



May 31, 2022

Honorable Chairman Liane M. Randolph and
Honorable Board Members California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Submitted via public comment docket <https://ww2.arb.ca.gov/applications/public-comments>

Re: SUPPORT Proposed Advanced Clean Cars II Regulations (accii2022)

Dear Chair Randolph and Honorable Board Members:

Fermata Energy is pleased to support the proposal for the Advanced Clean Cars II regulation that will seek to reduce greenhouse gas emissions from new light- and medium-duty vehicles beyond the 2025 model year, and increase the number of zero-emission vehicles (ZEVs) for sale in California. As a follow up and complement to this landmark regulation, we request that the Board in its June 9th resolution accompanying the Advanced Clean Cars II hearing direct staff to analyze how CARB can accelerate V2X adoption through regulation or incentives, not only in light duty vehicles but in medium- and heavy-duty vehicles and non-road equipment, trains, and vessels. Fermata Energy operates Vehicle-to-Everything (V2X) bidirectional charging technologies that integrate EVs with buildings and the grid, turning EVs into valuable storage assets that reduce energy costs, stabilize the grid, increase energy resilience, and combat climate change. Fermata Energy enables utilities to more rapidly integrate renewable energy onto the grid, and Vehicle-to-Building (V2B) and Vehicle-to-Grid (V2G) revenue makes EVs more cost-effective. In short, Fermata Energy offers solutions to two major challenges we face today: the integration of clean, renewable energy, and the adoption of EVs.

In addition to developing the hardware and software required to perform V2X activities, Fermata Energy has spent nearly 10 years studying how V2X can unlock additional value streams from EVs, including those that are commercially viable today without regulatory intervention and how to best monetize these value streams. Fermata Energy has extensive experience with analyzing use cases, monetization mechanisms, and business models to maximize the benefits of V2X technologies. Vehicle Grid integration (VGI) encompasses both V1G (smart and managed charging solutions) and V2X (bidirectional power transfer to the grid, building, home, microgrid, or any other external load source). While V1G enables EVs to



participate in off-peak charging programs and provide automated load management, V2X unlocks additional value streams and benefits for ratepayers and the grid by enabling the discharge of power stored onboard an EV. V2X unlocks the value of EVs to provide all of the services that that V1G does, in addition to backup power/resilience, demand charge management, demand response, system-wide peak shaving, and ancillary services, among others.

The interest in V2X commercialization is widespread and accelerating, as shown by the recent U. S. Department of Energy (DOE) [Vehicle to Everything Memorandum of Understanding \(V2X MOU\)](#) that the Commission signed.¹ Participants in the V2X MOU include the U.S. Department of Energy's Offices of Vehicle Technologies, Electricity, Technology Transitions, and Cybersecurity, Energy Security, and Emergency Response, as well as The California Energy Commission, The California Public Utilities Commission, The City of Lancaster and City of Lancaster Community Choice Aggregator, The City of Los Angeles, Fermata Energy, First Student, Ford Motor Company, General Motors LLC, International Brotherhood of Electrical Workers–Chapter 11, Lion Electric Inc., Los Angeles Department of Water and Power, Lucid Group, Inc. (Lucid Motors), the National Electrical Contractors Association – Los Angeles, Nissan, Nuvve Holding Corp., Pacific Gas and Electric Company, Rhombus, Sacramento Municipal Utility District, San Diego Gas & Electric, Southern California Edison, and Zeem Solutions.²

However, there are many barriers to V2X and that is one reason this MOU was formed. Board Member De La Torre also attended the kick-off event, and we respectfully request that CARB join this MOU. More importantly, however, **we request that the Board in its June 9th resolution accompanying the Advanced Clean Cars II hearing direct staff to return in no more than three years with an analysis of what CARB can do by regulation or incentives to accelerate V2X adoption, not only in light duty vehicles but in medium- and heavy-duty vehicles and non-road equipment, trains, and vessels.** While we would have preferred to see V2X provisions included in the Advanced Clean Cars II regulations, we recognize that V2X commercialization is a complex topic and that it applies to more than light duty vehicles. Thus, we believe a more comprehensive assessment of both alternating and direct current forms of V2X by CARB staff is appropriate and respectfully request the Board to formally request this in Board resolution.

Fermata Energy's experience with V2X shows that V2X technology creates multiple win-win scenarios, especially for low- and moderate-income EV drivers. For example, V2X is a

¹ [Department of Energy Announces First of Its Kind Collaboration to Accelerate "Vehicle-to-Everything" Technologies | Department of Energy](#)

² Ibid.



win for drivers and utility customers by providing access to affordable and reliable EV transportation, lower electricity costs, and backup power. V2X is a win for utilities by achieving multiple goals with the same investment dollar (e.g., increased EV adoption, GHG reduction, etc.), and increasing reliability/resilience, customer satisfaction and asset utilization. V2X is a win for government and regulatory agencies by providing clean, safe, reliable, and affordable transportation. V2X technology also provides mobile assets that can be flexibly deployed to provide power for a range of resilience scenarios impacting areas and communities most at risk.

We feel strongly that CARB has a unique opportunity to make a major difference in the commercialization of V2X technology to address many issues that California and other ZEV states face. If CARB were to provide incentives or regulations on V2X, as we are recommending, it could provide market confidence for vehicle manufacturers and V2X charging equipment providers, and accelerate V2X by providing a positive value to consumers, including low- and moderate-income consumers. CARB action to unlock the full potential of V2X could help mitigate the emerging California generation shortage because with V2X, EVs become grid assets.³ For example, PG&E CEO Patti Poppe recently noted that EVs on the road in “PG&E’s service area today have 6,700 MW of capacity,” which equals “three Diablo Canyon nuclear power plants. It’s on the road today, and we are not using it as a power source. We’re only using it as a power draw.”⁴ CARB action on V2X also could help address the duck curve, evening ramp, and summertime “needle” peaks in California’s generation and distribution grids. CARB action to help commercialize V2X could create a low-cost, cleaner alternative to the zero-emission portable gensets required by CARB’s recent Small Off-Road Engines (SORE) regulation. Finally, Fermata Energy encourages CARB to support all connectors, protocols, and EVSE sizes in any V2X recommendations for incentives or regulation in order to foster competition and encourage lower cost solutions.

Respectfully submitted,

John Wheeler

/s/ John Wheeler

Chief Financial Officer

Fermata Energy

³ Decommissioning of Diablo Canyon and lack of hydropower in drought years.

<https://www.utilitydive.com/news/california-drought-could-halve-summer-hydropower-share-leading-to-more-nat/624489/>

<https://www.utilitydive.com/news/california-grid-reliability-2022-2023-summer/609261/>

⁴<https://www.latimes.com/environment/newsletter/2021-10-14/as-california-fires-burn-pge-ceo-promises-fixes-boiling-point>