

**DOCKETED**

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*Comment Received From: Jason Anderson*  
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## **Cleantech San Diego Association EPIC 5 Research Input**

*Additional submitted attachment is included below.*



**Electric Program Investment Charge 2026–2030 (EPIC 5)  
Research Concept Proposal**

**Please provide the name, email, and phone number of the best person to contact should the CEC have additional questions regarding the research concept:**

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**Please provide the name of the contact person's organization or affiliation:**

Cleantech San Diego Association

**Please provide a brief description of the proposed concept that you would like the CEC to consider as part of the EPIC 5 Investment Plan. What is the purpose of the concept, and what would it seek to do? Why are EPIC funds needed to support the concept?**

Cleantech San Diego is a member-based business organization founded 18 years ago that positions the San Diego region as a leader in the cleantech economy. In 2016, Cleantech San Diego launched the Southern California Energy Innovation Network (SCEIN), one of four Regional Energy Innovation Clusters (REICs), supported by the California Energy Commission. The program provides free resources through a consortium of regional partner organizations to help energy entrepreneurs successfully bring their innovations to market.

Cleantech San Diego strongly believes that REICs, with the support of the CEC's EPIC Program, play a critical role in advancing California's clean energy goals, increasing affordability for ratepayers, and creating thousands of jobs across the state. We urge the Commission to consider including dedicated resources to continue supporting REICs, which form the backbone of the state's innovation ecosystem. REICs provide much-needed pathways for energy technology commercialization through dedicated support for regionally-focused entrepreneurship training, technical assistance, and in-market deployment and technology validation, thereby derisking technology and ensuring ratepayers benefit and costs are reduced.

REICs serve as a necessary conduit between cleantech startups and a deep bench of industry professionals. Among its many valuable services to energy innovators, the program makes connections to potential customers and strategic partners, offers access to pilot projects and technology development opportunities, and provides introductions to the investment community. Without the continuation of REICs, future and current participating clean energy startups would lose critical support and potential loss of raised capital that is vital for their path to commercialization. Discontinuing the funding for REICs would also halt the established application pipeline and significantly reduce the momentum of the energy innovation industry and its outcomes, which benefit California ratepayers and the state's clean energy future.

Interruption in funding would also impede the equity progress being made to bring the opportunities and benefits of clean energy to all Californians.

As you develop the next EPIC investment plan, Cleantech San Diego urges the CPUC to continue prioritizing funding for REICs. By supporting REICs, the state can bolster sustained innovation, economic growth, and equity in the transition to a clean energy future.

In accordance with Senate Bill 96, please describe how the proposed concept will "lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory energy goals." For example, what technical and/or market barriers or customer pain points would the proposed concept address that would lead to increased adoption of clean energy technology or innovation? Where possible, please provide specific cost and performance targets that need to be met for increased industry and consumer acceptance. For scientific analysis and tools, provide more information on what data and information gaps the proposed concept would help fill, and which specific parties or end users would benefit from the results, and for what purpose(s)?

Startups that participate in Cleantech San Diego's Southern California Energy Innovation Network (SCEIN), gain access to the resources of nine regional partner organizations along with industry connections designed to help get their product to market faster. Partner organizations are: UC San Diego, San Diego State University, University of San Diego, UC Riverside, California State University San Marcos, Center for Sustainable Energy, CONNECT, and Imperial Valley Economic Development Corporation.

This collaboration of organizations to provide and coordinate key services, assistance, resources, and infrastructure is needed by cleantech entrepreneurs and researchers in each region to successfully bring to market energy innovations that can benefit electric ratepayers.

Additionally, SCEIN has a Technical Advisory Committee (TAC) composed of diverse professionals from the private, public, and academic sectors who have domain expertise across the broad scope of technologies that span the evolving energy industry. TAC members aid in the screening of entrepreneurs/technologies that are seeking support from the program and provide business and technology support services and mentorship to active participants.

