

POWERING CHICAGO

IBEW 134/NECA



The Time is Now: Considerations
for EV Charging Infrastructure



MULTIPLE FORCES ARE POWERING ACCELERATION OF EV ADOPTION

The electrification of transit is accelerating rapidly, particularly in Illinois and the Midwest. Significant new local, state and federal laws are supporting the move to electrification. While this transition is pertinent for everyone, it's especially meaningful for commercial transportation and electric vehicles (EV.)

GOVERNMENT MOVES TO EXPEDITE TRANSITION TO EV

The [Illinois Climate and Equitable Jobs Act](#), passed by lawmakers in September 2021, asserts a bold goal of having one million all-electric vehicles on Illinois roads by 2030. As of January 2022, there are just over 37,000 registered in Illinois¹. Additionally, in 2020, Chicago Mayor Lori E. Lightfoot and the Chicago City Council passed an ordinance that requires all new construction of residential buildings with five or more units, and onsite parking and commercial properties with 30 or more parking spaces, to have 20 percent of any supplied parking spaces Electric Vehicle Supply Equipment (EVSE) ready.



“Basically, every residential apartment or every residential building will have it. You’ll need it for all industrial commercial distributions. Everyone’s going to have more electric, more friendlier vehicles, meaning, you will have vans, you have cars that now need that.” **Nick Pupich, Director of Controls and Specialized Solutions at Connelly Electric.**

¹ <https://www.ilsos.gov/departments/vehicles/statistics/electric/2022/electric011522.pdf>

Regionally, the governors of Illinois, Indiana, Michigan, Minnesota and Wisconsin have joined forces to [build a new network for charging electric vehicles](#). Regional Electric Vehicle (REV) Midwest is a bipartisan effort to build the future of mobility and electrification. And on a federal level, President Biden's plan to spend \$15 billion to help create 500,000 more public charging stations is feeding optimism about the large-scale, streamlined transition to EV.

Combined, these legislative moves underscore the reality that EV isn't a far-flung, futuristic technology. The technology is here and the push is underway to transition away from gas-powered vehicle models.

EXPERTS PREDICT EV SALES TO SOON ECLIPSE GAS-POWERED ENGINES

Though EVs are still outnumbered on the roads, this won't be the case for long. In just 15 years, Bloomberg New Energy Finance predicts² that EV sales will surpass sales of gas powered models. Another Bloomberg report predicts that at least two-thirds of global car sales will be electric by 2040. These projections make sense with automakers like GM investing \$27 billion in EV technology from 2020-2025³.

With the fast-growing popularity of EVs and a number of federal and state tax breaks aimed at incentivizing investment in EV technology, now is the time to think about installing Electric Vehicle Supply Equipment (EVSE), commonly called charging stations or charging docks.

Brought to you by the electrical experts at [Powering Chicago](#), this e-book will guide you through the points to consider when planning your public or private sector property's approach to electrification. This guide includes expert insights from Jennifer Mefford, National Co-Chair of the [Electric Vehicle Infrastructure Training Program](#) (EVITP), Bob Hattier, master trainer and curriculum developer for EVITP, Gene Kent, Director at the IBEW/NECA Training Institute (IN-Tech) for Local 134, and leading Powering Chicago electrical contractors. Use this guide to discover the best approach to transition to EV, a simple process to get started, and additional supplementary resources.



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²<https://about.bnef.com/electric-vehicle-outlook/#toc-viewreport>

³<https://plants.gm.com/media/us/en/gm/ev.detail.html/content/Pages/news/us/en/2021/jun/0616-gm.html#:~:text=Today's%20announcement%20builds%20on%20GM's,transition%20to%20EVs%20and%20AVs>

NOW IS THE TIME TO CONSIDER EV

Consumer incentives like the federal \$7,500 [Plug-In Electric Drive Vehicle Credit](#) (which the Biden administration wants to raise to \$12,500) and Illinois's \$4,000 rebate for those buying select EVs will help to increase the number of EVs on the road. Adding to the Illinois consumer rebate is the rebate of up to 80% for the cost to install a charging station. Both state incentives begin July 1, 2022. If the tax breaks succeed in incentivizing buyers, the need for charging infrastructure will also increase. For businesses, organizations, municipalities, or developers considering EVSE, there are numerous reasons why now is the time to act.



