

**DOCKETED**

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*Comment Received From: Angela  
Submitted On: 10/24/2022  
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## **Monarch Tractor Comments on CTP Plan Update**

Please find our comment letter attached.

*Additional submitted attachment is included below.*



Patrick Brecht  
California Energy Commission  
715 P Street  
Sacramento, CA 95814

**RE: Comments on the October 6 Advisory Committee Meeting for the Clean Transportation Program**

Dear Mr. Brecht:

Monarch Tractor appreciates the opportunity to submit comments regarding the 2022-2023 Investment Plan Update for Clean Transportation Program - Revised Staff Report. We encourage the Commission to recognize the tremendous, near-term promise of zero emission vehicles (ZEVs) in the agricultural sector, and include funding for these vehicles and infrastructure to support them in the Investment Plan. We further encourage the agency to explore unique opportunities for agricultural electrification projects to pair with solar or other renewable energy resources and demonstrate and scale beneficial vehicle-grid integration opportunities.

Monarch Tractor is an innovative, mission driven company, headquartered in Livermore, California, that is committed to enabling clean, efficient, and regenerative farming practices by making them economically viable. The Monarch Tractor brings together the benefits of electrification, automation, and insightful data to enable farmers to transition to more productive, precise, and sustainable farming practices. Providing a superior platform for farmers, Monarch Tractor is focused on delivering meaningful change for today's farmers and the generations of farmers to come.

**Significant Air Quality, Climate Benefits from Autonomous, Electric Tractors**

Monarch's compact tractor is an attractive platform for significantly reducing criteria and greenhouse gas emissions in the agricultural sector. The compact tractor segment offers the opportunity for significant emissions reductions due to its high volume, high utilization, and significant annual growth.

The Monarch Tractor is a zero-compromise solution, offering equal or greater performance compared to even the most advanced diesel tractors. We also offer a host of additional benefits for farmers, farming operations, and the environment – including improved worker health and safety, data driven precision applications, and exportable power where the tractor can be used



as a mobile generator, displacing additional combustion from on-farm equipment or supporting other vehicle-grid integration opportunities.

With the potential for emissions-free, 24-hour operations, a single Monarch Tractor can replace two or three diesel tractors operating 12- or 8-hours per day – providing outsized air quality, climate and energy benefits on a dollar-per-emission reduction basis. This operation profile helps facilitate regenerative farming practices, as well, due to lower operating costs, lower operating impacts, and precision operations, which are often impractical or cost prohibitive for many California farmers today.

To facilitate continuous operations, Monarch Tractors include swappable battery capability. This provides the added benefit of charging during off-peak hours and/or when renewables are available, and also opens opportunities for electrifying other operations on the farm or providing backup power during grid events. By electrifying the center of the farm ecosystem – the tractor – the State can pave the way for entire farm operations to be powered by renewable energy. We encourage you to explore these opportunities and others that can maximize the grid integration, climate and air quality benefits of ZEVs in the agricultural sector – through both the Clean Transportation Program and other programs at CEC, such as research and development through the Electric Program Investment Charge (EPIC) program.

### **Clean Transportation Program Should Expand Dedicated Funding for ZEVs in Agriculture**

These technologies are ready, and the agricultural ZEV market is ready to scale. **We encourage CEC to identify off-road and agricultural applications as eligible for CEC’s general heavy-duty/off-road funding programs, and we further encourage you to consider developing targeted programs to support integrated ZEV infrastructure/charging and vehicle/grid applications specifically in the agricultural sector.**

While we appreciate there is significant infrastructure funding available under the “Clean Trucks, Buses and Off-Road Equipment ZEV Infrastructure” category, we are concerned that the bulk of this funding may target on-road or other freight-related categories, which are already supported through a wide array of other programs. Indeed, the Investment Plan Update makes no reference to ZEVs in agriculture and/or tractors (aside from “tractor-trailers.”) We hope you will include references to electric offroad tractors and ZEVs in agriculture in your final Investment Plan Update, and we also encourage you to explore infrastructure needs for ZEVs in agriculture in the 2<sup>nd</sup> AB 2127 Assessment, including agricultural-related charging needs necessary to achieve the Governor’s target of 100% ZEVs in off-road applications by 2035.



