

# Memorandum

To: Chair David Hochschild  
Vice-Chair Siva Gunda  
Commissioner Kourtney Vaccaro  
Commissioner Patty Monahan  
Commissioner Andrew McAllister

Date: April 1, 2022

From: Josh Croft

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Subject: **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS FOR PROPOSED CONCEPT AND PROTOTYPE SMALL GRANT AWARDS UNDER THE CALIFORNIA SUSTAINABLE ENERGY ENTREPRENEUR DEVELOPMENT (CALSEED) INITIATIVE, AGREEMENT NO. 300-15-007**

New Energy Nexus dba California Clean Energy Fund or CalCEF Ventures (CalCEF) is the administrator of the Energy Commission's CalSEED Initiative under Agreement No. 300-15-007. The CalSEED Initiative awards small grants and provides access to business and technical services to entrepreneurs seeking to develop a technical feasibility case for their technologies.

CalCEF held an open application period, Solicitation 21-01, in Q4 2021 and received 212 applications that passed initial screening. As a result of the open application, 30 projects are being proposed for funding at the May 11, 2022 Energy Commission Business Meeting. Twenty three of the applicants are proposed to receive a \$150,000 "concept" grant award and seven are proposed to receive a \$450,000 "prototype award" follow-on grant.

I am an Energy Commission Specialist II in the Energy Research and Development Division of the California Energy Commission. I have reviewed the CEQA compliance forms submitted by each applicant. Below is my CEQA analysis for each proposed project:

## Concept Awards

### **1. PROJECT TITLE: KEPLER EXTENSIBLE ENERGY SYSTEM**

**Applicant:** Kepler Energy Systems, Inc.

**Principal Investigator:** Michelle Lau

**Project Summary:** The goal of this project is to build a full-scale prototype of a compressed air energy storage system that utilizes a machine learning controller and historical and real-time data to continuously shape operations to meet peak demands. Storage tanks will be configured to maximize ambient heat transfer and minimize thermodynamic losses. During the CalSEED agreement, Kepler Energy Systems will build a full-scale prototype of the KE2 pod, including developing the codes and algorithms, sourcing the commercial components, designing and machining the custom components, and building the system to operate within a mobile containment pod. The design and programming will be conducted in an office/research

setup and the buildout of the prototype will take place within the containment pod in a lab warehouse.

**CEQA Exemption Status:** 14 CCR 15301 “Existing Facilities”; 15 CCR 15306 “Basic Data Collection”; 14 CCR 15311 “Accessory Structures”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the buildout of a prototype energy management and storage system that will be contained within an enclosed mobile unit, thereby restricting construction activities to the confinement of the mobile unit. All design, research, and construction activities are planned to take place within existing facilities and in the mobile containment unit. There are no planned modifications to land or the existing facilities, the project involves negligible or no expansion of an existing or former use of the sites, there will be no excessive generation of noise or odors, and no hazardous waste is associated with the project.

## **2. PROJECT TITLE: HYBRID BATTERY MANAGEMENT SYSTEM (HBMS)**

**Applicant:** HyVerde LLC

**Principal Investigator:** Ricardo Castro

**Project Summary:** The goal of this project is to design and demonstrate a hybrid battery management system that can be integrated into an electric vehicle to enable multiple types of battery chemistries and reduce temperature and charge variations across a battery. During the CalSEED agreement, the team will design and develop a full-scale hybrid balancing prototype and demonstrate its ability to integrate sustainable multi-chemistry batteries, accelerate hazard detection and reduce temperature gradients in the battery pack

**CEQA Exemption Status:** 14 CCR 15306 “Basic Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt from CEQA because project activities are limited to the design and testing of a novel battery management system for electric vehicles. The testing will be performed at an existing laboratory at the University of California, Merced campus and involves negligible or no expansion of existing or former use of the site. In addition, the project involves data collection and research, which will not result in a serious or major disturbance to an environmental resource. There are no planned modifications to the land or a building, no excessive generation of noise or odors anticipated, and no hazardous waste involved.

## **3. PROJECT TITLE: LOW-COST SOLID-STATE SODIUM BATTERY FOR STATIONARY ENERGY STORAGE**

**Applicant:** Ariya LLC dba Ariya Energy

**Principal Investigator:** Arthur Kariya

**Project Summary:** The goal of this project is to develop a solid-state polymer electrolyte for low-cost sodium batteries. This polymer electrolyte has high ionic conductivity and enables the use of sodium while simplifying manufacturing. During the CalSEED agreement, Ariya Energy will develop a solid-state polymer electrolyte that is ready for battery integration and will

demonstrate good ionic conductivity and protection of the positive and negative terminals of a battery.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the development and testing of a novel battery. All physical activities will be contained in an existing facility and involve negligible or no expansion of existing or former use of the facility. Project activities will be small in scale, with the largest equipment used having the approximate footprint of a dining room table. The batteries will use trace amounts of chemicals, namely salts. This project does not involve any construction or changes to land or buildings, generation of excessive noise or odors, or handling or disposal of substantial quantities of hazardous materials.

#### **4. PROJECT TITLE: LOW COST, ADDITIVELY MANUFACTURED MARINE PUMPED HYDROELECTRIC STORAGE**

**Applicant:** RCAM Technologies, Inc.

**Principal Investigator:** Gabriel Falzone

**Project Summary:** The goal of this project is to develop Marine Pumped Hydroelectric Storage pods that can integrate with California’s floating offshore wind farms to create offshore renewable hybrid energy systems. The proposed innovation is a long-duration energy storage technology that stores and releases energy in 3D concrete printed spheres arranged in a rigid pod of spheres connected to a pump/turbine/generator module installed on the seafloor. RCAM’s project will include research into prototype manufacturing using 3DCP, modeling and testing of prototype performance. During the CalSEED agreement, RCAM will fabricate a functional 3D concrete printed MPH prototype; model, operate, and test prototype performance.

