# Program Offerings Overview

November 10<sup>th</sup>, 2023



Providing effective energy strategies for buildings and communities

# Agenda

- Who is SEDAC? What is our program's mission?
- SEDAC's core programs
  - Energy Code Training
  - Public Water Infrastructure Assessments
  - Climate Action Planning
- SEDAC Partnerships
  - DCEO Clean Energy Workforce Development
  - IL Green Business Program
  - EPA Thriving Communities Tech. Asst. Center
  - Cook County Sun & Save
  - Ameren Small Projects



## Who we are

- We are an applied research program at University of Illinois.
- We help building owners and communities improve energy efficiency, save money, and become more sustainable.

Our goal: Reduce the energy footprint of Illinois and beyond.





### What We Do

We are an applied research program at the University of Illinois.

We assist buildings and communities in achieving energy efficiency, saving money, and becoming more sustainable.

- We **help facilities** become more energy efficient.
  - We educate.
  - We research.
  - We advocate for a greener future.





# SEDAC Core Programs



# **Energy Codes Program**

- Training
- Technical Assistance
- Advocacy



# **Illinois Energy Conservation Code**

Updated Illinois Energy Conservation Code (2021 IECC with IL Amendments) is expected to be effective soon.



# **SEDAC Energy Code Training Series**

### Energy Code Webinar Schedule

- 08.22.23 ARCHIVED Energy Code Basics
- 09.26.23 ARCHIVED Existing Residential Buildings

### 11.14.23 – UPCOMING! - Residential Stretch Code

- 12.12.23 Q&A Review How We Answer Energy Code Questions
- 02.20.24 Commercial Stretch Code
- 04.09.24 Simplified Code Compliance
- 05.21.24 Existing Commercial Buildings
- 06.11.24 Q&A Review How We Answer Energy Code Questions

Registration: https://smartenergy.illinois.edu/events



# SEDAC Energy Code In-person Workshops

12.12.23 – Q&A Webinar

2021 IECC: Submitted Questions and Answers

- Slides ARCHIVED

03.19.24 – Workshop 2
Energy Code Basics, Simplifying Code Compliance & Q&A Review
– Location: TBD

Registration: https://smartenergy.illinois.edu/events



## Access to 2021 IECC & IL Amendments





Search all of Digital Codes



# IL Amendments DRAFT: CDB May 2023 Board Book pp 026-069

### CHAPTER 1 [CE] SCOPE AND ADMINSTRATION

### SECTION C101 SCOPE AND GENERAL REQUIREMENTS

C101.1 Title. This code shall be known as the International Energy Conservation Code of [NAME. OF JURISDICTION] and shall be cited as such. Illinois Energy Conservation Code or "this Code" and shall mean:

With respect to the State facilities covered by 71 Ill. Adm. Code 600.Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2018 International Energy Conservation Code, including all published errata but excluding published supplements that encompass ASHRAE 90.1-2016), and any statutorily authorized adaptations to the incorporated standards adopted by CDB are effective July 1, 2019.

With respect to the privately funded commercial facilities covered by 71 III. Adm. Code 600.Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2018 International Energy Conservation Code, including all published errata and excluding published supplements that

C101.1.3 Adaptation. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population, distribution, geography and climate of the Sate and construction within the State, consistent with the public policy objectives of the EEB Act.

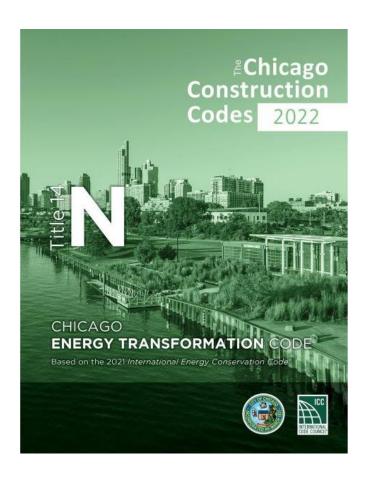
C101.5 Compliance. Residential buildings shall meet the provisions of IECC — Residential Provisions. Commercial buildings shall meet the provisions of IECC-Commercial Provisions the Illinois Energy Conservation Code covered by 71 Ill. Adm. Code 600.Subpart C. The local authority having jurisdiction (AHI) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

