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Additional submitted attachment is included below.

August 18, 2021

California Energy Commission
1516 9th Street
Sacramento, CA 95814

RE: New Energy Nexus public comments draft initiatives of the California Energy Commission Electric Program Investment Charge Investment Plans 2021-2025

Dear Commissioners,

We offer the following comments to the following initiatives listed in the EPIC 4 Draft Initiative Plan:

Initiatives #1 and 2: Environmental Considerations

New Energy Nexus supports both efforts to develop and deploy Floating Offshore Wind Technologies and efforts to Advance Geothermal and Mineral Recovery Technologies. In an effort to avoid foreseeable environmental damage, we suggest the evaluation criteria for these kinds of projects should include a technological mechanism or auditable business practice that prevents negative environmental impacts. Additionally, there are many learnings and best practices from offshore wind installations and geothermal plants in other parts of the world that could be beneficial in California.

Initiative #3: Emerging Solar Energy Technologies

New Energy Nexus supports this initiative to further the development of emerging Solar Energy Technologies. The support for new technologies should incorporate Life Cycle Assessment to encourage consideration of, and transition to, a circular clean energy economy. In addition to supporting novel technologies, support should also be provided for strategies to scale existing solar technologies, particularly to increase clean energy access for underserved communities.

Initiatives #4-6: Short Duration, Long Duration and Energy Storage Use Case Demonstrations

New Energy Nexus supports these efforts to provide demonstration opportunities for energy storage technologies and use cases. Energy storage is a key enabling technology for the transition to a clean energy economy.

Initiative #7: Green Hydrogen (H₂) Roadmap Implementation to Support Grid Reliability

New Energy Nexus is encouraged by this effort to advance green hydrogen to support grid reliability and suggests limiting use of funds in a way that assures that funds are not used to prolong the use of Natural Gas.

Initiatives #8-11: Initiatives Related to Enabling and Supporting Innovation in and Demonstrations of Clean, Dispatchable Generation

New Energy Nexus supports all efforts to enable markets and regulatory frameworks, innovation, scaling, demonstration, and commercialization of clean, dispatchable generation. As an organization that aims to support diverse clean energy entrepreneurs to drive innovation and build equity into the global clean energy economy with a goal of 100% clean energy for 100% of the population, clean energy generation is a major priority. We would like to see innovation of

more efficient, less expensive technologies, scaling and commercialization, and replication of business models, regulatory frameworks, incentives, and programs that will scale deployment of these technologies.

Deploying new technologies in this space will require mandates on utilities since the path to commercialization for startups is dependent upon utilities being required to supply reliable energy from renewable sources, so a partnership with Cal ISO should be considered for initiative 11.

Initiative #12: Furthering Cybersecurity with Modulatable Grid Resources

New Energy Nexus is fully in support of CEC's initiative to further cybersecurity with highly modulatable grid resources. Cybersecurity is a critical aspect of energy security and is far too often overlooked and underfunded. Grid security is directly tied to national security and the functionality of nearly all sectors (healthcare, transportation, communications, education, food security, financial markets, etc). New Energy Nexus is excited to see cybersecurity as an increasingly prioritized area of innovation at the CEC.

Initiative #17: Efficient Transportation Electrification and Charging Technologies

New Energy Nexus is fully in support of CEC's initiative to increase the efficiency of charging devices and systems, and to electrify vehicles across all transportation segments. The CalSEED and CalTestBed programs are currently funding and testing electric charging innovations and electric motors and batteries at several of the testing facilities under the program umbrella and would appreciate additional support for these companies as they accelerate towards commercialization.

Initiatives #18-19: Enabling Plug-In Electric Vehicles (PEVs) as Distributed Energy Resources

New Energy Nexus is fully in support of CEC's initiative to enable PEVs as distributed energy resources. Vehicle-to-Grid (V2G) could have a huge impact on energy resiliency in the case of increasingly intense and frequent natural disasters (wildfires, storms, etc.). There are large opportunities to utilize and transform existing structures, such as parking garages and lots at hospitals and shelters, into clean virtual power plants. We are excited to see creative solutions arise and funded as this initiative is scaled.