**CEQA Exemption Status:** 14 CCR 15262 “Feasibility Studies”, 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because there are no physical activities that will cause a significant effect on the environment. The work to be performed during the project includes paper studies on system design and performance analysis, fabrication of a bench-scale prototype, and laboratory testing of the said prototype. All activities will take place in an existing facility and will not require changes to the environment or generate hazardous materials. There is no direct or reasonably foreseeable indirect physical change as a result of the project. No construction activities, changes to land or a building, generation of excessive noise or odors, or handling/disposal of hazardous materials are anticipated.

#### **5. PROJECT TITLE: UNIFYING VEHICLES AND GRID WITH ULTRALONG CYCLE LIFE SOLID-STATE BATTERIES**

**Applicant:** Tyfast Energy Corporation

**Principal Investigator:** GJ la O’

**Project Summary:** The goal of this project is to develop a long-lasting, solid-state battery cell with a novel anode material that allows for ultrafast charging without sacrificing safety and energy density. The proposed innovation will replace graphite with a disordered-rocksalt anode that provides higher Lithium transport in the structure for fast cycling, a low material expansion for electrode stability, and long cycle life, and an ideal anode operating voltage for enhanced battery safety. During the CalSEED agreement, the team will optimize the anode material for a solid-state battery cell, screen and select the materials for the solid-electrolyte and cathode and fabricate a pouch cell battery.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because battery prototype development and testing will not cause a significant direct effect on the environment. Tyfast will perform the project development at the Sustainable Power and Energy Center at UC San Diego where an established battery R&D center and fabrication pilot line will be utilized to build our solid-state battery cells. The laboratory-scale fabrication and testing of battery cells will be small in size, quantity and be performed under controlled laboratory conditions. As a result, there will be no significant effect on the environment.

## **6. PROJECT TITLE: SOLID-STATE CELL AND PACKAGING DESIGNED FOR RECYCLABILITY AND CYCLE LIFE**

**Applicant:** DarmokTech

**Principal Investigator:** Deepak Upadhyaya

**Project Summary:** The goal of this project is to develop a cell and packaging design to make solid-state batteries a viable replacement for conventional Li-ion technology for EVs and short-duration storage, which are fire-prone and difficult-to-recycle. The innovation is based on prismatic cell design with stacked electrodes and aluminum casing that will improve cycle-life by reducing interfacial resistance and Li-dendrite formation. The CalSEED award will be used to build and test proof-of-concept cells to validate design features and battery performance.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because the project is limited to the development, mathematical modeling, and testing of an innovative recyclable solid-state battery packaging design in an existing laboratory, involves no expansion of existing use of the facility, and will not contribute to air/water/noise pollution.

## **7. PROJECT TITLE: EV CHARGING AUTONOMOUS ROBOTS - EVSE**

**Applicant:** kWh Bot

**Principal Investigator:** Robert Freeman

**Project Summary:** The goal of this project is to engineer autonomous robotic EV chargers that will deliver charges to EVs automatically at any parking spot in the service area. kWhBot

robots will shuttle kWhBot battery slates from charging stations to parking spots within any lot equipped with the technology. This project is the first step towards charging electric vehicles parked in unimproved parking spots, which will reduce EV charging infrastructure costs and allow for quick and affordable increases in EV charging capacity by lot owners and fleet managers. During the CalSEED agreement, this team will develop a prototype to demonstrate the robotic delivery and charging of an EV in simulated and real-world scenarios.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the development and testing of a prototype charging adapter, software and robot designed to deliver charges to electric vehicles. Most of the project work involves design and computer simulations, followed by small prototype assembly, and then robotic testing in an existing private driveway. All sites are existing facilities and involve no expansion of existing or former use of the facilities. There are no construction or alterations to land, no noise or odors, and no hazardous materials involved in the project.

#### **8. PROJECT TITLE: CONTROLLER AND SENSOR INTEGRATION FOR OPTIMIZED ELECTRIC HEAVY-VEHICLE RANGE EXTENSION**

**Applicant:** Aeromutable Corporation

**Principal Investigator:** David Manosalvas-Kjono

**Project Summary:** The goal of this project is to develop a device that will provide continuously optimized aerodynamic performance of heavy vehicles, reducing energy consumption, and improving safety for the trucking industry while increasing their profitability through improved electric tractor range. A three-part system will have the ability to measure the micro-climate surrounding the vehicle and determine the optimum air injection configuration to change the pressure signature in the back of the trailer. This enhancement will reduce the energy consumption of the vehicle and allow for an increase in range using the same battery pack. During the CalSEED agreement, Aeromutable will develop software capable of translating and porting the tractor’s computer information, will adapt it’s AI-controller to optimize its blowing configuration based on the tractor data, and perform a series of road tests to integrate, train, and showcase the savings of the entire system.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because it will not disturb the environment and will make use of conventional transportation infrastructure for its testing. No construction activities, changes to land or a building, generation of excessive noise or odors, or handling/disposal of hazardous materials are anticipated.

#### **9. PROJECT TITLE: 100 kW DC MICROGRID WITH INTEROPERABLE CHARGING**

**Applicant:** Electric Fish Energy Inc.

**Principal Investigator:** Vince Wong

**Project Summary:** The goal of this project is to develop a DC microgrid that can accommodate agnostic EV charging for current and future-ready voltage architectures with a minimal grid connection. The proposed innovation is a containerized microgrid, using one chipset that is able to support multiple brands of EV chargers with mini grid-scale batteries that can be charged at high-renewable-energy hours of the day to store clean energy – a single module that can support ultrafast charging but acts as a resource, rather than a liability for the grid. During the CalSEED agreement, Electric Fish will test the integrated system and further develop the design.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project should be exempt under CEQA because it has no impact to existing environment. It solely leverages existing physical infrastructure and does not require modification of any structures or facilities, or disturbance to any existing ground area. The project’s physical activities are not anticipated to create any direct or indirect physical changes in the environment.

