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Enabling V2H

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Emporia at a glance

Affordable home energy hardware, software and utility programs, from a Colorado-based team.

450K
customers on our home energy management platform

700K+
devices deployed: energy monitors, EV chargers, home batteries and more

100+
active utility programs across multiple states (managed charging and battery storage)

Utility compliance
Deep expertise in rebate structures, demand response and IEEE 1547 grid codes.

Affordable-first hardware
Designed for utility rebate eligibility from day one.

Released products
Classic and Pro L2 EV chargers, Vue energy monitors, home batteries, load management.



Our goal: build the world's largest residential virtual power plant, working with utilities to support the grid and passing the value on to customers.

Active bidirectional projects

Two programs in active development, DC and AC, both aimed at reliable home backup.

DC bidirectional

Background

Multi-year program that reached pre-certification readiness, designed for UL 1741 SB certification at release and V2G interconnection in California. Now re-scoped for lower cost and broader vehicle compatibility as federal incentives and tariffs shift.

Release plans

Field pilot planned for Q2 2027 under CEC EPIC grant EPC-24-029, with 100 chargers and at least 30% in low-income and disadvantaged communities.

Vehicle compatibility

Designed to work with any vehicle that supports bidirectional DC charging. Interoperability testing with automakers is underway.

AC bidirectional

Background

AC bidirectional charger built on open standards, designed to pair with Emporia's whole-home platform.

Release plans

Planned for 2027 release with UL 1741 SC certification. Installs for V2H home backup at launch, with V2G turned on once interconnection details are understood.

Vehicle compatibility

Designed to work with any vehicle that supports bidirectional AC charging. Interoperability testing with automakers is underway.

Technology and portfolio approach

Two product architectures, one approach: universal interoperability through open standards.

DC: all-in-one

- Single unit for V2H and V2G
- Whole or partial home backup
- UL 1741 SB at release, designed for V2G interconnection in California

AC: two units

- **V2G unit:** V2G with no extra hardware
- **V2H add-on:** whole or partial home backup
- UL 1741 SC at release, V2H first, V2G once interconnection is clear

Grid modes

- **V2H:** grid-isolated backup
- **V2G:** grid-parallel export, once interconnected

Universal interoperability

Open vehicle and grid standards, no proprietary lock-in, for the programs we partner with.

More on the next slide

Whole-home fit

Designed to work with Emporia energy monitoring, the home battery, load management and solar-aware charging.

Interoperability plans

Open standards on both sides, for any bidirectional EV and the programs we partner with.

EV Vehicle side

Standards

ISO 15118-20 (Amd 1), SAE J3072 and IEEE 2030.5

Goal

Designed to work with any vehicle that supports bidirectional DC or AC charging.

Status

Interoperability testing with automakers is underway.

Grid Utility and aggregator side

Standards

IEEE 2030.5, plus any other protocols utilities or aggregators require (OCPP, OpenADR, etc.)

Goal

Standards-based integration with the utility and aggregator programs we partner with, so customers stay protected and in control.

Track record

Builds on the 100+ utility programs Emporia's platform already supports.

California experience

Emporia is a technology partner on CEC EPIC grant EPC-24-029, **'Grid Supportive Bidirectional V2X Residential EV VPP'**, led by Bidirectional Energy, Inc.

We develop the bidirectional charger and load management for the project.

100 chargers

planned across California, with at least 30% in low-income and disadvantaged communities

EPIC pilot

Field pilot of DC bidirectional charging in California homes, planned for Q2 2027.

Working with the CEC

Working with the CEC and California stakeholders on the path to V2H and V2G in California homes.

What would accelerate V2H in California

1. **Interconnection exemption for V2H-only (grid-isolated backup) installs,** so home backup can start now, with no interconnection application until bidirectional interconnection is available.
2. **Interconnection rules for standards-based AC V2G** (UL 1741 SC, SAE J3072, IEEE 1547), so V2G can turn on when utilities are ready.
3. **Stable, predictable incentives,** so manufacturers and vehicle partners can commit to bidirectional programs.
4. **Support for interoperability standards,** such as ISO 15118-20 (Amd 1) and IEEE 2030.5, so any bidirectional EV works with any home equipment and the utility and aggregator programs it joins.
5. **Continued pilot funding, like EPIC,** to prove V2H in real California homes, including low-income and disadvantaged communities.

Lead ask

For AC: V2H-only exemption now, V2G next.

Thank you



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