

Workforce Development Boards and Electric Vehicle (EV) Charging Infrastructure



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<https://www.aacc.nche.edu/EVHub>

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Executive Summary

The rapid adoption of electric vehicles (EVs) is reshaping transportation, energy, and workforce systems across the United States. As businesses transition to electric fleets, customers expect reliable charging access, and governments invest heavily in clean transportation, the demand for dependable EV charging infrastructure has intensified. Central to this infrastructure is a skilled workforce capable of installing, maintaining, and operating increasingly complex charging systems.

NAWB as a leader in the workforce development system assists its members to enable, align, and scale apprenticeship efforts across regions. Effective EV workforce development, relies on collaboration. In this spirit, and to support the efforts of the local workforce development boards, NAWB is partnering with the American Association of Community Colleges (AACC) on an ABA Initiative, funded by the Department of Labor, to strengthen, modernize, expand, and diversify Registered Apprenticeship (RA), specifically in the national electric vehicle supply chain.

This brief provides workforce development boards with an overview of the EV charging landscape, the emerging workforce challenges, and the strategic role WDBs can play—individually and in partnership with employers, educational institutions, and economic development organizations. It highlights labor market realities, outlines apprenticeship-based solutions, and presents real-world examples of successful regional collaboration. For WDBs, proactive engagement with businesses is not only a solution to talent shortages but also a competitive advantage in a rapidly expanding sector.

The Growing Importance of EV Charging Infrastructure

EV adoption is accelerating nationwide, driven by consumer demand, corporate sustainability commitments, and federal and state policy incentives. With millions of EVs projected to be on U.S. roads within the next decade, public and workplace charging infrastructure must expand significantly to keep pace.

EV drivers increasingly expect charging stations to function reliably, regardless of location or manufacturer. Unlike traditional fueling infrastructure, EV charging systems integrate electrical hardware, high-voltage components, software platforms, networking, and data management. As a result, the performance of charging infrastructure is directly tied to the availability of trained, competent technicians and support staff.

For businesses—including utilities, electrical contractors, fleet operators, property owners, manufacturers, and service providers—EV charging is no longer a niche offering. It is a core operational requirement that affects customer satisfaction, brand reputation, and regulatory compliance.

Workforce Challenges Facing the EV Charging Industry

Why the Talent Shortage Exists

Despite strong demand, the EV charging industry faces a growing shortage of qualified workers. Several factors contribute to this challenge:

- **Exploding Demand:** Millions of new charging stations are required globally, creating unprecedented needs for installation, commissioning, and ongoing maintenance.
- **Specialized Skill Requirements:** EV charging work extends beyond traditional electrical skills. Technicians must understand software diagnostics, networking, high-voltage safety, and manufacturer-specific systems.
- **Training Gaps:** Postsecondary and industry training programs have not scaled quickly enough to meet demand, particularly for credentials such as EVITP (Electric Vehicle Infrastructure Training Program).
- **Technology Complexity and Variation:** Differences across charger manufacturers and platforms increase the need for adaptable, broadly skilled workers rather than narrowly trained specialists.

Regional Examples of Success:

Denver Economic Development & Opportunity, City of Denver

Conversations with Hertz and their projected growth in EV car purchases led to Denver to building a sector partnership titled ZEV (Zero Emission Vehicles). Core partners are Denver public schools and community colleges as well as organizations outside the traditional training pathways. Leading occupations included Auto Service Technicians. A grant from the State of Colorado helped fund training for 300 individuals.

Barriers to the growth in the sector is the lack of a robust field of training, poor alignment across the education system and policy and administration changes.

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Industry projections underscore the urgency of addressing workforce constraints. The United States could face a shortage of up to 35,000 EV technicians by 2028, creating operational bottlenecks for charging networks and fleet operators. At the same time, charging infrastructure expansion is expected to generate more than 160,000 jobs by 2032, nearly half of which will involve electrical installation, maintenance, and repair.

For workforce development boards and businesses, these trends signal both risk and opportunity. Organizations that fail to secure talent may face delays, downtime, and higher costs. Conversely, those that invest early in workforce development can position themselves as preferred employers and reliable partners in the EV ecosystem.

The Role of Workforce Development Boards

Workforce Development Boards serve as critical intermediaries between employers, jobseekers, educators, and public funding systems. Their mission is to ensure that workforce investments align with regional economic needs while creating pathways to family-sustaining employment.

In the EV sector, WDBs are uniquely positioned to:

- Analyze labor market data to identify current and emerging skill needs.
- Convene employers, training providers, and economic development partners.
- Leverage public funding to offset training costs for businesses.
- Support incumbent worker upskilling and career advancement.

For businesses, engagement with WDBs can reduce recruitment risk, accelerate training timelines, and improve employee retention.

Regional Examples of Success:

Workforce Solutions Borderplex, El Paso, TX

A substantial increase in electric vehicles in the area has resulted in a growing need by local electric companies building and installing EV vehicles. Tourism growth has been a leading factor in over 200 public EV charging station installations. The city of El Paso received a government grant to study climate and weatherization changes and the resulting workforce needs. Employers are primarily looking at incumbent worker training to meet EV installation and maintenance needs. One finding by the WDB is that EV knowledge and skills are not stand-alone jobs, but an add-on to existing electrical positions.