#### **10. PROJECT TITLE: LOW PRESSURE, LOW FLOW, ANTI-CLOGGING IRRIGATION DEVICE**

**Applicant:** OmniFlow Inc.

**Principal Investigator:** Frank Zhu

**Project Summary:** The goal of this project is to develop a water and energy-saving irrigation device with a terminal control component for precision irrigation that has anti-clogging abilities and lowers cost. The self-cleaning irrigation emitter uses topological space design to achieve high-level resistance to blockage in small spaces. This special material structure can make the flow channel close to the size of the particles and can ensure the continuity and stability of the space when the particles are passed through. During the CalSEED agreement, the team will optimize the material selection, complete the engineering design, and help facilitate field tests that mimic real-world settings.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because all physical activities will be contained in an existing establishment without alterations to the establishment, and minimal noise and material use will take place. There are no direct or reasonably foreseeable indirect physical changes to the environment anticipated as a result of this project. There are no planned modifications to land or a building, no excessive generation of noise or odors anticipated, and no hazardous waste disposal.

#### **11. PROJECT TITLE: SOLAR THERMAL ENERGY POWERED WATER DESALINATION AND PURIFICATION SYSTEM**

**Applicant:** Solarflux Energy Technologies, Inc.

**Principal Investigator:** Naoise Irwin



**Project Summary:** This project aims to develop a modern, low-cost distributed water treatment solution using an energy-efficient membrane distillation process that is powered by a solar thermal concentrator, providing a source of potable water in a compact, turnkey package. Membrane distillation is emerging water desalination and purification process relying on thermal energy at low pressures and temperatures, facilitating safe, low-cost distributed water treatment. During the CalSEED agreement, the Solarflux team will design a full prototype, test key components, and materials, including candidate membranes, and will perform a techno-economic feasibility analysis for the technology relative to other competing technologies on the market, such as reverse osmosis.

**CEQA Exemption Status:** 14 CCR 15262 “Feasibility Studies”, 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because the scope of the project is limited to laboratory and analytical work, and there will therefore be no significant direct effect on the environment. No new construction, changes to land or buildings, generation of excessive noise or odors will be involved, and no hazardous materials are to be used.

## **12. PROJECT TITLE: IN-SITU EVAPOTRANSPIRATION FORECASTS TO IMPROVE FARM WATER DEMAND ESTIMATES**

**Applicant:** Benchmark Labs, Inc.

**Principal Investigator:** Carlos Gaitan Ospina

**Project Summary:** The goal of this project is to develop a forecasting system that will provide hourly and daily forecasts of evapotranspiration and other environmental variables like temperature and relative humidity that are relevant for saving irrigation water. The proposed in-situ forecasting system is based on IoT sensor data, publicly available weather information and a nonlinear bias-correction method, providing forecasts at the point of a specific in-situ sensor, not average conditions over a wider area like traditional approaches. During the CalSEED agreement, the team will develop five key technology features, resulting in an operational evapotranspiration forecasting system working for multiple lead times, a proof-of-concept water balance model using in-situ conditions, and a simple user interface.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because the project will not generate potential environmental impacts as it utilizes infrastructure already deployed and maintained by the California Irrigation Management Information System and the National Oceanic and Atmospheric Administration. No changes to the physical environment are required for the project.

## **13. PROJECT TITLE: ERS MULTI-STAGE-GASIFIER POWERGEN: FOR SMALL PARTICLE AND HIGH-MOISTURE CONTENT BIOMASS**

**Applicant:** Summation Lab

**Principal Investigator:** Milan Alex

**Project Summary:** The goal of this project is to develop a multi-stage gasifier system that transforms biomass like wood chips and almond shells into renewable energy in the form of fuel gas and electricity without incinerating the biomass. This innovation can process low-grade biomass with high fines and moisture content to produce renewable energy in a cost-effective manner compared to existing gasification technologies. During the CalSEED agreement, Summation Lab will design and plan the demonstration of the first prototype of ERS Multi-Stage Gasifier Powergen/cogen system.

**CEQA Exemption Status:** 14 CCR 15329 “Cogen < 50 MW”, 15 CCR 15306 “Basic Data Collection”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the planning, design, and market study for the use-case of a gasifier system that converts biomass to electricity and heat. There will not be any construction or alterations to land, no excessive noise or odors, and no hazardous materials associated with the project.

#### **14. PROJECT TITLE: DISTRIBUTED REAL-TIME MONITORING AND CONTROL FOR RESILIENT POWER INFRASTRUCTURES**

**Applicant:** Perch Sensing Inc.

**Principal Investigator:** Dominic Gaiero

**Project Summary:** The goal of this project is to develop a distributed real-time monitoring and control system that significantly improves the resiliency of power infrastructure. The proposed system is based on novel self-energized low-cost distributed sensors that are “perched” upon utility infrastructure and provide fine-grained power and environmental data more efficiently than existing approaches. During the CalSEED agreement, the team will engineer the system and conduct feasibility studies for new integrated micro-grid control applications

**CEQA Exemption Status:** 14 CCR 15306 “Basic Data Collection”, 14 CCR 15303 “Installation of Small New Equipment in Small Structures”

**Reason Why Project is Exempt:** The project is exempt under CEQA because project activities are limited to the development and testing of a novel sensor system that will be perched on existing utility infrastructure. The development of the system and initial testing will occur in an existing laboratory and will not require modifications to the facility. There are no construction or alterations to land, no noise or odors, and no hazardous materials involved in the project. The data collection of the sensor will be non-invasive.

#### **15. PROJECT TITLE: SEMITRANSSPARENT ORGANIC SOLAR PANELS FOR BUILDING-INTEGRATED PHOTOVOLTAICS**

**Applicant:** Horizon PV Inc.

**Principal Investigator:** Yang Yang

**Project Summary:** The goal of this project is to develop a thin-film solar cell, which is semi-transparent, flexible, and can be laminated to glass surfaces or on walls, capable of generating clean renewable electricity from solar windows in buildings and vehicles. During the CalSEED



agreement, the team will (1) fabricate and deploy mini-modules to test stability and feasibility, (2) formulate a chemistry route for the future mass-production of polymers, and (3) confirm the mass-production printing process.

