

Smart Communities In Focus

Spotlight: Chicago, IL



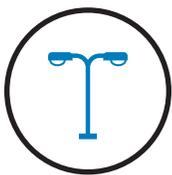
Chicago's smart community effort, known as Sustainable Chicago, is aided through its partnerships with ComEd, Ameresco, Argonne National Laboratory, Chicago Innovation Fund, Chicago Transit Authority, CIVIQ Smartscares, Illinois Institute of Technology, National Science Foundation, Silver Spring Networks, and the University of Chicago.

Chicago's Goals

- Support economic development and job creation
- Advance energy efficiency and clean energy
- Develop clean transportation options
- Address climate change

Smart communities are built on smarter energy infrastructure and leverage the power of data and technology to improve sustainability, spur economic development, help drive efficiencies, and enhance the overall quality of life for their citizens. This summary focuses on specific opportunities where communities and electric companies can collaborate to make communities smarter, including projects that advance: Smart Street Lighting, Smart Transportation, Smart Buildings, Distributed Energy Resources, and Data Analytics and Intelligent Services.

What Makes Chicago Smart?



Smart Street Lighting—Saves energy, improves safety, and reduces traffic congestion.

- Chicago is partnering with Ameresco to replace 270,000 street lights with LED fixtures with dimming capability. New fixtures will be networked and controlled remotely by a lighting control system. Replacement begins in 2017 and will be completed in 2020.
- ComEd is piloting the implementation of off-grid streetlights, powered by wind turbines, solar panels, and batteries in the Bronzeville neighborhood.



Smart Transportation—Improves safety and mobility, reduces carbon footprint, and provides greater access to services.

- ComEd developed a screening tool that identifies the best areas in Chicago to install electric vehicle (EV) chargers based on attracting EV usage and energy grid conditions.
- After a successful pilot, the Chicago Transit Authority will add 30–40 electric buses to its 1,800 bus fleet within the next few years.
- ComEd is preparing to pilot a community mobility pilot using shared-use EVs in the Bronzeville neighborhood.



Smart Buildings—*Save energy and improve sustainability.*

- Retrofit Chicago has worked for years to encourage energy efficiency retrofits in residential, commercial, and municipal buildings. Through its Energy Challenge, more than 60 buildings spanning 44 million square feet are committed to reducing energy usage by at least 20 percent.

For more information, see: www.retrofit.cityofchicago.org.



Distributed Energy Resources—*Improve sustainability, efficiency, and reliability.*

- ComEd proposed a microgrid in the Bronzeville neighborhood of Chicago, clustered with an existing microgrid at the Illinois Institute of Technology. The project will include 750 kilowatts of solar and 500 kilowatts/2,000 kilowatt-hours of battery storage. ComEd also has won a grant from the U.S. Department of Energy to develop and implement a microgrid controller.
- ComEd is developing hosting capacity maps that would support the siting of community solar.
- Under a U.S. Department of Energy grant, ComEd is researching the usage of smart inverters to support increased penetration of renewable energy like wind and solar.
- ComEd is piloting a community energy storage unit integrated with EVs for charging station demand management.



Data Analytics and Intelligent Services—*Increase efficiency, improve city services, and enhance quality of life.*

- ComEd is using data from smart streetlights to identify systemic failures and to decrease future outages.
- Chicago partnered with Argonne National Laboratory, the University of Chicago, and others on a project called the Array of Things. Between 2016 and 2018, this project will install 500 sensor nodes around the city and capture environmental, air quality, light, and infrared information. Data gathered through the project will be open, free, and available to the public. It is anticipated that Chicago will develop applications to utilize traffic pattern data for increased efficiency.
- Chicago is piloting the implementation of CIVIQ Smartscape's interactive, networked public kiosks that provide free Wi-Fi and access to relevant transit information and other services.

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