

**DOCKETED**

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<b>Document Title:</b>	Draft Solicitation Concept for Energy Storage Innovations to Support Grid Reliability
<b>Description:</b>	This is a draft solicitation concept to solicit public feedback on a funding concept through the Electric Program Investment Charge (EPIC) 2021-2025 Investment Plan.
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# DRAFT SOLICITATION CONCEPT

## Electric Program Investment Charge

### Subject Area: Energy Storage Innovations to Support Grid Reliability

*No applications are being accepted at this time.* This is a draft solicitation concept. Do not design or submit applications according to this DRAFT. The actual solicitation is subject to change.

The purpose of this draft solicitation concept is to solicit public feedback on eligibility requirements, goals and vision, and solicitation format (See Section 8 for specific questions). Staff will accept comments submitted to the California Energy Commission (CEC) Dockets Unit or by email until **Tuesday, January 16, 2024**, at 5:00 p.m. (See Section IX for additional details on how to comment.)



<http://www.energy.ca.gov/contracts/index.html>

State of California

California Energy Commission

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## I. INTRODUCTION

This “draft solicitation concept” document details a concept under consideration for a competitive grant solicitation on energy storage to be issued through the California Energy Commission’s (CEC) Electric Program Investment Charge (EPIC) 2021-2025 Investment Plan.<sup>1</sup>

This solicitation intends to enable more strategic and high-value implementation of energy storage in transmission, distribution, and customer domains to support grid reliability and achievement of clean energy policy goals such as those established by Senate Bill (SB) 100. In October 2023, California reached a milestone of over 6,600 megawatts (MW) of energy storage capacity, up from 770 MW just four years ago and double the amount installed just two years ago. However, California is projected to need 52,000 MW of energy storage capacity by 2045 to meet growing electricity demand while transitioning away from fossil fuels to a modernized grid powered by clean, renewable sources.<sup>2</sup>

To date, commercialized lithium-ion batteries are successfully deploying on the electric grid for intra-day (<4 hour) peak-load shifting, firming of solar and wind generation, and other grid services. However, the technology faces several challenges, including high cost, supply chain limitations, scarcity of critical materials, flammability risks, and degradation over many cycles. Further work on lithium-based batteries that can address these issues, such as alternative material selection or improved manufacturing processes, will help promote stronger deployment of stationary energy storage applications. Advancements in non-lithium technology can also increase the supply chain diversity, improve the safety, and lower the cost of short duration energy storage by incorporating earth abundant material and non-flammable electrolytes. Many of these technologies are still pre-commercial and require research investments to improve performance and better position the technology to lower costs through scale-up. Therefore, investment in both lithium and non-lithium technologies for short-duration storage will be important for increasing the deployment of energy storage to enhance grid reliability.

In addition, changing weather, larger penetration of the grid by renewable generation, and increasing electric load have increased the need for energy storage with durations

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<sup>1</sup> Lew, Virginia, Anthony Ng, Mike Petouhoff, Jonah Steinbuck, Erik Stokes, and Misa Werner. 2021. [The Electric Program Investment Charge 2021–2025 Investment Plan: EPIC 4 Investment Plan](#). California Energy Commission. Publication Number: CEC-500-2021-048-CMF-REV.

<sup>2</sup> California Energy Commission staff. 2023. [California Sees Unprecedented Growth in Energy Storage, A Key Component in the State’s Clean Energy Transition](#).

longer than 4 hours.<sup>3</sup> Several modeling analyses have investigated the role for long duration energy storage (LDES) under SB 100 and other policy scenarios. One study from Energy and Environmental Economics estimates that up to 5 GW of LDES could be economical by 2045 under SB 100 policy, and up to 40 GW could be needed to achieve 0 MMT emissions from the grid.<sup>4</sup> Furthermore, LDES could prevent overbuild of wind and solar resources as in-state gas power plants are retired, decreasing the total system costs. These results are predicated on LDES reaching commercial readiness in terms of performance and cost in the required timeline. As a result, several federal and state research efforts have targeted emerging technologies that can economically achieve long duration storage, as commercial lithium-based batteries are less cost effective at these durations.