- Compliance forms published in the ASHRAE 90.1 User's Manual; or
- Compliance Certificates generated by the U.S. Department of Energy's COMcheck™ Code compliance tool; or
- Other comparable compliance materials that meet or exceed, as determined by the AHJ, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck<sup>TM</sup> Code compliance tool; or
- The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural



https://codes.iccsafe.org/content/IECC2021P2

# Access to Chicago Energy Transformation Code



https://codes.iccsafe.org/codes/illinois/Chicago

### ARTICLE XIII. CHICAGO ENERGY CONSERVATION CODE

**SECTION 1.** The Municipal Code of Chicago is hereby amended by inserting a new Title 14N, as follows:

TITLE 14N ENERGY CONSERVATION CODE

PART I - COMMERCIAL PROVISIONS

CHAPTER 14N-C1 SCOPE AND PURPOSE

### 14N-C1-C001 Adoption of the commercial provisions of the International Energy Conservation Code by reference.

The commercial provisions of the *International Energy Conservation Code*, 2018 edition, second printing, and all erratum thereto identified by the publisher (hereinafter referred to as "IECC-CE"), except Appendix CA, are adopted by reference and shall be considered part of the requirements of this title except as modified by the specific provisions of this title.

If a conflict exists between a provision modified by this title and a provision adopted without modification, the modified provision shall control.

### 14N-C1-C002 Citations.

Provisions of IECC-CE which are incorporated into this title by reference may be cited as follows:

14N-C[IECC-CE chapter number]-[IECC-CE section number]

### 14N-C1-C003 Global modifications.

The following modifications shall apply to each provision of IECC-CE incorporated into this title:

- Replace each occurrence of "International Codes" with "Chicago Construction Codes."
- Replace each occurrence of "International Building Code" with "Chicago Building Code."
- Replace each occurrence of "ASME A17.1" or "ASME A17.1/CSA B44" with "the Chicago Conveyance Device Code."
- 4. Replace each occurrence of "NFPA 70" with "the Chicago Electrical Code."



# We Provide CEUs!

SEDAC is a Preferred Education Provider with the International Code Council (ICC). Credits earned on completion of this program will be reported to ICC for ICC members. Certificates of Completion will be issued to all participants.

This workshop is approved for 1 LU/HSW CES credits from the American Institute of Architects (AIA). Credits earned on completion will be reported for AIA members.

AIA Continuing Education Provider



# **Energy Code Assistance**

- Technical support
  - energycode@sedac.org
  - 800.214.7954
- Online resources at
  - smartenergy.illinois.edu/energy-code
- Workshops
- Webinars
- Online on-demand training modules





# Public Water Infrastructure

- Training
- Technical Assistance
- Sustainability Research



# What is the Illinois PWI Program?

Partnership between Illinois EPA Office of Energy, SEDAC, and IL Sustainable Technology Center







 Funds energy assessments and continuing education opportunities for public water systems and their staff.



# **How the Program Works**

The Illinois EPA Public Water Infrastructure Energy Assessment Program helps municipalities reduce the cost of water and wastewater treatment.

- NO-COST energy assessments and technical assistance
- Comprehensive report listing:
  - Cost of upgrades
  - Estimated payback period
  - Any applicable incentives or funding opportunities
- Operator continuing education events
- Program participants are eligible for grant funding opportunities within 5yrs of assessment completion.