Initiatives #20 and 39 Lithium-ion Battery Reuse and Recycling/Advanced Battery Manufacturing

New Energy Nexus is fully in support of CEC's initiative to focus on the critical topic of Lithium-ion battery recycling, particularly the focus on lowering costs, reducing life cycle environmental impacts, and creating a robust domestic supply chain. New Energy Nexus has several programs that support battery recycling technologies including CalSEED, CalTestBed and the CalCharge. From a circular economy and manufacturing standpoint, it would make sense to co-locate several operations in the Lithium Valley including: Li Mining, Lithium-ion Battery Manufacturing, Lithium-ion Battery recycling with a geothermal power generation facility. It is also important to research non-Lithium battery technologies to determine what alternatives there are that might be less expensive/hazardous.

Additionally, as California becomes a world leader in battery manufacturing and supply, we encourage the CEC to capitalize on the significant opportunity to take a proactive equitable approach to workforce development throughout the battery supply chain.

Initiatives #21-23: Enabling Grid Resilience with Load Flexibility in the Industrial, Agriculture and Water (IAW) Sectors/Virtual Power Plants Autonomous and Predictive Controls/Increasing Reliability and Interoperability of Load Flexible Technologies

New Energy Nexus supports efforts to increase reliability and resilience of the grid through demand response and load flexibility in partnership with the industrial, agricultural, and water sectors. Load balancing functions enabled by demand response by and for these three critical sectors are particularly important to the state of CA and its ratepayers due to the economic importance all three sectors have, and the persistent drought conditions that the state has been grappling with.

In addition to the demand response for the above-mentioned sectors, other SmartGrid related technologies and AI that enable virtual power plants are important to support for the grid to navigate around outages to prevent cascading failures. New Energy Nexus is also fully in support of CEC's initiative to increase reliability and interoperability of load flexible technologies. Using load as a resource creates efficiency and saves money on installing additional generation.

Initiatives #24- 33: Electric Stovetops, Industrial Heating Energy Efficiency and Decarbonization of the Cement Industry, Separation Processes, Heat Pump Water Heaters, hot water, space conditioning, Building Envelope Upgrades, Smart Energy Management Systems (SEMS) and HVAC Technology Development and Demonstrations

New Energy Nexus is fully in support of CEC's initiatives to support innovations and demonstrations in the above listed technology areas. They are all important tools in decarbonizing the economy, and in the case of the cement industry, may even offer opportunities for carbon capture.

Initiative #34: Bringing Rapid Innovation Development to Green Energy (BRIDGE)

This initiative is of particular interest to New Energy Nexus as the BRIDGE funding opportunity is intended to follow CalSEED and CalTestBed in the CEC's innovation pipeline. However, previous BRIDGE solicitations required that projects must have previously received a funding award from one of the CEC programs specified or U.S. federal agencies funding electricity research. This made CalSEED entrepreneurs that would list CalSEED funding previous funding, but haven't fully closed out the CalSEED contract, as ineligible to apply to BRIDGE. As a resolution, CEC worked with the CalSEED programmatic staff to develop an eligibility form that would require a sign-off from the CalSEED staff that confirms that the CalSEED entrepreneur has completed Milestone Three of their project and it is eligible for BRIDGE funding.

CalTestBed program staff have been verbally notified that the program's voucher recipients may not use CalTestBed as a vehicle to apply for BRIDGE until their final reports are submitted, but there is a lack of clarity in the information posted on the website for BRIDGE, stating that CalTestBed companies are ineligible due to not having started their testing, which is not accurate. There is also a lack of clarity about the process for program directors to officially update that information, which we hope to do before the next round of applications are due. We believe this is a very important program, and want to ensure the entrepreneurs we support understand the eligibility criteria, and the application requirements for this extremely valuable funding opportunity.