Continued efforts in research, development, and demonstrations are needed to reduce costs, improve performance, mitigate supply chain sustainability issues, and improve system safety and reliability of emerging short- and long-duration energy storage technologies. In addition to the investment in nascent storage technologies, there is growing interest in how energy storage can provide multiple services to the electric grid and amplify its benefits and value. California Public Utilities Commission (CPUC) Decision 18-01-003 established guidance on enabling energy storage systems to provide multiple use cases or services to the electric system, with the goal of maximizing the benefits conferred by energy storage systems.<sup>5</sup> These use cases include services like grid infrastructure upgrade deferral, voltage support, frequency regulation, spinning/ non-spinning reserves, behind-the-customer-meter load management, backup power, and demand response. In addition, energy storage can act as a buffer in capacity-constrained areas of the grid and enable more flexible interconnection of new resources, helping mitigate a long-standing problem. Stacking multiple use cases within one energy storage system can increase the value proposition and revenue streams for these installations and benefit overall electric system reliability.<sup>6</sup>

The purpose of this solicitation is to fund research and development to improve the cost-effectiveness, performance, safety, and supply chain sustainability of energy storage technologies and maximize the value and benefits of future energy storage procurements to support grid reliability. This solicitation will also fund demonstrations of energy storage

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<sup>3</sup> Paul Denholm, Wesley Cole, and Nate Blair. 2023. [Moving Beyond 4-Hour Li-Ion Batteries: Challenges and Opportunities for Long\(er\)-Duration Energy Storage](#). National Renewable Energy Laboratory.

<sup>4</sup> California Energy Commission staff. 2023. [Staff Workshop on Long Duration Energy Storage Analysis](#).

<sup>5</sup> California Public Utilities Commission. 2018. [Decision 18-01-003](#). Rulemaking 15-03-011.

<sup>6</sup> Fitzgerald, Garret, James Mandel, Jesse Morris, Hervé Touati. 2015. [The Economics of Battery Energy Storage: How multi-use, customer-sited batteries deliver the most services and value to customers and the grid](#). Rocky Mountain Institute.

systems that can serve multiple use cases and provide data on, and insight into, the added value of stacking grid and customer services. The findings can better inform policymakers, system operators, utilities, and other stakeholders on the benefits and barriers to implementing storage that supports multiple use cases.

## II. FUNDING

The CEC reserves the right to modify the available funding and the minimum/maximum award amounts described in this section. The solicitation will consist of two groups of funding. Group 1 encompasses Applied Research and Development projects. Group 2 encompasses Technology Demonstration and Deployment projects. The funding distribution and requirements are shown in the table below.

<b>Project Group</b>	<b>Available Funding</b>	<b>Minimum Award Amount</b>	<b>Maximum Award Amount</b>	<b>Match Funding Requirement (% of CEC Funds Requested)</b>
<b>Group 1:</b> Applied R&D to Improve Energy Storage Value, Safety, and Sustainability	\$5 million	\$1 million	\$1.5 million	10%
<b>Group 2:</b> Multiple-Use Case Demonstrations for Energy Storage Value Stacking Technology Demonstration & Deployment	\$25 million	\$5 million	\$10 million	25% (10% for projects benefitting DAC, LIC, and Tribal communities)

Match funding includes cash or in-kind (non-cash) contributions provided by the applicant, subcontractors, or other parties including pilot testing, demonstration, and/or deployment sites (e.g., test site staff services) that will be used in performance of the proposed project.

Match funds do not include: CEC awards, EPIC funds received from other sources, future/contingent awards from other entities (public or private), the cost or value of the project work site, or the cost or value of structures or other improvements affixed to the project work site permanently or for an indefinite period of time (e.g., photovoltaic systems).

The match funding minimum requirement for Group 2 is reduced to 10% of the requested CEC funds for projects located in and benefiting a California Native American Tribe, Disadvantaged Community (DAC), and/or Low Income Community (LIC).

