Program for Fleet Operators, Specialized Workforce for HDV Charging Infrastructure, Local Planning Partnerships, and Facilitating Statewide and Interagency for Critical Freight Planning, can each play a pivotal role in expediting their conversion.

Additionally, the adoption of zero-emission heavy-duty freight further addresses health concerns in communities disproportionately affected by poor air quality resulting from diesel emissions. This additional measure complements the comprehensive approach, aligning with the initiative's goal of promoting environmental justice and improving public health outcomes in these affected areas.

## Topline Outputs and GHG Emission Reduction Estimates

As noted in the introduction, these outputs represent a possible scenario for greenhouse gas reduction. Whether the targets outlined here are achieved will depend on a number of factors. Their inclusion in the PCAP does not constitute an endorsement of a specific policy.

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.
  - a. Medium and heavy duty vehicles emit a disproportionate amount of greenhouse gas and criteria pollutant emissions, and often travel in close proximity to LIDAC communities. Adopting zero-emission heavy duty vehicles in Illinois' large freight sector could provide both substantial emissions benefits and a laboratory for operational improvements and scalability that could help accelerate adoption elsewhere.
  - b. This would reduce GHG emissions 2.1 MMTCO<sub>2e</sub> by 2030, and 76.4 MMTCO<sub>2e</sub> by 2050.
  - c. This scenario is based on projections of U.S. heavy-duty electric truck sales by [McKinsey](#).
  - d. To determine the GHG emission impact of this scenario, the RMI Energy Policy Simulator was used to model emissions impacts of the scenario in the transportation sector. The transportation sector emissions impacts were broken out and discounted by 34% to account for the power sector emissions impact of the electricity used to charge the trucks. This discount was determined using a class 8 truck as a proxy: using data from the US Department of Transportation Vehicle Inventory and Use Survey, the average MPG of these trucks was found to be 7, and diesel fuel emits 22.45 pounds CO<sub>2</sub> per gallon when burned per [US EIA](#), providing a CO<sub>2</sub> per mile traveled figure of ~3.207. To compare this to an electric heavy-duty truck, the Tesla Semi was used as a proxy. The Tesla Semi has an officially [stated](#) fuel efficiency of 2 kWh/mi, and Pepsi, one of the



largest operators of the trucks, [says](#) it has achieved an efficiency of 1.7 kWh/mi; an average of these two figures, 1.85 kWh/mi, was used. The electricity used to charge the truck is assumed to have a carbon intensity of ~0.588 lbs CO<sub>2</sub> per kWh. This was derived from US EIA [data](#) which shows Illinois' average emissions intensity to be 639 lbs CO<sub>2</sub> per MWh, which was then discounted an additional 8% to approximate off-peak charging (which operators will be incentivized to do, as nearly all large customers in Illinois are on time-of-use pricing). The 8% reduction is based on PJM's [reported](#) differential between the marginal CO<sub>2</sub> emissions rates of its on-peak and off-peak power, and when applied results in 587.77 CO<sub>2</sub> per MWh, or ~0.588 lbs CO<sub>2</sub> per kWh. This level of carbon intensity in a truck with a mileage of 1.85 kWh/mi results in 1.088 lbs CO<sub>2</sub> per mile traveled for the electric truck. This is ~2.12 lbs of CO<sub>2</sub> per mile less than the diesel truck, almost exactly a 34% reduction in CO<sub>2</sub> emissions on a per mile basis. This 34% discount was applied to the annual transportation sector emissions output by the RMI Energy Policy Simulator to account for the offsetting power sector emissions produced by the electric heavy-duty trucks and produce the GHG reduction estimates for this measure.

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. This would reduce GHG emissions by 2 MMTCO<sub>2</sub>e by 2030, and 131.4 MMTCO<sub>2</sub>e by 2050.
  - b. This scenario is loosely based on Illinois' stated policy goal of putting 1 million electric vehicles on the road by 2030. It is further backed by the concept that Illinois could accelerate somewhat ahead of the baseline projection for passenger electric vehicles' overall market share in the US, which [RMI](#) projects at roughly 50% in 2030, [EY](#) projects at 50% in 2032, and [Morningstar](#) projects at 40% by 2030.
3. Expand mobility access, shifting 15% of trips to lower-carbon forms of travel by 2050.
  - a. The United Nations Intergovernmental Panel on Climate Change [identifies](#) mode shift as a particularly important tool in decarbonizing the transportation sector, and demand for sustainable mobility options and infrastructure has grown in Illinois. Walking and biking have significant health, quality of life, and economic co-benefits beyond their significant emissions reductions.
  - b. If achieved, this would reduce emissions by 6.5 MMTCO<sub>2</sub>e by 2023, and 79.3 MMTCO<sub>2</sub>e by 2050.
  - c. This value was selected as a conservative midpoint within a variable range provided within the RMI Energy Policy Simulator.
4. Strategically support electrification of freight rail and trackside power.
  - a. Diesel emissions from idling freight cars and generators on freight yards is similar in climate and environmental justice impact to other heavy-duty vehicles, but is logistically different and involves different stakeholders.
  - b. This could reduce GHG emissions 0.25 MMTCO<sub>2</sub>e by 2030, and 5.7 MMTCO<sub>2</sub>e by 2050, based on a modeled action of shifting 20% of sales of new rail freight vehicles. This is



only an approximation of the emissions potential for rail electrification, as limited emissions calculation tools are available for more targeted interventions in this area.

## Implementing Authority

- **Clean Energy Jobs Act (CEJA):**
  - CEJA has granted significant authority for implementing transportation electrification programs in Illinois.
  - Outlined a statutory intent to increase electric vehicle (EV) adoption to one million by 2030.
- **Illinois Department of Commerce and Economic Opportunity (DCEO):**
  - Operates a robust network of workforce development programs.
  - Expects to use Clean Jobs Workforce Training Hubs under CEJA to build the EV workforce pipeline.
- **Illinois Environmental Protection Agency (EPA):**
  - Has existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilities state and federal pass-through funds.
  - Operates EV and charging infrastructure grant programs under the umbrella of its Driving a Cleaner Illinois Program, which includes federal Volkswagen Settlement and additional EV rebate and charging programs authorized under CEJA and Rebuild Illinois capital program.
- **Illinois Department of Transportation (IDOT):**
  - Has existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilities state and federal pass-through funds.
  - Has primary responsibility for implementing the National Electric Vehicle Infrastructure (NEVI) program, public transit, and port electrification programs.
- **Legislative Authority for Idling Law:**
  - Illinois expects to seek legislative authority to strengthen the state's idling law under the Illinois Vehicle Code, which currently applies to areas designated as nonattainment for ozone.
- **Illinois Climate Bank:**
  - Has broad authority to develop and implement new financing options.
  - Can leverage existing funding programs and efficiently obtain necessary board approvals for new initiatives.
  - Does not require annual appropriation authority to spend funds.
- **Annual Appropriation Authority:**
  - Illinois state agencies require annual appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds.



This information suggests a comprehensive approach in Illinois to promote clean energy, electric vehicle adoption, workforce development, and environmental protection through various legislative and programmatic measures.

## Implementing Agencies

- Illinois Department of Commerce and Economic Opportunity
- Illinois Environmental Protection Agency
- Illinois Finance Authority / Illinois Climate Bank
- Illinois Department of Transportation

## Measure Initiatives

### 1. Create a Heavy Duty Vehicle Charging Infrastructure Program for Small and Medium Fleet Operators

#### Summary

This initiative is designed to spearhead the construction of charging infrastructure tailored for small to midsize fleet and freight operators, with a particular focus on supporting local and regional routes within high-emission urban areas. Recognizing the unique challenges these operators face, such as limited benefit from current highway-centric charging solutions and ineligibility for certain tax incentives due to their operational scale and financial structure, the program aims to provide a more accessible and equitable path towards electrification. A key aspect of this approach is the co-creation of charging projects in direct partnership with the communities they serve, ensuring local benefits and aligning with broader environmental and equity goals.

#### Elements:

**Shared EV Charging Grants.** Direct grant incentives will be offered to facilitate the establishment of on-site or shared EV charging infrastructure, catering specifically to the needs of small and medium fleet operators. This effort is coupled with the Clean Freight Concierge Initiative, which provides tailored support and guidance, ensuring that these operators not only gain access to charging solutions but also navigate the transition to electric vehicles with comprehensive support.

**Low-Cost Loans.** A low-cost loan program will be introduced, emphasizing the deployment of DC fast-charging stations and including bridge loan options. These loans are particularly aimed at supporting small and medium-sized operators, especially those located in disadvantaged communities, enhancing financial accessibility. This element is synergistic with the concierge initiative, offering financial guidance and support.



**Workforce to Maintain Charging Infrastructure.** Maintenance of the charging infrastructure is crucial, as detailed in the Workforce to Maintain Heavy Duty Charging Infrastructure initiative, ensuring reliability and longevity of the investments.

**Freight Outreach.** This program will rely on the clean fleet and freight concierge initiative to ensure active participation, financial support, education and accessibility completing the cycle to guarantee the realization of emissions reductions.

### Priority for Illinois:

Integrating this initiative with Illinois' broader environmental and economic objectives, including the ambitious targets set by the Climate and Equitable Jobs Act (CEJA), underscores the state's commitment to a sustainable, equitable transition to electrification for all transportation sectors. By specifically addressing the needs of small and medium-sized freight operators, the program not only aims to improve local air quality but also to bolster the economic resilience of these critical businesses within their communities.

### Complementary Funding and Initiatives

This initiative enhances and aligns with existing state efforts, including the Illinois Environmental Protection Agency's (IL EPA) Charging Infrastructure Grant Program, the Illinois Department of Transportation's (IDOT) National Electric Vehicle Infrastructure (NEVI) Program, and the IL EPA's Drive a Cleaner Illinois Program. It specifically addresses the unique requirements of small to medium-sized operators, complementing but not replicating existing resources. This initiative focuses on making charging infrastructure more affordable for sectors of the transportation and freight industry that are often overlooked or underserved by programs. Through integration with the Clean Freight Concierge Initiative, it promotes a unified strategy to eliminate barriers to electrification, facilitating a smoother and more inclusive transition for all stakeholders involved.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will leverage its authority under its existing Charging Infrastructure Grant Program to expand a medium- and heavy-duty vehicle charging infrastructure grant program. Illinois Climate Bank is working to establish a low-cost loan program for EV charging infrastructure that can be accessed by fleet and freight operators.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



## 2. Support Deployment of Trackage Power to Reduce Diesel Engine Idling

### Summary

This initiative entails deploying trackage power along railway tracks, eliminating the necessity for diesel generators on trains, as well as offering enhanced idling reduction programs to significantly reduce the use of diesel generators. These strategically positioned hubs can also support the transition to electrified engines in commuter trains to further advance the state's cleaner transportation goals and address environmental justice concerns in communities that are disproportionately affected by diesel emissions. The dual emphasis on infrastructure and idling reduction aligns with Illinois' broader objectives, including saving fuel costs, preventing air pollution, reducing carbon dioxide emissions, fostering economic savings, and providing environmental sustainability.

### Elements:

**Trackage Power Grants.** Grant incentives for equipment retrofits that do not qualify for tax credits, or where projects are not being completed because costs are well in excess of tax credit value. These grants aim to encourage small to medium-sized freight operators to upgrade or retrofit equipment to improve efficiency and reduce environmental impact.

**Low-Cost Loans.** Provide targeted low-cost loans designed for the freight industry segments traditionally underserved by conventional financing options. These loans will be focused on large capital cost items that accelerate trackage power and idling reduction such as outfitting freight with auxiliary engines.

**GHG Emissions Calculation.** Utilize the Freight Hub Data Collection and Analysis Program to rigorously measure the initiative's impact on GHG emissions. This should include tracking reductions achieved through the adoption of trackage power and reduced idling, offering transparent and actionable data to guide ongoing improvements.

**Freight Outreach.** This program will rely on the clean fleet and freight concierge initiative to ensure active participation, financial support, education, and accessibility completing the cycle to guarantee the realization of emissions reductions.

**New Policy and Regulation.** Collaborate closely with interagency and statewide freight planning initiatives to craft policies and regulations that bolster trackage power use and minimize diesel idling. This effort should review and possibly recommend enhancements to Illinois' idle reduction laws, focusing on reducing emissions in frontline and disadvantaged communities.

### Priority for Illinois:

Deploying trackage power and enhancing idling reduction programs are top priorities for Illinois, reflecting the state's dedicated effort to combat diesel emissions and their adverse effects on community health and the environment. The initiative directly aligns with Illinois' priority to safeguard public health, enhance air quality, and advance equitable outcomes across all communities by targeting gaps in support





for specific freight operators, types, and equipment. By significantly reducing diesel emissions, especially in freight hubs that disproportionately impact disadvantaged and low-income communities, Illinois strengthens its commitment to environmental justice and public health, aligning with the Illinois Idle Reduction Laws and Idle Reduction Weight Exemptions.

### **Complementary Funding and Initiatives**

This initiative adeptly fills critical gaps across a spectrum of state and federal environmental and transportation programs, including Driving a Cleaner Illinois, the Diesel Emissions Reduction Act, The Clean Ports Program, and Illinois Department of Transportation (IDOT) NEVI and Rail Freight Programs. Specifically designed to extend the reach of these foundational efforts, it introduces essential support for freight infrastructure, a sector previously underserved by existing policies and incentives. By providing targeted assistance where it's most needed, this initiative ensures that no segment of the freight and transportation sector is left behind in Illinois' transition to clean energy. Additionally, by aligning with and enhancing the Illinois Idle Reduction Laws, this approach not only complies with state regulations but also significantly amplifies their environmental impact. This strategic integration ensures comprehensive and effective emissions reductions across the state's freight transport sector, reinforcing Illinois' commitment to a cleaner, healthier future for all its residents.