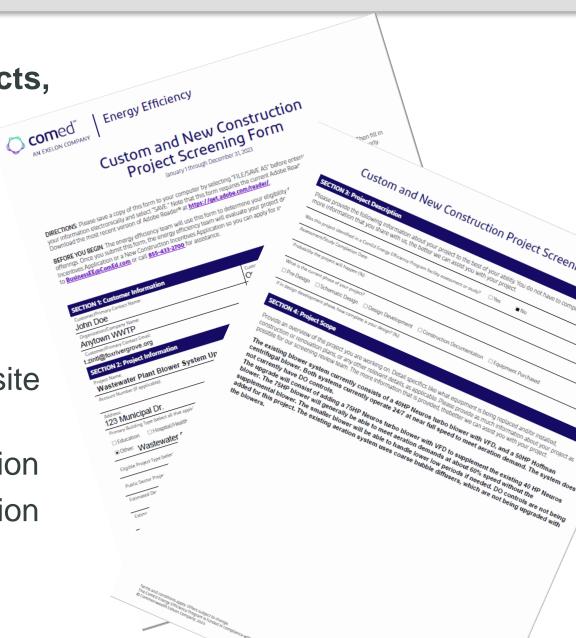




### **Technical Assistance**

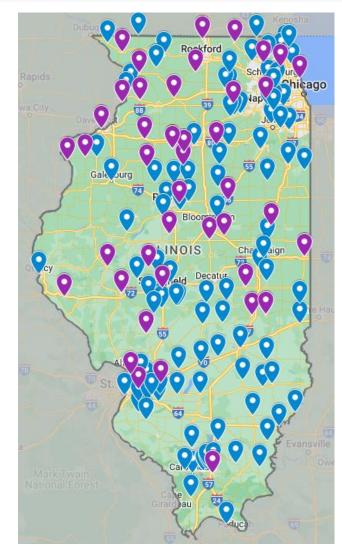
We provide assistance with smaller projects, too!

- Help completing utility rebate & grant application forms
- Estimate potential savings for individual measures
  - New project not in original report
  - Small facility that can't justify full on-site assessment
- Updates to past reports with new information
- Updating benchmarking post implementation



# **Program Summary: 2017 - 2023**

- Plants served: 158 WWTPs, 43 PWSs
- 500 total recommendations, 39 implemented
- \$4.2M identified savings, ~\$0.45M implemented
- 40,000 MTCO<sub>2</sub>e identified emissions reductions,
   5,000 MTCO<sub>2</sub>e implemented
- Hosted 4 in-person workshops, 2 "field days", 26 training webinars, and created 1 research paper,
   15 publications, and 2 video case studies
  - Partner with industry professionals, engineering firms, and operators to diversify training





# **Overview of Funding Opportunities**

### Government Grants, Loans, and Assistance

# US DOE Sustainable Wastewater Infrastructure of the Future (SWIFt) + USDA Rural Development Water and Environmental Programs (WEP) Loans and + Grants Illinois EPA Wastewater Treatment Plant Energy Efficiency Grant + Illinois EPA Revolving Loan Fund + Illinois Finance Authority (Loan) +

### Private Grants or Assistance

Rural Community Assistance Program (RCAP)	+
DOE Midwest CHP TAP	+
Net Zero Energy Wastewater Grant	+

### **Utility Incentives**

Illinois Municipal Electric Agency Rebate Program	+
ComEd Energy Efficiency Program (for ComEd customers)	+
Ameren Illinois Rebate Program (for Ameren customers)	+
Nicor Gas Energy Efficiency Incentive Programs	+
North Shore Gas Energy Efficiency Incentive Programs	+



### **Case Studies & Technical Articles**

### Herrin WWTP Case Study

June 28, 2023

In 2018, SEDAC performed an energy assessment for the Herrin IL Wastewater Treatment Plant (WWTP). The assessment identified several energy [...]



# Algal Treatment for Wastewater Treatment Plants

May 2, 2023

A new process to enhance water treatment and minimize energy consumption is gaining traction in Water Resource Recovery. The concept [...]





### Illinois EPA Public Water Infrastructure Energy Efficiency Program Flyer

May 2, 2023

Take a look at our program flyer for information on no-cost energy assessments, top energy savings opportunities, and realized savings [...]



### Lift Station Optimization in Wastewater Treatment Plants

**Q** June 29, 2022

Lift stations move wastewater from lower to higher elevation, particularly where the elevation of wastewater sources is not sufficient for [...]