### **III. ELIGIBILITY REQUIREMENTS**

#### **A. APPLICANT REQUIREMENTS**

##### **1. Eligible Applicants**

This solicitation is open to all public and private entities with the exception of local publicly owned electric utilities.<sup>7</sup> In accordance with CPUC Decision 12-05-037, funds administered by the CEC may not be used for any purposes associated with local publicly owned electric utility activities.

Each grant agreement resulting from this solicitation will include terms and conditions that set forth the recipient's rights and responsibilities. By submitting an application, each applicant agrees to enter into an agreement with the CEC to conduct the proposed project according to the terms and conditions that correspond to its organization, without negotiation: (1) University of California and California State University terms and conditions; (2) U.S. Department of Energy terms and conditions; (3) Special Terms and Conditions for California Native American Tribes and Tribal Organizations with Sovereign Immunity in addition to the standard terms and conditions; or (4) standard terms and conditions.

CEC's terms and conditions will be located on the EPIC Program page at <https://www.energy.ca.gov/programs-and-topics/programs/electric-programinvestment-charge-epic-program>. Please refer to the applicable EPIC Grant terms and conditions. Failure to agree to the terms and conditions by indicating that acceptance is based on modification of the terms will result in rejection of the application. Applicants must read the terms and conditions carefully. The CEC reserves the right to modify the terms and conditions prior to executing grant agreements.

If an applicant, by law, cannot agree to the (1), (2), or (3) terms and conditions listed above without negotiation, the applicant can apply and request to negotiate terms. The CEC retains the sole right to refuse to agree to any terms changes. Note: the Energy Commission Agreement Management System (ECAMS) system will require applicants to

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<sup>7</sup> A local publicly owned electric utility is an entity as defined in California Public Utilities Code section 224.3.

agree to certain certifications before submitting an application, including certifying the applicant will conduct the proposed project according to the terms and conditions without negotiation. Applicants that, by law, cannot agree to the terms and conditions will not be penalized for agreeing to the ECAMS system certifications.

All corporations, limited liability companies (LLCs), limited partnerships (LPs) and limited liability partnerships (LLPs) that conduct intrastate business in California are required to be registered and in good standing with the California Secretary of State prior to its project being recommended for approval at an Energy Commission Business Meeting. If not currently registered with the California Secretary of State, bidders are encouraged to contact the Secretary of State's Office as soon as possible to avoid potential delays in beginning the proposed project(s) (should the application be successful). For more information, contact the Secretary of State's Office at <http://www.sos.ca.gov/>. Sole proprietors using a fictitious business name must be registered with the appropriate county and provide evidence of registration to the CEC prior to their project being recommended for approval at a CEC Business Meeting.

## **2. Number of Applications**

Applicants may submit more than one application for the same project group, but each application must be for a distinct project.

## **B. PROJECT REQUIREMENTS**

### **1. Technology Advancement Stages**

Group 1 projects must fall within the "applied research and development" stage, which includes activities that support pre-commercial technologies (Technology Readiness Level 3-4) and approaches that are designed to solve specific problems in the electricity sector. Applied research and development activities include early pilot-scale testing activities that are necessary to demonstrate the feasibility of pre-commercial technologies.

Group 2 projects must fall within the "technology demonstration and deployment" stage, which involves the installation and operation of pre-commercial technologies or strategies at a scale sufficiently large and in conditions sufficiently reflective of anticipated actual operating environments to enable appraisal of operational and performance characteristics and of financial risks (TRL 6).

### **2. Ratepayer Benefits, Technological Advancements, and Breakthroughs**

California Public Resources Code Section 25711.5(a) requires EPIC-funded projects to:

- Benefit electricity ratepayers; and
- Lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.



EPIC’s mandatory guiding principle is to provide ratepayer benefits, which are defined as (1) improving safety, (2) increasing reliability, (3) increasing affordability, (4) improving environmental sustainability, and (5) improving equity, all as relate to California’s electric system.