**CEQA Exemption Status:** 14 CCR 15301 “Existing Facilities”, 14 CCR 15306 “Data Collection”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the design, fabrication and testing of a thin-film solar cell that can be laminated to glass surfaces or walls. The solar cell is composed of a polymer that will be designed and synthesized in an existing laboratory with chemical hoods and will involve negligible or no expansion of existing or former use of the facility. All the materials will be applied inside of the lab without outdoor exposure during the project.

#### **16. PROJECT TITLE: ELECTRIFYING THE MINING INDUSTRY**

**Applicant:** Aepnus Technology Inc.

**Principal Investigator:** Lukas Hackl

**Project Summary:** The goal of this project is to develop an electrochemical technology platform that can synthesize critical battery minerals using electricity instead of carbon-intensive reagent chemicals. The proposal is a design concept termed “Electrochemical Lithium Conversion” for the electrified, single-step conversion of lithium extracted from domestic ore and brine deposits into industrially relevant salts (e.g., for use in electric vehicles) with minimal carbon, energy, and water footprint. During the CalSEED agreement, the team will develop a rapid prototyping pipeline to iterate through an array of electrode formulations, reactor designs, and operating parameters to optimize our system for scale-up.

**CEQA Exemption Status:** 14 CCR 15262 “Feasibility Studies”, 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because all activities will not affect the environment; no large-scale physical development will take place. This project does not involve any construction or changes to land/buildings, generation of excessive noise or odors, or handling/disposal of substantial quantities of hazardous materials. All physical activities will be contained in an existing establishment without alterations to the establishment, and minimal noise and material use will take place.

#### **17. PROJECT TITLE: ARCADIA SR - SOLAR SIMPLIFIED**

**Applicant:** TECSI Solar Inc.

**Principal Investigator:** Samuel Truthseeker

**Project Summary:** The goal of this project is to develop a solar panel for asphalt shingle roofs that integrates racking, flashing, hardware, and power electronics to simplify all rooftop components to a single SKU, installed using a single tool. The fully integrated nature of the product means all necessary components are onboard the PV module, and only one tool is required. This makes installation simpler and significantly faster than current technologies.

During the CalSEED agreement, the project team will finalize the concept, validate it through testing, and build fully functional prototypes.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because it will not disturb the environment and will make use of conventional transportation infrastructure for its testing. No construction activities, changes to land or a building, generation of excessive noise or odors, or handling/disposal of hazardous materials are anticipated.

**18. PROJECT TITLE: LOCALIZED NEAR-TO-LONG TERM CLIMATE PREDICTION TO PREPARE AND PROTECT COMMUNITIES**

**Applicant:** Climformatics Inc.

**Principal Investigator:** Subarna Bhattacharyya

**Project Summary:** The goal of this project is to build a predictive 'near-term' forecasting tool with an increased accuracy for localized fire-weather forecasting that will help to predict, prepare, and protect the energy grid infrastructure, utilities, and consumers from future wildfires. The goal for the product is to improve the localized climate and weather predictions by developing technology which will compensate for missing sub-grid scale processes that are not yet included in the weather and climate models by using available observations from NASA & NOAA data products. During the CalSEED agreement, the team will validate the technology for fire-weather variables, develop visual analytics and build a preliminary application demonstration of fire-weather prediction tool.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”

**Reason Why Project is Exempt:** This project is exempt under CEQA because it will be implemented from our computers remotely logging into IBM cloud computing facilities with no significant direct interaction with the environment. The IBM cloud computing data centers are green which implies that the storage, management, and dissemination of the data through their computer systems are designed to maximize energy efficiency and minimize environmental impact and carbon footprint.

**19. PROJECT TITLE: MODULAR THERMO-ELECTRIC REFRIGERATION SYSTEMS**

**Applicant:** Modulium Inc

**Principal Investigator:** Anahat Sahay

**Project Summary:** The goal of this project is to develop a modular thermo-electric refrigeration unit that can efficiently preserve perishable items of concern such as medicines, dairy, vaccines, and produce. The innovation utilizes solid-state Peltier coolers which can be individually activated depending on total cooling needs and thus enhance energy efficiency. During the CalSEED agreement, one small, fixed volume refrigeration system prototype will be built to demonstrate modularity and provide scale-up models to size a future unit.

**CEQA Exemption Status:** 14 CCR 15301 “Existing Facilities” 15 CCR 15306 “Basic Data Collection”, 14 CCR 15303 “Installation of Small New Equipment in Small Structures”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the buildout of a prototype thermoelectric refrigeration system will be contained within a contained area. This project involves no construction or alterations to land, no excessive noise or odors and no hazardous waste. The prototype will be tested in an existing laboratory in which the primary equipment will be flowmeters (to measure water-flow) and off-the-shelf temperature measurement probes and involves negligible or no expansion of existing or former use of the site. The prototype is expected to be approximately 3x3x3 feet in size and will be mainly constructed of environmentally friendly, common materials.

## **20. PROJECT TITLE: DISCRETE CELLULAR BUILDING SYSTEMS**

**Applicant:** Discrete Lattice Industries LLC

**Principal Investigator:** Benjamin Jenett

**Project Summary:** The goal of this project is to develop a modular construction system for cellular building systems which offers significant cost and material savings through mass production and automation while offering novel combinations of performance and sustainability. The proposed innovation is based on unique, man-made materials whose properties are controlled by modifying the internal cellular structure rather than just the composition. This allows for structures with record-setting stiffness at super low density. During the CalSEED agreement, the team will de-risk several aspects of the technology and business strategy. This project will also perform simulations to project system-level performance while validating subsystem properties with physical prototyping.

**CEQA Exemption Status:** 14 CCR 15262 “Feasibility Studies”, 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** The scope of this project is analysis and modeling, and the sub-scale prototyping will not produce any significant waste, noise, or environmental side effects. There is no direct or reasonably foreseeable indirect physical change as a result of the project. No construction activities, changes to land or a building, generation of excessive noise or odors, or handling/disposal of hazardous materials are anticipated.

