Building Reliable V2G Infrastructure
The Essential Role of Skilled and Trained Labor

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Why V2G is Different

V2G systems are far more complex than standard EV chargers

Advanced inverters, controls, and communications are required

The grid depends on these systems to deliver reliable power back

Interconnection requires coordination with utilities, aggregators, and software providers, and often involves different meter and protection designs than standard chargers

Risks Without Skilled Installation

Multiple chargers often share feeders and switchgear — one wiring or protection fault can affect the entire group

Improper installation can cause outages, damage equipment, and create serious safety hazards

With V2G, failure doesn't just inconvenience drivers — it undermines grid reliability and public trust

The Need for a Skilled and Trained Workforce

Installations must meet utility and regulatory requirements, like California's Rule 21 and UL 1741 SB

Electricians must understand bidirectional power flow, communications standards like ISO 15118 and IEEE 2030.5, and complex commissioning

Proper physical installation ensures software and communication systems work reliably

Commissioning requires validation of advanced inverter functions like voltage ride-through, anti-islanding, and secure utility communications

EVITP 5.0 curriculum now includes bi-directional charging, inverter functions, and commissioning requirements

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V2G: A Collaborative Effort

Utilities set interconnection and technical requirements

Aggregators and software providers manage fleets as “virtual power plants”

Platforms enable near-instant grid communication and optimize charging/discharging

Contractors and electricians build the safe, reliable infrastructure to support these systems

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Skilled Workforce = Safe, Reliable, Resilient V2G

If we want school buses to power our communities, we must build the charging infrastructure with the same care we build power plants with skilled and trained electricians at the foundation

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