Accordingly, applications must describe how the project will (1) benefit California investor-owned utility ratepayers by improving safety, increasing reliability, increasing affordability, improving environmental sustainability, and improving equity, all as relate to California’s electric system; and (2) lead to technological advancement and breakthroughs to overcome barriers to achieving the state’s statutory energy goals.

### **3. Project Timeline**

The expected project timeline for Group 1 is three years.

The expected project timeline for Group 2 is four years, from CEC agreement execution to completion, including the required minimum one year demonstration period.

## **IV. PROJECT FOCUS**

### **A. PROJECT SCOPE**

Projects can encompass innovative short- or long-duration thermal, electrochemical, and mechanical energy storage technologies.

Applications to both Group 1 and Group 2 must describe how the proposed innovation and project will enable a pathway to meet the following target performance metrics:

- Levelized cost of storage (LCOS) of <\$0.05/kWh. A useful guide for calculating the LCOS can be found in the Department of Energy (DOE) Energy Storage Grand Challenge Cost and Performance Assessment.<sup>8</sup>
- Calendar life of >10 years of operation.
- Roundtrip efficiency of >50% DC-DC.

### **Group 1: Applied R&D to Improve Energy Storage Value, Safety, and Sustainability**

Group 1 projects will develop innovations that improve upon existing or novel pre-commercial energy storage system (ESS) technologies targeting stationary storage

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<sup>8</sup> Viswanathan, Vilayanur, Kendall Mongird, Ryan Franks, Xiaolin Li, Vincent Sprenkle, Richard Baxter. 2022. [2022 Grid Energy Storage Technology Cost and Performance Assessment](#). Pacific Northwest National Laboratory.

markets. Projects must improve ESS cost-effectiveness, safety, system performance (i.e., roundtrip efficiency, energy density, cycle life), reliability, siting flexibility, and/or supply chain sustainability compared to the current state-of-the-art. These projects can target short- or long-duration energy storage applications.

Innovations of interest include advanced battery components or materials; controls, software, and monitoring technologies; manufacturing processes; and enclosure or system design. Applicants must identify the barrier(s) inhibiting commercialization of their proposed innovation and explain how their project will help overcome the barrier(s).

Group 1 projects will be required to conduct prototype or pilot testing of the innovation in a relevant environment to demonstrate feasibility and validate improvements and benefits.

Applications will provide detailed information and plans, including, but not limited to:

- Targeted innovation or technology;
- Project performance metrics that include the selected technology's improvement(s) over the incumbent technology;
- Current and target Technology Readiness Level (TRL)<sup>9</sup> of the proposed technology/production system design, including backup materials and explanation of accomplished TRL milestones to date; and
- Description of the prototype or pilot test plan, including details on the test facility or site and data to be collected.

Technologies not of interest in Group 1 include the following:

- Commercially competitive technologies (note: lithium-ion-based projects are eligible if the technology innovation meets the requirements above)
- Electric vehicle battery technology development or vehicle-to-grid innovations
- Hydrogen

## **Group 2: Multiple-Use Case Demonstrations for Energy Storage Value Stacking**

Group 2 projects will demonstrate innovative ESS technology, location, and use case combinations. Applicants must identify the barrier(s) inhibiting commercialization of their proposed combination and explain how their project will help overcome the barrier(s).

Additionally, Group 2 projects must demonstrate innovative stacking of at least two services (see Table 1) using the same storage asset and optimize customer and grid benefits. Examples of these benefits include avoided renewable energy curtailment,

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<sup>9</sup> U.S. Department of Energy. 2011. [Technology Readiness Assessment Guide](#).

customer outage mitigation, grid infrastructure deferral, and environmental benefits such as greenhouse gas emission or air pollution reduction.<sup>10</sup> Projects must adhere to adopted rules set by CPUC Decision 18-01-003<sup>11</sup> for multiple-use applications of energy storage. Table 1 shows services of interest that provide benefits to the grid and customers. Projects are encouraged to participate in services in the grid domain above their interconnection point.