### **Implementation Schedule and Milestones**

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will leverage its authority under its existing Charging Infrastructure Grant Program and Rail Freight Programs to issue grants for trackside power for freight operators. Illinois Climate Bank will work to expand its low-cost loan program for EV charging infrastructure to include freight trackside power.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## **3. Support Zero-Emissions On-Road and Off-Road Vehicle Deployment for Small and Medium Fleet Operators**

### **Summary**

The initiative is dedicated to advancing the electrification of Medium and Heavy-Duty Vehicles (MHDVs), with a particular focus on small and medium fleet operators who face significant challenges due to the



high upfront costs of electric vehicles. By offering targeted rebates and innovative financing solutions, this program specifically addresses the accessibility and affordability barriers these operators encounter. The aim is to significantly boost adoption within this group, directly contributing to Illinois' 2030 EV goals and addressing a pivotal gap in the market. This targeted approach ensures that small and medium fleet operators, often overlooked by broader incentive programs, receive the support necessary for transitioning to zero-emission vehicles.

### Elements:

**Vehicle purchase rebate.** Offers targeted rebates for the acquisition of specific types of MHDVs and particular categories of buyers, especially those traditionally ineligible for existing programs (such as the Illinois Electric Vehicle Rebate Program) or cannot take advantage of tax credits.

**Low-Cost Loans.** Provides financial support to fleet operators with a carve-out to benefit small and medium-sized fleet operators. Includes provisions for third-party ownership to capitalize on tax incentives, exploring innovative financing arrangements where entities could lease vehicles.

**Equipment Retrofits.** Grant incentives for equipment retrofits. Help to extend the life of capital assets that already support decarbonization efforts but do not qualify for tax credits.

**Fleet Operational and Logistics Training.** Training for fleets on how to optimize the life of the vehicles and further described in the initiative, Workforce Training for Fleet Operators.

**Freight Outreach.** This program will rely on the clean fleet and freight concierge initiative to ensure active participation, financial support, education, and accessibility completing the cycle to guarantee the realization of emissions reductions.

### Priority for Illinois:

This initiative is a key part of Illinois' drive to meet its environmental and public health goals under the Clean Energy Jobs Act (CEJA). It focuses on expanding support for zero-emission vehicles, including medium and heavy-duty vehicles (MHDVs), both on-road and off-road, and equipment retrofits. This effort is crucial for reducing statewide greenhouse gas emissions, improving air quality, and advancing towards the CEJA goal of 1 million electric vehicles by 2030, showcasing Illinois' comprehensive strategy for decarbonization.

### Complementary Funding and Initiatives

This initiative aligns with and enhances federal incentives such as those under the Inflation Reduction Act (IRA), targeting electrification across Illinois. It specifically addresses the funding gaps left by federal tax credits and existing programs, focusing on medium and heavy-duty vehicle (MHDV) operators, particularly in segments of the transportation sector typically underserved today by programs like the Drive a Cleaner Illinois initiative. By providing targeted support for small and medium fleet operators, including rebates, low-cost loans, and equipment retrofit incentives, this effort ensures a more inclusive transition to zero-emission vehicles.



Driving a Cleaner Illinois is the Illinois EPA's grant program developed to distribute funding for various types of mobile source electrification projects. The Driving a Cleaner Illinois Program implements funding from a variety of sources, including the Climate and Equitable Jobs Act, the Volkswagen Environmental Mitigation Trust, U.S. Environmental Protection Agency's Diesel Emission Reduction Act (DERA) Program, and Federal Highway Administration's Congestion Mitigation and Air Quality Improvement (CMAQ) Program.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will leverage its authority under its existing Driving a Cleaner Illinois, the grant program developed to distribute funding for various types of mobile source electrification projects. Illinois Climate Bank will work to create a low-cost loan program for medium- and heavy-duty fleet vehicles.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.
- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 4. Create a Clean Fleet and Freight Concierge

### Summary

The initiative to create a Clean Fleet and Freight Concierge focuses on enhancing coordination and support for freight companies, especially those that don't have the internal resources to access programs and incentives. By guiding these companies toward economical, low-carbon technologies and practices, this program aims to significantly reduce greenhouse gas emissions and promote cleaner transportation methods across Illinois.

The Clean Fleet and Freight Concierge is not a standalone initiative but a vital component that complements and enhances a suite of efforts aimed at reducing greenhouse gas emissions within Illinois. It plays a crucial role in ensuring the success of other key initiatives, including the Heavy-Duty Vehicle Charging Infrastructure Program, the deployment of trackside power to reduce diesel engine idling, and the support for zero-emissions vehicle deployments among small fleet operators. By serving as a central hub for information, resources, and support, the concierge fosters a synergistic environment where the success of one initiative amplifies the impact of others.

Moreover, the concierge is integral to facilitating seamless communication and coordination among various related efforts, such as clean freight planning, stakeholder engagement, and workforce training



initiatives. It acts as the linchpin that ensures these diverse programs work in concert, not only to achieve their objectives but also to collectively advance Illinois' overarching environmental and transportation goals.

### Elements:

**Contractor Education.** Establishing networks between freight companies and contractors skilled in low-carbon technologies, ensuring the success of the transition initiatives. Providing contractors with tools and resources to better understand the benefits and incentives available to fleets and freight companies. This ensures that contractors can effectively support these companies in their transition to cleaner technologies, amplifying the impact of the concierge service.

**Strategic Planning Assistance.** Acting as the main point of contact for freights and fleets, this feature involves entering into a contract with a third-party implementer to disseminate information about various programs, incentives, and opportunities for decarbonization, ensuring that companies are well-informed and able to take full advantage of available resources.

**Workforce Training.** Creating a feedback loop with workforce training programs to identify and address skill gaps, ensuring the workforce is equipped to support the transition to cleaner freight and fleet operations.

**Clean Freight Planning and Stakeholder Engagement.** Facilitating communication between freight companies and stakeholders, including communities and partnership organizations, to promote comprehensive support and engagement in decarbonization efforts.

### Priority for Illinois

This concierge service is vital for Illinois, given its significant role in the national freight system and the urgent need to reduce transportation sector emissions. By providing targeted support and facilitating the adoption of clean technologies, this initiative directly aligns with Illinois' goals to decrease GHG emissions and enhance air quality, particularly in disadvantaged communities affected by freight-related pollution.

### Complementary Funding and Initiatives

By complementing and enhancing the Illinois Department of Transportation's Rail Freight Program and other existing initiatives, the Clean Fleet and Freight Concierge ensures that resources are leveraged effectively, avoiding duplication and maximizing impact. This initiative is a strategic component of Illinois' broader effort to combat climate change, offering a synergistic approach to reducing GHG emissions across the state's transportation sector.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will conduct a solicitation for a third-party implementer to serve as a clean freight concierge.



Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 5. Create a Freight Hub Data Collection and Analysis Program Emphasizing Monitoring and Metrics in Local Communities.

### Summary

The Freight Hub Data Collections and Analysis initiative for GHG emissions aims to implement comprehensive air pollution monitoring at key distributed freight hubs that may not be served by the US EPA Clean Ports Program. By deploying advanced tracking technologies both at these hubs and in homes located in close proximity, the program seeks to closely monitor, track, and subsequently enhance local health outcomes and air quality associated with the clean freight transition. This targeted approach allows for the quantification of GHG reduction progress over time, setting a critical baseline and tracking metrics specifically designed for this large polluting industry and the disadvantaged communities that are most affected by heavy freight emissions.

### Elements

**Air Pollution Monitoring.** Implementation of state-of-the-art air quality monitoring stations at strategic freight hub locations to gather real-time data on emissions and their impact on local air quality.

**Fund Community Trackers.** Distribution of indoor air quality monitoring devices to households and local businesses in close vicinity to freight hubs, enabling the collection of data on the ambient air pollution levels they are exposed to.

**Data Analysis and Reporting.** Utilization of sophisticated data analysis tools and methodologies to process and interpret the collected data, aiming to identify trends, measure the effectiveness of emissions reduction initiatives, and inform future policy and program development.

**Community Engagement and Feedback.** Establishing mechanisms for community feedback and participation in the monitoring process, ensuring transparency and fostering trust among the most highly affected populations. This includes outreach and education around community trackers.

### Priority for Illinois:

This initiative is a top priority for Illinois as it directly addresses the health and environmental disparities faced by disadvantaged communities located near freight hubs. By setting a baseline and tracking improvements in air quality, the state can demonstrate tangible benefits from emissions reduction programs, such as trackside power and idling reduction initiatives. This focus on measurable outcomes



supports Illinois' broader goals for sustainable transportation, environmental justice, and GHG emissions reduction, ensuring that progress is both significant and enduring.

### **Complementary Funding and Initiatives**

This initiative complements existing efforts to reduce GHG emissions and improve air quality around freight hubs while filling the gaps in the Clean Ports Program. It enhances the accountability and efficacy of programs like the Trackside Power and Idling Reduction and the Zero Emissions Vehicle Deployment by providing clear, quantifiable metrics of success. Furthermore, this initiative supports Illinois' commitment to environmental justice by focusing on quantifiable benefits for low-income and disadvantaged communities, ensuring that they are not left behind in the state's transition to a cleaner, healthier future. This program's deployment of new technologies and tracking methods sets a replicable model for other regions and aligns with the Illinois Department of Transportation's goals for innovation in sustainable freight logistics.

### **Implementation Schedule and Milestones**

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will expand its Ambient Air Monitoring Network Plan to include targeted air quality monitoring sites in targeted environmental justice communities.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## **6. Develop Workforce Training for Fleet and Freight Operators**

### **Summary**

The Workforce Training Program for Fleet and Freight Operators is an integral component of Illinois' strategic effort to transition towards a more sustainable, efficient, and electrified fleet industry. This initiative is crafted with the understanding that the success and longevity of the fleets acquired through the Zero Emissions Vehicle Initiative critically depend on the operators' proficiency in utilizing these vehicles to their fullest potential. As such, the training program is designed to provide comprehensive instruction to fleet operators, dispatchers, and drivers, focusing on optimizing electric vehicle (EV) use from operational, logistical, and environmental standpoints. The curriculum aims to enhance the skill set of those at the forefront of fleet operations, ensuring that the investment in zero-emission vehicles yields maximum environmental and economic benefits. By integrating the Workforce Training Program closely with the Zero Emissions Vehicle Initiative, Illinois is establishing a holistic approach that marries



vehicle acquisition with operator expertise, setting a standard for a cleaner, more sustainable transportation future.

## Elements

**Fleet Operator Training.** Tailored training on driving strategies to maximize battery life, route optimization, vehicle weight, distance, start-stop frequency, speed, logistics, and topography.

**Dispatcher Training.** Instructions on planning efficient routes and logistics that align with battery life and charging station availability, essential for minimizing downtime and maximizing vehicle utility.

**Driver Training.** Guidance on strategic charging — when and where to charge to ensure operational efficiency and vehicle readiness.

**Comprehensive Fleet Training.** Workshops and/or training on managed charging, utilizing software and tools for ensuring charging availability, and exploring potential revenue streams from smart charging practices.

**Coordination with Clean Freight Concierge.** This element ensures alignment with broader state initiatives, leveraging insights and support from the Clean Freight Concierge to enhance training relevance and application.

**Utilization of Workforce Training Hubs.** Capitalizing on established and emerging workforce development centers across Illinois to deliver this training, ensuring statewide accessibility and consistency.

## Priority for Illinois

Investing in a workforce capable of navigating the intricacies of electric fleet operations is a priority for Illinois. This training program directly supports the state's ambitious environmental goals by ensuring that fleet operators are equipped with the knowledge and tools necessary to optimize EV use and contribute to the reduction of greenhouse gas emissions. It aligns with Illinois' commitment to transition to a more sustainable transportation sector, bolstering economic growth while safeguarding environmental health.

## Existing/Complementary Efforts

This initiative is an essential supporting component to the effective execution of the Zero Emissions Vehicle Initiative and the Clean Freight Concierge program. Workforce development investments that focus on the fleet, dispatcher, and driver training fill in the gaps in the existing state workforce, and certification initiatives focus on infrastructure deployment and construction. The workforce efforts will leverage and expand the capacity of Illinois' developing workforce training hubs, created by CEJA and which will be located in 13 targeted locations across the state. This comprehensive approach ensures that Illinois' workforce is ready to meet the demands of a green transportation future, making the state a leader in sustainable fleet and freight operations.



## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will work with the Illinois Department of Commerce and Economic Opportunity to leverage and expand the capacity of Illinois' developing Clean Jobs Workforce Network Program to include fleet workforce training.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 7. Build a Workforce to Maintain Heavy-Duty Charging Infrastructure

### Summary

The initiative is strategically designed to foster the development of a specialized workforce dedicated to maintaining heavy-duty electric charging infrastructure with a dual focus on ensuring operational reliability and supporting economic growth within local communities. This program targets the critical need for specialized maintenance to keep heavy-duty EV charging stations functional and reliable, particularly vital for commercial transportation and logistics sectors that depend heavily on these facilities. It aligns with the broader Heavy Duty Vehicle Charging Initiative, addressing the reliability and accessibility challenges of HDV charging infrastructure. Importantly, the initiative is committed to creating local prevailing wage jobs in the communities where this infrastructure is deployed, prioritizing disadvantaged or low-income areas. This approach not only addresses a significant gap in the EV infrastructure ecosystem but also contributes to economic empowerment and resilience in communities that stand to benefit the most from localized job creation and skill development.

### Elements

**Vocational Training Programs.** Extend the work of Clean Jobs Workforce Hubs to create specialized vocational training and certification programs tailored for the maintenance of HDV and charging infrastructure. These initiatives aim to equip participants with essential technical skills, ensuring proficient maintenance and reliable operations in the field.

**Local Training and Job Creation.** Focused on leveraging the deployment of charging stations as a catalyst for local job creation and training, particularly in disadvantaged or low-income communities. This initiative ensures a skilled maintenance workforce is developed directly within the communities hosting these chargers, promoting job growth and economic stability.