El Paso has met the growing need in the EV area due to a strong coalition of the City of El Paso, local chambers of commerce and the El Paso Electrical unions.

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WDBs prioritize sectors like EV charging based on several factors:

- **Labor Market Demand:** The entry or expansion of EV manufacturers, charging companies, and electrical contractors into a region signals sustained hiring needs.
- **State and Regional Incentives:** States such as Colorado and Illinois have tied incentive funding to workforce availability, encouraging alignment between economic development and training systems.
- **Employee Upskilling:** Employers increasingly seek to retain existing workers by providing clear advancement pathways tied to new EV-related competencies.

Partnerships with Economic Development Organizations

Collaboration between businesses, WDBs, and economic development agencies can yield measurable benefits, including increased tax revenue, reduced unemployment, and stronger supply chains. For WDBs, these partnerships often translate into expedited hiring pipelines and shared training infrastructure.

Funding Opportunities

WDBs and businesses can access a range of funding sources to support EV workforce initiatives, including:

- State workforce and economic development grants
- Climate and clean energy initiatives
- Federal apprenticeship and training funds

WDBs frequently act as navigators, helping employers identify and secure these resources.

Regional Examples of Success:

Grundy Livingston Kankakee Workforce Board (IL)

The building of a production plan by the Grotion company for EV installers and mechanics created a large need for knowledgeable and skilled workers. The Grundy Livingston Kankakee WDB, working in partnership with the Illinois State Economic Agency, was charged with recruiting and training at least 350 workers with a goal of 600. Incentive packages from the State helped to implement the strategies. The success of this effort has led to the county studying how to increase employer engagement in the EV sector. The experience and partnerships created from this effort have also begun to identify additional engagement opportunities for the WDB. The alignment with employer services and economic development leaders has been an important benefit of the WDB's work.

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Sharing success stories—such as effective apprenticeship programs or rapid workforce scaling—helps raise awareness of career opportunities in the EV sector. This visibility benefits WDBs and businesses by expanding applicant pools and strengthening employer brands.

Strategic Partnerships

Effective EV workforce development relies on collaboration among:

- Secondary and postsecondary education institutions
- Sector partnerships and industry associations
- Local chambers of commerce and labor organizations

Apprenticeships as a Scalable Solution

Registered apprenticeships are emerging as one of the most effective tools for addressing EV workforce shortages. They combine paid, on-the-job learning with structured instruction, allowing businesses to develop talent aligned with their specific technologies and processes.

Pre-Apprenticeships and Early Talent Pipelines

Pre-apprenticeship programs can introduce EV concepts within high school automotive and electrical curricula. These programs build awareness while reducing onboarding time for employers.

Enhancing Existing Apprenticeships

Rather than creating entirely new programs, many employers are integrating EV components into established apprenticeships in:

- Electrical trades
- Automotive service and repair
- Battery installation and maintenance

This approach reflects the reality that EV skills are often an extension of existing occupations rather than stand-alone jobs.

Focus on Incumbent Workers

For many businesses, the most immediate return on investment comes from upskilling current employees. Incumbent worker apprenticeships:

- Improve retention
- Reduce recruitment costs
- Provide clear advancement pathways

Overcoming Common Barriers

System Alignment

Misalignment across education, workforce, and industry systems can slow progress. WDBs can play a leadership role by articulating skill needs clearly and supporting business participation in curriculum development.

Policy and Administrative Challenges

Demonstrating how EV workforce initiatives support broader economic and environmental goals helps maintain policymaker support and funding continuity.

Limited Educational Engagement

Employer involvement is often the catalyst for educational institutions to modernize curricula and expand work-based learning opportunities.

Funding Constraints

While funding gaps remain, coordinated efforts—such as accelerator events and shared training models—can maximize existing resources and reduce duplication.

Implications and Next Steps for Workforce Development Boards

Workforce development is no longer optional in the EV industry sector. It is critical for WDBs to support businesses operating in or adjacent to the EV charging ecosystem. Strategic engagement can:

- Ensure access to skilled labor
- Reduce operational risk
- Improve employee retention
- Strengthen relationships with public-sector partners

Recommended actions include:

1. Engage with local businesses to assess talent needs.
 2. Explore apprenticeship and incumbent worker training models.
 3. Participate in regional sector partnerships.
 4. Align workforce strategies with broader sustainability and growth goals.
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Conclusion

The expansion of EV charging infrastructure represents a significant economic opportunity, but its success depends on workforce readiness. The workforce development boards are positioned to bridge the demand created by the growth of EV jobs and employers, jobseekers, educators, and training providers. They ensure that public workforce dollars are invested strategically so that local businesses can find skilled workers, and residents can access the training and support they need to access pathways to family-sustaining employment.

Resources

<https://www.aacc.nche.edu/?s=apprenticeship+resources>

<https://www.aacc.nche.edu/managing-and-sustaining-ev-apprenticeship-programs/funding-apprenticeship-programs-for-long-term-success/>

<https://www.dol.gov/agencies/eta/apprenticeship>

<https://apprenticeshipsforamerica.org/pages/afa-resources>

<https://www.nawdp.org/resources/registered-apprentice-standards/>

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