

Initiative #1: Ensuring cost-effective and timely access to EV connections for the benefit of all Californians

SO2: Overcoming Barriers to EV Benefits in DVCs

INITIATIVE DESCRIPTION	Page(s) 19	PROPOSED INITIATIVE BUDGET	\$15,100,000
- This initiative advances the technology, tools, and program designs that make conventional and bidirectional EV charging faster, easier and less expensive across all customer segments, cutting emissions in the most affected communities, and driving rate-reducing load growth. - Serves SO 2 by alleviating pollution in priority communities, bridging transportation access for renters, multi-family, and non-residential customers, and addressing energy burden through lower EV adoption and fuel costs, while also advancing hardware, design, and construction innovations to lower the cost of infrastructure for MHDV and other non-residential charging, supporting SO 1. - Pairing TD&D that directly broadens residential charging access for DVC, low-income, renter, and multi-family customers with innovations that cut the cost and timeline of non-residential and MHDV charging is the most effective approach to SO 2, because the access and pollution barriers it targets concentrate in the same underserved communities and neither effort resolves them alone.		% OF TOTAL BUDGET (excl. admin & overhead)	16.70%
		# OF RESEARCH TOPIC AREAS	2

ALIGNMENT SUMMARY

STRATEGIC OBJECTIVE ALIGNMENT	Page(s) 20
SO2: “The EPIC program will accelerate innovation, demonstration, and innovative approaches to deployment to overcome obstacles to equitable transportation electrification benefits (including alleviation of pollution, bridging transportation access, and addressing energy burden) in Disadvantaged and Vulnerable Communities, low-income communities, and non-attainment air districts.”	

This Initiative supports SO 2 by developing and demonstrating scalable solutions that make EV load connections faster, simpler, and more affordable across customer segments. By overcoming infrastructure, process, and cost barriers that disproportionately burden DVCs, it accelerates equitable access to TE benefits.

CPUC ALIGNMENT	Page(s) 21
- CPUC is actively shaping how transportation load gets connected, with open questions spanning vehicle-grid integration, proactive distribution planning and cost optimization, flexible service connections, V2X interconnection, and affordability-driven rate design. - Demonstrated results reducing installation cost and duration, enabling MFH resident access to charging, and enabling V2X value would strengthen adoption forecasts and provide a defensible basis for program design, rate structures, interconnection policy, and future GRC filings. - Pre-commercial solutions must be proven in a utility environment before supporting large-scale investment, placing them outside the GRC's scope. Federal programs target national charging networks and early-stage tech rather than utility-specific TD&D, and private investment favors proprietary tools over the shared multi-IOU and CEC data this work requires.	

1.2 Advancing residential TE with specific emphasis on ESJ Communities

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WHAT PROBLEM ARE WE SOLVING?

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Over 80% of light-duty EV charging happens at home, yet cost, complexity, and visibility barriers constrain uptake. Single-family installs frequently trigger panel, service, or upstream distribution upgrades costing up to \$10,000 or more, while at least two-thirds of California multi-family residents lack home charging access, blocked by shared-infrastructure upgrades, property owners lacking incentives to act, and tenant-level billing solutions that do not exist at scale. These are the gaps the Commission identified for SG 1 — charger capital and ownership costs, DAC and low-income charging access, and localized distribution impacts — and they fall hardest on renters and ESJ households in multi-family and parking-constrained housing.

START	2027
OUTPUTS	2028-2030
MARKET READY	2030-2050

ALIGNMENT SUMMARY

WHAT IS THE DISTINCT RESEARCH APPROACH?

- Demonstrates lower-cost, vendor-agnostic residential charging solutions that avoid triggering panel, service, or upstream distribution upgrades in single- and multi-family settings.
- Advances more cost-effective V2X, including AC bidirectional charging and more accessible program designs, that deliver grid value while strengthening the customer value proposition.
- Tests shared multi-family charging infrastructure with tenant-level billing and submetering to resolve property-owner coordination and cost-recovery barriers.
- Pairs customer-facing pre-purchase tools and DAC-focused program, pricing, and incentive design with improved visibility into evolving residential load for program targeting and system planning. (Gaps addressed, 43)

HOW WILL YOU KNOW YOU ARE SUCCESSFUL?

- Validated lower-cost charging and V2X approaches that connect EVs without triggering panel, service, or upstream grid upgrades, with avoided-upgrade value quantified.
- Tenant-level billing, shared-infrastructure, and DVC-focused program designs that expand charging access for renters, multi-family, and low-income households
- **Primary outcome:** Expanded, lower-cost residential charging access in DAC and low-income communities. **Metrics:** Reduced customer installation costs, count of EV connections completed without upgrades, and increased charging access for underserved households.
- Metrics and Impact Assessment p. 44

HOW WILL YOU COORDINATE?

- CEC funds earlier tech validation, data quality and interoperability standards, and equitable-participation research, which complements PG&E testing and utility system integration of cost-reducing tech for conventional and V2X charging, new program design and billing solutions for renter, MFH and DVC households. (Coordination p. 45)
- Builds on EPIC 4.02A (Socket of the Future), which enables L2 charging for 100A-panel customers without upgrade, EPIC 4.03 MFH and parking-constrained customer charging solutions, and extends EPIC 4.12 and PG&E’s VGI V2X Residential Pilot beyond single family homes and into more V2X use cases. (Leveraging Past RD&D p. 44)
- Program, pricing, and incentive design draws on demand-flexibility valuation and EV & DER orchestration work in **5** Topic 2.3. (Gaps Addressed p. 43)