Finally, SCEIN is uniquely positioned within a well-established regional business organization, Cleantech San Diego, which has a robust network of over 135 member companies, including commercial entities as well as municipalities, utilities, cities, the military, law firms, community-based organizations, and more. This network is leveraged to drive collaboration between diverse entities in the clean energy space, including the startups in SCEIN.

**Please describe the anticipated outcomes if this research concept is successful, either fully or partially. For example, to what extent would the research reduce technology or ratepayer costs and/or increase performance to improve the overall value proposition of the technology? What is the potential of the innovation at scale? How will the innovation lead to ratepayer benefits in alignment with EPIC's guiding principles to improve safety, reliability, affordability, environmental sustainability, and equity?**

The continuation of REICs across the state will result in the continued development and commercialization of technological advancements and breakthroughs in energy technology by providing programs, services, and resources designed to meet the needs of energy entrepreneurs and organizing collaboration and regional planning around energy innovations that will benefit electric ratepayers. This will result in the substantial ratepayer benefits of greater electricity reliability, lower costs, and increased safety by building a portfolio of technologies specifically adapted for priority energy technology needs in the region.

By providing key services, education/training, testing facilities, infrastructure, and expertise in each region, REICs deliver custom support for energy entrepreneurs in overcoming critical limitations to the development and commercialization of energy innovations so that they may successfully deploy and commercialize their innovations. This addresses the barrier of connecting region-specific needs to emerging technologies, opportunities, and assets. In addition to accelerating the commercialization of energy innovations, it simultaneously promotes economic growth and job creation in each region and advances the whole state toward meeting the CEC's statutory energy goals.

**Describe what quantitative or qualitative metrics or indicators would be used to evaluate the impacts of the proposed research concept.**

Currently, Cleantech San Diego's SCEIN program reports bi-annual metrics reports to the CEC. These include, but are not limited to:

- Total funding (private and public/grant)
- Follow-on-funding (private and public/grant since joining the REIC)
- Technology Readiness Level (TRL) (at entry and at time of metrics)
- Whether the company is located in a disadvantaged community (DAC)
- Total employees
- Current stage of funding
- C-suite diversity
- Number of patents (pending, approved, and working on application)

To date, 81 cleantech startups have been served by SCEIN, 34 of which are currently active in the program in 2025. Together, these startups employ 867 people, have had 569 patents approved, and have raised over \$714 million in follow-on funding from public (\$179 million) and private (\$535 million) sources since being accepted into the program. Additionally, 71 percent of SCEIN companies have C-Suite diversity.

In addition to the metrics collected as prescribed by the CEC, SCEIN also collects metrics on the following:

- Pilot projects and commercial deployments
  - Deployments in California
  - Deployments in San Diego, Imperial, Riverside, and San Bernardino Counties
  - Deployments in DACs
- Manufacturing dollars spent

- Manufacturing dollars spent and percent of total spent in California
- Manufacturing dollars spent and percent of total spent in San Diego, Imperial, Riverside, and San Bernardino Counties

This bi-annual metrics collection process allows SCEIN to track the progression, and success, of the companies supported through the program as they progress year by year through this REIC.

**Please provide references to any information provided in the form that supports the research concept's merits. This can include references to cost targets, technical potential, market barriers, equity benefits, etc.**

In December of 2016, SCEIN submitted a Regional Energy Technology Priorities and Needs Report to identify and assess regional energy needs and opportunities in order to identify key energy priorities that can help the state reach its energy targets:

Regional Energy Technology Priorities and Needs Report:

- Full Report: [https://cleantechsandiego.org/wp-content/uploads/2016/05/12-21-16-SDREIN-Task-2-Report\\_FINAL.pdf](https://cleantechsandiego.org/wp-content/uploads/2016/05/12-21-16-SDREIN-Task-2-Report_FINAL.pdf)
- Synopsis: <https://cleantechsandiego.org/wp-content/uploads/2016/05/San-Diego-Regional-Energy-Technology-Priorities-Needs-Report-Synopsis.pdf>

**The EPIC 5 Investment Plan must support at least one of five Strategic Goals:**

- 1. Transportation Electrification**
- 2. Distributed Energy Resource Integration**
- 3. Building Decarbonization**
- 4. Achieving 100 Percent Net-Zero Carbon Emissions and the Coordinated Role of Gas**
- 5. Climate Adaptation**

**Please describe in as much detail as possible how your proposed concept would support these goals.**

Collectively and individually, REICs have been key drivers of EPIC's intention to accelerate innovation, demonstration, and innovative approaches to energy technology deployment.