Initiative #35: Realizing Accelerated Manufacturing and Production for Clean Energy Technologies (RAMP)

This is another initiative of particular interest to New Energy Nexus, as both BRIDGE and RAMP are extremely valuable to the entrepreneurs, we support through CalSEED, CalTestBed, and CalCharge. These two funding opportunities are part of the essential follow-on funding that will help accelerate companies towards commercialization, which will realize enormous benefits for the ratepayers of the state.

Initiative #36: Provide Support for Entrepreneurs to Test, Verify, and Validate Their Innovations

New Energy Nexus and the CalTestBed program are delighted to see further support for the continuation and growth of CalTestBed as a priority initiative and look forward to working with the CEC on Initiative #36 under EPIC 4. While there are significant opportunities for collaboration, synergy, and overlap between the CalTestBed and CalSEED programs administered by New Energy Nexus, we would like to ensure that each program is resourced adequately to continue the growth and capacity building of these programs to further the CEC's goals in accelerating clean energy technology throughout California. In 2021, the CalTestBed Program has been recognized by the Federal Laboratory Consortium for Outstanding Partnership due to the extraordinary coordination and collaboration of the CTB network of 60 clean energy testing facilities available at Lawrence Berkeley National Laboratory and 9 University of California Campuses, in addition to the pool of technical reviewers, the companies that received vouchers, the national network of next level partners and the extraordinary collaboration with the CEC and its Regional Energy Innovation Cluster ecosystem. This program is ambitious and seeks to grow in order to provide the acceleration and support needed by the entrepreneurs to rapidly commercialize and deploy their clean energy innovations in order to transition to a clean energy economy and reap the geometric benefits of job creation, reduced pollution, improved health, increased access to clean energy technologies, reduced cost, improved safety and reliability among many other ratepayer benefits.

The CalTestBed team looks forward to expanding the facility network to add new campuses/labs/capabilities, to creating a more robust national network of next level partners for follow-on opportunities such as pilot/demonstration projects, investment, corporate partnerships, grants, and customer acquisition, and exploring additional channel partners to help us reach underserved and underrepresented communities so that all Californians can realize the benefits of this program.

Initiative #37: Mobilizing Significant Private Capital for Scaling Clean Energy Technologies

New Energy Nexus is encouraged to see the introduction of bankability of clean energy technologies into EPIC's initiatives. Currently, bankability in EPIC 4 is aimed at later stage technologies. Financing is an important consideration and, in many cases, a barrier for any stage technology. We would be interested to explore and expand this topic to the entire range of technology readiness levels to better support and streamline entrepreneur pathways to commercialization, especially for under-resourced and underserved communities.

Initiative #38: Accelerating Tech Transfer

While accelerating tech transfer is very important, there is a concern about the feasibility of the approach outlined in this initiative, and the willingness of stakeholders to transfer IP ownership of technical innovations to secondary parties for commercialization. This approach requires a feasibility assessment with multi-stakeholder engagement and feedback, as IP ownership has proven to be a contentious issue.

Initiative #41: Integrating Climate Resilience in Electricity System Planning

Ensuring grid reliability is a key theme under this initiative and is a priority for EPIC funding overall. Working closely with early-stage clean energy innovators, CalSEED and CalTestBed endeavours to set up the most promising technologies for success as they mature from concept to validated technology. However, the next step from validated technology to a pilot and demonstration project is not a clear process for many entrepreneurs. Many entrepreneurs struggle to secure demonstration opportunities since the process is highly dependent on previously established relationships and knowing the right people rather than a standardized application and selection process. This is a critical gap for all emerging clean energy technologies, but for those focused on grid reliability, their needs are specific to the relationship and/or approaches to the California Utilities and California Independent System Operators (ISO). To achieve increased reliability, utilities will need to adopt new technologies and new grid technologies will need to be demonstrated by a utility or ISO. SCE, SDG&E, and PG&E are also recipients of EPIC funds. We would be interested to see if there are opportunities to leverage existing connections between the CEC and the utilities to add a level of transparency and streamline demonstration opportunities for emerging clean energy technologies looking to increase grid reliability.