Electric Vehicle
EVITP
Infrastructure Training Program

“The market is at a pivot point where we’re going to see a lot more electrified product come into the market, which means a lot more charging,” said **Jennifer Mefford, National Co-Chair of the [Electric Vehicle Infrastructure Training Program \(EVITP\)](#)**. “Customers that are looking at EV need to turn to a contractor that knows what they’re doing. That is a proven electrical professional that is tapped into electricians who have EVITP certification. That way, they can have thoughtful planning conversations and make good choices about equipment. Electrical contractors are well poised to provide that information in a site assessment.”

BUSINESS BENEFITS OF EVSE

While the tax incentives are plentiful, installing EVSE has many benefits to business, both in the long and short-term.



Puts your business on the map — literally. If you choose a charging station through a network like [Volta](#), [PlugShare](#), or [blink](#), your business will appear on their charging maps. With an average charge time of 30 minutes, this increases the likelihood that customers will visit and patronize your business.



The potential to recoup large portions of EVSE capital investment costs. Rebates and tax incentives that support the shift to electric vehicle usage and the expansion of needed electrical infrastructure upgrades will not be around forever. Some funding is available right now and much more is coming later in 2022.



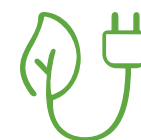
A benefit to employees. With the recruiting market perhaps tighter than ever, businesses need to look to other means to recruit and retain talent. Offering employees EV chargers simplifies their day and, in the near future, will be seen as a non-negotiable qualifier of employment.



Charge for charging time. While larger businesses may choose to offer free charging as a perk to customers, others may choose to charge visitors to charge up (so it is not a new operational expense for your business). Most businesses charge between 25 to 55 cents/kwh.



Earn a reputation for being an environmentally-friendly business. As people become increasingly aware of industry's environmental impact, they will continue expecting business to manage its carbon footprint.



A benefit for customers. While offering EV charging stations might currently be a “nice to have”, it will soon become essential to attracting customers.

SPECIFIC BENEFITS FOR FLEET MANAGERS

While the benefits of electrification are real for businesses, organizations and facilities of all types, there are specific benefits for electrified vehicle fleets. To start, if you maintain a fleet, EVs can cost up to 40% less to maintain, due to a decreased need for ongoing maintenance such as oil changes. Additionally, the cost of electricity required to drive 15,000 miles is 70 percent less than the cost of gas.

Realizing the long-term savings and environmental benefits, logistics and ride-sharing companies are racing to make the shift to electric vehicles. For example, FedEx is on track to achieve the goal of a fully-electrified parcel fleet by 2040. Governments and municipalities are also moving quickly to adapt to EV fleets, as evidenced by President Biden pledging to replace nearly 650,000 federal fleet vehicles with electric models.

School districts that operate drivers education programs also capture significant savings by transitioning to an electric fleet. Chicagoland schools may be eligible for financial support to purchase EVs and EVSE for their existing drivers education programs, through ComEd's Electric Vehicles for Education program.

A COMPREHENSIVE APPROACH TO INSTALLING EVSE

Once you've decided to pursue Electric Vehicle Supply Equipment (EVSE), commonly called charging stations or charging docks, you need to start planning your approach. The good news is that there are experts that can make the move toward electrification as easy as possible. Start by finding a local provider who is trained to install EVSE. Visit Powering Chicago's [Find a Contractor tool](#) or the [Electric Vehicle Infrastructure Training Program's \(EVITP\) tool](#) to find a qualified union contractor. A good EVSE contractor will be able to walk you through the process, considerations, as well as serve as a consultant for what approach makes the most sense for your organization.

