

<b>DOCKETED</b>	
<b>Docket Number:</b>	19-ERDD-01
<b>Project Title:</b>	Research Idea Exchange
<b>TN #:</b>	232739
<b>Document Title:</b>	Berkeley Lab's comments/questions on Next EPIC Challenge Draft Solicitation
<b>Description:</b>	Berkeley Lab's comments/questions on Next EPIC Challenge Draft Solicitation Design-Build Competition for Zero-Emission Mixed-Use Development
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<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	4/14/2020 9:18:24 AM
<b>Docketed Date:</b>	4/14/2020



## **Berkeley Lab's comments/questions on Next EPIC Challenge Draft Solicitation**

### **Design-Build Competition for Zero-Emission Mixed-Use Development**

#### **Questions regarding the site eligibility and timeline**

1. Is a project eligible if it's located with the PG&E, SCE, or SDG&E service areas, but depends upon another service provider for direct service (such as a Community Choice Aggregator or utility commission)?
2. What standard qualifies as affordable housing? Is there a maximum area median income (AMI) that would serve as a threshold for affordable housing?
3. Many large scale, mixed-used developments are comprised of smaller sub-phases. Characteristics, such as density and percent of affordable housing, of these sub-phases can differ from one to the other. Are the eligibility criteria for a sub-phase for which an application would be submitted for or for the entire development (comprised of multiple sub-phase areas)?
4. Project sites are designated as low-income based on current and past characteristics. Would a project area be considered if the proposed project will change the area's characteristics? For example, a proposed project will occur at the site of an abandoned property which is not appearing on the characteristic mapping tools- would that exclude that project?
5. Are there variances or exceptions for the gas consumption criteria? Mixed-use developments depend upon a variety of uses, including restaurants. The restaurant and culinary industry is further behind on using all electric equipment. If a site is 100% electric, it might present a challenge for developers who are trying to attract tenants.
6. Including eligibility criteria that require advanced energy demand system management systems prevents many projects/developments from considering this funding opportunity. Many developers are still trying to understand this technology and how it should be integrated within large, mixed-use developments. Is there an opportunity to use this funding opportunity to help developers design and construct these systems? Is there another funding opportunity that these developers should consider?
7. What does it mean that a site is to be secured by Feb 2021? Projects and developments can take upwards of three years to go through a CEQA process and subsequent entitlements. If entitlement is required for "securing the site" then only projects that have been entitled are eligible for this funding opportunity.



## Questions on Technology solutions

8. This is an interesting challenge and will be technically exciting. To be impactful, it should also address the question of scalability and broad applicability. Indeed, I think the challenge question should be edited to say “Can we design and build mid-rise, mixed-use development that is affordable, equitable, climate-resilient, cost-competitive, **scalable** and emissions-free? Arguably, we already know that this is technically feasible and can be cost-competitive for new construction. The big question is how to scale. Otherwise we could end up with a one-off “white elephant” demonstration project. Toward that end, we think the challenge should include an element of R&D on scalability. This includes technical aspects (e.g. configuring technical solutions that work within prevalent design and construction practices) as well as R&D on delivery process and markets to identify the ways this can be incorporated into current development models and practices.
  9. Performance metrics on affordability should be defined, e.g., within 10% more than the standard construction cost.
  10. Life cycle GHG should be used which includes the embodied carbon footprint of materials, equipment (renewable technologies included), and construction.
  11. Allow flexibility of code compliance with Title 24, i.e., individual buildings may not all comply with Title 24, but the community as a whole does comply.
  12. Community systems design should be simulated across scenarios to ensure robustness of performance, e.g., historical multi-year weather data, future weather data, extreme weather events, and various occupant behavior styles (on energy use).
  13. Human dimension (technology adoption, human-building interaction, flexibility of comfort/productivity envelope) should be considered in the design and operation process.
  14. Resilience metrics should be defined, e.g., be able to operate in an island mode (self sufficient) to serve critical loads (50% of peak loads) for 6 to 24 hours.
  15. Data collection and protocol of testing, as well as M&V should be defined. Data should be well documented and made available for the public for research purposes.
  16. District energy systems should be evaluated to determine feasibility in terms of optimal size (scaling), cost, and performance.
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