Initiative #42: Advancing the Environmental Sustainability of Energy Deployments

New Energy Nexus is encouraged to see Environmental Assessments as a priority initiative as the CEC works to achieve their SB100 goals. Clean energy technology innovation, testing and deployment are all vitally important in our efforts to mitigate and reverse the effects of climate change, but these efforts need to be coordinated, thoughtful, and circular with a cradle to cradle approach in life cycle assessment. Negative environmental impacts need to be assessed and considered to ensure that technologies are creating more harm than good once deployed. Utilizing use cases from various technologies that have been deployed around the world, conducting assessments and modeling are all important in determining the environmental impact of the technologies supported by EPIC funds.

Initiative #43: Cost Share

New Energy Nexus would be delighted to see this initiative come to fruition as it would expand eligible cost share for federal funding opportunities to include EPIC-funded innovations. This would be a boon for the entrepreneurs we support and would help them navigate the various “valleys of death” created by funding lapses.

Initiative #44: Events and Outreach Support

Regarding CEC managed platforms, it would make sense to move the “Energize Innovation” platform to make it part of the “Empower Innovation” platform, and if it is meant for a select audience, require a login for those who are allowed on that part of the platform. Having these as separate platforms requires a duplication of efforts and dilutes the value each when they could be connected and the value of each magnified. That being said, the Empower Innovation has quite a lot of value, but it needs to be curated, as it will not run on autopilot. The ecosystem needs a point of contact who will compile announcements, funding opportunities, and events, and help magnify messaging about these activities (and the platform members) outside of the platform on twitter and LinkedIn. There should also be a job opportunities portion of the site where members can post job announcements throughout the ecosystem. Since there is a goal to create clean energy jobs in the ecosystem, we should provide a means to fill them as well. The Empower Innovation curators should thoughtfully and intentionally seek connections with underserved and underrepresented communities in order to widen the circle of our ecosystem and broaden the reach of our solicitations.

For events and outreach, the CEC should encourage intentional partnerships with CBOs, Community Choice Aggregators, and NGOs that represent and serve underserved and underrepresented communities to raise awareness of funding and project opportunities and solicit feedback in planning processes.

All Initiatives: Justice, Equity, Diversity, and Inclusion (JEDI)

New Energy Nexus is encouraged to see equity included as an overarching theme for the EPIC investment planning process. Every decision point in creating program strategy and implementation is an opportunity to incorporate a JEDI lens; to choose to be more inclusive, to choose to consider the needs of underserved communities, to build justice and equity into institutional processes. JEDI principles are also instrumental for the entrepreneurs and business leaders supported through EPIC funds for scaling and commercializing technologies. This lens should be applied across all CEC work, internal and external, so the Commission is consistent in both their messaging and activities. The transition to a clean energy economy provides an historic opportunity to create greater environmental, economic, and social justice in communities that have traditionally been marginalized, and this opportunity should not be squandered.

General Comments:

- Considerable energy gains are made by pairing technologies like solar + storage. New Energy Nexus would find value in a devoted initiative to explore how new technologies could be stacked or paired together to maximize benefits. One pathway could be through funding partnerships in demonstrations.
- Coming out of Covid lockdowns, economic recovery is a high priority. EPIC funds are going to clean energy leaders who will be scaling technologies and building new businesses. Additionally, a skilled workforce is necessary to install, operate, and maintain new technologies. Supporting the technologies mentioned above should thoughtfully include workforce development efforts to ensure the success of the technologies while creating high quality jobs.

Finally, we would like to thank the CEC for their extensive research, planning, and facilitation of the Draft EPIC 4 Initiative Plan and the public engagement process. We hope these comments will further strengthen the initiatives and program. We look forward to collaborating with the CEC on these initiatives in the future as EPIC 4 is implemented.

Sincerely,

The CalSEED and CalTestBed team at New Energy Nexus