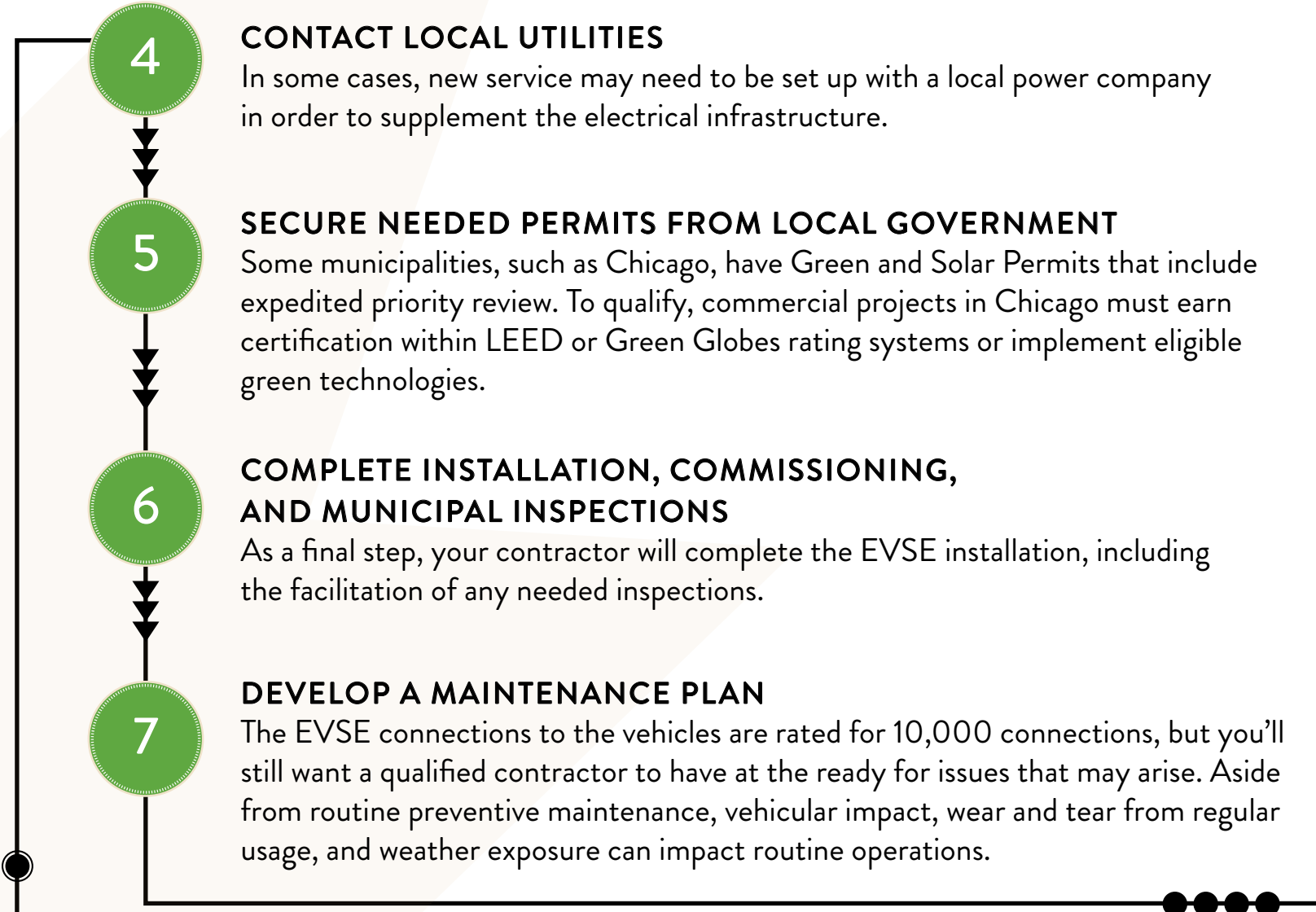