As the state's southernmost REIC, Cleantech San Diego's SCEIN program has demonstrated the ability to not only support, but accelerate the EPIC 5 Investment Plans' five strategic goals, as demonstrated through the following examples of our active and alumni energy startups:

- 1. Increase Transportation Electrification**
  - a. ChargeNet deploys distributed energy resources and DC fast charging at quick serve restaurants.
  - b. Neocharge created a 220V smart plug splitter for residential EV charging.
  - c. Nuvve developed a vehicle-to-grid software platform for fleets.

- d. Paired Power manufactures solar-powered microgrid EV chargers that enable rapid deployment of new EV infrastructure without requiring expansions of existing grid capacity.
  - e. Xtelligent is working to improve road network capacity by 50%+ at a 20x cost reduction. This is estimated to improve transportation efficiency by 20%+ while also enabling scaling of connected, automated EVs.
  - f. Sonocharge is developing a revolutionary acoustic device that integrates with all lithium batteries to enhance overall performance.
- 2. Distributed Energy Resource Integration
  - a. Enersion is deploying their commercial and industrial refrigerant-free reversible heat pump that produces green cooling and heating with 10x less electricity consumption in comparison to traditional heat pumps, at the Viejas microgrid. via a California Energy Commission Grant.
  - b. Alderbuck Energy is developing medium voltage connected solid-state, bi-directional, DC distribution infrastructure for multiple industries.
  - c. Looq automates the creation of 3D Digital Twins, capturing the complex physical world and creating detailed 3D models for the energy sector. The company's hardware and software vision technology cuts field survey times by over 100x, amplifies data value using its proprietary AI, and powers collaboration across global engineering teams.
  - d. Smartville has an innovative battery reconditioning process that returns used EV battery packs to a consistent and uniform state-of-health in order to provide low-cost, easy-to-integrate, and reliable stationary energy storage solutions to customers.
  - e. UNIGRID's anode innovation increases the energy densities of sodium ion batteries by a factor of 2x and their safe chemistry eliminates fire hazards, offering competitive advantages in both the distributed stationary storage and e-mobility markets.
- 3. Building Decarbonization
  - a. VECKTA developed the world's first end-to-end onsite energy deployment platform that helps commercial and industrial businesses improve resilience, unlock savings, and decarbonize at scale.
  - b. Community Energy Labs builds control solutions for smart energy management and decarbonization for community building owners.
- 4. Achieving 100 Percent Net-Zero Carbon Emissions and the Coordinated Role of Gas
  - a. ZNRG Innovations provides affordable, sustainable, and grid-friendly home water heaters that significantly reduce residential carbon emissions. Water heating is the second largest consumption of home energy, and their patent-pending Immersed Induction™ technology is the world's first 120V plug-in ready water heater that's 50%-85% less cost to install and 65% less lifecycle cost.
  - b. Redoxblox is a thermochemical energy storage technology for decarbonization, capable of providing heat and electricity when coupled with a power block (gas, or steam turbine). This unique technology is easily scaled, low-cost, and is a drop-in replacement for natural gas in almost every case.
- 5. Climate Adaptation

- a. AquaPoro's groundbreaking Atmospheric Low-Moisture Adsorption (ALMA) based technology extracts drinkable water from the air, even in the world's driest regions, in an energy efficient manner.
- b. Watts on Water aims to cover artificial waterways with renewable energy generating solar infrastructure, to reduce fossil fuel use and greenhouse gas emissions while saving dwindling water resources from evaporation.

These are just a few examples of the energy companies SCEIN has supported to date. Looking ahead, this list offers a glimpse at the types of innovative companies and meaningful market growth that REICs could support with future funding.