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Notice of Funding Opportunity

Title: California Energy Commission – Vehicle-to-Building Technologies for Resilient Backup Power

Website: <https://www.energy.ca.gov/solicitations/2021-10/gfo-21-303-vehicle-building-technologies-resilient-backup-power>

Funding: Total: \$19,500,000. Maximum awards: \$4M, depending on group.

Dates: Pre-Application Workshop: November 9, 2021 at 10AM
Deadline for Written Questions: November 14, 2021
Deadline to Submit Full Applications: January 7, 2022

Summary: This solicitation seeks to accelerate development of technologies and easy-to-implement products that allow individual or fleets of PEVs to power residential, commercial, or public buildings including but not limited to schools, community centers, or government facilities during electricity outages or intentional islanding events.

Project Topic Areas:

Group 1: Rule 21 Compliant or Exempt V2B Technologies

Group 1 projects must demonstrate grid interactive V2B technologies that are compliant with Rule 21 as written (for example, off-board DC chargers with necessary certifications) or non-grid interactive V2B technologies for which Rule 21 is inapplicable. Group 1 projects are not required to be located in DACs and/or LICs, however projects located in and benefiting DACs, LICs, and/or Native American Tribes are eligible for additional points during scoring. Projects must advance the technology readiness of a V2B system that enables safe disconnection from utility distribution systems and provision of backup power from the on-board PEV battery to building loads through facility wiring. Projects must also evaluate the impact of V2B technologies on PEV battery degradation and any potential implications for battery warranty provisions.

Group 2: Rule 21 Non-Compliant V2B Technologies and Enablers

Group 2 projects must conduct applied research and development of grid interactive V2B technologies that are not compliant with Rule 21 as written: for example, use of on-vehicle inverters to discharge AC electricity to building loads. Group 2 projects can include laboratory testing and/or limited demonstrations in controlled environments such as those developed in support of the California IOU Vehicle-to-Grid (V2G) AC pilots created in CPUC Decision 20-09-035. Projects must advance the technology readiness of an innovative design(s) and/or prototype(s) of a V2B technology(ies) or enabling component(s) that reduces cost, increases performance, or eliminates other barriers to customer use or manufacturer integration. Examples of potential innovations include but are not limited to: development, testing, and/or limited demonstration of bidirectional on-board chargers; advancements that enable use of propulsion system components for bidirectional charging; software solutions for continuous battery health optimization through bidirectional charging.

Group 3: Rule 21 Compliant or Exempt V2B Technologies Demonstrated at Public Buildings in DACs and/or LICs

Group 3 projects must demonstrate grid interactive V2B technologies that are compliant with Rule 21 as written or non-grid interactive V2B technologies for which Rule 21 is inapplicable at buildings that are accessible to the public facilities and located in disadvantaged and low-income communities. Projects must advance the technology readiness of a V2B system that enables safe disconnection from utility distribution systems and provision of backup power from the on-board PEV battery to building loads through facility wiring. Projects must also partner with community-based organizations (CBOs) in project design and execution to improve engagement, dissemination, and delivery of benefits.

The solicitation supports development of V2B technologies at various stages of technology readiness and regulatory compliance. Groups 1 and 3 fund technology demonstration and deployment projects in real-

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world conditions with V2B technologies that have a higher technology readiness level (TRL, approximately 6-8). Group 2 funds applied research and development projects focused on laboratory testing or controlled demonstrations of earlier stage technologies (approximately TRL 3-5). This solicitation is open to all vehicle types and classes that have a primary function other than provision of backup power or other electric services. However, EPIC funds cannot be used to purchase vehicles for the proposed project. Applicants may use match funds to purchase vehicles. Proposals are encouraged to engage broad project partners including automotive and charging equipment manufacturers, charging service providers and aggregators, and electric utilities as relevant for the specific technology, demonstration, and target markets. Proposals are also encouraged to identify demonstration locations with high likelihood of experiencing public safety power shutoffs or other outages and to describe how the proposed V2B technology can increase resilience and reliability for California ratepayers. Projects requesting the maximum amount of funds are encouraged to propose larger demonstrations with multiple sites.

Funding:

There is up to \$19,500,000 available for grants awarded under this solicitation. Match funding is required in the amount of at least 30 percent of the requested project funds for Group 1, 20 percent of requested project funds for Group 2, and 10 percent of the requested project funds for Group 3.

Project Group	Available Funding	Minimum Award	Maximum Award	Minimum match funding (% of EPIC Funds Requested)
Group 1	\$6,000,000	\$3,000,000	\$4,000,000	30%
Group 2	\$7,500,000	\$2,000,000	\$4,000,000	20%
Group 3	\$6,000,000	\$3,000,000	\$4,000,000	10%

Project Requirements:

Projects funded through this solicitation must advance the TRL of the proposed V2B technology and demonstrate and/or validate its ability power building loads using energy stored in on-board PEV batteries during outages or when intentionally islanded from utility distribution systems. Projects may, but are not required to, provide additional services beyond provision of backup power (for example, demand charge management or participation in demand response programs). All proposals must describe a path to commercialization for the proposed V2B technology, including but not limited to: identification of beachhead and later markets; estimates of market size and number of interoperable PEVs; and technology or product development timeline(s). As per AB 841, all electrical vehicle charging infrastructure funded or authorized, in whole or in part, by the CEC must be installed by someone with an Electric Vehicle Infrastructure Training Program (EVITP) certification. California Public Resources Code requires EPIC-funded projects to: Benefit electricity ratepayers; and Lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state’s statutory energy goals. To maximize the impact of EPIC projects and to promote the further development and deployment of EPIC-funded technologies, a minimum of 5 percent of CEC funds requested should go towards technology transfer activities.

Eligible Applicants:

This solicitation is open to all public and private entities with the exception of local publicly owned electric utilities. In accordance with CPUC Decision 12-05-037, funds administered by the CEC may not be used for any purposes associated with local publicly owned electric utility activities.