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Vehicle-to-Home Technologies: Enabling Bidirectionality in California

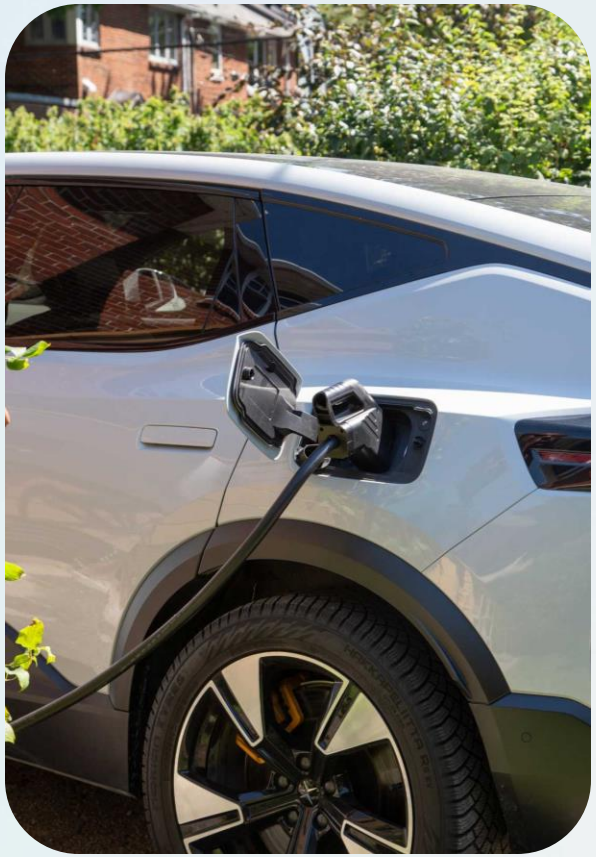
CEC Webinar on V2H Solutions – REDWDS Segment