## **21. PROJECT TITLE: RIVIEH SMART BUILDING PLATFORM**

**Applicant:** Rivieh, Inc.

**Principal Investigator:** Mustafa Homsî

**Project Summary:** This project will develop a smart building energy management system designed for residential buildings. This innovation will integrate a new sensor technology, millimeter-wave radar, within the form factor of light switches. The additional perception level acquired by this sensor will allow a distributed autonomous controller to be deployed among identical light switches to manage most of the building’s loads using existing infrastructure and without adding additional complexity or cost. During the CalSEED agreement, the team will develop a functional, certified light switch ready to demonstrate to potential customers.

**CEQA Exemption Status:** 14 CCR 15311 “Minor Structure,” 15 CCR 15305 “Basic Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because all activities will be conducted in existing facilities and they will not cause a noticeable change in the daily operation of these facilities. There are no direct or reasonably foreseeable indirect physical changes to the environment anticipated as a result of this project. There are no planned modifications to land or a building, no excessive generation of noise or odors anticipated, and no hazardous waste disposal.

**22. PROJECT TITLE: EASY DOES IT - AUTOMATED MODEL INPUT FOR BUILDING CONTROL**

**Applicant:** Community Energy Labs

**Principal Investigator:** Tanya Barham

**Project Summary:** The goal of this project is to develop a low-cost grid-interactive building control platform that can autonomously and flexibly manage energy and shape electricity demand for K-12, municipal, and small to mid-sized buildings. The innovation utilizes a dynamic model predictive control that autonomously optimizes energy, pricing, and comfort without placing an undue burden on controls professionals or building operators to set up or maintain. This proposal is for an architecture and method for automating the selection and collection of appropriate inputs, outputs, constraints, and training data needed to accurately instantiate a model-based controller for load shaping and management, saving customers’ time, labor, and tens of thousands of dollars compared to standard approaches to MPC setup and calibration. During the CalSEED agreement, the team will verify that owner and occupant interfaces yield high customer satisfaction, reduce system overrides, and can reliably scale to other building and use types.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because the work involved requires no physical interaction with land, air, or water resources and consumes negligible amounts of energy through personal computer use. There are no direct or reasonably foreseeable indirect physical changes to the environment anticipated as a result of this project. There are no planned modifications to land or a building, no excessive generation of noise or odors anticipated, and no hazardous waste disposal.

**23. PROJECT TITLE: AFFORDABLE FILTER THAT IMPROVES HVAC EFFICIENCY AND KILLS AIRBORNE PATHOGENS**

**Applicant:** KorganoTech Inc.

**Principal Investigator:** Tim Leong

**Project Summary:** The goal of this project is to develop an energy-efficient and highly effective air-filtration system that consumes less energy compared to other air-purification technologies that are being applied to combat spread of pathogens. Newer HVAC solutions employ 100% fresh-air instead of recirculated-air which doubles energy consumption. The proposed innovation is a reusable air filter that will contain a nanowire mesh embedded with

bioactive nanoparticles to kill pathogens. This low-cost solution will allow use of recirculated-air while consuming almost no energy providing the most energy-efficient option to combat airborne pathogens. During the CalSEED agreement, the team will complete development and validate both energy savings and neutralization efficacy

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because the project to develop an innovative air filter is limited in scope and all activities will be performed in an existing sited lab, involves no expansion of existing use of the facility, and will not generate noise or odors more than the permitted levels. This project has no direct or foreseeable indirect environmental impact because there are no construction activities, changes to land or building, generation of excessive noise or odors, and handling or disposal of hazardous materials. The activities for this project will be conducted at the Breakout Labs Incubator in the city of Livermore.

## Prototype Awards

### 1. PROJECT TITLE: REMOTE INSPECTION PLATFORM FOR UTILITY INFRASTRUCTURE

**Applicant:** Tolo Inc.

**Principal Investigator:** Thomas Karagianes

**Project Summary:** The goal of this project is to continue to demonstrate a remote inspection platform for utility infrastructure using immersive photogrammetric imagery. These images are presented to the inspector through a novel software application custom-built for utility inspection which provides the inspector with advanced tools and greater inspection freedom and flexibility than field inspection, resulting in more accurate, shareable, monitorable inspections that drive better maintenance decisions and enhanced grid reliability. During the CalSEED agreement, Tolo will manufacture and field-test their field-capable minimal viable product equipment and perform two pilot projects.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection, 14 CCR 15061 (b)(3) “Common Sense Exemption”

**Reason Why Project is Exempt:** This project is exempt from CEQA because activities are limited to field surveys performed through an aerial custom camera system which will be used to inspect designated utility equipment. The equipment produces a small buzzing sound that is quieter than standard neighborhood yardwork and will only be present during flight. There are no construction or installation activities associated with this project.

### 2. PROJECT TITLE: LITHIUM ION BATTERY FIRE SUPPRESSION SYSTEM

**Applicant:** RePurpose Energy, Inc.

**Principal Investigator:** Joe Lacap

**Project Summary:** The goal of this project is to continue to validate a system that tests, reassembles, and redeploys used electric vehicle batteries to store solar energy, creating lower-cost, more sustainable energy storage systems. The process begins by precisely measuring EV battery health in less than 90 seconds using machine learning. Then battery reassembly is optimized into new circuits to maximize safety, efficiency, and longevity. Finally, the batteries are equipped with proprietary controls and fire suppression systems. This allows for repurposing used EV batteries safely for 7-10 years in “second-life” energy storage systems at around half the cost of new battery alternatives. During the CalSEED agreement, RePurpose will achieve UL 1974 and UL 1973 certifications for their battery repurposing process and flagship product.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the repurposing and testing of lithium-ion batteries at a facility already permitted to handle and store the batteries. The project therefore leverages existing physical infrastructure and does not require modification or expansion of existing or former use of any structures or facilities, or disturbance to any existing ground area. No hazardous waste is expected to be generated as a result of the project. However, if any batteries fail the inspection or electrical tests conducted under this project they will be safely packaged and transported to a licensed battery recycler to be disposed of.

