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## **WeaveGrid Comments on EPIC 4 Proposed Research Initiatives**

*Additional submitted attachment is included below.*



**WeaveGrid**

222 7<sup>th</sup> Street, 2<sup>nd</sup> Floor  
San Francisco, CA 94103  
[weavegrid.com](http://weavegrid.com) | 650-590-9021

Amanda Myers  
Policy & Regulatory Affairs Manager, West  
[amanda@weavegrid.com](mailto:amanda@weavegrid.com)

August 18, 2021

California Energy Commission  
1516 9<sup>th</sup> Street  
Sacramento, CA 95814

**Subject: WeaveGrid Comments on the Development of the California Energy Commission Electric Program Investment Charge Investment Plans 2021-2025 Workshop Presentation 2021-08-04, Docket No. 20-EPIC-01**

WeaveGrid appreciates the opportunity to provide comments on the Workshop Presentation for the Electric Program Investment Charge (EPIC) 4 Investment Plan.<sup>1</sup> Proposed research initiatives outlined in the California Energy Commission (CEC) EPIC 2021-2025 Investment Plan signal the state's strong commitment to climate goals and supporting the state's innovation economy.

WeaveGrid is a California-based vehicle-grid integration (VGI) software company that uses vehicle telematics – the intelligence and connectivity already embedded in electric vehicles (EVs) – and utility data to offer an interface for utilities to engage with automotive manufacturers and EV drivers. The onboard computer of EVs records and reports charging-related data, such as state of charge (i.e., the assessment of the energy left in a battery), charging location, energy, and power draw, and the vehicle's communications technology is employed to read charging data and manage charging remotely, without a dedicated interface device. By leveraging integrations with automotive manufacturers and gaining authentication from drivers who opt in to share their data securely, WeaveGrid offers utilities both aggregated charging data and the ability to manage charging for enrolled EV customers. WeaveGrid is a market leader in providing these solutions, which are successfully deployed in multiple utility programs across the United States.

CEC staff solicited input from stakeholders on the proposed research initiatives. Our comments herein comprise WeaveGrid's input. WeaveGrid's top priority initiative is *19. Integrating Distributed Energy Resources (DERs) for Grid-Supportive Vehicle Charging*.<sup>2</sup> A 2019 Lawrence

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<sup>1</sup> Draft Initiatives for EPIC 4 Workshop Presentation, August 4, 2021, <https://www.energy.ca.gov/event/workshop/2021-08/electric-program-investment-charge-2021-2025-investment-plan-scoping-draft>.

<sup>2</sup> Workshop Presentation, Slide 30.

Berkeley National Lab and Pacific Gas and Electric study found that high levels of EV adoption in residential areas with unmanaged charging resulted in a significant amount of the feeders in the study area reaching or exceeding their maximum loading limit.<sup>3</sup> The same study concluded that managed charging is the most cost-effective solution to reduce distribution grid impacts. WeaveGrid's optimized charging software solution is designed to address grid edge strain from EVs. We are eager to explore research opportunities with the CEC that can deepen the collective understanding of charging grid impact mitigation.

Moreover, we have suggested changes and recommendations for research initiative *18. Enabling Plug-in Electric Vehicles as Distributed Energy Resources*.<sup>4</sup> We appreciate the focus on advancing software for integrating plug-in electric vehicles (PEVs) charging with building management systems. This is a valuable application for charging software but is one of many within a suite of currently available and to-be-established applications – this initiative could be further expanded to a wide range of vehicle-grid integration use cases, including V1G and other V2X use cases, to fully realize the role that software can play to meet grid needs. Furthermore, CEC staff should consider expanding the demonstration of high-accuracy, low-cost submeters to the PEVs themselves as the vehicle telemetry and metrology can be used for a range of charging use cases.

The EPIC Program undoubtedly contributes to California's climate, transportation electrification, and innovation leadership. We look forward to the next tranche of research initiatives and will seek to engage in relevant opportunities that focus on optimizing EV charging. Thank you for your consideration of these comments.

Sincerely,

/s/ Amanda Myers

Amanda Myers  
Policy and Regulatory Affairs Manager, West  
WeaveGrid  
Telephone: 650-590-9021  
Email: amanda@weavegrid.com

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<sup>3</sup> J. Coignard, P. MacDougall, F. Stadtmueller and E. Vrettos, "Will Electric Vehicles Drive Distribution Grid Upgrades?: The Case of California," in *IEEE Electrification Magazine*, vol. 7, no. 2, pp. 46-56, June 2019, <https://ieeexplore.ieee.org/document/8732007>.

<sup>4</sup> Workshop Presentation, Slide 29.