DOCKETED	
Docket Number:	25-BUSMTG-01
Project Title:	2025 Business Meeting Agendas, Transcripts, and Public Comments
TN #:	262079
Document Title:	Grid Science Comments - CalSEED Program - March Business Meeting Agenda
Description:	N/A
Filer:	System
Organization:	Grid Science
Submitter Role:	Public
Submission Date:	3/4/2025 8:38:06 AM
Docketed Date:	3/4/2025

Comment Received From: Grid Science
Submitted On: 3/4/2025
Docket Number: 25-BUSMTG-01

CalSEED Program - March Business Meeting Agenda

Additional submitted attachment is included below.

March 03,2025

Subject: Request for Approval of CalSEED Prototype Phase

Dear Commissioners,

I write to respectfully request the Commission's approval for Grid Science to advance to the CalSEED Prototype phase. Grid Science is a purpose-built company to directly address California's most pressing energy challenges and **fulfill the EPIC goals** through **groundbreaking, AI-enabled, grid-enhancing technology**. This innovation will deliver essential improvements toward the EPIC program mandate:

1. **Expanding the use of renewable energy** – by accurately valuing distributed energy resources (DERs) while offering **powerful new policy tools** for objective energy equity progress.
2. **Building a safer, more resilient electricity system** – by **preventing the 30% of ignition faults** currently unaddressed, at just **4% of the levelized cost** of existing programs.
3. **Advancing electrification across buildings, businesses, and transportation** – by supporting market incentives, data services for automation providers, and improved economics for **GM and Ford** for vehicle-to-grid (V2G).
4. **Enabling a decentralized electric grid** – by harmonizing DER contributions with **CAISO transmission operations**, unlocking new efficiencies.
5. **Improving affordability, health, and community resilience** – by optimizing distributed solar hosting capacity and EV charging access while **resolving the NEM 3.0 dilemma** with a balanced, win-win-win outcome.
6. **Supporting California's local economy and workforce** – by **restoring 17,000 lost contractor** jobs and drive significant value, increasing the market cap of DER companies such as **Sunrun (+$8B)** and **Tesla Energy (+$100B)**.

With CalSEED support, **Grid Science developed an AI-powered grid optimization system** that leverages power flow data and electrification forecasts to maximize the effectiveness of capital spending for distributed system upgrades. This first-of-its-kind breakthrough technology will significantly **reduce the $50 billion in distribution system upgrade costs** estimated by the CPUC by 2035—mitigating rate increases that already burden California's economy (see Appendix 1 – Concept).

Our **Prototype proposal** is a direct continuation of the Concept phase, advancing the system with real-time functionality and expanding **use cases beyond capital upgrade deferment** to include additional grid-enhancing benefits.

Despite this clear alignment with EPIC objectives, New Energy Nexus (NEX), the **program manager**, **declined to advance this technology** – without explanation, refused to reconsider its decision, and failed to engage in meaningful discussions despite continuous requests. The NEX committee did not adhere to official scoring criteria or prioritize the EPIC mandate, raising concerns about both its objectivity and qualifications for this role. This lack of basic care reflects a pattern of mismanagement by NEX, including deficiencies in professional communication, program administration, deliverable evaluation, and entrepreneurial support (see Appendix 2 – Retrospective). Despite multiple attempts to engage with CEC staff since December, I have received no guidance, and since November, NEX has stonewalled my continuous attempts to navigate this situation – only once referring the decision to the Energy Commission.

As a technology innovation advisor working with senior executives and policymakers, I have never encountered an organization so unresponsive and misaligned with its stated mission. It is difficult to see how these actions of CalSEED serve the **intent of the California Legislature** while the **public faces unprecedented energy challenges**:

- 2nd highest electricity costs in the nation
- Fastest-rising utility rates
- Most frequent power outages
- Highest wildfire risk from electrical infrastructure

How can this be in the interests of investor-owned utilities, shareholders, regulators, or the people of California? As well, CEC's ambitious electrification and EV adoption goals can only be met by deploying transformative, grid-enhancing technologies such as ours.

As a citizen volunteer who has made great personal and professional sacrifices to contribute to California's energy future, I must ask: What is the purpose of the $1 billion ratepayer-funded EPIC and CalSEED if they fail to support such improvements?

Bold goals require equally bold innovation. Grid Science committed to driving these advancements here in California so that its residents and businesses can be the first to benefit — while reinforcing the CEC's leadership history of energy innovation.

If the Commission determines that advancing this technology is in the best interest of California, we respectfully request approval to continue development in the Prototype phase. I am available to address any questions in person, before, or during the March business meeting.