### **3. PROJECT TITLE: NOVEL COMPOSITES TO INCREASE POWER LINES CAPACITY AND DECREASE SAG**

**Applicant:** ALD Technical Solutions LLC

**Principal Investigator:** Davoud Zamani

**Project Summary:** The goal of this project is to build an installer of a lightweight, long-lasting, and cost-effective structural composite reinforcement system that will be wrapped around existing transmission lines to increase power capacity, extend lifespan, decrease sag, and improve reliability and resiliency of grid infrastructure with no downtime and minimal capital investment. The Composite Wire Wrap is a lightweight, high strength, long-lasting, cost-effective composite reinforcement system, which withstands high temperatures. The product can be installed quickly and easily by this innovative robotic technology system and secured in place around existing power lines. During the CalSEED agreement, ALD Technical Solutions will fabricate the Composite Wire Wrap Robotic Installer and perform pilot testing at a customer site.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the buildout and testing of a prototype for the structural composite reinforcement system which can be wrapped around existing transmission lines. The prototype will be within a contained area, thereby restricting construction activities to the confinement of the mobile unit. There are no planned modifications to the transmission lines, other than securing the reinforcement system. There are no modifications required to any land or any



facility, and there will be no excessive generation of noise or odors and no hazardous waste disposal.

#### **4. PROJECT TITLE: GREEN HYDROGEN FROM BIOGAS**

**Applicant:** Hago Energetics, Inc.

**Principal Investigator:** Wilson Hago

**Project Summary:** The goal of this project is to demonstrate a technology that uses renewable energy to convert agricultural waste to green hydrogen for the transportation sector. This technology works by processing biogas generated from manure waste into a novel chemical reactor that produces hydrogen. This process uses minimal amounts of electricity or natural gas to create green hydrogen and uses agricultural waste as raw material, so more carbon is taken out of the atmosphere than is produced by the process. This feature, along with a special process that uses waste wood as a catalyst for this chemical conversion, makes this process unique. During the CalSEED agreement, Hago Energetics will demonstrate this technology at a farm, generating data regarding performance metrics and revenue potential from the hydrogen and carbon generated from the prototype.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”; 14 CCR 15311 “Accessory Structures”

**Reason Why Project is Exempt:** This project is exempt from CEQA because project activities are limited to the installation, operation and testing of a technology that will convert animal manure to green hydrogen. The technology will be constructed at an existing facility and then transported to an existing dairy farm for testing. The dairy farm is not environmentally sensitive. The technology is skid-mounted and approximately 8 feet by 16 feet. The project will not involve any construction, trenching or similar activities and involves no hazardous waste or excessive noise or odors.

#### **5. PROJECT TITLE: RAPID AI SCREENING TO SIGNIFICANTLY REDUCE COST OF BATTERY MANUFACTURING**

**Applicant:** Parthian Energy

**Principal Investigator:** Michelle Mahshid Roumi

**Project Summary:** The goal of this project is to continue to develop a new class of advanced battery sensors, with applications in manufacturing quality control, ultrafast charging, and evaluating second-life capabilities. The Parthian Electromagnetic Sensor, or PES, detects internal defects in lithium-ion battery cells by evaluating the change in the battery’s electromagnetic signature. This process reduces unnecessary scrap, enhances safety, and enables higher energy density cells to be deployed into EVs and grid storage with decreased risk of thermal runaway. During the CalSEED agreement, Parthian Energy will develop a scalable prototype, demonstrate the feasibility of reducing the duration and cost of battery quality control, as well as perform pilot testing on a battery cell manufacturing line.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the buildout and testing of a prototype battery sensor system. Project activities will be within a contained existing facility that is meant for battery testing. The batteries that will be tested are cellphone size or smaller. There are no planned modifications to the facility and the project involves no expansion of existing or former use of the site. There will be no excessive generation of noise or odors anticipated, and no hazardous waste involved.

#### **6. PROJECT TITLE: COST AND CAPEx REDUCTION OF SILICON PHOTOVOLTAICS THROUGH STREAMLINED MANUFACTURING**

**Applicant:** Leap Photovoltaics Inc.

**Principal Investigator:** David Berney Needleman

**Project Summary:** The goal of this project is to further develop a process to manufacture crystalline silicon solar cells without wafers. This additive manufacturing approach directly deposits a layer of silicon microparticles to a surface that absorbs sunlight and converts it to electricity, achieving the same performance and reliability as traditional solar cells at half the cost while enabling the use of local supply chains. This unique combination addresses the thin margins and supply chain disruptions of solar manufacturing and is more sustainable. Furthermore, this additive manufacturing process makes direct integration of solar energy generation with new products like vehicles and roofing materials easier, opening up new markets for solar energy. During the CalSEED agreement, Leap Photovoltaics will demonstrate performance metrics for electron recombination lifetime, shunt resistance, and series resistance to optimize device components and layers and build a first prototype.

**CEQA Exemption Status:** 14 CCR 15306 “Data Collection”, 14 CCR 15301 “Existing Facilities” 14 CCR 15303 “Installation of Small New Equipment in Small Structures”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the buildout and testing of a photovoltaic cell with novel device architecture. The prototype will be developed at an existing facility and may require installation of certain equipment such as a fume hood, screen printer, coating tool, chemical vapor deposition tool, and electrical test equipment at the facility. Small quantities of acids, bases, metal inks and some solvents and compressed gases will be involved in the project and are considered hazardous materials, which will be handled and disposed of safely and in accordance with all applicable laws, regulations and standards. This project involves negligible or no expansion of an existing or former use of the project sites.

#### **7. PROJECT TITLE: IMPROVING SITUATIONAL AWARENESS OF DISTRIBUTION EQUIPMENT DURING EXTREME WEATHER CONDITIONS**

**Applicant:** Gridware Inc.

**Principal Investigator:** Tim Barat

**Project Summary:** The goal of this project is to demonstrate a system of low-cost, solar-powered, sensor platforms that are deployed across a distribution grid to provide real-time monitoring and fault anticipation. Gridware’s solution is centered around a primarily mechanical sensor package that characterizes and monitors the behavior of the electric distribution system. This introduces a way to mechanically monitor the system as opposed to the

traditional electrical monitoring that is currently employed by utilities. Mechanical monitoring can reveal the weakening of the system as it ages, identify components that have loading beyond normal conditions, and indicate precursors to critical failures. The solution can further be deployed into real-time control to de-energize the system before failure. During the CalSEED agreement, Gridware will work with SLAC and Redding Electrical Utility to advance analytical tool development and continue fire research with CAL Fire to conduct more controlled burn testing and improve fire detection capabilities.