# Climate Action Planning

- Net-zero roadmaps
- Facility Assessments
- Technical Service



# **Entities Reaching Net-Zero Emissions**

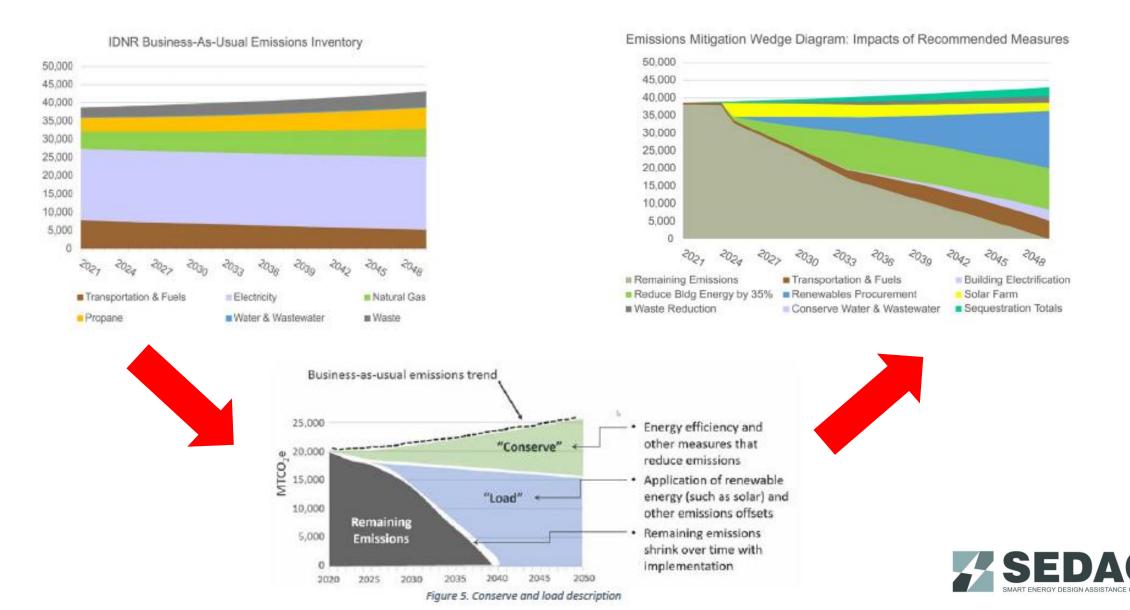
- IGEN Net-Zero Collaborative
  - IGEN = IL Green Economy Network
  - Climate action planning for community colleges
  - Goal to achieve net-zero emissions
- Cook County Forest Preserves
  - Parks and support facilities in Cook County
  - Goal to achieve net-zero emissions
- Illinois Dept. of Natural Resources
  - State parks, historic sites, natural history museums, and support facilities
  - Goal to achieve net-zero emissions