Sincerely,

Byron Kaufman

Byron Kaufman
CEO, Founder
Grid Science

Appendix:

1. CalSEED Concept Deliverable – Executive Summary
2. CalSEED Retrospective Deliverable – Executive Summary

Distribution:

1. CEC Docket
2. CEC Public Advocate
3. Commissioner Hochschild
4. Commissioner Gunda
5. Director Steinbuck
6. Mr. Henri van Eeghen, CEO New Energy Nexus

Governance (determined following publication of Business meeting agenda):

A. Senator Becker
B. Senator Bogh
C. Assemblyman Gallagher
D. Assemblymember Irwin
E. Governor Newsom
F. Senator Stern
G. Senator Wahab

Executive Summary

The rapid transformation of the energy sector, driven by electrification, decarbonization, and technological innovation, presents both challenges and opportunities. As utilities adapt to growing demands for cleaner and more reliable energy, new tools are required to ensure cost-effective and efficient energy management. Recognizing this, Grid Science has developed a groundbreaking Proof of Concept (POC) tool that evaluates the financial and operational value of distributed energy resource (DER) battery storage. This tool leverages artificial intelligence (AI), machine learning (ML) and real-time grid data to redefine how utilities approach asset management and electrification planning.

The POC tool is specifically designed to support utilities as they navigate complex energy landscapes, such as those shaped by California Public Utility Commission's (CPUC) Demand Flexibility Rulemaking (R.22-07-005), which emphasizes real-time, circuit-specific pricing. By incorporating AI to analyze real-time grid data, the tool predicts the impacts of electrification on specific locations, providing detailed insights into the value of using DER batteries instead of costly traditional grid upgrades. The tool's initial use case, Asset Upgrade Deferral, focuses on situations where the costs and benefits of distribution assets are well-defined, making it a valuable resource for immediate implementation.

Drawing from cutting-edge research and expertise from the Department of Energy, the Electric Power Research Institute, and other leading organizations, the POC represents a best practices approach using advanced analytical methods tailored to address real-world utility challenges. Grid Science's tool is a practical solution, offering utilities an accessible, cloud-based platform for evaluating DER battery storage and its potential for transforming grid management.

By July 2024, the POC had been deployed as a functional cloud service, relying on sensor generated datasets to model and analyze the economic viability of DER battery storage. It integrates predictive modeling, scenario analysis, and financial frameworks to offer actionable insights, reducing the need for manual, time-consuming calculations. This automation allows utilities to focus on timely decision-making while enjoying enhanced grid reliability and cost savings.

One of the POC's most compelling features is its ability to quantify the time value of asset deferrals. Traditional asset upgrades, such as transformer replacements or capacity enhancements, are expensive and require significant planning. The POC tool demonstrates how distributed behind-the-meter (BTM) battery storage can defer these upgrades by meeting capacity needs at a fraction of the cost. Through robust financial modeling, including discounted cash flow (DCF) analysis and granular asset configurations, the tool provides a clear picture of long-term economic benefits, empowering utilities to make data-informed decisions.

The broader implications of this technology extend beyond immediate cost savings. By enabling more efficient adoption of DERs, the POC tool has the potential to significantly enhance the market valuation of distributed energy companies, increasing their enterprise value by 500% to 1000%. This innovation not only benefits DER providers but also helps

utilities manage peak demand and control spiraling electricity rates. As California grapples with rising energy costs and the need for more resilient grid infrastructure, tools like this are essential for ensuring a sustainable and equitable energy transition.

In addition to its financial benefits, the POC tool addresses critical operational challenges. Grid resilience is increasingly vital as extreme weather events and cybersecurity threats test infrastructure capabilities. By optimizing the deployment of DERs, the tool enhances grid stability, reduces reliance on centralized assets, and supports the integration of renewable energy sources. This aligns with California's ambitious climate goals, which include achieving 100% clean electricity by 2045.

The development of this POC tool was guided by collaboration and innovation. Inspired by the insights of leading DER strategists, AI experts, and policy leaders, Grid Science built upon a foundation of rigorous research and industry best practices. The tool's cloud-native architecture ensures scalability and accessibility, allowing utilities of all sizes to benefit from its capabilities. Furthermore, its modular design enables future enhancements, such as real-time data integration and expanded use cases, ensuring that it remains a relevant and valuable resource as the energy landscape evolves.

Looking ahead, the commercialization of this technology represents a significant step forward for the energy sector. By providing utilities with a comprehensive, data-driven approach to DER valuation, the tool empowers stakeholders to make informed decisions that balance cost, reliability, and sustainability. It transforms the traditionally reactive nature of grid management into a proactive strategy, where resources are allocated based on precise, scenario-driven analysis.