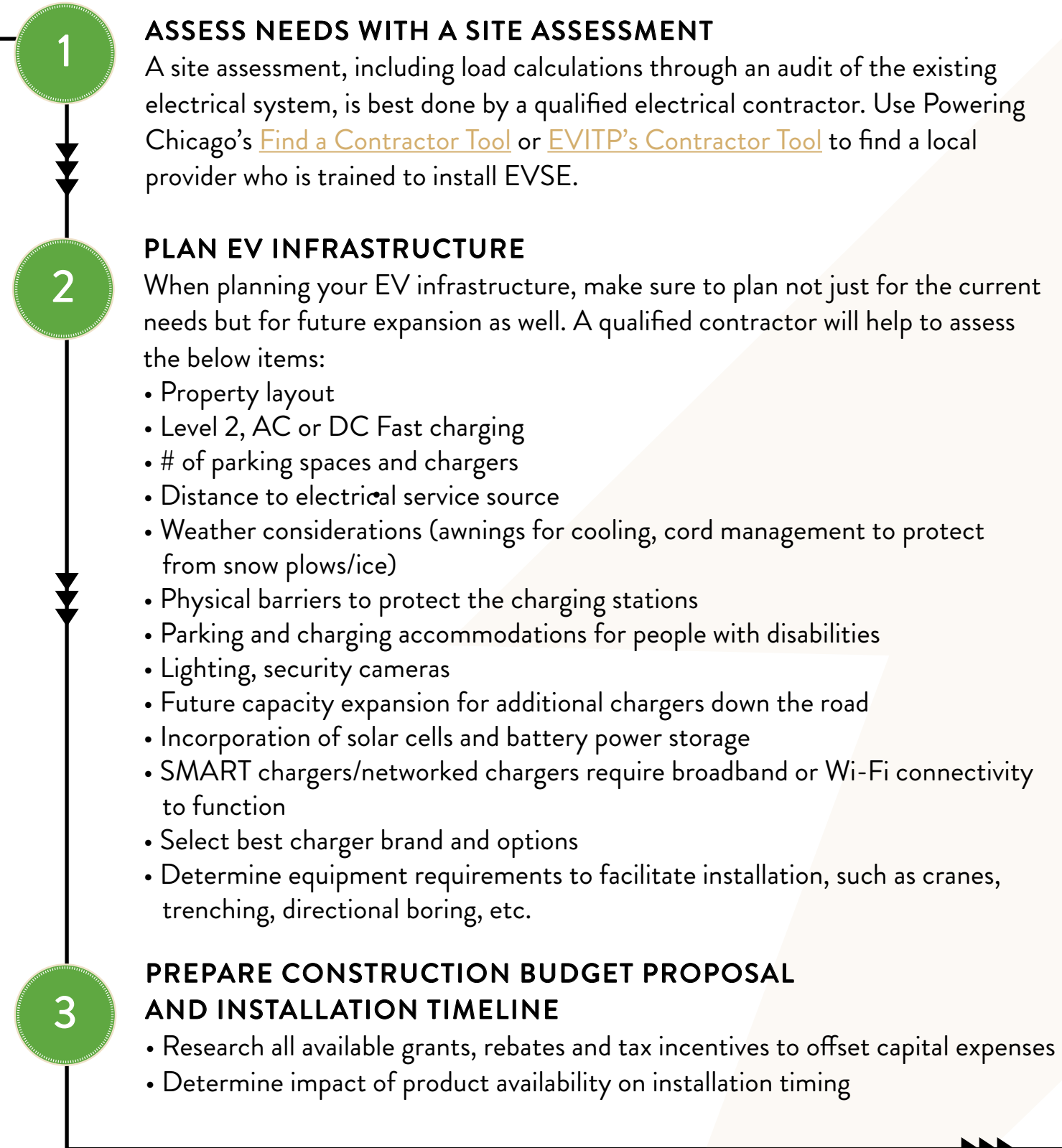