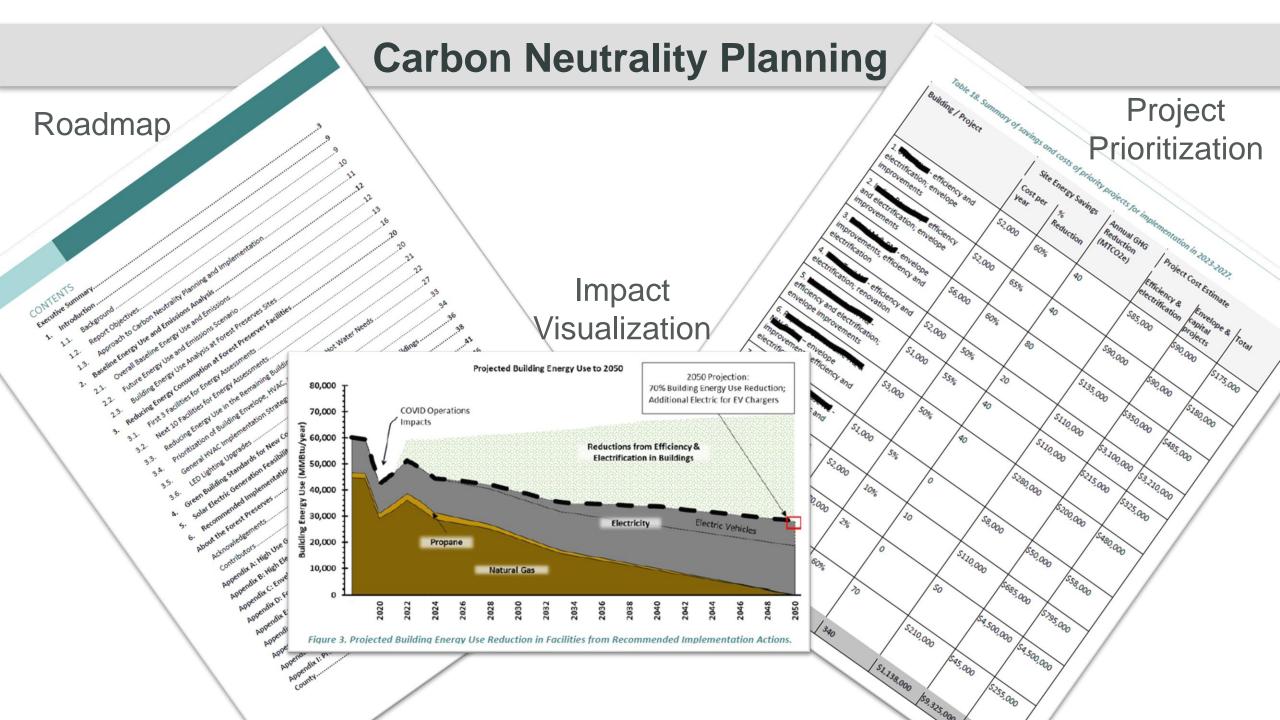


# **Resources for Climate Action Planning**



# **Climate Action Reports**





# SEDAC Partnerships



# Clean Energy Workforce

- Partnered with Dept.
   of Commerce and
   Economic
   Opportunity
- Other Public Universities



## **SEDAC's Contributions**

### RESEARCH!

- Skills and training inventory
  - Identified 1,157 training programs for clean jobs
- In-demand clean energy jobs
  - Built out prioritization of skillsets to train
- Challenges and barriers to equitable workforce opportunities
  - Developed recommendations for collaboration between stakeholders
- Assisting with Program Launch
  - Funding opportunity announcements
  - Organization outreach





# **Workforce Program Resources**

### **WORKFORCE RESOURCES**



### How will CEJA Grow the Solar Workforce?

May 16, 2023

The Illinois Climate and Equitable Jobs Act (CEJA) sets a goal for Illinois to reach 40% renewable energy by 2030 [...]



### Growing the Clean Energy Workforce

April 19, 2023

It's an exciting time to be part of the clean energy workforce! Recent state and federal legislation has brought unprecedented [...]



October 1, 2021

In the current job market where job seekers have a multitude of different options, how do you craft a job [...]



### Energy Efficiency Workforce: Lessons Learned from Past Crises

October 9, 2020

Growing the Energy Efficiency Workforce Research Series In Illinois, nearly 10,000 energy efficiency jobs have been lost since the beginning [...]



# A CALL

### Building a Resilient Energy Efficiency Workforce

September 8, 2020

The economic effects of the pandemic have devastated many job sectors, including the energy efficiency sector. In Illinois, there are [...]



### Energy Efficiency Workforce Diversity

U July 14, 2020

There are many benefits to a diverse workforce. Diversity can drive competition, improve culture, foster innovation and economic growth, and [...]

### https://dceo.illinois.gov/climateand equitablejobs.html

### Climate and Equitable Jobs Act Implementation

**CEJA Program Announcements** 

CEJA Commissions and Councils

Clean Jobs Workforce Network Program

Climate Works Preapprenticeship Program

Energy Transition Navigator Program

Returning Resident Clean Jobs Program

**FEJA Solar Training Programs** 

Clean Energy Contractor Incubator Program

Clean Energy Primes Contractor Accelerator Program

Other CEJA Programs



# Illinois Green Business Program

 Partnered with IL Green Business Association



### **SEDAC's Contributions**

- Development of green business metrics
- Development of impact calculator for certification program
- Assessments & Report generation for IL businesses
  - Energy use reduction
  - Waste reduction
  - Sustainable sourcing



**Become a Certified Illinois** 

Complete core and elective practices across 6 areas of sustainability in our

Green Business.

green business checklist.

# Thriving Communities Technical Assistance Centers

- Partnered with
  - Blacks in Green
  - Midwest Tribal Energy Resources Assoc.
  - Black Environmental Leaders Assoc.
  - Environmental Health Watch
  - Univ. of Chicago School of Public Health



### **SEDAC's Contributions**

- Illinois participant intake for TCTAC in Region 5
  - Serving as subject matter experts for program
    - Grant writing assistance
    - Energy conservation and impacts
    - Publications
    - Training
    - Technical Assistance



U.S. EPA Region 5 States



# Cook County Sun & Save

 Partnered with Cook County and 360 Energy Group



### **SEDAC's Contributions**

- Program administrative duties, including
  - Vendor program certification
  - Client application review
  - Program development