For policymakers and regulators, the POC tool offers a practical framework for evaluating the impacts of electrification policies. As states like California lead the way in energy transition efforts, having access to tools that quantify the economic and environmental benefits of DERs is essential. This enables more effective policy design and implementation, fostering an ecosystem where innovation thrives, and consumers benefit from stable and affordable energy rates.

APPENDIX 2 - Retrospective Executive Summary

CalSEED

CalSEED Awardee Project Retrospective

GRID SCIENCE
integral resilience

Summary

Grid Science successfully delivered a groundbreaking proof of concept for a grid-enhancing technology to accurately value distributed energy resources, specifically battery wall-type electricity storage. The project was completed on time and within budget. Concurrently, we formalized our legal entity, established a website, engaged advisors, and laid the foundation for our business.

Throughout the program, I enjoyed engaged fully—building alliances, contributing to the shared community, and forming meaningful relationships essential to navigating such complex endeavors.

While CalSEED likely lent credibility to some business development efforts, the program itself generated limited independent benefits or notable outcomes. The most significant challenges we encountered stemmed from inadequate program support, particularly around deliverable approvals and overall management.

Areas for Improvement:

1. Professional Communications
    - Managers were often unresponsive via email and unavailable by phone.
    - Receipt of important matters was rarely acknowledged.
    - Meeting requests were routinely ignored.
    - Only after repeated requests did communication improve.
    - Example: NEX management failed to respond to critical alliance and commercialization discussions involving the principles energy bodies of a foreign nation.
2. Program Management
    - Lack of basic risk, issue, and problem awareness.
    - Prototype Committee lacked qualifications and transparency in decision-making.
    - Managers refused to provide selection criteria for prototypes or escalate decision review.
    - No updates or information were provided for over three months, forcing us to appeal blindly.
3. Deliverable Approvals
    - Clear contract breach with Deliverable III due to refusal to accept.
    - Expectations were not provided despite multiple requests.
    - Proof-of-concept acceptance criteria were not understood, leading to a five-month delay:

        - Sep–Dec when deliverable expectations were not provided and so delayed hoping to avoid problems during Prototype selection.
        - Dec–Feb while trying to get reasonable acceptance criteria.
    - Constantly changing criteria and unreasonable requests delayed almost 2 months in Dec – Feb.
    - Deliverable II delay noted in #4.
4. EPIC Mandate vs. DEI Strategy
    - NEX substituted CalSEED's EPIC mandate with its own Diversity, Equity, and Inclusion (DEI) agenda.
    - Attempt to impose DEI hiring goals instead of the SOW Deliverable II: "goals for social impact and energy equity."
    - Startups lack the resources for such hiring mandates, making this basically an ideology test.
    - This misalignment delayed Deliverable II and potentially caused further program challenges with Prototype selection.
5. Value-Added Contribution
    - Limited actionable insights or unique contribution for seed-stage startups.
    - Contribution was DEI, social impact, public funding, crowdfunding, brand, and community.
    - Startup training was sourced to CleanTech Open with solid delivery.
    - The CalTest/NEX Level event (Oct 24, one year into the program) was a rare example of genuine value—offering networking, resources, and community-building.
6. Supporting Entrepreneurial Businesses
    - Limited understanding of startup needs, technology development process, and creating opportunities.
    - Example: An external advisor (not CalSEED) informed us about a NEX/USAID program; for which they only arranged only a demo and later apparently would have competed against us for the follow-on substantial grant — indicative of a self-serving orientation.
7. Program Operations & Leadership
    - Managers lacked training and organizational support.
    - Senior leadership was invisible; accountability was absent.
    - CEC program manager was unaware of an escalation request—even two months after I directly escalated it to NEX executives and Commissioners.
    - Stonewalled my continuous efforts for over 3 months to collaborate and find a resolution.

CEC has significant work ahead to operate an effective energy innovation accelerator. Addressing these shortcomings requires:

- Training the trainers to improve program execution.
- Establish and improve program methods.

- Implementing basic processes for risk management, issue resolution, and transparency.
- Refocusing on value creation for entrepreneurs and the legislated mandate instead of internal agendas.

As a technology innovation advisor specializing in turnaround strategies and effectiveness engineering, I have rarely encountered such consistent incapacity. This failure of effort risks CEC's credibility but also diverts valuable resources and, most critically, wastes entrepreneurs' most precious asset—Time.

I continue to pursue CalSEED because collaboration with the CEC remains the only viable pathway to investor-owned utility (IOU) adoption. Accelerating the deployment of grid-enhancing technologies in California will drive faster adoption across the Western U.S.—a mission critical to our shared energy transition goals.

Leaving one's home to implement these solutions elsewhere is the last thing any innovator wants. However, this experience has forced me to deeply question California's commitment to live up to its promises and motivation to deliver meaningful outcomes.