## **Incorporate ZEVs in Agriculture into Broader Planning and Incentive Framework at CEC, Other Agencies**

We also encourage you to specifically consider pilot projects and demonstrations to fully explore the potential for automated, electric tractors to not just reduce diesel pollution, but to shift agriculture from a “hard to abate” sector to a beachhead in the state’s efforts to electrify end uses and achieve deep decarbonization and ultimately, net-zero or net-negative emissions. These pilot programs could be supported through the Clean Transportation Program, EPIC, and/or other programs, and coordinated with vehicle incentive programs at CARB, healthy soils programs at CDFA, utility programs at CPUC, and others to achieve rapid transformation of vehicle stock, energy use, and emissions in the agricultural sector.

Finally, we encourage CEC to fully integrate ZEVs in the agricultural sector into its broader planning and programs, including the Integrated Energy Policy Report, Electric Vehicle Infrastructure Deployment Assessments, EPIC, electrification and grid resilience forums, and other relevant efforts. Efforts to support the adoption of zero emission tractors will allow California to continue its leadership in ZEVs and become the gold standard for the deployment of sustainable agricultural technologies.

### **Response to Questions**

We appreciate staff teeing up specific questions in the presentation, and offer our feedback on those items below:

1. Given the prescriptive nature of the General Fund allocations from the State Budget Acts of 2021 and 2022, should the Investment Plan shift fungible Clean Transportation Program dollars to other categories? (e.g. low-carbon fuel production; ZEV manufacturing; workforce training and development?)

Whether fungible dollars or prescriptive ones, the Investment Plan should include dedicated funding for ZEVs in agriculture, which offer the potential of a whole-farm solution to shift away from combustion and emissions in California’s agricultural sector, including potentially large sources of emissions in low income and disadvantaged communities.

We also appreciate the value and high demand for ZEV manufacturing funding, as an applicant and recipient of those awards, ourselves. This funding is critical to support our growth and that of other ZEV manufacturers in California and develops the skilled workforce needed to usher in the Zero Emission Revolution. We feel this program has



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already proved its worth and quite valuable, and think the state would be well served to expand it further, should discretionary funding be available to do so.

2. Does the timing and allocations between light-duty and medium-duty/heavy-duty infrastructure investments in the Investment Plan strike the right balance for ZEV acceleration? If not, where should adjustments be made and why?

As broad categories, we feel the state has approached timing and allocations between light-duty and medium/heavy-duty sectors appropriately. An initial focus on light-duty infrastructure made sense, as the market developed before others, but an increasing shift to heavy-duty now is also appropriate, as the sector offers significant air quality and equity benefits, and now represents compelling – but nascent – commercial opportunities, as well.

However, the CEC should consider non-freight off-road applications, including ZEVs in agriculture, as medium/heavy-duty and scale funding for those applications immediately, and alongside other medium/heavy-duty opportunities in freight and on-road applications. Delaying investment in these additional medium/heavy-duty and offroad sectors would stifle market growth of ZEVs in an important application that is ready to scale now.

3. What should the Investment Plan include within each funding allocation to improve equitable access and benefits from that allocation?

We believe supporting ZEVs in agriculture will provide significant, additional equity benefits for the Investment Plan overall. Additionally, we encourage the Plan to consider opportunities to provide the most direct and comprehensive vehicle-grid integration benefits possible across funding categories, which we think ZEVs in agriculture are especially well positioned to do.

We look forward to working with you to integrate all the benefits of ZEV tractors rapidly and fully into California's agricultural sector and work sites throughout the state. We are very excited to discuss these opportunities with you and answer any questions you may have about our company, technology, or market for ZEVs in the off-road and agricultural sectors. Please do not hesitate to reach out with any questions.



October 24, 2022

Sincerely,

DocuSigned by:

*Praveen Penmetsa*

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Praveen Penmetsa  
CEO and Co-Founder