**Standardized Training Curriculum.** Develop an inclusive, standardized training curriculum designed specifically for the maintenance of EV charging infrastructure, with a focus on heavy-duty chargers. This initiative aims to utilize established educational materials from industry-leading programs, adapting them to align with Illinois-specific codes, standards, and operational contexts





**Collaboration with Workforce Hubs.** These collaborations aim to leverage the robust support created by CEJA and already available through the Clean Jobs Workforce Hubs. By working closely with these established hubs, the program ensures that the workforce is not only equipped with cutting-edge knowledge and techniques but also benefits from a localized training approach. This localized approach facilitates access to training and employment opportunities, particularly for residents of disadvantaged or low-income communities, thereby fostering a skilled workforce that is well-distributed across the state. Through these partnerships, the initiative will ensure that the curriculum and training opportunities are widely accessible, meet the highest industry standards, and are tailored to address the specific needs of Illinois' EV charging infrastructure.

**Support for NEVI, Charging and Fueling Infrastructure, and Other Charging Initiatives.** This workforce training effort will also support the maintenance of chargers deployed under the NEVI program and other initiatives, ensuring the long-term reliability of the state's EV infrastructure and ongoing prevailing wage job opportunities.

### Priority for Illinois

Elevating the development of a skilled workforce for maintaining heavy-duty vehicles and heavy-duty EV charging infrastructure is a strategic priority for Illinois, directly supporting the state's environmental and economic goals. This initiative not only aims to enhance the reliability of critical charging infrastructure but also emphasizes the creation of local, prevailing wage jobs in disadvantaged or low-income communities. By doing so, Illinois addresses a key component of sustainable transportation infrastructure while fostering economic development and social equity, ensuring that the benefits of the state's transition to electrified transportation are shared widely.

### Existing/Complementary Efforts

This workforce development program complements existing initiatives by filling a critical need for skilled maintenance personnel, ensuring the longevity and reliability of Illinois' growing EV charging infrastructure while leveraging the knowledge and resources of the Clean Jobs Workforce Hubs. It leverages and expands upon the foundation laid by the Heavy Duty Vehicle Charging Initiative and aligns with federal efforts under the NEVI program. This holistic approach ensures that as Illinois advances its electric mobility infrastructure, it also cultivates a local workforce capable of sustaining this growth, bringing jobs to the communities that are most impacted by enhancing the effectiveness of both state and federal investments in clean transportation.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will work with the Illinois Department of Commerce and Economic Opportunity to leverage and expand the capacity of Illinois' developing Clean Jobs Workforce Network Program to include fleet workforce training.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



## 8. Facilitate Statewide and Interagency Coordination Around Critical Freight Planning and Engagement

### Summary

This initiative aims to establish a comprehensive planning and engagement framework for critical freight projects across the state and will act as a central architecture that will inform and support the other initiatives within the clean freight area. By fostering collaboration among state agencies, local communities, and the private sector, this initiative aims to prioritize freight projects that significantly contribute to GHG reductions. This strategic planning process is essential for identifying projects that not only support decarbonization efforts but also ensure the effective utilization of state and federal funding, including CPRG funds focused on clean freight.

### Elements

**Strategic Planning Process.** Development of a strategic planning process to identify high-priority clean freight projects. This process will include various stakeholders and incorporate engagement to foster input and feedback. This planning process will focus on creating a governance structure for inland ports, a strategic plan for the allocation of state and federal funding, including CPRG funds to maximize GHG reductions, and create a framework to work through challenges that can limit the GHG reductions in other initiatives.

**Coalition Building.** Formation of a coalition comprising state agencies, communities of high impact, community based organizations, environmental justice groups, industry, education, and others that will inform the strategic planning process.

**Community Based Organization (CBO's) Compensation.** CBO's, and environmental justice communities will be compensated for their participation in the planning process, ensuring that these critical voices are represented and included throughout the process. There will also be compensation for certain outreach and engagement efforts that may be created out of this initiative.

**Overcoming Known Barriers.** Facilitate forums to address and strategize on overcoming supply chain barriers, ensuring the success of other clean freight initiatives that depend on infrastructure and supplies. Work collaboratively to find solutions to building codes and streamlining the building code . Collaborate with local communities on land use planning and engage with the appropriate stakeholder around standardization of interconnection to ensure the success of other clean freight initiatives.

### Priority for Illinois

This initiative is crucial for Illinois, aligning with the state's commitment to sustainable transportation and decarbonization. By facilitating statewide and interagency coordination, Illinois sets a foundation for strategic freight planning, ensuring the success and maximization of GHG reductions from clean freight investments.



## Existing/Complementary Efforts

It is anticipated that this effort will be able to coordinate investments and strategies with any successful applications under the US EPA Clean Ports Program.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will establish an interagency working group for coordination and begin to work with community-based organizations to address known barriers.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## Geographic Location

Statewide, with an emphasis on freight in the Chicagoland region, as its highly concentrated freight operations in close proximity to vulnerable communities presents one of the most compelling opportunities in the nation for deploying clean freight measures that yield a combination of climate and community benefits.

## Complementary Funding and Initiatives

For the Clean Transportation and Freight measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Department of Commerce and Economic Opportunity. Administers:
    - i. Clean Jobs Workforce Network Program
    - ii. Energy Transition Navigator Program (for workforce)
    - iii. Contractor efficiency and electrification certification programs
  - b. Illinois Environmental Protection Agency. Administers:
    - i. Charging Infrastructure Grant Program
    - ii. Drive Cleaner Illinois Program
    - iii. Volkswagen Environmental Mitigation Trust
  - c. Illinois Department of Transportation
    - i. National Electric Vehicle Infrastructure (NEVI) Program
    - ii. Rail Freight Program
    - iii. Idle Reduction Weight Exemption
  - d. Illinois Climate Bank. Administers:



- i. Various climate finance products
- **Utility Initiatives**
  - a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
    - i. Beneficial Electrification Programs
- **Federal Funding**
  - a. US Treasury Commercial Clean Vehicle Credit
  - b. US EPA Clean Ports Program
  - c. US EPA Diesel Emission Reduction Act (DERA) Program
  - d. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - e. US FHWA Congestion Mitigation and Air Quality Improvement (CMAQ) Program
  - f. US FHWA Charging and Fueling Infrastructure Program

## Metrics for Tracking Progress

### CLEAN TRANSPORTATION & FREIGHT

Metric	Description
Transportation-1	Total medium- and heavy-duty electric vehicles registered in Illinois, including in geographies near freight facilities and disadvantaged communities
Transportation-2	Share of medium- and heavy-duty electric vehicles registered in Illinois, including in geographies near freight facilities and disadvantaged communities
Transportation-3	Total medium- and heavy-duty internal combustion vehicles registered in Illinois, including in geographies near freight facilities and disadvantaged communities
Transportation-4	Share of medium- and heavy-duty electric vehicles registered in Illinois, including in geographies near freight facilities and disadvantaged communities
Transportation-5	Air quality near freight facilities, including near rail facilities where trackside power measures have been implemented



# Clean Industry

Manufacturers in Illinois account for 12.83% of the total output in the state, [employing 9.44% of Illinois workforce](#). Industry is responsible for about 18% of Illinois GHG emissions, or roughly 45 MMTCO<sub>2</sub>e a year including both industrial energy and process emissions. Industrial GHG emissions declined by less than 10 MMTCO<sub>2</sub>e between 1990 and 2021.

While CEJA and the IRA support high levels of electric and transportation sector decarbonization that will help reduce GHG emissions in the industrial sector, new policies are needed to address industry decarbonization, particularly with respect to replacing high global warming potential substances with the low-carbon alternatives, electrifying industrial thermal processes and using clean hydrogen in the hard to electrify industries.

Electrifying industrial processes, particularly industrial thermal processes, offers a significant opportunity to decarbonize Illinois' industrial sector. Industrial thermal energy needs, and heat in particular, represent about  $\frac{2}{3}$  of the industrial sector's energy demand, while only about 10% of such demand is fulfilled with renewable energy nationwide. Process heating, reactions, evaporation, concentration, and drying are responsible for about 52% of the US industrial direct GHG emissions.

Due to their highest global warming potential (GWPs) and longest atmospheric lifetime among other GHGs emitted by human activities, replacement of fluorinated gases (also known as F-gases), such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>), with low carbon alternatives creates a high GHG reduction potential for Illinois industry. About 92% of F-gas emissions come from substitutes of ozone-depleting substances, particularly HFCs used as refrigerants in building and vehicle air conditioning, with the remaining 8% coming from a variety of industrial processes such as aluminum and semiconductor manufacturing, according to the [US EPA](#). F-gases, particularly HFCs, are released into the atmosphere during manufacturing processes, and leaks,



servicing, and disposal of equipment in which they are used. Industrial emissions of fluorinated gases can be reduced through F-gas capture and destruction processes, optimizing production to minimize emissions, and replacing these gases with alternatives.

For the sectors that are hard to electrify, the state is investigating efficient production and use of clean hydrogen as part of a regional effort. Illinois participates in the [Midwest Alliance for Clean Hydrogen](#) (MachH2), a multi-state, multi-sector network that includes Illinois, Indiana, and Michigan, that will focus on hydrogen created through electrolysis, a process which will use carbon-free electricity to separate water molecules into hydrogen and oxygen to produce carbon-free hydrogen. In October 2023, the U.S. Department of Energy (DOE) awarded Midwest Alliance \$1 billion in federal funding under the Regional Clean Hydrogen Hubs Program funded through the Bipartisan Infrastructure Law, to promote decarbonization through hydrogen use in steel and glass production, power generation, refining, heavy-duty transportation, and sustainable aviation fuel.

## Topline Outputs and Greenhouse Gas Emission Reductions

1. Improve industrial efficiency 5% by 2030 and 25% by 2050, and support implementation of process improvements.
  - a. Industrial efficiency is the most cost-effective and readily available measure to reduce emissions from the industrial sector. By building upon existing state and federal programs, and leveraging existing relationships with industrial operations, Illinois could accelerate the pace of industrial efficiency improvements that are already occurring.
  - b. Achieving this would reduce GHG emissions by 27.2 MMTCO<sub>2</sub>e by 2030, and 151 MMTCO<sub>2</sub>e by 2050.
  - c. This goal is based on an [analysis](#) by the U.S. Department of Energy which estimated that an additional 1.2% efficiency per year in the industrial sector was feasible in most sectors. The 2030 and 2050 goals both assume achievement just shy of that goal, as well as process and system design improvements that would progressively reduce fuel consumption by 1.8% by 2050.
2. Electrify 10% of low-temperature industrial heat by 2030 and 95% by 2050.
  - a. Low-temperature industrial heating end uses are among the most readily available opportunities for GHG emissions reductions in the industrial sector, outside of efficiency. All-electric technologies such as industrial heat pumps are technically capable, today, of filling this role in nearly all cases. Federal tax credits, combined with state programs to support uptake by businesses, [could](#) bring these technologies into cost parity or cost advantage compared to comparable gas-fired industrial equipment.
  - b. Achieving these targets would reduce GHG emissions by 7.427 MMTCO<sub>2</sub>e by 2030, and 201.3 MMTCO<sub>2</sub>e by 2050.
  - c. This scenario is based on one [modeled](#) by the National Renewable Energy Laboratory (NREL), which shifted several varieties of low-temperature industrial heat to 100% by 2050 as part of an overall decarbonization scenario.
3. Convert 30% of medium- and high-temperature industrial heat in targeted sectors to electricity or hydrogen by 2050.



- a. While technologies for high-temperature industrial heating are still nascent, [several](#) low-carbon steel plants are moving forward worldwide, and there is growing interest from US Steel (which has [committed](#) to net zero emissions by 2050) and Midwest-based [Cleveland Cliffs](#). As part of the MachH2 Hydrogen Hub, Illinois is well-positioned to be a leader in this area, and it presents a significant emissions reduction opportunity.
  - b. Achieving this goal would reduce GHG emissions by 0.25 MMTCO<sub>2</sub>e by 2030, and 15.6 MMTCO<sub>2</sub>e by 2050.
  - c. This scenario assumes that Pulp Paper and Printing, Chemicals, Glass and Glass Products, Cement and Other Nonmetallic Minerals, Iron and Steel, and Other Metals shift to 15% electricity and 15% hydrogen for high-heat operations by 2050. Since the technology is still relatively new, the penetration assumed for this measure is moderate and unavoidably somewhat speculative.
  - d. While the immediate emissions reductions are not as large as some other measures, developing markets, programs, know-how, and economies of scale for high-heat industrial processes will be essential for reducing Illinois' emissions to the levels needed for the state and the US to meet their respective commitments to the Paris Climate Agreement. Given its relatively low-cost and low-carbon electricity, the presence of a DOE hydrogen hub, and its industrial base, Illinois is a strong place to pioneer measures that can be scaled and replicated elsewhere.
4. Reduce emissions of hyper-potent fluorinated gases by 20% by 2030 and 67% by 2050, primarily through substitution of lower-warming-potential alternatives, and supported by improved disposal, equipment and maintenance.
    - a. There are readily available lower-potency gases that can replace the functions fluorinated gases (or "f-gases") serve in many instances, and their incredible potency makes their replacement relatively logistically simple compared to some other forms of GHG reduction, and allows for rapid near-term reductions, which is a priority of the CPR program as articulated.
    - b. Achieving this goal would reduce GHG emissions by 2.46 MMTCO<sub>2</sub>e by 2030, and 45 MMTCO<sub>2</sub>e by 2050.
    - c. As a freight and warehousing hub, Chicagoland has among the [largest](#) footprints of cold-storage space in the country, with large new facilities under construction in [Lake County](#) and elsewhere. Refrigeration is one major source of f-gases. The large cold storage sector in Illinois presents a large opportunity for immediate impact, and the presence of cold storage operators who do business nationally could help best practices developed here spread more readily elsewhere.