“A lot of customers are thinking, ‘I have an electric service, I can add whatever I need to install a charging station,’ but the first step must be to determine whether or not they have enough power available to be able to support those charging stations. You have to make sure that what you’re planning to add is not going to overwhelm the whole system and create a potential fire hazard.” **Chris Warke, Senior Estimating Project Manager at Taylor Electric**



7 KEY STEPS TO EVSE INSTALLATION

Partner with a trained and licensed electrical contractor to guide you through each of these steps.



IBEW LOCAL 134

“Is the electrical service capable of supplying the required power to the EVSE? Are chargers located in a safe area? Is it well lit? Is it secure? Is the charging equipment protected from potential vehicle damage and weather threats that could lead to corrosion or electrical fires? Those are all things that a qualified union electrical contractor can assess and advise on the best plan for the business.” **Bob Hattier, Business Representative at IBEW Local 134, Executive Director at Illinois IBEW Renewable Energy Fund and adjunct professor at Triton College**



CONNELLY
ELECTRIC

“Once we have the electrical infrastructure assessed and new needs identified, then we start designing a plan with our electrical design engineers or the client’s building engineers. Sometimes they are lucky and have the infrastructure in place. If not, there are two things that usually happen. They usually have a higher power source, like a 480 or 600-volt power source, that we could do a step-down transformer and add a couple of panels for them. Or if that’s not the case, then we will work with ComEd or a power utility to get them the correct power source and set up what they need for future EV chargers.” **Nich Pupich, Director of Controls and Specialized Solutions, Connelly Electric**

THE POWERING CHICAGO DIFFERENCE

While the push to increase electric vehicle (EV) charging infrastructure is relatively recent, the IBEW/NECA Technical Institute (IN-Tech) in Alsip, IL, has been training members on this specialized work for decades. At IN-Tech, IBEW Local 134 electricians train through a five-year, accredited apprenticeship program and graduate as electrical journeypersons. Apprentices complete 8,000 hours of combined classroom and on-the-job training during the program. IN-Tech’s U.S. Department of Labor-recognized apprenticeship program has trained union electricians on electric vehicle infrastructure from the beginning.

“As more and more cars will be electric, we are going to need charging stations. Who is going to build the charging stations? Here [IBEW Local 134] is where you’ll find the women and men that are prepared to do it.” **U.S. Senator Dick Durbin** during a recent visit to the IBEW Local 134 Union Hall.



Leading the way for EV training in Illinois is the state-of-the-art Photovoltaics and Renewable Energy Training Field that was opened in 2015 at IN-Tech. The training field opened to educate and train IBEW Local 134 electricians on green energy concepts and applications. The training field, the only one of its kind in the Midwest, provides hands-on education for wind and solar power, battery storage, and electrical vehicle charging infrastructure.



“As qualified persons, all of the safety, troubleshooting, proper wiring, and installation practices are already there as the backbone of our union apprenticeship and electrical training that we’ve been doing for a very long time,” said **Joe Kilcoyne, North American Board of Certified Energy Practitioners (NABCEP) Instructor and Business Representative at IBEW Local 134.**

All Powering Chicago members are qualified under the Illinois Commerce Commission’s Certification Requirements to perform the installation, maintenance, or repair work on electric vehicle charging stations. Powering Chicago contractors have the resources and knowledge to ensure EV charging stations are installed correctly the first time, meeting or exceeding all local electrical codes. This is especially important in the City of Chicago, which has its own electrical code. Because of the varied qualifications and expertise among Chicagoland contractors, selecting a qualified electrical contractor is the most important step in getting your EV charging project started.



“Highly-trained, experienced Powering Chicago partners are ready today to partner with municipalities, school districts, business and organizations to make this great city a leader in electrical vehicle transit. IBEW Local 134 apprentices are trained extensively on the intricacies of safe EV charging and EV charger installation, including solar-powered considerations.” **Elbert Walters III, Executive Director, Powering Chicago**

Training the next generation of electricians on the importance and safe installation of renewable energy, including safe and high-quality installations of EV charging stations and supporting electrical infrastructure, is critically important. Which is why the unionized electrical industry developed the [Illinois IBEW Renewable Energy Fund \(REF\)](#) to promote the safe, productive, and sustainable growth of renewable energy system training in Illinois.

The Illinois IBEW Renewable Energy Fund, through Powering Chicago member trainers, also educates area fire departments to ensure firefighters and paramedics are properly prepared to safely handle renewable energy components like solar panels and electric vehicle charging stations. The training program focuses on system awareness and identification, safety concerns and hazard mitigation, and codes and standards affecting solar and energy storage.



“Because EV is growing in popularity, there are many contractors offering EVSE installations,” said **Director of the IBEW/NECA Technical Institute Gene Kent.** “If an electrician isn’t trained in a registered apprenticeship program, and EVITP-certified, there’s no guarantee that they know what they’re doing. When you hire a Powering Chicago installer, you know you’re getting the best of the best.”

