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Expand CEC programming for demonstration projects of critical renewable generation technologies

Additional submitted attachment is included below.

LEAP PHOTOVOLTAICS

Climate Innovation Program (CIP) – 22-ERDD-02

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As part of CEC's objective to facilitate resilient, electrified communities, we ask the CEC to prioritize demonstration and commercialization activities for new renewable energy generation technologies.

A robust renewable energy innovation and manufacturing sector forms the bedrock to achieving California's climate goals and brings other direct benefits, including job creation, equity inclusion, economic development, and the acquisition and retention of critical know-how. California's solar industry stands as a testament to innovation and commitment to a better world. However, the state's capabilities in solar R&D and manufacturing have eroded and largely emigrated overseas. With greater policy support from initiatives such as the CIP, Californians can recoup their technology and manufacturing leadership. This resurgence can be instrumental in establishing long-term competitiveness, realizing climate goals at a lower cost, generating thousands of new jobs, and accelerating the state's transition towards clean energy.

We applaud CEC's administration of EPIC, which has played a notable role in filling critical funding gaps, as discussed below. Programs such as BRIDGE and RAMP have supported many clean energy technologies in their transition from prototyping to production, unlocking substantial ratepayer benefits. The CIP presents an opportunity to build on EPIC's success by:

- Ensuring continuity and expanding programming for critical renewable energy generation technologies.
- Leveraging additional federal funding from multiple new programs established in recent legislation.
- Increasing access to funding. Funding timelines often pose a barrier for small businesses with limited cash flow. RAMP solicitations, for example, work on 12–18-month cycles and fund a relatively small number of companies. Companies can wither while waiting for an opportunity to apply or be awarded funding.

Opportunity to leverage federal funding where it is most needed.

With the enactment of groundbreaking federal legislation such as the Inflation Reduction Act (IRA) and the Bipartisan Infrastructure Law (BIL), there are new policy tools available to bolster renewable energy manufacturing technologies. The impact of the IRA in the solar sector is evident as numerous PV module vendors are significantly expanding their capacities within the United States.

However, this expansion is not mirrored upstream in the solar panel supply chain, which consists of solar-grade polysilicon, silicon ingot, wafer, and cell manufacturing. These upstream operations involve more intricate processes, entail longer return on investment (ROI) periods, and currently have few capable players outside of China.

New and existing policy tools offer California a unique opportunity to harness federal funding for the advancement and scaling-up of new solar technologies. By leveraging these funds, the state can cultivate globally competitive technologies that can reposition California as a solar leader.

For many of these relevant funding opportunities, aggressive cost-share requirements remain a barrier for companies. Existing or upcoming federal funding opportunities that the CEC should consider leveraging include:

- DOE SBIR/STTR, particularly for Phase II and Phase III (commercialization)
- BIL investments such as Solar Manufacturing Incubator (EERE/SETO) and Photovoltaics Research & Development (EERE/SETO)
- Tax credits from IRA including 45X, the advanced manufacturing production credit, and 48C, the qualifying advanced energy project credit

Support for demonstration projects is the most critical funding gap.

Following research and development, small businesses frequently face financial barriers to a demonstration at scale. There is a federal funding gap around $5-20M to bridge programs that support R&D and prototyping, such as SBIR, and programs that support scale-up or large-scale demonstration projects like DOE's Loan Program Office. While California's EPIC programs such as BRIDGE and RAMP provide valuable resources to bridge this gap, access to these opportunities remains limited and the timelines are typically protracted for small businesses.

With multiple new programs established in recent legislation, there is an unprecedented opportunity to explore how all these initiatives might work in concert to address barriers to the deployment of innovative technologies. Additional support from CIP, with a focus on technology demonstrations where funding sources continue to be extremely limited, would be pivotal. This support can play a crucial role in unlocking additional private capital and federal funding, advancing California toward its climate and equity goals.