## Implementing Authority

The State of Illinois's participation in MachH2 is bolstered by the Hydrogen Economy Task Force created under the Department of Commerce and Economic Opportunity via Public Act 102-1086. The Task Force was charged with creating a plan to facilitate the deployment of hydrogen in the state's economy.





DCEO already operates a robust network of workforce development programs - the Department expects to leverage these existing programs to support industry transition to cleaner manufacturing processes and practices.

Illinois EPA and other state agencies have existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilizing state and federal pass-through funds.

Legislative authority may be needed to either pilot or mandate state or local government utilization of low-carbon commodities. Authorizing statutory authority or memoranda of agreement may also be required for participation in a multi-state industrial decarbonization effort.

The Illinois Climate Bank has broad authority to develop and implement new financial assistance opportunities, including grant and loan programs, to leverage existing funding programs, along with an ability to efficiently obtain necessary board approvals for new initiatives.

Illinois state agencies require annual appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds.

## Implementing Agencies

- Illinois Department of Commerce and Economic Opportunity
- Illinois Environmental Protection Agency
- Illinois Finance Authority / Illinois Climate Bank
- Illinois Department of Transportation

## Measure Initiatives

### 1. Clean Industry Concierge.

#### Summary

With the acceleration of funding opportunities on the state and federal level, industrial customers miss opportunities, remain unaware of the full range of decarbonization programs they may be eligible for, and lack internal resources to access these opportunities. The Clean Industry Concierge initiative will help Illinois industrial facilities to navigate, coordinate and access funding opportunities, get support in designing and implementing decarbonization measures, and provide strong guidance on industry best practices in efficient and cost-effective low-carbon technologies and processes. A special focus will be placed on small- and medium-sized industrial facilities and operators that often fall through the cracks. The Clean Industry Concierge will coordinate with the other decarbonization efforts within Illinois, including building and transportation decarbonization, equity and workforce development, to reduce





costs, increase synergies and increase community benefits, as well as fill the gaps and avoid duplication. It plays a crucial role in ensuring the success of other key initiatives, and will serve as a central hub for information, resources, and support, to foster a synergistic environment where the success of one initiative amplifies the impact of others.

## Elements

**Contractor and Supply Chain Connections and Education.** Establishing networks between manufacturers and contractors skilled in low-carbon technologies, as well as suppliers of lower-carbon materials and products, to ensure the success of the transition initiatives. Providing contractors and suppliers with tools and resources to better understand the benefits and incentives available to manufacturers in Illinois. This ensures that contractors and suppliers can effectively support these companies in their transition to cleaner technologies, amplifying the impact of the concierge services.

**Strategic Planning Support.** Acting as the main point of contact for manufacturers, this feature involves disseminating information about various programs, incentives, and opportunities for decarbonization, ensuring that companies are well-informed and able to take full advantage of available resources.

**Workforce Training Liaison.** Creating a feedback loop with workforce training programs to identify and address skill gaps, ensuring the workforce is equipped to support the transition to cleaner manufacturing processes and practices.

**Clean Industry Planning and Stakeholder Engagement.** Facilitating communication between manufacturers and stakeholders, including communities and partnership organizations, to promote comprehensive support and engagement in decarbonization efforts.

## Complementary Funding and Initiatives

By complementing and enhancing the Illinois DCEO Workforce Development Program and other existing initiatives, the Clean Industry Concierge ensures that resources are leveraged effectively, avoiding duplication and maximizing impact. This initiative is a strategic component of Illinois' broader effort to combat climate change, offering a synergistic approach to reducing the state's industrial GHG emissions.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will conduct a solicitation for a third-party implementer to serve as a clean freight concierge.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Rulemaking at Illinois EPA, if necessary, can be completed within 12 months, with program launch within 18 months from the start of the initiative at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



## 2. Buy Clean Planning and Pilot.

### Summary

The "Buy Clean and Pilot" initiative supports low-carbon commodities through state and local government planning, testing, and piloting. It targets commodities with low embodied carbon or captured carbon, and projects that improve energy and operational efficiency, and leverage federal incentives.

### Elements

**Planning, Testing and Demonstrations.** State and local agencies and governments will plan, test, and pilot low-or no-carbon commodities, products, services, and processes , including commodities produced with embedded captured carbon, and identify opportunities and challenges for their use in Illinois. The focus will be on the commodities, products, services, and processes that are used in Illinois with at least 40% GHG reduction potential, coordination regionally and leveraging other resources available on the federal and state level.

**Pilot Grants.** Allocate gap funding for testing, demonstration and evaluating high-potential GHG emissions reduction projects in the industrial sector, prioritizing those lacking funding from other sources.

### Complementary Funding and Initiatives

Currently, there are no direct state federal funding resources to launch a Buy Clean initiative. However, potential synergies exist with the Illinois Department of Transportation's Material Labs program, which ensures that quality materials are used in highway projects.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Department of Transportation will coordinate its Material Labs to test, sample, document, and report on new low-carbon materials for use in highway projects.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



### 3. Fluorinated Gas Reduction Program.

#### Summary

The Fluorinated Gas Reduction Program, which has high GHG reduction potential for Illinois industry, aims to mitigate the impact of fluorinated gases, which have high global warming potential and long atmospheric lifetimes. The state will work with stakeholders to develop and implement an incentive program encouraging the adoption of lower carbon alternatives and enhancing industrial processes and logistics to reduce emissions from leaks, servicing and disposal of equipment utilizing fluorinated gases. The state will engage in the stakeholder outreach, planning, and project identification and will establish a program that will provide technical support and financial incentives to phase out super-emitting fluorinated gases.

#### Elements

**Technical Support.** Technical assistance to industrial and manufacturing facilities in the form of facility assessments to help the facility identify cost-effective and innovative approaches, funding opportunities and needed support to execute a project.

**Incentive Program.** The state will establish a Fluorinated Gas Reduction Incentive Program to support:

- replacement of fluorinated gases with cost-effective low global warming potential technologies, primarily in commercial and industrial refrigeration;
- optimization of manufacturing processes and logistics to minimize emissions from leaks, servicing and disposal of equipment that uses F- gases.

#### Complementary Funding and Initiatives

There are no existing funding sources related to the substitution of fluorinated gases.

#### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will develop an incentive program to support substitution of F- gases with lower carbon alternatives.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.



## 4. Regional Industrial Decarbonization.

### Summary

The state will work in tandem with regional coalitions and partnerships to implement a competitive grant program supporting investments in innovation at industrial and manufacturing facilities that also reduce air pollution. Projects eligible for this program will demonstrate implementation readiness, innovation, direct air pollutant reductions, co-benefits, benefits to low-income and disadvantaged communities, with an ability for projects to be completed within five years. Incentives to cover the costs of installation or upgrades to enhance industrial efficiency and reduce air pollution will be provided in the form of reimbursements to qualified and selected applicants. Such support is contingent on securing funding for specific measures by respective coalitions. The state will select projects on a competitive basis, contingent upon an applicant satisfying the criteria set by the coalition. This measure could be utilized by eligible manufacturing, mining/quarrying and energy production or extraction companies, carbon management project developers, local and tribal governments, and other qualifying public/private partnerships within the state.

### Elements

The state will leverage funding available through the regional industrial decarbonization efforts and coalitions it joins to provide:

**Technical Assistance.** Technical assistance to industrial and manufacturing facilities in the form of facility assessments to help the facility identify:

- cost-saving and innovative measures,
- funding opportunities to implement those measures, and
- gaps in funding needed to execute a project.

**Implementation Grants.** Grants to qualifying industrial and manufacturing facilities in coalition states to address gaps in funding to realize cost savings and reduce onsite emissions through electrification, fuel switching and lower-heat alternatives, including green hydrogen utilization for process heat, electrification, enhanced process and energy efficiency, catalyst for emission reduction from N<sub>2</sub>O, or carbon capture and storage.

### Complementary Funding and Initiatives

This measure intends to fill gaps in funding left after implementation of the federal 48C Clean Manufacturing Tax Credit. That program is currently funded at a \$4 billion level, and applications were due in December 2023. The winners of 48C credits have not been announced. The 48C program is expected to leave an abundance of unfunded projects to spur innovation and reduce emissions. This coalition grant program will build on the 48C grants and focus on projects that do not get 48C funding.



## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA, Illinois Climate Bank, and Illinois Department of Commerce and Economic Opportunity will work together, to provide technical assistance to interested industrial facilities, and to support the creation of a competitive grant program for the distribution of implementation grants.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## Geography

Statewide, finding opportunities where possible for industrial GHG reductions that occur near disadvantaged communities and can provide air quality co-benefits. The state may also collaborate with regional partners.

## Complementary Funding and Initiatives

For the Clean Industry measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

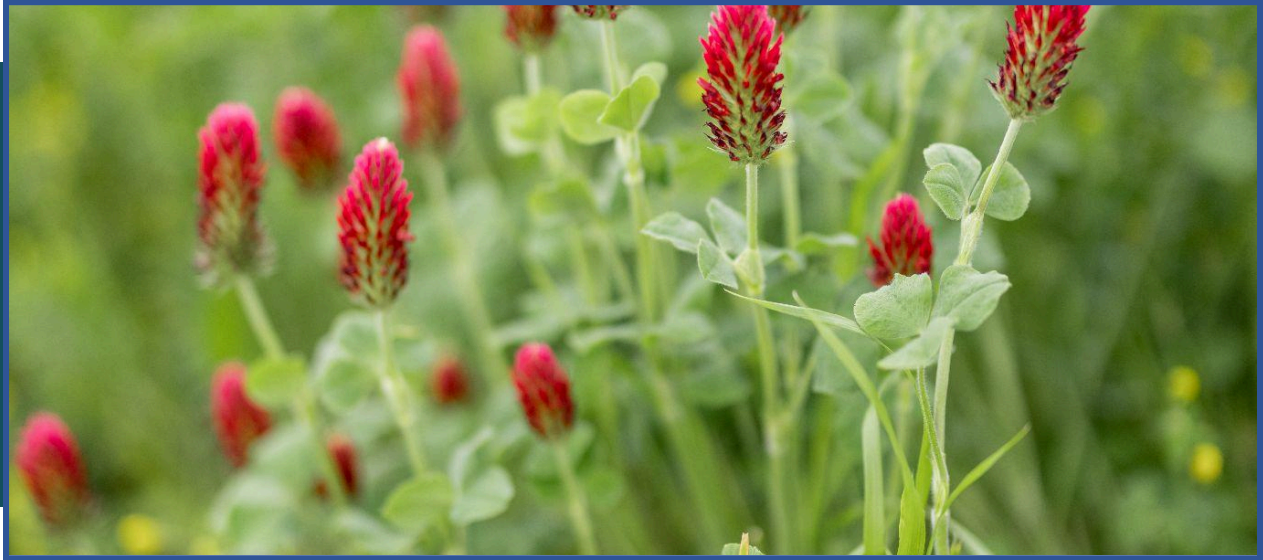
- **State Initiatives**
  - a) Illinois Department of Commerce and Economic Opportunity. Administrators:
    - i) Workforce Development Program
    - ii) Clean Jobs Workforce Network Program
    - iii) Energy Transition Navigator Program (for workforce)
    - iv) Contractor efficiency and electrification certification programs
  - b) Illinois Climate Bank. Administrators:
    - i) Various climate finance products
- **Utility Initiatives**
  - a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
    - i. Beneficial Electrification Programs
- **Federal Funding**
  - a. US Treasury 48C Clean Manufacturing Tax Credit
  - b. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - c. US DOE Regional Clean Hydrogen Hubs Program
  - d. US DOE Advanced Energy Manufacturing and Recycling Grant Program
  - e. US DOE Industrial Demonstrations Program



## Measurement and Metrics

### CLEAN INDUSTRY

Metric	Description
Industry-1	Number of qualified facilities/organizations applying for the funding.
Industry-2	Number of qualified facilities/organizations successfully implementing projects within the given timeline.
Industry-3	Number of tested and demonstrated low-carbon and no-carbon commodities, products, services, and processes that achieve at least 40% GHG reduction vs business as usual for a targeted industry.
Industry-4	Number of fluorinated gases replaced and number of technologies and processes changed that lead to reduction/avoidance of GHG emissions vs business as usual for a targeted industry.
Industry-5	Amount of CO <sub>2</sub> and other co-pollutants reduced at each participating site, both on an annual basis and over the duration of the program.
Industry-6	Amount of CO <sub>2</sub> and other co-pollutants reduced in a targeted industry, both on an annual basis and over the duration of the program.
Industry-7	Amount of CO <sub>2</sub> and other co-pollutants reduced in Illinois, both on an annual basis and over the duration of the program.
Industry-8	Percentage of manufacturing processes, including low and medium heat processes, electrified by switching from fossil fuels to clean energy resources.
Industry-9	Percentage of improved industrial efficiency and process improvements.
Industry-10	Number of people and percentage of Illinois population living in environmental justice and disadvantaged communities benefiting from lower emissions from neighboring manufacturing facilities.
Industry-11	Number of jobs created and number of people trained in clean manufacturing practices.



# Clean Agriculture

## Reducing Emissions from Agriculture, Land Use, and Methane

Illinois is actively addressing the imperative of reducing greenhouse gas (GHG) emissions in its large agricultural sector, which currently accounts for 12% of the state's total emissions. Building on existing federal and state initiatives, Illinois is implementing key initiatives to maximize GHG emissions reduction from agriculture, land use, and methane in those and other sectors.

The largest source of emissions within the agriculture sector, by far, is soil management, and reducing these emissions is a focus of the state's climate strategy. The state has already made efforts to support and expand programs to support low-till and no-till agriculture and cover crop planting, but opportunity in this area vastly outstrips available resources.