**CEQA Exemption Status:** 14 CCR 15306 “Basic Data Collection”, 14 CCR 15303 “Installation of Small New Equipment in Small Structures”

**Reason Why Project is Exempt:** This project is exempt under CEQA because project activities are limited to the development and testing of a utility-pole mounted sensor and associated software that can monitor the system including anticipating faults. Testing of the technology will involve lab testing and will also involve controlled burns coordinated with CAL Fire to test the fire detection capabilities of the technology. The controlled burns will be planned, executed and cleaned up by CAL Fire. Installation of the sensors on utility-poles will not affect the functionality of the poles.

**STATE OF CALIFORNIA**  
**STATE ENERGY RESOURCES**  
**CONSERVATION AND DEVELOPMENT COMMISSION**

**RESOLUTION: CalSEED CONCEPT AND PROTOTYPE SMALL GRANT AWARDS  
2022**

**WHEREAS**, pursuant to Public Resources Code section 25710 et seq. the State Energy Resources Conservation and Development Commission ("CEC") is authorized to establish and administer the Electric Program Investment Charge ("EPIC") Program; and

**WHEREAS**, the CEC has recognized that California's electricity ratepayers benefit from energy research, development and demonstration ("RD&D") activities conducted by individuals, small businesses, academics and small non-profit institutions; and

**WHEREAS**, the CEC has created the California Sustainable Energy Entrepreneur Development ("CalSEED") Initiative within the EPIC Program to provide funding for the aforementioned public interest RD&D activities; and

**WHEREAS**, New Energy Nexus dba California Clean Energy Fund or CalCEF Ventures ("CalCEF") is the administrator of the CalSEED Initiative under CEC Agreement Number 300-15-007 and is responsible for soliciting grant applications, recommending grant awards to the CEC, and managing approved grant projects; and

**WHEREAS**, CalCEF, in compliance with its duties under Agreement Number 300-15-007, held Solicitation 21-01, an open application period and competitive solicitation, and received 212 applications that passed initial screening, and as a result has proposed to CEC small grant projects for funding; and

**WHEREAS**, CEC staff has reviewed the projects CalCEF has proposed, and recommends the following 30 small grant projects for funding:

1. \$150,000 is being requested for the "Kepler Extensible Energy System" project with Kepler Energy Systems, Inc., a project to build a full-scale prototype of a compressed air energy storage system that utilizes a machine learning controller and historical and real-time data to continuously shape operations to meet peak demands; and
2. \$150,000 is being requested for the "Modular Thermo-electric Refrigeration Systems" project with Modulium Inc., a project to develop a modular thermo-electric refrigeration unit that can efficiently preserve perishable items of concern such as medicines, dairy, vaccines, and produce; and

3. \$150,000 is being requested for the “ERS Multi-Stage-Gasifier Powergen: For Small Particle and High Moisture-Content Biomass” project with Summation Lab, a project to develop a multistage gasifier system that transforms biomass like wood chips and almond shells into renewable energy in the form of a fuel gas (syngas) and electricity without incinerating the biomass; and
4. \$150,000 is being requested for the “Hybrid Battery Management System” project with HyVerde LLC, a project to design and demonstrate a hybrid battery management system that can be integrated into an EV to enable multiple types of battery chemistries and reduce temperature and charge variations across a battery; and
5. \$150,000 is being requested for the “Distributed Real-Time Monitoring and Control for Resilient Power Infrastructures” project with Perch Sensing Inc., a project to develop a distributed real-time monitoring and control system that significantly improves the resiliency of power infrastructure; and
6. \$150,000 is being requested for the “kWhBot – EV Charging Autonomous Robots” project with kWh Bot, a project to engineer autonomous robotic EV chargers that will deliver charge to EVs automatically at any parking spot in the service area; and
7. \$150,000 is being requested for the “Semitransparent Organic Solar Panels for Building-Integrated Photovoltaics” project with Horizon PV Inc., a project to develop a thin-film solar cell, which is semi-transparent, flexible, and can be laminated to glass surfaces or on walls, capable of generating clean renewable electricity from solar windows in buildings and vehicles, and
8. \$150,000 is being requested for the “Low-cost Solid-State Sodium Battery for Stationary Energy Storage” project with Ariya LLC dba Ariya Energy, a project to develop a solid-state polymer electrolyte for low-cost sodium batteries; and
9. \$150,000 is being requested for the “Low Cost, Additively Manufactured Marine Pumped HydroElectric Storage” project with RCAM Technologies, Inc., a project to develop Marine Pumped Hydroelectric Storage pods that can integrate with California’s floating offshore wind farms to create offshore renewable hybrid energy systems; and
10. \$150,000 is being requested for the “Low Pressure, Low Flow, Anti-Clogging Irrigation Device” project with OmniFlow Inc., a project to develop a water and energy-saving irrigation device with a terminal control component for precision irrigation that has anti-clogging abilities and lowers cost; and
11. \$150,000 is being requested for the “Discrete Cellular Building Systems” project with Discrete Lattice Industries, LLC, a project to develop a modular construction system for cellular building systems that offer significant cost and material savings through mass production and automation while offering novel combinations of performance and sustainability; and
12. \$150,000 is being requested for the “Rivieh Smart Building Platform” project with Rivieh, Inc., a project to develop a smart building energy management system designed for residential buildings; and
13. \$150,000 is being requested for the “Easy Does It - Automated Model Input for Building Control” project with Community Energy Labs, Inc., a project to develop a low-cost grid-interactive building control platform that can