Table 1: Possible Services from Transmission-, Distribution-, and Customer-sited Resources

Services to Grid and Cust.		Grid Domains		
		Tran.	Dist.	Cust.
Energy & AS Markets and Products	Energy	✓	✓	✓
	Frequency Regulation	✓	✓	✓
	Spin/Non-Spin Reserve	✓	✓	✓
	Flexible Ramping	✓	✓	✓
	Voltage Support	✓	✓	✓
	Blackstart	✓	✓	✓
Resource Adequacy	System RA Capacity	✓	✓	✓
	Local RA Capacity	✓	✓	✓
	Flexible RA Capacity	✓	✓	✓
T & D Related	Transmission Investment Deferral	✓	✓	✓
	Distribution Investment Deferral		✓	✓
	Microgrid/Islanding		✓	✓
Site-Specific & Local Services	TOU Bill Management			✓
	Demand Charge Management			✓
	Increased Use of Self-Generation			✓
	Backup Power			✓

Source: [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-storage/2023-05-31\\_lumen\\_energy-storage-procurement-study-report.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-storage/2023-05-31_lumen_energy-storage-procurement-study-report.pdf)

Group 2 projects must demonstrate “electricity in – electricity out” storage systems with at least 100 kW of electricity maximum output. Projects that consist of multiple individual storage systems are eligible if they add up to at least 100 kW and still demonstrate

<sup>10</sup> Aydin, Mariko Geronimo, and Cevat Onur Aydin. 2023. *California Public Utilities Commission Energy Storage Procurement Study: Appendix A*. Lumen Energy Strategy, LLC. Prepared for the California Public Utilities Commission. May 31, 2023.

<sup>11</sup> California Public Utilities Commission. 2018. *Decision 18-01-003*. Rulemaking 15-03-011.

stacking of multiple services using the same system. Hybrid storage resources paired with renewable generation and sharing the same point of interconnection are eligible.

Applications that describe the use of a commercial technology for a non-innovative or non-unique use case will not be considered responsive to Group 2. Non-innovative or non-unique use cases are considered use cases where specific types of energy storage technologies are already a commercially competitive solution in California.

Demonstrations must operate for a minimum of 12 months to collect relevant field data to inform replicability and bankability for future commercialization. Data of interest include degradation rate when providing multiple services, roundtrip efficiency, average daily charge/discharge profiles, estimated return on investment, and value of customer and grid benefits generated.

Projects will further be evaluated on their ability to provide benefits to Disadvantaged, Low-Income Communities, and/or Tribes, including but not limited to, improving health and safety, access and education, financial benefits and cost savings, and consumer protection. Projects located in and benefiting Disadvantaged, Low-Income Communities, and/or Tribes within IOU service territories must allocate appropriate funding for the engagement of a community-based-organization (CBO) and/or Tribe for relevant project tasks. A CBO is defined as a public or private nonprofit organization that should meet all of the following criteria:

- Has deployed projects and/or outreach efforts within the region (e.g., air basin or county) of the proposed disadvantaged or low-income community or similar community.
- Has an official mission and vision statements that expressly identifies serving disadvantaged and/or low-income communities.
- Currently employs staff member(s) who specialize in and are dedicated to diversity, equity, or inclusion, or is a 501(c)(3) non-profit.

For projects located in and benefiting Tribes, the Tribe must be included on the project team and within the project budget.

Applications should describe their approach to soliciting, considering, and integrating input from local communities through a community engagement plan that aims to inform, educate, and involve local community members in the project's development and deployment. Applications should identify specific community benefits and impacts that are expected to result from the project, and the actions that will be taken to achieve them. This includes workforce development, jobs created or retained, community investments, and local health impacts.