Other opportunities and areas of focus include creating innovative approaches for natural carbon storage to mitigate climate change, accelerating the adoption of zero-emissions commercial landscaping and agricultural equipment through the small clean equipment and machinery program, and mitigating or capturing and utilizing methane emissions in the agricultural sector and elsewhere, such as wastewater and landfill facilities.

In addition to their climate benefits, these efforts produce significant supplemental benefits including improved soil health, reduced erosion, and improved air quality.

By leveraging successful programs and established networks, Illinois is taking decisive steps to implement practical solutions, demonstrating a commitment to sustainable practices, environmental stewardship, and contributing to broader efforts to combat climate change within the crucial agricultural industry.





## Topline Outputs and Greenhouse Gas Emission Reductions

1. Reduce agricultural process and land-use emissions 2% by 2030 and 10% by 2050, using approaches such as no-till and low-till agriculture, cover crops, natural carbon sequestration, and other measures.
  - a. This would reduce GHG emissions 0.95 MMTCO<sub>2e</sub> by 2030. If continued in perpetuity, they would yield 4.75 MMTCO<sub>2e</sub> by 2050, but that continuation would be contingent upon funding, programmatic capacity, and other factors.
  - b. These projections were estimated based on the following assumptions:
    - i. Conversion of 100,000 acres of conventional tilled farmland to a no-till practice, reducing 0.5 MTCO<sub>2e</sub> per acre, for a total of 50,000 MTCO<sub>2e</sub> annually.
    - ii. Incentivizing current no-till acres not accounted for under any current carbon market program to participate in one, continuing to sequester carbon that would have otherwise been released. This could be done on 112,000 acres annually, reducing GHG emissions by 0.57 MTCO<sub>2e</sub> per acre, totaling 63,840 MTCO<sub>2e</sub>.
    - iii. Addition of 112,000 acres of cover crops to land currently planted into a no-till system, achieving a per-acre reduction of 0.68 MTCO<sub>2e</sub>, totaling 76,160 MTCO<sub>2e</sub>.
    - iv. Combined, these reductions total 190,000 MTCO<sub>2e</sub> annually. Depending on timing for grant issuance and deployment may be by 2030. Their continuation beyond this period would be contingent upon additional funding, programmatic capacity, and other factors.
  - c. This methodology is based on estimates by the Illinois Department of Agriculture of what is possible based on a placeholder program budget. There is likely considerable additional opportunity for emissions reductions in this area depending on the scale of resources the program receives.
2. Reduce total combined emissions from wastewater, landfills, and livestock by 10% by 2050, through approaches such as methane capture and utilization, anaerobic digestion, and others, focusing on approaches which are most cost-effective and offer the most added benefits.
  - a. This would reduce GHG emissions by an estimated 0.8 MMTCO<sub>2e</sub> by 2030, and 16.9 MMTCO<sub>2e</sub> by 2050. This estimate was developed by summing the 2016-2020 average of Illinois' methane emissions across agriculture, waste, and wastewater in the state GHG inventory – 13 MMTCO<sub>2e</sub> – and progressively reducing that figure by 0.4% annually beginning in 2026. The five-year average was used instead of a single year in order to account for year-to-year statistical “noise,” and control somewhat for 2020 emissions that may have been skewed by the COVID pandemic.
3. Reduce GHG emissions from lawn equipment and other small engines by accelerating the shift from gas-powered to electric-powered lawn equipment and other small engines, with a focus on heavily-used tools in professional landscaping, shifting 40% of new sales to all-electric equipment by 2030 and 99% of new sales to all-electric equipment by 2035.
  - a. This could reduce GHG emissions by an estimated 2.63 MTCO<sub>2e</sub> by 2030, and 84.46 MMTCO<sub>2e</sub> by 2050.





- b. This estimate was reached by starting with a total of average annual emissions between 2016 and 2020 of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O expressed as MTCO<sub>2</sub>e in the Mobile Source Emissions>Non-Highway>Other section of the state GHG inventory, which is 6.47 MMTCO<sub>2</sub>e. The estimate assumes 10% turnover per year (as expressed as a percentage of emissions), and a growing percentage of new sales being electric equipment, and a growing percentage of those new sales being electric, beginning with a baseline of 45% in 2026 (approximated using recent reports from [Grand View Data](#) and [Fact.MR](#) on electric mower market penetration and growth rate) and increasing linearly to 70% in 2030 and 99% in 2035, then remaining at 99% thereafter to conservatively assume that some small portion of the market may be very slow to adopt electric equipment. The emissions from the portion of the market that turns over to electric equipment is assumed to reduce its emissions by 92.3%, using a modified [emissions calculator](#) from Mow Electric that estimates the per-acre emissions differential between gas and electric mowers, and considers the carbon intensity of the Illinois power grid (assumed to be 0.5287 lbs CO<sub>2</sub> per kWh). The year-over-year annual reduction tapers off over time, as the 10% turnover comes from an increasingly electrified sector where there is presumably less gas equipment to replace each year. The annual emissions produced by this scenario are then subtracted from the BAU level of emissions, and summed to reach the 2030 and 2050 reduction numbers. More sophisticated tools to calculate these emissions do not appear to be readily available off the shelf, and the emissions reductions calculation approach here is oversimplified; it uses mowers as a proxy for other non-mower small engines (string trimmers, chainsaws, etc.), market penetration may slow for various reasons, the market share of electric lawn equipment and other small engines is growing organically such that some level of emission reduction is likely to occur organically (though this is true of most clean energy technologies). In any case, there are clear GHG emissions reduction gains to be made from accelerating the transition towards electric small engines and lawn equipment.

## Implementing Authority

Illinois EPA, Department of Agriculture (DOA), and Department of Natural Resources (DNR) have existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilizing state and federal pass-through funds.

DOA intends to leverage its existing “Fall Covers for Spring Savings” program to expand the incentives available for cover crop integration, no-till farming practices, and sustainable agriculture enhancement. DOA also implements programs under the authority of the Illinois Forestry Development Act.

The State of Illinois expects to pass legislation to strengthen the regulatory structure under Illinois EPA and DNR to advance carbon sequestration efforts.



The Illinois Climate Bank has broad authority to develop and implement new financial assistance opportunities, including grant and loan programs, to leverage existing funding programs, along with an ability to efficiently obtain necessary board approvals for new initiatives.

Illinois state agencies require annual appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds.

## Implementing Agencies

- Illinois Department of Agriculture
- Illinois Environmental Protection Agency
- Illinois Finance Authority / Illinois Climate Bank
- Illinois Department of Natural Resources

## Measure Initiatives

### 1. Expanding Deployment and Improving Efficiency of Low-Till, No-Till, and Cover Crop Practices

#### Summary

This initiative aims to expand the adoption of cover crops and increase the efficiency of no-till practices among Illinois farmers through advanced technology deployment and financial incentives. By building on the solid foundation of the "Fall Covers for Spring Savings" initiative, led by the Illinois Department of Agriculture (DOA), this program introduces advanced technological solutions and financial incentives that are expected to decrease greenhouse gas (GHG) emissions, and the systems to report and track these emissions reductions. Furthermore, the initiative emphasizes leveraging trusted partners and networks to disseminate knowledge about this initiative's benefits.

The current IDOA program covers a total of 140,000 acres, providing a [premium discount](#) of up to \$5 per acre on the following year's crop insurance for every covered crop acre enrolled and verified in the program. In 2023, the acreage allotment was met in under 24 hours, with a total of 182,688 acres requested in that application period. IDOA launched "Fall Covers for Spring Savings" to promote additional acres of cover crops that are not covered by other state or federal incentives.



## Elements

**Illinois Cover Crop Program Expansion.** Significantly raise the acreage cap to accommodate the growing interest and demand from farmers wishing to participate in the cover crop program. This expansion will ensure that more farmers can benefit from the initiative. Layer in additional incentives based on new technology deployment. Cover crop participants receive a \$5/acre financial incentive per acre of cover crop enrolled in the program. The state will expand the program as described in the GHG emissions reduction estimate above in this section, evaluate the introduction of tiered incentives based on the percentage of crop cover within a field, and begin offering multi-year program enrollment instead of annual allotments to encourage ongoing participation. These contracts will not only provide a stable financial incentive for farmers to continue their sustainable practices but also contribute to the program's overall goals of improving soil health and increasing carbon sequestration over time.

**Enhanced Support and Communication.** Leverage and expand already existing networks and resources such as the Illinois Sustainable Agriculture Partnership, ReGenerate Illinois, Saving Tomorrow's Agriculture Resources (STAR), and others to provide support to farmers participating in the initiatives, including technical assistance, education on best practices for cover crop and no-till management, and financial incentives that make it more attractive for farmers to adopt these sustainable practices.

**Low-Cost Loans for New Technologies.** The Illinois Climate Bank will establish a new low-cost loan program specifically designed to support farmers in acquiring new technologies that optimize practices that reduce GHG emissions and increase soil health. This element aims to reduce the financial barriers to adopting innovative solutions like robotic cover crop planters and advanced soil health monitoring tools. By making these technologies more accessible, the program seeks to enhance the efficiency and effectiveness of cover crop practices, leading to broader adoption and greater environmental benefits across the state.

**Comprehensive Tracking and Reporting.** The state will develop a robust system for tracking cover crop acreage and soil health improvements, leveraging the latest in remote sensing and data analytics. This system will ensure precise measurement of the program's impact on soil conservation and carbon sequestration efforts across Illinois.

**Carbon Credit Facilitation.** The state will explore an innovative and scalable initiative aimed at streamlining the process for farmers, landowners, and operators to generate and verify carbon credits, aligning with both voluntary and compliance carbon market demands. This program will integrate with a range of clean agriculture initiatives, addressing the traditionally complex and inefficient process of carbon credit generation. By streamlining this procedure, the initiative ensures that farmers and operators can capitalize on previously untapped revenue streams, effectively turning sustainable practices into financial benefits.

**Advanced Technology Integration.** The Illinois Climate Bank provides grant and loan funding to pilot the deployment of innovative technologies for the planting and verification of cover crops and soil carbon levels. The use of robotic planting technology will streamline the seeding process, making it more efficient and less labor-intensive. Meanwhile, soil carbon verification technology will provide accurate



data on the environmental benefits of cover crop practices, supporting better tracking and accountability.

### **Complementary Funding and Initiatives**

This initiative builds upon and complements key agricultural programs in Illinois. It works alongside the Illinois Department of Agriculture "Fall Covers for Spring Savings" program, aimed at cover crop promotion, by offering additional incentives for cover crop integration. It also provides stackable financial benefits with the Conservation Stewardship Program, which incentivizes no-till farming practices. Supported by the Saving Tomorrow's Agriculture Resources (STAR) framework, the initiative promotes standardized, scalable conservation practices, effectively enhancing sustainable agriculture across the state.

### **Implementation Schedule and Milestones**

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Department of Agriculture will expand its "Fall Covers for Spring Savings" program to meet demand.

Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## **2. Biomethane Emissions Reduction, Capture, and Utilization in High-Value End Uses**

### **Summary**

The initiative prioritizes the development of localized, distributed biomethane utilization systems, aiming to significantly reduce local greenhouse gas emissions and develop regional supply chains specifically for its deployment in high-value end uses, such as industrial heat, sustainable aviation fuel, and maritime transport. By concentrating on the practical aspects of methane capture, storage, and utilization from local sources in the agriculture, wastewater, and waste sectors, Illinois seeks to make a substantial contribution to its environmental goals. This strategy underlines the importance of leveraging local manure as a valuable resource, thereby enhancing methane management on a regional scale and supporting these sectors' integration into Illinois' broader environmental objectives.



## Elements

**Enhanced Support and Communication.** The overarching goal is to leverage existing networks and trusted partners to provide owners of wastewater, waste, and livestock facilities with crucial information, empowering them to meet state regulations, access financial incentives, and benefit from educational support, thereby promoting environmentally responsible manure management practices.

**Connecting Distributed Biomethane Collection to High-Value End Use Supply Chains.** Ensure seamless integration of distributed methane capture systems with regional biomethane supply chains, creating an economic and efficient flow of captured methane to utilization in high-value end uses where limited options for decarbonization exist.

**Seed Grants.** Tailor financial incentives to seed sound biomethane practices such as manure source, collection, handling, and storage; methane capture at waste and waste facilities; processing of food waste into biomethane; and other approaches that reduce emissions at the local level and integrate into regional biomethane supply chains. Considerations will be made to avoid “split incentives” for operators.

**Revenue Stacking and Contract Facilitation.** Focuses on assisting operators of facilities producing biomethane in maximizing financial benefits through strategic contract facilitation. This involves supporting operators in securing contracts for the end-use of resources, including agreements for purchase of by-products and participation in carbon credit and offset programs. The initiative aims to optimize revenue streams for operators by leveraging multiple income sources and facilitating agreements that enhance the economic viability of sustainable practices.

**Carbon Credit Facilitation.** The state will explore an innovative and scalable initiative aimed at streamlining the process for farmers, landowners, and operators to generate and verify carbon credits, aligning with both voluntary and compliance carbon market demands. This program will integrate with a range of clean agriculture initiatives, addressing the traditionally complex and inefficient process of carbon credit generation. By streamlining this procedure, the initiative ensures that farmers and operators can capitalize on previously untapped revenue streams, effectively turning sustainable practices into financial benefits.

## Complementary Funding and Initiatives

The initiative is designed to complement existing efforts, notably the EPA and DOE Methane Emissions Reduction program, which has provided the Illinois Department of Natural Resources with \$17.4 million. While this federal funding addresses certain methane emission reduction projects, this initiative specifically targets the underrepresented area of local manure production from farming and agriculture. This targeted approach ensures that the initiative fills a critical gap by addressing segments not covered by existing funding, thus providing a comprehensive and inclusive strategy for methane management and utilization in the state.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Climate Bank will develop a competitive grant program,



paired with low-cost loan programs, to community-based projects to coordinate distributed biomethane utilization systems.