Dan Fletcher, dcbel | November 10, 2026

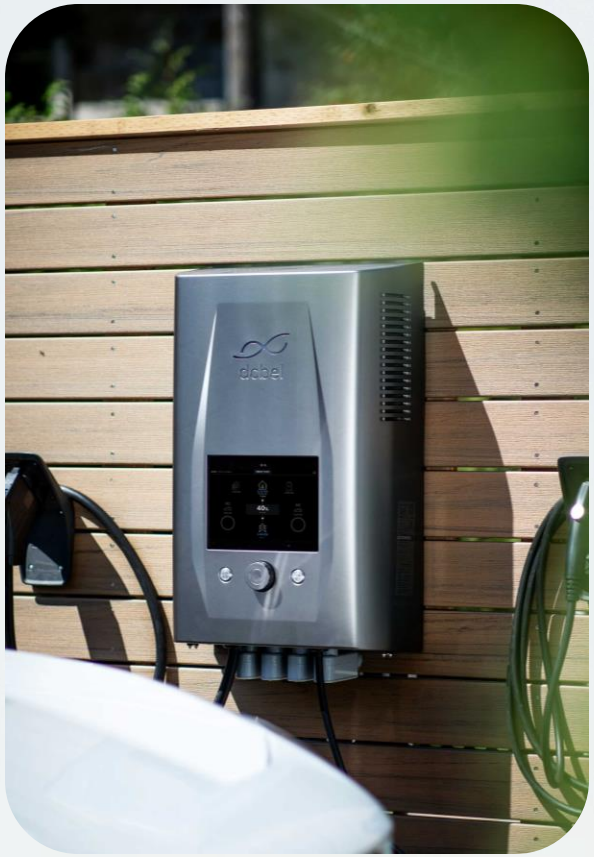
INTRODUCTION

dcbel

Peace of mind
all the time



- Ready for two-way EV power

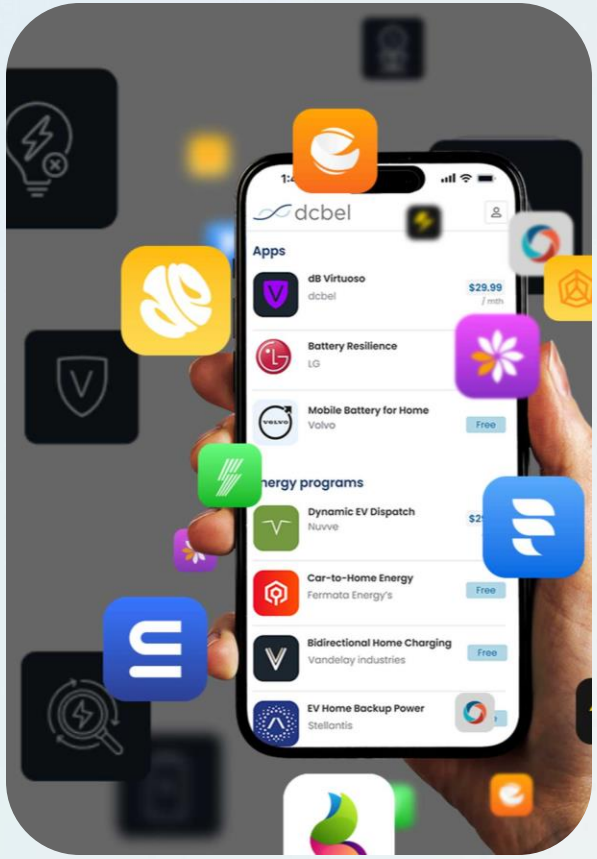


- Your home’s energy brain

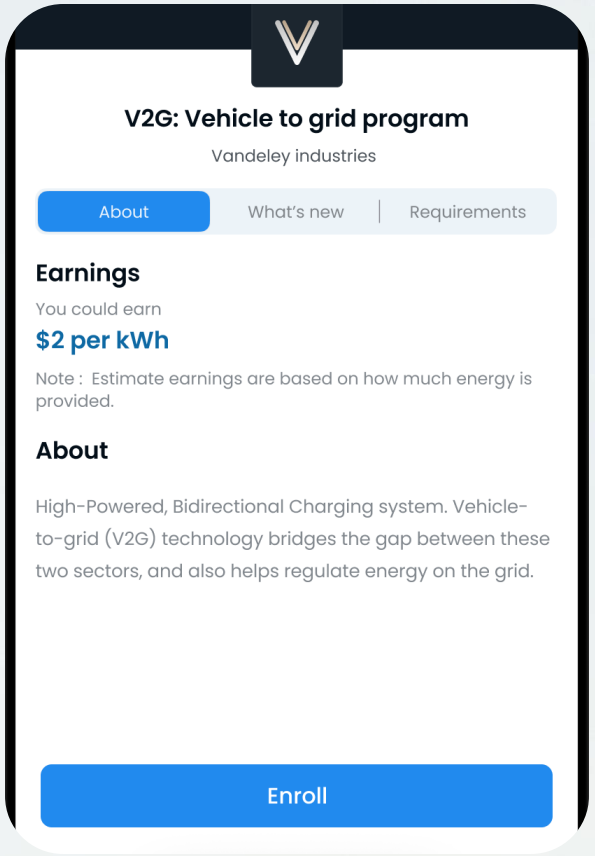


- Right energy, right time

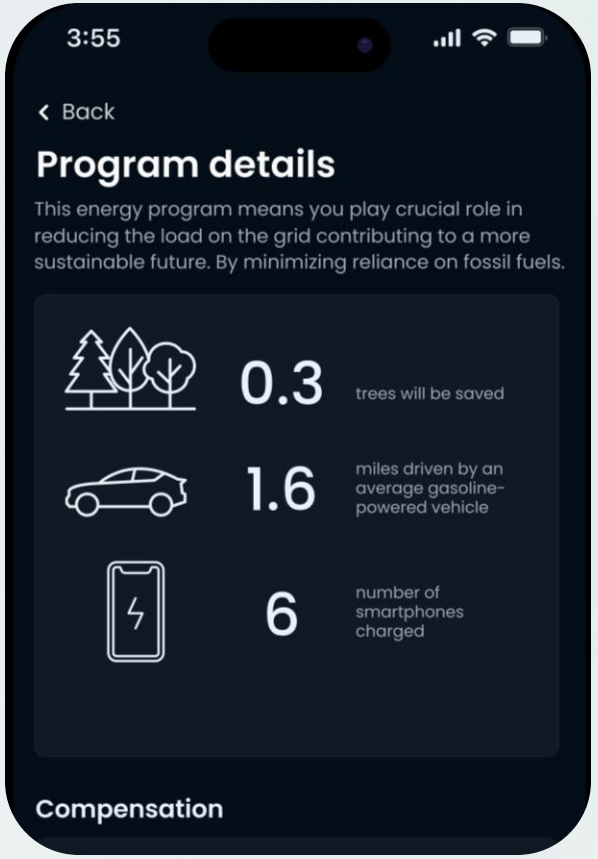
Smart trading without the effort



Choice of market participants*



Grid support that pays



Programs for a smarter & cleaner grid

INTRODUCTION

dcbel & REDWDS project

dcbel is a home energy technology company with expertise in power conversion. Technical breakthroughs made by the group have to led to a product known as the Ara Home Energy Station. With operations and team based in San Bruno, CA dcbel LLC is active in California, Massachusetts, Vermont, Texas, and Quebec. The dcbel Ara + Orchestrate software turn the home and EV into one grid-responsive system.



REDWDS: Ready Deployment with Dynamic Rates

dcbel role: prime recipient – hardware, software, customer enrollment, installation, CEC data reporting

PHASE 1 · THROUGH DEC 31, 2026

$2.47M for Phase 1

200	single-family homes
50%	in disadvantaged / low-income communities
35%	on dynamic rates

PHASE 2 · PERFORMANCE- & FUNDING-GATED

~$50M for Phase 2

1,000s	of homes – scaling to thousands
≥50%	in disadvantaged / low-income communities



REDWDS PROJECT

Key partners

01 **Southern California Edison**

Utility

02 **Sonoma Clean Power**

Community choice aggregator

03 **ev.energy**

Managed EV-charging platform

04 **PowerFlex**

EV charging & clean-energy solutions

05 **UC Davis**

University research

THE DCBEL BIDIRECTIONAL OFFERING FOR THE HOME

What the homeowner gets

01

V2H backup

The EV powers the home during outages

02

V2H for energy arbitrage

Use your vehicle to power your home when you want to – e.g., when the grid is expensive