Applications will provide detailed information and plans, including, but not limited to:

- Performance Metrics, including:
  - Targeted technology improvement or innovation,
  - Expected system size (power, duration),
  - Product efficiency,
  - Product lifetime,
  - Current and targeted levelized cost of storage (\$/kWh), and
  - Anticipated avoided greenhouse gas and other air pollutant emissions.
- Proposed site location(s).
- Description of the use cases chosen for the project.
- TRL of the proposed technology/production system design, including backup materials and explanation of accomplished TRL milestones prior to the application process.

Projects not of interest in Group 2 include the following:

- Commercial Li-ion batteries deployed with conventional use cases, such as behind-the-meter customer storage
- Thermal storage without electricity discharge capabilities
- Hydrogen

## **B. CALIFORNIA ENVIRONMENTAL QUALITY ACT**

Prior to CEC approval and encumbrance, the CEC must comply with the California Environmental Quality Act (CEQA). To comply with CEQA, the CEC must have CEQA-related information from applicants and sometimes other entities, such as local governments, in a timely manner. Unfortunately, even with this information, the CEC may not be able to complete its CEQA review prior to the encumbrance deadline for every project. For example, if a project requires an Environmental Impact Report, the process to complete it can take many months. For these reasons, it is critical that applicants organize project applications and provide all CEQA-related information in a manner that minimizes the time required for the CEC to comply with CEQA and enables the CEC to complete its review in time to meet its encumbrance deadline.

In addition to any other right reserved to it under this solicitation or that it otherwise has, if the CEC determines, in its sole and absolute discretion, that the CEQA review associated with a proposed project would not likely be completed prior to the encumbrance deadline referenced above, and that the CEC's ability to meet its encumbrance deadline may thereby be jeopardized, the CEC may cancel a proposed award and award funds to the next highest scoring applicant, regardless of the originally proposed applicant's diligence in submitting information and materials for CEQA review.

## **V. TWO PHASE SOLICITATION**

Applicants will apply for funding in two phases: the Pre-Application Abstract and the Full Application. Applicants will be given one month to submit abstracts, and CEC staff will review and post results within one month of the abstract submission deadline. Applicants will have two months to submit full applications after the CEC has published abstract review results. The Pre-Application Abstract may include a project summary, project implementation schedule, and a list of proposed project partners. Pre-Application Abstracts that score well will be encouraged to submit a Full Application, which will include a project narrative, budget, schedule, scope of work, commitment letters, and additional details.

The Pre-Application Abstract and Full Application will each be evaluated in two stages: 1) administrative and completeness screening and 2) technical and cost evaluation of applications.

## **VI. STAGE ONE: ADMINISTRATIVE AND COMPLETENESS SCREENING**

The Contracts, Grants, and Loans Branch will review Pre-Application Abstracts and Full Applications for compliance with administrative requirements and completeness. Applications that fail Stage One shall be disqualified and eliminated from further evaluation.

## **VII. STAGE TWO: TECHNICAL AND COST EVALUATION OF APPLICATIONS**

Applications passing Stage One will be submitted to the Evaluation Committee to review and score based on the Evaluation Criteria in this solicitation. As an example, potential Evaluation Criteria for the solicitation could include the following (note that these are subject to change when the CEC solicitation is released):

- Technical Merit
- Technical Approach
- Impacts and Benefits to California
- Team Qualifications, Capabilities, and Resources
- Budget and Cost-Effectiveness
- Funds Spent in California
- Benefits to Disadvantaged, Low-Income Communities, and/or Tribes and Localized Health Impacts.

During the evaluation and selection process, the Evaluation Committee may schedule a clarification interview with an applicant that will be held by telephone, videoconference,

or in person at the Energy Commission for the purpose of clarification and verification of information provided in the application. However, these interviews may not be used to change or add to the contents of the original Application.

Unless the CEC exercises any of its other rights regarding this solicitation (e.g., to cancel the solicitation or reduce funding), Full Applications obtaining at least the minimum passing score based on the Evaluation Criteria will be recommended for funding in ranked order until all funds available under this solicitation are exhausted.

If the funds available under this solicitation are insufficient to fully fund a grant application, the CEC reserves the right to recommend partially funding that application. In this event, the applicant/proposed awardee and Commission Agreement Manager shall meet and attempt to reach an agreement on a reduced scope of work commensurate with the level of available funding.