Establishment of the programs will require no statutory change, and limited regulatory intervention.

- Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

### 3. Supporting Natural Carbon Storage

#### Summary

The Natural Carbon Storage Initiative strategically aims to enhance Illinois' approach to climate change mitigation by restoring forests, grasslands, and other natural areas, emphasizing not only carbon sequestration but also the improvement of climate resilience, quality of life, and access to natural spaces for its residents. This initiative recognizes natural carbon storage as a cornerstone in the state's broader strategy to significantly reduce greenhouse gas emissions, improve water quality, and increase biodiversity by addressing critical gaps in existing programs like the USDA Agriculture Conservation Easement Program (ACEP) and the USDA Conservation Stewardship Program (CSP) and building upon the Illinois Department of Natural Resources Forest Assistance Program.

By integrating the restoration of natural landscapes with community access and recreational opportunities and climate resilience benefits, Illinois commits to a holistic environmental strategy that benefits both the planet and its people, ensuring that the initiative contributes to the state's overarching goals of enhancing biodiversity, public health, and climate resilience.

#### Elements

**Partnerships and Outreach.** Utilize current resources and develop trusted partnerships to engage private landowners, leveraging enhanced outreach efforts to communicate the benefits of participating in the initiative.

**Conservation Easements.** Offer competitive easement payments to incentivize the preservation of lands, with a focus on placing long-term conservation easements of no less than 40 years. This initiative will enroll parcels to protect prime, unique, or other productive soils, ensuring their contribution to carbon sequestration.

**5-Year Incentive Contracts for Prime Lands.** Implement 5-year incentive contracts based on competitive bids to identify and secure prime lands capable of achieving higher-than-average carbon storage. This element aims to prioritize the conservation and restoration of lands with significant carbon sequestration potential, offering financial incentives to landowners who commit to carbon storage practices that exceed standard benchmarks.



**Conservation Planning Support.** Provide support for local jurisdictions in conservation planning and restoration efforts, aimed at improving quality of life and reducing GHG emissions through enhanced natural carbon storage.

**Resource Monitoring.** Develop efficient tools for resource monitoring to track the impact of conserved lands on carbon sequestration and ecosystem health.

**Carbon Credit Facilitation.** The state will explore an innovative and scalable initiative aimed at streamlining the process for farmers, landowners, and operators to generate and verify carbon credits, aligning with both voluntary and compliance carbon market demands. This program will integrate with a range of clean agriculture initiatives, addressing the traditionally complex and inefficient process of carbon credit generation. By streamlining this procedure, the initiative ensures that farmers and operators can capitalize on previously untapped revenue streams, effectively turning sustainable practices into financial benefits.

### Complementary Funding and Initiatives

While building on the foundation provided by federal conservation programs and the Illinois Department of Natural Resources' efforts, this initiative seeks to expand the scope of natural carbon storage practices. By focusing on areas not adequately covered by existing USDA programs such as the USDA Agriculture Conservation Easement Program (ACEP) and USDA Conservation Stewardship Program (CSP), this initiative specifically targets private and urban landowners for forestry management assistance and facilitates local planning and local conservation. By doing this, the initiative creates a more inclusive and effective approach to enhancing Illinois' natural carbon sinks. This collaborative and integrative strategy enhances the state's capacity to combat climate change, promote biodiversity, and provide public recreational opportunities.

### Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, the Illinois Department of Natural Resources will build upon its Forest Assistance Program to implement the effort.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## 4. Accelerating Clean Landscaping and Small Engine Equipment

### Summary

The Clean Landscaping and Small Engine Program would support Illinois' efforts to promote sustainable professional landscaping and agriculture through the adoption of all-electric equipment. While federal tax credits appear to allow for rebates of very large, commercial-scale landscaping equipment, there are



virtually no incentives available for small engines and landscaping equipment below this size. This initiative seeks to fill this gap and support a broader variety of lawn and small motor equipment. In addition to the emissions reductions opportunities in this area, this program would mitigate air and noise pollution, reduce workers' exposure to harmful pollutants, and aligns with Illinois' environmental goals by offering grants, rebates, and low-cost loans to overcome financial barriers to electric transition. This strategic investment in efficient technologies addresses both environmental impacts and economic benefits, such as reduced maintenance costs and longer equipment lifespans.

## Elements

**Equipment Grants or Rebates.** The program will provide grants or rebates for the purchase of all-electric commercial landscaping equipment, such as blowers, trimmers, and mowers. This initiative aims to make cleaner, quieter, and more efficient equipment accessible to professionals in the field.

## Complementary Funding and Initiatives

This initiative complements existing federal and state incentives, such as the IRA tax credit for the largest commercial electric lawn mowers and the Illinois sales tax exemption for on-farm equipment, by filling critical gaps. While these programs have laid the groundwork for a transition to cleaner equipment, the Accelerating Clean Landscaping and Small Engine Equipment Program specifically addresses the broader range of equipment needs, focusing on professional landscaping. By offering support beyond mowers to include a wide array of professional-grade electric equipment, this initiative significantly lowers the cost barrier, facilitating a more comprehensive and accelerated shift towards electrification.

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will develop a grant program for the purchase of all-electric equipment.

Establishment of the programs will require no statutory change, and limited regulatory intervention. The state expects it could launch the program by 2026, with measurable metrics reporting and GHG emissions reductions able to be reported for the subsequent period.

## Geography

Statewide, finding opportunities where possible for industrial GHG reductions that occur near disadvantaged communities and can provide air quality co-benefits. Agricultural investments will be concentrated in more rural areas of the state, while biomethane investments will drive investment toward small towns and other accessible transportation hubs near rural areas. The small engine equipment program will drive investments statewide.





## Complementary Funding and Initiatives

For the Clean Agriculture measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Department of Agriculture. Administers:
    - i. Fall Covers for Spring Savings Program
  - b. Illinois Climate Bank. Administers:
    - i. Various climate finance products
  - c. Illinois Department of Revenue
    - i. Sale tax exemption for on-farm equipment
- **Federal Funding**
  - a. US DOE Methane Emissions Reduction Program
  - b. USDA Agriculture Conservation Easement Program
  - c. USDA Conservation Stewardship Program
  - d. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - e. US Treasury Tax Credit - commercial grade electric lawn mowers

## Measurement and Metrics

### CLEAN AGRICULTURE

Metric	Description
Agriculture-1	Acres of land where low-till, no-till, and cover crop practices are utilized
Agriculture-2	Amount of fertilizer runoff detected in waterways
Agriculture-3	Acres lost due to erosion of agricultural land
Agriculture-4	Acreage of natural land
Agriculture-5	Total methane emissions from the agriculture, wastewater, and waste sectors
Agriculture-6	Metric tons of Biomethane collected
Agriculture-7	Metric tons of Biomethane put to high-value end uses
Agriculture-8	Dollars spent on purchase of all-electric landscaping equipment



# Clean Power

Illinois has embarked on an effort to rapidly decrease carbon emissions from the power sector thanks to the Climate and Equitable Jobs Act (CEJA), passed in 2021. CEJA sets ambitious goals for the state to achieve a growing percentage of its power from carbon-free sources: 40% clean energy by 2030, 50% by 2040, and 100% by 2050, with interim targets. The state has also established a detailed power sector decarbonization schedule that prioritizes emissions reductions from the dirtiest power plants, and those impacting environmental justice communities, with interim targets from 2030 - 2045.

This commitment to reducing greenhouse gas emissions requires a strategic shift from reliance on fossil fuels to the adoption of renewable energy sources. Rapidly and affordably scaling clean generation to the levels needed to achieve the state's climate goals will require changes to the operation and infrastructure of the grid, and the deployment of a suite of other technologies: energy storage, transmission, demand response, and more. Minimizing emissions while maintaining affordability and reliability will require strategic deployment of specific resources in specific proportions, and every utility, grid, and state will have unique solutions. While market signals are important and useful drivers of clean energy deployment, they have limitations, and more detailed information about the challenges and opportunities of the clean energy transition is important to both clean energy companies and policymakers.

Comprehensive energy modeling will enable the state to identify pressing needs during its transition to 100% clean energy, considering economic, environmental, and social factors. The modeling effort will help the state identify future state policy intervention, including strategies for cost-effectively building out its electric grid to accommodate electrification and the transition to decentralized, renewable energy resources. State regulators recently began more rigorous grid planning processes, but these are primarily concerned with the distribution system, and modeling and planning which assessed the state's generation system would be a valuable complement to this. Regional transmission operators (RTOs)



conduct some modeling of, e.g., expected plant retirements in their territory, but that modeling does not occur until shortly before a plant is expected to retire, so that modeling would not allow adequate time to undertake any needed efforts to deploy new resources, nor would it consider cases where fossil plants reduce their generation but do not close.

Further, more support is necessary to accelerate transition to renewable energy at the municipal and co-op utilities in Illinois. Many smaller utilities are currently under long-term contracts for supply from fossil-fuel generation, and have insufficient internal capacity and investment scale to manage the transition, including to study, analyze, and enter into new agreements for the long-term supply of renewable energy as a successor to current long-term contracts.

## Topline Outputs and Greenhouse Gas Emission Reductions

1. Generate 40% clean energy by 2030, 50% by 2040, and 100% by 2050, using tools including but not limited to: deployment of clean and zero-carbon energy (such as wind, solar, geothermal, or other zero-emission sources, both utility-scale and distributed), deployment of energy storage (including lithium-ion and other storage media, both utility-scale and distributed), expansion of demand response (including virtual power plants, distributed demand response, and smart electric vehicles and appliances), improved energy efficiency, increasing transmission capacity (including new transmission lines and the use of grid-enhancing technologies). This would result in an estimated 29.7 MMTCO<sub>2e</sub> in emissions reductions by 2030 and 416.9 MMTCO<sub>2e</sub> in emissions reductions by 2050.

## Implementing Authority

The Illinois Power Agency has broad authority to efficiently procure technical resources needed to further support and expand planning capacity under the existing Long-Term Renewable Resources Procurement Plan process. The Illinois Commerce Commission has similar broad authority to procure technical resources needed for grid planning activities.

Illinois EPA has existing authority under the Grant Accountability and Transparency Act and complementary rules to uniformly implement competitive grant and incentive programs utilizing state and federal pass-through funds.

The Illinois Climate Bank has broad authority to develop and implement new financial assistance opportunities, including grant and loan programs, to leverage existing funding programs, along with an ability to efficiently obtain necessary board approvals for new initiatives.

Illinois state agencies require annual appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds.



## Implementing Agencies

- Illinois Commerce Commission
- Illinois Environmental Protection Agency
- Illinois Department of Commerce and Economic Opportunity
- Illinois Power Agency

## Measure Initiatives

### 1. Statewide Clean Energy Modeling

#### Summary

The state will support comprehensive statewide energy modeling and planning that will inform decision-making and strategic planning of the Illinois Power Agency (IPA)'s Long-Term Renewable Resources Procurement Plan process. Due to long delays in RPS implementation and, more recently, interconnection backlogs, Illinois is behind the Renewable Portfolio Standard schedule and is lagging in new renewable energy deployment. State statute directs the state to consider multiple options in the event that a grid reliability is at risk, including the expansion of renewable energy, demand response, and energy efficiency programs, the implementation of DER initiatives, and temporary extensions of pollution deadlines. Energy modeling will help ensure that Illinois has clean energy resources to backfill retiring fossil fuel plants and stay the course for CEJA's decarbonization timeline

#### Elements

**Modeling Support.** In 2025, the Illinois EPA will undertake a modeling exercise in conjunction with the IPA to determine what if any resources would be needed to maintain reliability while fossil fuel plant closure schedules in CEJA. IEPA will engage energy modeling consultants to develop and implement state-of-the-art energy models, incorporating the latest technologies and market trends.

**Integrating Modeling into Renewable Energy Procurement Plans.** IPA staff will manage the project, collaborate with consultants, and integrate modeling results into the procurement planning process of the biennial Long-Term Renewable Resources Procurement Plans.

#### Complementary Funding and Initiatives

The Illinois Power Agency (IPA) has expertise in forecasting and planning incentives for renewable resources in Illinois through its biennial Long-Term Renewable Resources Procurement Plan process. However, additional resources are needed to allow the IPA engage comprehensive, statewide energy modeling in its biennial plan development process.



## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois EPA will work with Illinois Power Agency to conduct a modeling exercise. Illinois Power Agency will incorporate the output of the modeling work into its existing biennial Long-Term Renewable Resources Procurement Plans.

Establishment of the programs will require no statutory change. The state will undertake the modeling exercise in 2025, with results potentially included in subsequent Long-Term Renewable Resources Procurement Plans after its completion.

## 2. Small Utility Clean Energy Planning Support

### Summary

Many smaller utilities are currently under long-term contracts for supply from fossil-fuel generation, and have insufficient internal capacity and investment scale to manage the transition, including to study, analyze, and enter into new agreements for the long-term supply of renewable energy as a successor to current long-term contracts. The state will work with municipal and co-op utilities in Illinois to help them identify a path to transition the state's power sector to carbon-free by 2045. The state will provide technical and financial support in assessing needs and identifying ways to replace fossil fuel resources with renewable energy.

### Elements

**Technical Assistance.** The state will provide technical assistance to municipal and co-op utilities in Illinois in assessing their energy supply needs and identifying potential clean energy supply sources to fill that need and replace fossil fuel generation.

**Strategic Planning Grants.** The state will issue grants to municipal and co-op utilities in Illinois to help them negotiate and secure power system and generation plans, renewable energy power purchase agreements that comply with CEJA goals of a 100% carbon-free power sector by 2045.