- autonomously and flexibly manage energy and shape electricity demand for K-12, municipal, and small to mid-sized buildings; and
14. \$150,000 is being requested for the “Solar Thermal Energy Powered Water Desalination and Purification System” project with Solarflux Energy Technologies, Inc., a project to develop a modern, low-cost distributed water treatment solution using an energy efficient membrane distillation process that is powered by a solar thermal concentrator, providing a source of potable water in a compact, turnkey package; and
  15. \$150,000 is being requested for the “Unifying Vehicles and Grid with Ultralong Cycle Life Solid-State Batteries” project with Tyfast Energy Corp., a project to develop a long-lasting, solid-state battery cell with a novel anode material that allows for ultrafast charging without sacrificing safety and energy density; and
  16. \$150,000 is being requested for the “In-Situ Evapotranspiration Forecasts to Improve Farm Water Demand Estimates” project with Benchmark Labs, Inc., a project to develop a forecasting system that will provide hourly and daily forecasts of evapotranspiration and other environmental variables like temperature and relative humidity that are relevant for saving irrigation water; and
  17. \$150,000 is being requested for the “Controller and Sensor Integration for Optimized Electric Heavy-Vehicle Range Extension” project with Aeromutable Corporation, a project to develop a device that will provide continuously optimized aerodynamic performance of heavy vehicles, reducing energy consumption, and improving safety for the trucking industry while increasing their profitability through improved electric tractor range; and
  18. \$150,000 is being requested for the “100 kW DC Microgrid with Interoperable Charging (200-950V Vehicle Architectures)” project with ElectricFish Energy, Inc., a project to develop a direct current microgrid that can accommodate agnostic EV charging for current and future-ready voltage architectures with a minimal grid connection; and
  19. \$150,000 is being requested for the “Electrifying the Mining Industry” project with Aepnus Technology Inc., a project to develop an electrochemical technology platform that can synthesize critical battery minerals using electricity instead of carbon-intensive reagent chemicals; and
  20. \$150,000 is being requested for the “Solid-State Cell and Packaging Designed for Recyclability and Cycle Life” project with DarmokTech, a project to develop a cell and packaging design to make solid-state batteries a viable replacement for conventional Li-ion technology for EVs and short-duration storage, which are fire-prone and difficult to recycle; and
  21. \$150,000 is being requested for the “Arcadia SR - Solar Simplified “ project with TECSI Solar, a project to develop a solar panel for asphalt shingle roofs that integrates racking, flashing, hardware, and power electronics to simplify all rooftop components to a single unit, installed using a single tool; and
  22. \$150,000 is being requested for the “Affordable Filter That Improves HVAC Efficiency and Kills Airborne Pathogens” project with Korganotech Inc., a project to develop an energy-efficient and highly effective air-filtration system



- that consumes less energy compared to other air-purification technologies that are being applied to combat the spread of pathogens; and
23. \$150,000 is being requested for the “Localized Near-To-Long Term Climate Prediction to Prepare and Protect Communities” project with Climformatics Inc., a project to build a predictive near-term forecasting tool with increased accuracy for localized fire weather forecasting that will help predict, prepare, and protect the energy grid infrastructure, utilities, and consumers from future wildfires; and
  24. \$450,000 is being requested for the “Remote Inspection Platform for Utility Infrastructure” project with Tolo Inc., a project to continue to demonstrate a remote inspection platform for utility infrastructure using immersive photogrammetric imagery; and
  25. \$450,000 is being requested for the “Lithium-Ion Battery Fire Suppression System” project with RePurpose Energy, Inc., a project to continue to validate a system that tests, reassembles, and redeploys used EV batteries to store solar energy, creating lower-cost, more sustainable energy storage systems; and
  26. \$450,000 is being requested for the “Novel Composites to Increase Power Lines Capacity and Decrease Sag” project with ALD Technical Solutions LLC, a project to build an installer of a lightweight, long-lasting, and cost-effective structural composite reinforcement system that will be wrapped around existing transmission lines to increase power capacity, extend lifespan, decrease sag, and improve reliability and resiliency of grid infrastructure with no downtime and minimal capital investment; and
  27. \$450,000 is being requested for the “Green Hydrogen from Biogas” project with Hago Energetics, Inc., a project to demonstrate a technology that uses renewable energy to convert agricultural waste to green hydrogen for the transportation sector; and
  28. \$450,000 is being requested for the “Rapid Artificial Intelligence Screening to Significantly Reduce Cost of Battery Manufacturing” project with Parthian Energy, a project to continue to develop a new class of advanced battery sensors, with applications in manufacturing quality control, ultrafast charging, and evaluating second-life capabilities; and
  29. \$450,000 is being requested for the “Cost and CapEx Reduction of Silicon Photovoltaics through Streamlined Manufacturing” project with Leap Photovoltaics Inc., a project to further develop a process to manufacture crystalline silicon solar cells without wafers; and
  30. \$450,000 is being requested for the “Improving Situational Awareness of Distribution Equipment during Extreme Weather Conditions” project with Gridware Inc., a project to demonstrate a system of low-cost, solar-powered, sensor platforms that are deployed across a distribution grid to provide real-time monitoring and fault anticipation; and

**WHEREAS**, CEC staff has reviewed the 30 projects and determined that each project is exempt from the California Environmental Quality Act, as described in CEC staff’s “California Environmental Quality Act (CEQA) Analysis For Proposed Concept

and Prototype Small Grant Awards Under the California Sustainable Energy Entrepreneur Development (CalSEED) Initiative, Agreement No. 300-15-007” Memorandum (“Memorandum”) dated April 1, 2022, a document that is included in the backup materials to this Business Meeting item.

**THEREFORE BE IT RESOLVED**, that the CEC adopts CEC staff’s CEQA findings contained in the Memorandum for the 30 projects; and

**FURTHER BE IT RESOLVED**, that the CEC approves the 30 projects for a total of \$6,600,000; and

**FURTHER BE IT RESOLVED**, that the CEC directs CalCEF to execute grant agreements with the approved awardees pursuant to the requirements of Agreement Number 300-15-007.

### **CERTIFICATION**

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the CEC held on May 11, 2022.

AYE:

NAY:

ABSENT:

ABSTAIN:

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Liza Lopez  
Secretariat