

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

SO1: Reducing Medium and Heavy-Duty Vehicle Charging Infrastructure Costs

INITIATIVE DESCRIPTION	Page(s) 19		
- Advances charging technologies, construction approaches, and utility solutions that reduce infrastructure costs at the component, site, and portfolio level. - Demonstrates methods that increase power density, improve utilization of existing grid capacity, and avoid or defer distribution upgrades associated with transportation electrification. - Reduces deployment timelines through streamlined site design, customer integration, and charging infrastructure deployment approaches. - The RTAs in this initiative provide scalable pathways to lower charging infrastructure costs, avoid unnecessary grid investments, and support rate-reducing load growth, with RTA 1.1 directly supporting fleet and other non-residential charging under SO 1 and RTA 1.2 supporting solutions for residential customers under SO 2.		PROPOSED INITIATIVE BUDGET	\$15,100,000
		% OF TOTAL BUDGET (excl. admin & overhead)	16.70%
		# OF RESEARCH TOPIC AREAS	2

ALIGNMENT SUMMARY

STRATEGIC OBJECTIVE ALIGNMENT	Page(s) 20
SO1: “The EPIC program will accelerate innovation, demonstration, and innovative approaches to deployment that support the reduction of the IOU cost of medium- and heavy-duty charging infrastructure installations, and associated IOU cost of grid upgrades.”	

This initiative reduces charging infrastructure and grid-upgrade costs by advancing lower-cost charging technologies, streamlined deployment approaches, and grid-aware integration strategies, together accelerating transportation electrification while minimizing the cost of serving new EV load.

CPUC ALIGNMENT	Page(s) 21
- CPUC decision-makers need utility-scale evidence on how to achieve California's MHDV electrification goals without driving unnecessary charging infrastructure and distribution-system costs. - This initiative generates cost, performance, reliability, and customer-experience data on technologies and deployment approaches that can reduce both charging infrastructure installation costs and utility upgrade requirements. - Initiative results support future transportation electrification program design, forecasting, distribution planning, and infrastructure investment decisions by identifying scalable pathways to lower-cost MHDV charging deployment. - The required multi-IOU, multi-site, and multi-vehicle demonstration data are unlikely to be produced through private-sector investment alone and are most appropriately developed through EPIC-funded RD&D.	

1.1 Accelerating Non-Residential, MHDV, and Fleet Electrification

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WHAT PROBLEM ARE WE SOLVING?

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MHDV charging sites have average costs of \$800k or more, with charger activation averaging 25 months in PG&E's service area. Key sources of these costs are last-mile line extension, distribution capacity upgrades, and trenching, which vary widely by site and often lead to abandoned projects. Additionally, program and incentive structures not designed around fleet operational needs. These costs and delays disproportionately affect small operators and weigh heaviest when delayed TE projects are in DVCs and non-attainment air districts.

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START	2027
OUTPUTS	2028-2030
MARKET READY	2030-2045

ALIGNMENT SUMMARY

WHAT IS THE DISTINCT RESEARCH APPROACH?

- Demonstrates technologies that increase power density per site and avoid distribution capacity upgrades, plus V2X-capable site designs that increase value and can lower infrastructure and/or installation cost.
- Advances plug-and-play hardware, automated site assessment, and interoperability across EVSE, OEM telematics, and utility systems to compress the activation timeline.
- Develops portfolio-level siting, capacity-assessment, and repeatable site designs for multi-site customers such as transit agencies and depot operators, prioritizing demonstration in DAC, low-income, and non-attainment air districts.
- Gaps Addressed p. 40

HOW WILL YOU KNOW YOU ARE SUCCESSFUL?

- **Key Outputs:** Validated cost, performance, and reliability evidence across vehicle types, site conditions, and grid conditions, plus published replicable cost models for use beyond PG&E.
- Evidence on where cost and timeline savings are greatest, helping target future deployment toward the highest-pollution, highest-burden communities.
- **Primary outcome:** Lower-cost, faster non-residential and MHDV charging that accelerates fleet electrification. **Metrics:** Reduced infrastructure cost per site and utility-side cost to serve new load, and shorter EVSE installation time.
- Metrics and Impact Assessment and Expected Outcomes p. 41

HOW WILL YOU COORDINATE?

- CEC funds earlier-stage technology development and validating tech to enable multi-MW charging, while PG&E will advance these lab-validated solutions and other hardware, design, and construction innovations in field demonstrations on PG&E's distribution system (Coordination with EPIC Administrators p. 42)
- Builds on EPIC 4.01 (propensity modeling, extending it to non-residential forecasting), PG&E's V2X Commercial Pilot (non-residential V2X pilot data and pricing design), and EPIC 3.03, which underpins the Flex Connect program that has unlocked 4GWh+ for grid-constrained customers. (Leveraging Past RD&D p. 41)
- Related: V2G interconnection is advanced in RTA 6.1 and bridging solutions are advanced in RTA 6.2.