### Complementary Funding and Initiatives

The state is in the process of applying for a US DOE Grid Resilience and Innovative Partnerships (GRIP) funding to deploy a comprehensive initiative to help the state prepare its distribution grid infrastructure in rural areas for the transition to a zero carbon economy in order to reduce peak loads, better integrate renewable energy, support Illinois' decarbonization goals, improve distribution grid reliability and resiliency, and lower the cost of the energy transition and energy system upgrades. The Initiative is aimed to create a model for coordinating, aggregating and optimizing distributed energy resources (DER) and flexible customer load, focusing on energy storage, optimized electric vehicle (EV) charging, vehicle-to-grid (V2G) capabilities, load management, and virtual power plants (VPPs) across the state,



with a special focus on disparate, small, under-resourced utilities within two different Regional Transmission Organizations that Illinois is part of (MISO/PJM).

## Implementation Schedule and Milestones

This initiative will build on existing infrastructure within the state to implement and execute in an expedited manner. For this initiative, Illinois Climate Bank will develop a technical assistance resource, and make available strategic planning grants, to eligible municipal and co-op utilities.

Establishment of the programs will require no statutory change, and limited regulatory intervention. Illinois Climate Bank would be able to obtain board approval for new initiatives within 60 to 90 days of the start of the initiative, with program launch within 9 months at the earliest.

The state expects it could launch the program by 2026, though measurable metrics reporting and GHG emissions reductions will not occur until 2030 and later.

## Geography

Statewide, and in areas served by municipal and rural cooperative utilities.

## Complementary Funding and Initiatives

For the Clean Power measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Power Agency. Administers:
    - i. Illinois Renewable Portfolio Standard
    - ii. Illinois Solar for All Program
- **Federal Funding**
  - a. USDA Empowering Rural America New ERA Program
  - b. Rural Energy for America Program (REAP)
  - c. US DOE Grid Resilience and Innovative Partnerships Program
  - d. US EPA Greenhouse Gas Reduction Solar for All Competition
  - e. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - f. IRA Investment Tax Credits



## Measurement and Metrics

### CLEAN POWER

<b>Metric</b>	<b>Description</b>
Power-1	MWh of clean energy generated in Illinois
Power-2	MWh of fossil energy generated in Illinois
Power-3	Share of generation from clean and carbon-free sources in Illinois
Power-4	Share of generation from clean and carbon-free sources in Illinois
Power-5	CO2 emissions from electricity generation
Power-6	Criteria pollutant emissions from electricity generation



# Low Income Disadvantaged Communities Benefits Analysis

## Low-Income and Disadvantaged Community Identification

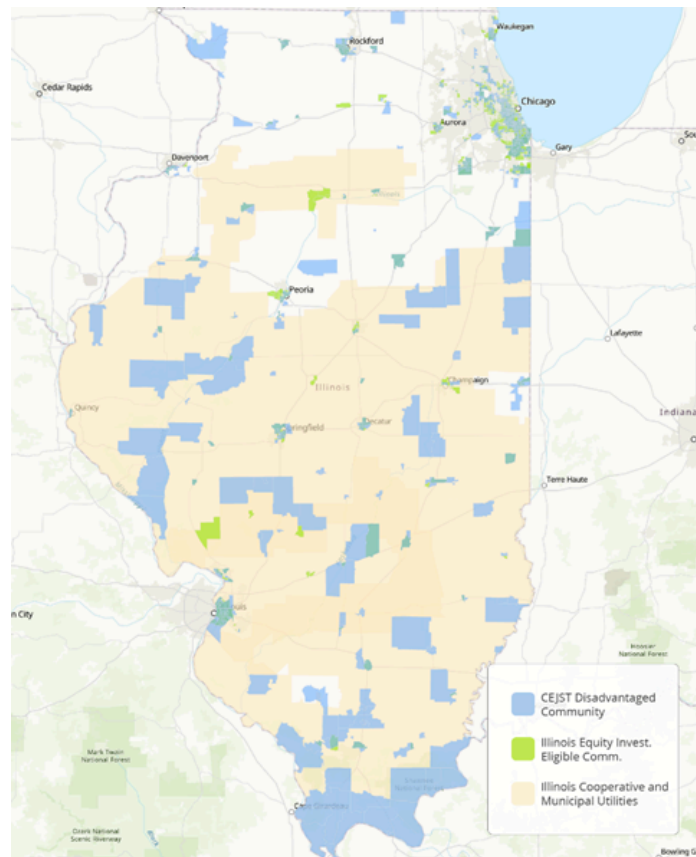
In the Climate and Equitable Jobs Act, passed in 2021, The State of Illinois created a new designation of Equity Investment Eligible Communities that often suffer the most from poor air quality and economic inequality, and may otherwise be left behind in the shift to a clean energy economy.

Under CEJA, the state targets consideration and explicit benefits to these newly-defined Equity Eligible Persons and Equity Investment Eligible Communities which are, among other criteria, residents of Environmental Justice or R3 areas.

### **Environmental Justice Communities:**

Environmental Justice Communities are communities that have been identified through a calculation utilizing the U.S. EPA tool EJ Screen and a demonstrated higher risk of exposure to pollution based on environmental and socioeconomic factors. Importantly, the statute further creates a formal self-designation process at the state level for communities that believe the data methodology unjustly excludes them.

**Restore. Reinvest. Renew. (R3) Areas:** R3 areas are communities that have been harmed by violence, excessive incarceration, and economic disinvestment, as originally defined for eligibility for R3 grants under Illinois' cannabis law.







The two community designations were thoughtfully considered to ensure that the state’s energy policy and investments both targeted communities experiencing burdens due to pollution, but also those that have faced socioeconomic harm and historic disinvestment. A census tract with either designation qualifies as an Equity Investment Eligible Community under Illinois law, which creates opportunities for residents and businesses to see benefits from solar energy and energy efficiency programs, workforce development and contractor accelerator programs, electric vehicle deployment, and utility infrastructure planning.

Illinois intends for at least 40% of benefits of this effort to support communities that have been classified as either disadvantaged communities, under federal guidance, or equity investment eligible communities, under the new state designation, growing to 60%. These efforts will drive new capital investment in Illinois’ Equity Investment Eligible Communities and create wealth-building opportunities for Equity Eligible Contractors.

An initial examination has determined that there are 1,452 census tracts in Illinois that are either classified as an Equity Investment Eligible Community by The State of Illinois or as a Disadvantaged Community by the White House CEQ’ Climate and Environmental Justice Screening Tool (“CEJST”). There are 860 census tracts that overlap, meaning they are both Equity Investment Eligible Communities per Illinois and Disadvantaged Communities per CEJST. There are 201 census tracts that have been designated by CEJST but are not Equity Investment Eligible Communities. And there are 391 census tracts that are Equity Investment Eligible Communities and not Disadvantaged Communities per CEJST.

## History of Engagement

Development of the plan also included consultation on the CPRG with multiple stakeholders, including: community organizations, including organizations representing disadvantaged communities; non-governmental organizations with expertise in climate mitigation; private businesses; higher education institutions; and trade associations.

To identify market barriers to the equitable GHG emission reductions in Illinois, the Illinois Climate Bank, in partnership with other state agencies, held a series of stakeholder meetings, small group meetings and workshops, and virtual presentations, throughout 2023 and early 2024 with more than 150 different entities to get a broad perspective on market gaps.

In 2023, the state collected stakeholder inputs through Climate and Equity Surveys to gain additional perspectives on program design under CPRG, GGFR, and complementary federal funding opportunities.

The stakeholder engagement produced valuable data on continued barriers to low-income and disadvantaged community participation in and benefit from climate and clean energy strategies that could be addressed through additional funding and thoughtfully-designed programs. Key market gaps identified included:



- the high number of walk-aways from low-income single-family and multi-family households due to the need for health & safety upgrades, such as roof repair, mold and asbestos abatement, or electrical upgrades;
- the lack of low-cost, easy-to-access finance for low-income households and the desire to create long-term wealth-building opportunities through solar;
- reliability and resiliency risks for the most vulnerable during extreme weather/outages;
- the high demand for low-income community solar projects that reach program capacity;
- challenges for community-driven community solar projects to compete with national developers;
- difficulty by developers in braiding and coordinating different funding streams;
- difficulty by small, DBEs to access capital and expand beyond a cash businesses; and
- a lack of trust in the marketplace driven by more than a decade of bad actors in the retail electric supply market.

In late 2023, Illinois EPA created an area on its website for individuals and stakeholders to share information and solicit feedback about the PCAP and CPRG, through which staff received and responded to many additional public comments.

In early 2024, Illinois EPA held two online public listening sessions to solicit feedback on the draft plan. One was held during the work day and another was held in the evening to facilitate attendance by community leaders and people with work obligations. More than 130 people participated in the two public listening sessions on the draft plan.

## Future Engagement

As part of its implementation of CPRG initiatives, the Illinois EPA and other state partners will engage stakeholders and community-based organizations in an initial planning phase that will provide essential input on the design of program elements.

The planning phase will begin as soon as Q4 2024 with public processes that are accessible to community representations. The planning process will focus on the following Program elements:

- Meaningful Benefits Plan
  - Information gathering on real-world costs of gap-filling
  - Identifying communities most in need and implementation ready
  - Identifying community resilience benefits as part of implementation
- Financial Assistance
  - Conducting analysis to establish incentive levels for grant and incentive programs
  - Developing simplified application requirements/processes
- Finance Offerings:
  - Ensuring equitable lending processes
  - Deesign financial products that promote long-term ownership and wealth-building in low-income and disadvantaged communities.
- Outreach strategy
  - Developing scope of work for Community-Based Outreach partners



- Continued evaluation of opportunities and processes for braiding initiatives with other incentives and initiatives
- Designing strategies for cross-entity customer referrals
- Equitable Access and Meaningful Involvement
  - Continuously improving access opportunities to decision-making processes that impact low-income and disadvantaged communities
- Workforce Training:
  - Assessment of skills needed to be incorporated into pre-apprenticeship pipelines and project requirements.

## Estimating Potential Benefits of GHG Emission Reduction Measures to LIDACs

The measures being proposed under this PCAP will be prioritized based on their impact on low-income and disadvantaged communities, but not in any specific disadvantaged communities at this time. The statewide nature of this deployment will impact disadvantaged communities and equity investment eligible communities across the state.

The PCAP’s Fleet and Freight initiatives will directly support community public health, environmental, and economic needs. The Illinois Climate Bank has identified significant benefits accruing to Illinois’ disadvantaged communities from fleet and freight electrification.

Vehicle Type	Societal value of reduced pollution (\$/vehicle/yr)		
	CO2	NOx	PM
Passenger	\$281	\$11	\$2
School Bus	\$1,520	\$886	\$136
Transit Bus	\$8,674	\$4,559	\$85
Delivery Vehicle	\$1,595	\$876	\$31
Class 8 Truck	\$7,721	\$3,108	\$222

Data source: Argonne National Laboratory AFLEET tool

### Criteria Pollutant Reduction Benefits to LIDACs

It is difficult to assess the exact impact of pollution reduction on specific geographic areas without fairly detailed knowledge of the specific projects that are being supported. However, peer-reviewed [research](#) suggests that people with lower incomes and lower socioeconomic status experience worse impacts from air pollution. and some of Illinois’ worst air quality is located in densely populated urban areas where there are vulnerable communities. The opportunities to deliver benefits are here, and have been described in many of the measures, including and especially around clean freight and fleets.



Illinois already has a well-established suite of policies to ensure that vulnerable communities are prioritized for pollution reduction, including emissions reductions timelines in CEJA that prioritize reductions at plants located near equity investment eligible communities (as defined above) and at plants with higher levels of criteria pollutant emissions. Measures in this plan will build upon this model, leveraging stakeholder feedback, institutional knowledge, processes, and relationships to ensure policy implementation and program design that continues to prioritize LIDAC communities.

## Climate Risks Impacting LIDACs

The [2023 National Climate Assessment](#) and many [other](#) studies have concluded that a warming climate is already increasing a variety of dangerous extreme events in Illinois and across the Midwest, including flooding and extreme heat. LIDACs already face many of the worst impacts of these events, and their residents are among the least-equipped to deal with them.

Climate mitigation such as the GHG reduction measures described in this plan are necessary but not sufficient to address these vulnerable people and communities exposed to flooding risk.

An array of adaptation, resilience, investment, and programmatic measures is necessary to support these people and communities, even in a best-case climate scenario. But a failure to mitigate climate change will mean even worse outcomes for these already-vulnerable communities.

### Flooding

A [study](#) by the Center for Neighborhood Technology found that nearly three-quarters of flood damage claims in Chicago in recent years have occurred in 13 zip codes where 62% of households have an income of less than \$50,000, and over a quarter are below the poverty line, [compared](#) to a median household income of over \$71,000 and 16.9% of people in poverty in Chicago as a whole. Similarly, in southern Illinois' Metro East region, East St. Louis and Cahokia Heights "experience significant flooding and sewage backups following heavy rain events," [per](#) US EPA. The poverty rate in this area is more than [three times](#) the state [average](#).

### Extreme heat

A 2023 [analysis](#) found that Chicago had the seventh-highest average heat index, weighted for its area, in the United States, and another 2023 [analysis](#) by the Chicago Tribune mapped heat in Chicago – it found that more than 300,000 people live in areas that are hotter than 90% of the rest of the city, predominately on the southwest side, one of the city's [poorest](#) areas. This is consistent with peer-reviewed [research](#) which found that people with lower incomes have higher exposure to extreme heat.



## Prioritizing Job Benefits to LIDACs

While a quantitative assessment of the job benefits to LIDACs would be difficult at this stage, Illinois has proactively sought input from people in LIDACs in its stakeholder process and will continue to do so in stakeholder engagement going forward.

Just as Illinois is building upon an existing record of concrete policy measures that prioritize LIDACs to benefit from pollution reductions in the power sector, it is building upon policies and programs designed to include and prioritize LIDACs to receive job and economic benefits from the energy transition.