03

Automated savings on dynamic rates

Charge when cheap, power the home when expensive

04

V2G export

Export when grid needs and prices are highest

PROGRAM REBATES

Covering Ara + install, interconnection, dynamic rate, and bidirectional EV

Up to

$10,700

Standard communities

Up to

$13,800

Priority communities (disadvantaged / low-income)

THE DCBEL BIDIRECTIONAL OFFERING FOR THE HOME

Deployments & supported vehicles

DEPLOYMENTS & GOALS

200

Active applications and site surveys

~15+

Installs completed by the end of 2026

EVITP

Certified installers – a large, active network

SUPPORTED VEHICLES

Any EV using **ISO 15118-20** bidirectional DC charging

Phase 1 — Nissan LEAF | Volvo EX90 | Polestar 3

Additional bidirectional OEM makes and models to be announced in early 2027



TECHNOLOGY

Technology & portfolio approach

AC or DC

Compatible with Certified DC bidirectionality (AC remains tbd)

DC

BIDIRECTIONAL

The inverter is in Ara, so V2H works independent of vehicle on-board hardware

Communications

Open standards

WITH THE EV

- ISO 15118-20
- CHAdeMO

WITH THE CLOUD / GRID

- REST API
- OpenADR
- IEEE 2030.5

IEEE 2030.5 for dynamic-rate and utility signals

Portfolio

Full home solution, not EV-only

IN ONE ENCLOSURE

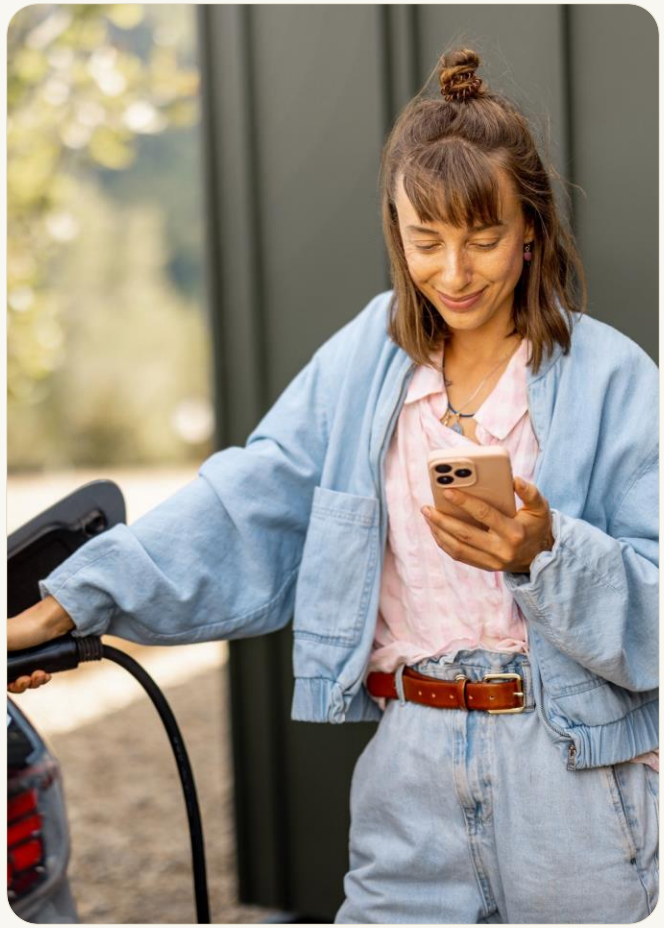
- Bidirectional EV charger
- Solar inverter
- Home battery integration
- Backup

One install
One interconnection
One app



LESSONS LEARNED

Customer feedback



+ What customers like

- Using the EV they already own as home backup power
- Hands-off savings – automation / AI handles dynamic-rate shifting
- One integrated system instead of multiple boxes and apps
- Rebates that significantly offset upfront cost

– What they don’t

- Short list of compatible bidirectional vehicles
- Installation and interconnection timelines are too long
- Complexity of dynamic rates and enrollment steps
- Many would be participants already have Solar NEM connection

LESSONS LEARNED

Barriers & challenges

Customer acquisition

01 Small pool of households with a bidirectional-capable EV

02 Reaching disadvantaged and low-income communities

03 Low awareness of V2H value and dynamic rates charged by utilities

Customer deployment

01 The cost of installation can be very high in urban centers due to upgrades on existing homes and availability and cost of electricians

02 Interconnection and permitting timelines vary by utility and jurisdiction

03 Installer process to migrate to this sort of technology

Resources & contact

LEARN MORE

dcbel

www.dcbel.energy

California program for homeowners

California Connected Home Rebate Program - dcbel

EV compatibility FAQ

intercom.help/dcbel/en/articles/6198151-is-my-ev-compatible

pv magazine USA coverage (May 2026)

dcbel nears 200 installations in California, plans for thousands more

CONTACT

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