POWERING CHICAGO EXPERTS



BOB HATTIER

Business Representative at IBEW Local 134
Executive Director at Illinois IBEW Renewable Energy Fund
Adjunct professor at Triton College

Bob is dedicated to the sustainable growth of the renewable energy industry by providing the training necessary to ensure a qualified workforce to install and maintain solar photovoltaic (PV), energy storage and electric vehicle (EV) charging systems.



JOE KILCOYNE

[North American Board of Certified Energy Practitioners](#)
(NABCEP) Instructor

Business Representative at IBEW Local 134

Joe's electrical construction career began in 2001 when he began his five-year apprenticeship with IBEW Local 134. Since completing his apprenticeship, he's served as a journeyman, foreman, general foreman, and now as a business representative, treasurer, and trainer. Joe is passionate about renewable energy and permaculture and focuses on communication, community, and innovative, sustainable and green building principles.



GENE KENT

Director of IBEW/NECA Technical Institute

Gene is the director of the IBEW-NECA Technical Institute (IN-TECH), the premier education and training center for aspiring electricians in the midwest. IN-TECH offers apprentices the opportunity to train and learn using state-of-the-art equipment and the latest technology under the care of instructors with extensive experience in the trades.



ELBERT WALTERS III

Executive Director of Powering Chicago

A former business representative for IBEW Local 134 and longtime member of the union, he now serves as the executive director for Powering Chicago, leading the organization's 100+ philanthropic and community impact initiatives each year and playing a key role in its daily operations. Elbert brings to the position a deep understanding of the unionized electrical industry's commitment to better construction, better careers and better communities.



JENNIFER MEFFORD

National Co-Chair of the [Electric Vehicle Infrastructure Training Program](#) (EVITP)

Jennifer serves as National Co-Chair for the [Electric Vehicle Infrastructure Training Program \(EVITP\)](#), a coalition of automakers, utilities, EVSE manufacturers and other stakeholders that delivers EVSE installation training and certification throughout the U.S. and Canada for residential, commercial, public and fleet markets.



NICK PUPICH



CHRIS WARKE

Senior Estimating Project Manager at [Taylor Electric](#)

After 20 years of being an electrician in the field, Chris started project managing and estimating. He now works at Taylor Electric where works with customers to assess their project needs and ensure projects are running on-time and within budget.

FEATURED PROJECTS BY POWERING CHICAGO MEMBERS

Powering Chicago contractors have been installing public and private electric vehicle chargers throughout Chicago since 2008. The breadth of projects that members have been involved with demonstrates their deep experience and level of trust that Chicagoans have. Below are a few standout projects that involve Powering Chicago members.



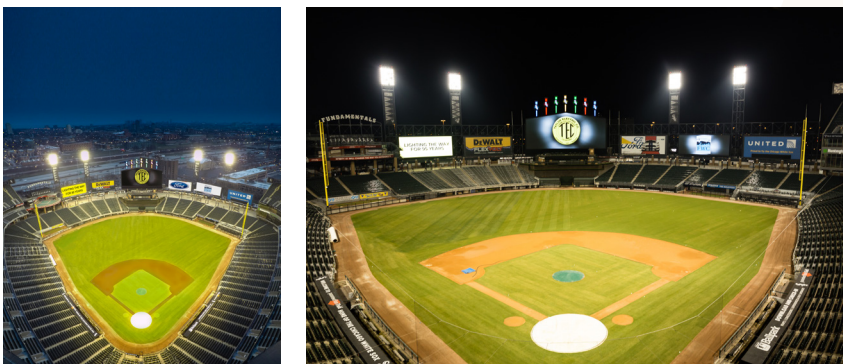
CHICAGO TRANSIT AUTHORITY

Aldridge Electric led the installation of charging stations for 20 new all-electric CTA buses at CTA's Chicago Avenue garage, Navy Pier, and the Chicago/Austin bus terminal.



GUARANTEED RATE FIELD

Taylor Electric completed the infrastructure, electrical and communications for charging stations at the Chicago White Sox's Guaranteed Rate Field.