The Department of Commerce and Economic Opportunity already administers a [host of programs](#) that support people from LIDACs to participate in the clean energy economy, such as: the Clean Jobs Workforce Network Program, Climate Works Pre-apprenticeship Program, Energy Transition Navigator Program, Returning Resident Clean Jobs Program, Solar Training Pipeline Program, Multi-cultural Jobs Program, and Craft Apprenticeship Program.

Illinois has been among the proactive states in the country in this regard. Those efforts will continue and grow under this plan.



# Review of Authority to Implement

Illinois EPA has reviewed the statutory and regulatory authority necessary to implement the priority GHG reduction measures identified in the Illinois PCAP.

The Grant Accountability and Transparency Act (GATA) and complementary regulations provide the uniform structure for state agencies to implement effective oversight of the competitive selection and monitoring of grant recipients. GATA adopts the federal “Uniform Guidance” and allows state agencies to distribute state, federal, and General funds via customizable Notices of Funding Opportunity (NOFO). The numerous incentive programs identified under Illinois’s PCAP priority measures would primarily be effectuated under the established GATA process.

Most Illinois state agencies require annual appropriation or re-appropriation authority to spend funds allocated from General Revenue Funds, other state funds, and federal funds. State agencies have worked closely with the Governor’s Office of Management and Budget and legislative appropriation staff to ensure necessary budget and budget implementation language is included in agency budgets to implement the abundance of new grant programs under the Inflation Reduction Act and Infrastructure Investment and Jobs Act.

CEJA designated the Illinois Finance Authority as the Illinois Climate Bank, with its purpose to distribute the benefits of clean energy in an equitable manner, make clean energy accessible to all, and accelerate the investment of private capital into clean energy projects in a manner reflective of the geographic, racial, ethnic, gender, and income-level diversity of the state. The Illinois Climate Bank has broad authority to develop and implement new financial assistance efforts, including grant and loan programs, to leverage existing funding programs, along with an ability to efficiently obtain necessary board approvals for new initiatives. Much of the financing options outlined under the priority measures would utilize the lending capacity of the Climate Bank. Public Act 103-187, which became effective January 1, 2024, better enables municipalities to borrow directly from the Climate Bank.

The Illinois Environmental Protection Act, among its express purposes, states the obligation of the state to encourage and assist local governments to adopt and implement environmental protection programs consistent with the Act, promote the development of technology for environmental protection and conservation of natural resources, and in appropriate cases to afford financial assistance in preventing environmental damage. Illinois EPA is the primary implementing agency for programs and requirements under the Illinois Environmental Protection Act.

CEJA authorized significant new authority for implementation of transportation electrification programs and outlined a statutory intent to increase the adoption of electric vehicles in Illinois to one million by



2030. Illinois EPA distributes EV adoption incentives under the umbrella of its Driving a Cleaner Illinois Program, which includes the federal Volkswagen Settlement and consumer EV rebate and EV charging infrastructure grants authorized under CEJA and the Rebuild Illinois capital program. These existing programs, along with IDOT's NEVI program implementation, will be coordinated with efforts under the Clean Transportation and Freight measures to support adoption of medium and heavy-duty EVs fleet vehicles. To reinforce this high-priority measure, Illinois expects to seek legislative authority to strengthen the state's idling law under the Illinois Vehicle Code, which currently applies to areas designated as nonattainment for ozone.

The Illinois Department of Commerce and Economic Opportunity has existing statutory and regulatory authority to operate workforce development programs on behalf of the state. CEJA provided additional authorization for seven new programs to build or strengthen the clean energy pipeline and help grow the electric vehicle, renewable energy, and clean manufacturing sectors:

- Clean Jobs Workforce Network Program
- Climate Works Pre-Apprenticeship Program
- Energy Transition Navigator Program
- Returning Resident Clean Jobs Program
- Solar Training Pipeline Program
- Multicultural Jobs Program
- Craft Apprenticeship Program

Additionally, CEJA created the Clean Energy Contractor Incubator Program and Clean Energy Primes Contractor Accelerator Program to support contractors training and business development needs.

For building efficiency measures, the Capital Development Board (CDB) has statutory authority to review and recommend periodic revisions to established building and construction codes to promote public safety and energy efficiency. Public Act 103-510 created the framework for the adoption of statewide building codes under CDB, to be implemented by July 1, 2025; units of local government retain authority until that date. CDB is also currently developing the Illinois Stretch Energy Code pursuant to a mandate under CEJA.

To bolster measures to expand renewable energy access, the Illinois Power Agency (IPA) has statutory authority to implement the Solar for All program that provides incentives for low-income distributed generation and community solar projects; this includes the Bright Neighborhoods Pilot program, which is testing a model to provide solar installations to income-eligible residents with no upfront costs and guaranteed electric bill savings. The IPA also has broad authority to efficiently procure the technical resources needed to further support and expand planning capacity under the existing Long-Term Renewable Resources Procurement Plan process.

The Illinois Commerce Commission has similar broad authority to procure technical resources needed for grid planning activities.

To implement Clean Agriculture measures, the Illinois Department of Agriculture intends to leverage its existing "Fall Covers for Spring Savings" program to expand the incentives available for cover crop



integration, no-till farming practices, and sustainable agriculture enhancement. DOA also implements programs under the authority of the Illinois Forestry Development Act.

The State of Illinois expects to pass legislation to strengthen the regulatory structure under Illinois EPA and the Department of Natural Resources to advance carbon storage efforts.

Regional industrial decarbonization is a key measure under the Clean Industry priority. Illinois expects to work with a regional coalition to implement a competitive grant program to support innovative investments at industrial and manufacturing facilities. Authorizing statutory authority or memoranda of agreement may also be required for participation in the multi-state effort.





# Intersection with Other Funding Availability

This PCAP includes measures directly targeted at filling in the gaps of funding, and leveraging other funding, to address the challenges and opportunities in equitable clean energy adoption. The impact of a Priority Climate Action Plan can only be realized by approaching the challenges holistically, across the economy.

The identification of the intersection with other funding availability is included in the description of each measure, identified down to each initiative within the measures. A summary of the major intersections identified is included below:

For the **Clean & Efficient Buildings** measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Department of Commerce and Economic Opportunity. Administers:
    - i. Clean Jobs Workforce Network Program
    - ii. Illinois Home Weatherization Assistance Program (IHWAPP)
    - iii. State Supplemental Low Income Energy Assistance Fund (LIHEAP)
    - iv. Energy Transition Navigator Program (for workforce, not associated with the navigator program initiative discussed above)
    - v. Contractor efficiency and electrification certification programs
  - b. Illinois Environmental Protection Agency. Administers:
    - i. Home Efficiency Rebates
    - ii. Home Electrification and Appliance Rebates
    - iii. Energy Code Training and Technical Support
    - iv. Energy Efficiency Trust Fund Grant Program
    - v. Energy Efficiency and Conservation Block Grants
    - vi. Energy efficiency measures for public water infrastructure.
  - c. Illinois Climate Bank. Administers:
    - i. Energy Efficiency Revolving Loan Fund
    - ii. State Small Business Climate Initiative
    - iii. Commercial Property Assessed Clean Energy
    - iv. Various climate finance products
    - v. Solar for All Enabling Upgrades Grant Program
    - vi. Solar for All Energy Storage Grant Program
- **Utility Initiatives**



- a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
  - i. Energy Efficiency Programs
  - ii. Beneficial Electrification Programs
- **Federal Funding**
  - a. Energy Efficient Home Improvement Tax Credit
  - b. US EPA Greenhouse Gas Reduction Solar for All Competition
  - c. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - d. IRA Investment Tax Credits

For the **Clean Transportation and Freight** measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Department of Commerce and Economic Opportunity. Administers:
    - i. Clean Jobs Workforce Network Program
    - ii. Energy Transition Navigator Program (for workforce)
    - iii. Contractor efficiency and electrification certification programs
  - b. Illinois Environmental Protection Agency. Administers:
    - i. Charging Infrastructure Grant Program
    - ii. Drive Cleaner Illinois Program
    - iii. Volkswagen Environmental Mitigation Trust
  - c. Illinois Department of Transportation
    - i. National Electric Vehicle Infrastructure (NEVI) Program
  - d. Illinois Climate Bank. Administers:
    - i. Various climate finance products
- **Utility Initiatives**
  - a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
    - i. Beneficial Electrification Programs
- **Federal Funding**
  - a. US Treasury Commercial Clean Vehicle Credit
  - b. US EPA Clean Ports Program
  - c. US EPA Diesel Emission Reduction Act (DERA) Program
  - d. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - e. US FHWA Congestion Mitigation and Air Quality Improvement (CMAQ) Program
  - f. US FHWA Charging and Fueling Infrastructure Program

For the **Clean Industry** measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**



- a. Illinois Department of Commerce and Economic Opportunity. Administrators:
  - i. Workforce Development Program
  - ii. Clean Jobs Workforce Network Program
  - iii. Energy Transition Navigator Program (for workforce)
  - iv. Contractor efficiency and electrification certification programs
- b. Illinois Climate Bank. Administrators:
  - i. Various climate finance products
- **Utility Initiatives**
  - a. The two large investor-owned utilities in the state, ComEd and Ameren, operate the following statutorily-mandated programs, overseen by the Illinois Commerce Commission:
    - i. Beneficial Electrification Programs
- **Federal Funding**
  - a. US Treasury 48C Clean Manufacturing Tax Credit
  - b. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - c. US DOE Regional Clean Hydrogen Hubs Program
  - d. US DOE Advanced Energy Manufacturing and Recycling Grant Program
  - e. US DOE Industrial Demonstrations Program

For the **Clean Agriculture** measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Department of Agriculture. Administrators:
    - i. Fall Covers for Spring Savings Program
  - b. Illinois Climate Bank. Administrators:
    - i. Various climate finance products
  - c. Illinois Department of Revenue
    - i. Sale tax exemption for on-farm equipment
- **Federal Funding**
  - a. US DOE Methane Emissions Reduction Program
  - b. USDA Agriculture Conservation Easement Program
  - c. USDA Conservation Stewardship Program
  - d. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
  - e. US Treasury Tax Credit - commercial grade electric lawn mowers

For the **Clean Power** measure, this PCAP identifies methods of complementing, and not replicating, funding from State, utility, and federal funding sources:

- **State Initiatives**
  - a. Illinois Power Agency. Administrators:
    - i. Illinois Renewable Portfolio Standard
    - ii. Illinois Solar for All Program
- **Federal Funding**



- a. USDA Empowering Rural America New ERA Program
- b. Rural Energy for America Program (REAP)
- c. US DOE Grid Resilience and Innovative Partnerships Program
- d. US EPA Greenhouse Gas Reduction Solar for All Competition
- e. US EPA Greenhouse Gas Reduction National Clean Investment Fund Competition
- f. IRA Investment Tax Credits



# Workforce Planning Analysis

This PCAP includes measures directly targeted at addressing challenges and opportunities in the clean energy workforce, because the success of any GHG measure is contingent upon having a workforce that is able to implement it. This analysis is spread throughout the sectors and measures included in the PCAP, and summarized below.

In the area of **clean buildings**, the plan emphasizes preparing more contractors to do clean buildings work, and ensuring customers can find them. It targets expanding workforce and contractor training and capacity to implement efficiency and electrification measures and supporting customers in connecting with contractors qualified to perform these measures, which today is difficult and impedes uptake of these measures. It proposes to **expand the existing Clean Jobs Workforce Network Program** to support additional skills needs around ground-source and air-source heat pump installation, heat pump water heat installation, roof replacement and repair, mold and asbestos abatement needs identified and remediation, electrical upgrades, energy storage installation, and more. It also proposes to **expand the Clean Energy Contractor Incubator Program** to support new contractor and subcontractor business development in communities not well served by an existing contractor base in ground-source and air-source heat pump installation, heat pump water heat installation, roof replacement and repair, mold and asbestos abatement needs and remediation, electrical upgrades, energy storage installation, and more.

In the area of **clean freight and fleets**, the plan outlines how the Workforce Training Program for Fleet and Freight Operators is an integral component of Illinois' strategic effort to transition towards a more sustainable, efficient, and electrified fleet industry. It prioritizes this based on the assessment that the success and longevity of the fleets acquired through the Zero Emissions Vehicle Initiative critically depend on the operators' ability to use these vehicles to their fullest potential. This training program is designed to provide comprehensive instruction to fleet operators, dispatchers, and drivers, focusing on optimizing electric vehicle (EV) use from operational, logistical, and environmental standpoints. The curriculum aims to enhance the skill set of those at the forefront of fleet operations, ensuring that the investment in zero-emission vehicles yields maximum environmental and economic benefits. By integrating the Workforce Training Program closely with the Zero Emissions Vehicle Initiative, Illinois is establishing a holistic approach that marries vehicle acquisition with operator expertise, setting a standard for a cleaner, more sustainable transportation future. This initiative would include:

- Fleet Operator Training on driving strategies to maximize battery life, route optimization, vehicle weight, distance, start-stop frequency, speed, logistics, and topography.
- Dispatcher Training. Instructions on planning efficient routes and logistics that align with battery life and charging station availability, essential for minimizing downtime and maximizing vehicle utility.



- Driver Training. Guidance on strategic charging — when and where to charge to ensure operational efficiency and vehicle readiness.
- Comprehensive Fleet Training. Workshops and/or training on managed charging, utilizing software and tools for ensuring charging availability, and exploring potential revenue streams from smart charging practices.

Finally, all this builds on Illinois' existing policy measures and programs to address workforce development in the **power sector**, including: the Clean Jobs Workforce Network Program, Climate Works Pre-apprenticeship Program, Energy Transition Navigator Program, Returning Resident Clean Jobs Program, Solar Training Pipeline Program, Multi-cultural Jobs Program, and Craft Apprenticeship Program. These programs are also cited in the LIDAC section of this plan, because the state has prioritized knitting workforce development initiatives together with benefits to LIDACs.