## **VIII. QUESTIONS FOR STAKEHOLDERS**

CEC staff are seeking responses and comments to the following to shape the direction and scope of this solicitation:

### **General**

1. Do the Project Groups described in Section IV.A address the primary objectives of the solicitation to enable more strategic and high-value implementation of energy storage to support grid reliability?
2. In addition to the target performance metrics outlined in Section IV.A regarding LCOS, calendar life, and roundtrip efficiency, what other metrics should be reported?
3. CEC is considering releasing this funding opportunity as a two-phase solicitation that includes a Pre-Application Abstract phase and Full Application phase. Projects that are successful in the Abstract phase will have two months to prepare a Full Application. Is this approach preferable to applicants or should the CEC consider a one-phase solicitation without the Pre-Application Abstract phase?
4. Are the draft funding levels and match requirements appropriate to achieve the desired outcomes of each Group?

### **Group 1**

1. Is a three-year project timeline feasible for Group 1 projects to meet the objectives of the solicitation? Are there any potential barriers or challenges in implementing these types of projects over three years?
2. What level of analysis would an applicant be able to provide to demonstrate supply chain sustainability improvements of a proposed innovation? For example, could

applications be expected to describe the source and lifecycle impacts of relevant materials, ethics or workforce implications, and/or manufacturing scale-up capabilities?

3. What data would be useful to gather and publish to validate technology improvements and accelerate commercialization?
4. What emerging technologies can be demonstrated to further reduce energy storage safety risks?
5. Are there additional energy storage applied R&D or innovation opportunities not captured by this Group 1 concept?
6. Should there be separate qualifications or target metrics for short-duration and long-duration storage within Group 1?
7. Should real-world field demonstrations be required or optional for Group 1 projects?

## **Group 2**

1. Is a four-year project timeline feasible for Group 2 projects to meet the objectives of the solicitation? Are there any potential barriers or challenges in implementing these types of projects over four years?
2. Are there any use cases missing from Table 1 that should be included?
3. What are some examples of innovative use cases for commercial Li-ion batteries that are worth exploring in this solicitation?
4. Is the minimum scale of demonstration (>100 kW capacity) reasonable?
5. Do the Group 2 requirements sufficiently encourage projects to be in and benefitting disadvantaged communities, low-income communities, or Native American tribes?
6. To maximize the impact and benefits of Group 2 demonstrations, what partnerships are most critical?
7. What barriers and opportunities exist for partnerships with utilities or other stakeholders to demonstrate transmission or distribution-connected energy storage use cases?
8. What data would be useful to gather and publish for measurement and verification purposes and to inform bankability and replicability?
9. Is the 12-month minimum demonstration period requirement reasonable for Group 2 projects?



## **IX. WRITTEN COMMENTS**

Comments on this “draft solicitation concept” document are due by **Tuesday, January 16, 2024, at 5:00 p.m.**

Please submit comments to the CEC using the e-commenting feature by accessing the comment page for this docket at

<https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=23-ERDD-01>.

A full name, e-mail address, comment title, and either a comment or an attached document (.doc, .docx, or .pdf format) is mandatory. Please include “Energy Storage Innovations to Support Grid Reliability Concept” in the comment title. After a challenge-response test is used by the system to ensure that responses are generated by a human user and not a computer, click on the “Agree & Submit Your Comment” button to submit the comment to the CEC’s Docket Unit.

Please note that written comments, attachments, and associated contact information included within the documents and attachments (e.g., your address, phone, email, etc.) become part of the viewable public record. This information may become available via Google, Yahoo, and any other search engines.

Interested stakeholders are encouraged to use the electronic filing system described above to submit comments. If you are unable to submit electronically, you may email your comments to: [DOCKET@energy.ca.gov](mailto:DOCKET@energy.ca.gov) and include “Energy Storage Innovations Concept 23-ERDD-01” in the subject line.