COMPLETE EV CONSULTATION

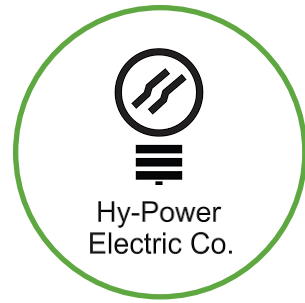
Jamerson & Bauwens has the knowledge and technical skill to provide end-to-end EV consultation, installation, and maintenance, flexible to fit the project's needs. Jamerson & Bauwens has installed hundreds of EV Charging Stations at automotive dealerships throughout Metro Chicago. Installations include everything from upfront site consultations with the owner to final bolt downs of the equipment and startup. Full turnkey solutions (infrastructure to final startup) are most of these installations.



INDUSTRIAL DISTRIBUTION CENTER

In 2021, Connelly Electric completed a project at an industrial warehouse and distribution company. This company had a fleet of vans that needed level 2 and level 3 EV chargers. The project included 26 charging stations and required expansion of the electrical infrastructure, including a new service with the local power utility. The team planned for the current 26 chargers and the ability to expand significantly in the future. All 26 chargers were networked properly over a SMART system.





COUNTRYSIDE MUNICIPAL CENTER

In 2019, [Hy-Power Electric](#) helped to build the state's first net zero government building, the Countryside Municipal Center. Among the building's [many environmentally-friendly features](#) were a number of EV chargers for public and facility use.



RESOURCES

Powering Chicago: [Database of Union Electrical EV Contractors](#)

U.S. Department of Energy: [Fuels & Vehicles - Electricity](#)

U.S. Department of Energy: [Federal Laws & Incentives](#)

City of Chicago: [Drive Electric Chicago](#)

City of Chicago: [Climate Action Plan](#)

Illinois Commerce Commission - [Database of Registered Contractors/EV Charger Installers, Maintenance and Repair Certifications](#)

U.S. Department of Housing and Urban Development Office of Sustainable Communities Grants: [Sustainable Community Initiatives](#)

Illinois Climate and Equitable Jobs Act 2021: [Summary & Overview](#)

State of Illinois: [Electric Vehicles Counts by County](#)

ComEd: [Vehicles for Education Program](#)

EY Report: [Electrification of Road Transport Promises Environmental and Commercial Gains](#)

AAA: [True Cost of Electric Vehicles Report](#)

Bloomberg: [Electric Vehicle Outlook 2021](#)

KEY POINTS SUMMARY

While the considerations for EVSE are many, there are a few key takeaways that you should know as you journey toward electrification for your business, school district, organization, or other facility.

✔ **HIRING A REPUTABLE, HIGHLY-TRAINED CONTRACTOR IS PARAMOUNT.**

Look for electrical contractors with specialty training and up-to-date knowledge of EVSE installation, equipment and maintenance. In Chicagoland, Powering Chicago members are the most highly-trained contractors and electricians. Find a Powering Chicago contractor today using [this search tool](#).

✔ **PLAN NOW FOR THE LONG-TERM.**

Planning for electrical capacity that allows for future expansion will provide cost savings down the road.

✔ **CONSIDER NETWORKING YOUR CHARGING STATIONS ON A SMART SYSTEM.**

This enables cost-savings through load shifting (charging during low-use/off-peak times of day when electric rates are cheaper) and peak shaving (reducing the power flow to recharge batteries). This is especially important for organizations with large EV fleets.

✔ **THE TIME IS NOW TO CONSIDER EVSE.**

Because of the growing number of government rebates and tax incentives, now is the time to consider EVSE. Even if you're not ready to go all-in, having a reputable contractor do a site assessment to consider near-term infrastructure upgrades is a smart move.



POWERING CHICAGO ⚡

IBEW 134/NECA

If you're in Chicago or Cook County and you're looking for an electrical contractor that you can trust to deliver results on time, and on budget, look no further than Powering Chicago's skilled union contractors. If you're outside of the Chicagoland area, consider using the National Electrical Contractors Association's [contractor search tool](#).