DOCKETED	
Docket Number:	23-ERDD-01
Project Title:	Electric Program Investment Charge (EPIC)
TN #:	252120
Document Title:	AES Clean Energy Comments - Advancing Clean, Dispatchable Generation Concept
Description:	N/A
Filer:	System
Organization:	AES Clean Energy
Submitter Role:	Public
Submission Date:	9/1/2023 2:38:42 PM
Docketed Date:	9/1/2023

Comment Received From: AES Clean Energy
Submitted On: 9/1/2023
Docket Number: 23-ERDD-01

23-ERDD-01 Advancing Clean, Dispatchable Generation Concept

Additional submitted attachment is included below.

BEFORE THE CALIFORNIA ENERGY COMMISSION
DIVISION OF THE CALIFORNIA NATURAL RESOURCES AGENCY

In the Matter of the Draft Solicitation Concept of Clean Dispatchable Generation Initiative EPIC 4	Docket No, 23-ERDD-01

COMMENTS OF AES CLEAN ENERGY DEVELOPMENT, LLC (US) ON THE DRAFT SOLICITATION CONCEPT REGARDING CLEAN, DISPATCHABLE GENERATION

Dan Patry
Senior Manager, State Government Affairs
AES Clean Energy Development, LLC
2180 South 1300 East Suite 600
Salt Lake City, Utah 84106-4462
dan.patry@aes.com

Date: August 29, 2023

BEFORE THE CALIFORNIA ENERGY COMMISSION
DIVISION OF THE CALIFORNIA NATURAL RESOURCES AGENCY

In the Matter of the Draft Solicitation Concept of Clean Dispatchable Generation Initiative EPIC 4	Docket No, 23-ERDD-01

COMMENTS OF AES CLEAN ENERGY DEVELOPMENT, LLC (US) ON THE DRAFT SOLICITATION CONCEPT REGARDING CLEAN, DISPATCHABLE GENERATION

I. INTRODUCTION

AES Clean Energy appreciates the opportunity to submit comments on the draft solicitation concept for grants seeking clean, dispatchable energy technologies to be issued through the California Energy Commission's (CEC) Electric Program Investment Charge (EPIC) 2021-2025 Investment Plan. AES Clean Energy is one of the top renewable energy growth platforms in the country, and is focused on accelerating the safe, reliable transition to clean energy solutions such as wind, solar, and energy storage throughout the U.S. Through its affiliates and subsidiaries AES Clean Energy maintains an operating portfolio of over five gigawatts and a development pipeline of fifty-one gigawatts and is an experienced California power provider with over 30 years of presence in the state, owning and operating a portfolio of 1.5 GW of solar, wind and storage projects and 3.6 GW gas-fired portfolio providing critical reliability for the California grid.

AES Clean Energy applauds the CEC for focusing its grants efforts to advance the performance and demonstrate cost improvements of clean dispatchable generation technologies. AES is uniquely placed to develop and execute renewable fuel powered dispatchable generation projects given our extensive presence in the California energy market. For more than 30 years AES

has developed, permitted, constructed, operated, and maintained generation assets that include gas fired CCGT (Combined Cycle Gas Turbine) and thermal steam cycle, wind, solar and battery energy storage.

We offer these high-level comments on the draft solicitation concept parameters, particularly questions 1, 2 and 5 from the draft solicitation concept, below.

II. AES' Comments on Draft Solicitation Concept

1) Do the Project Groups in Section IV.A. of this document address the primary objectives of expanding and improving renewable fueled technologies that can a) provide back-up power during grid-outages and acts as grid support and b) support grid resiliency and flexibility? If not, why? Are there alternative pathways or priorities that should be considered?

   A: At a high level, AES notes what appears to be a contradiction between the stated goals of the draft solicitation concept; back-up power and dispatchability. Back-up power seems to be meant for supporting the needs of the grid in extreme/critical conditions, but not to replace supply in case of a black-out/brown-out for emergency supply. In this sense dispatchable and behind-the-meter applications for renewable fueled projects, arguably, are exclusive of one another (virtual power plant use cases aside). As a practical matter, for behind-the-meter applications the tariff of the local service supplier must be weighted in the granting decision and the low end of the capacity range at 25kW seems in the draft solicitation concept is very low for a dispatchable resource.

   AES suggests further refinement of both the project capabilities sought for funding and the capacity of the project depending on the use case itself.

2) Which renewable fuels and/or generation technologies have the greatest potential for providing grid benefits in the near-term (5 years) and medium-term (10 years) that should be prioritized for funding?

Separate and aside from the scope of this draft solicitation, AES recently performed a preliminary technology screening of generating options that could potentially consume up to 100 percent hydrogen as a fuel. AES evaluated key constraints like technology limitations and capacities and development towards 100% hydrogen capabilities; site footprint; large desired generating capacity between 100MW and up of 1,000 MW; high fuel cost; power density; fuel efficiency and safety and environmental impacts as the most important ones. The different technologies that have been considered are Combustion Turbine Generators (CTG) of Aeroderivative and Frame types, Reciprocating Engine Generators and Fuel Cell Generators. The preferred technology for 100% hydrogen combustion solutions to provide clean, flexible, and dispatchable power ultimately depends upon expected service, fuel availability, and operating costs for the application.

5) . Is four years a feasible project timeline? Are there any potential barriers or challenges in implementing the proposed projects?

a. If grant awardees were CEQA-ready (see CEQA in Section 4) but need to obtain regulatory approvals and permitting during the project, is a 4-year timeframe feasible for completion? If not, what is the recommended term for a funded project?

AES has expertise in building and operating CTG power plants and continuous involvement with OEMs and technology stakeholders to stay up to date and adapt to evolving and innovative technologies. Commercially proven technologies that target 2030 as the first year by when 100% hydrogen capable units will be already commercial. Some are already 100% hydrogen capable with wet combustion systems. While we have encountered claims from one OEM that they have 100+ operational gas turbines with greater than 8 million hours of hydrogen burning experience, we anticipate 4 years to be not quite enough runway to deploy these applications in California.

III. CONCLUSION

AES Clean Energy appreciates the opportunity to submit comments on the draft solicitation concept and looks forward to deploying reliable and dispatchable clean hydrogen solutions to the California grid.

Respectfully submitted,

/s/ Dan Patry

Dan Patry
Senior Manager, State Government Affairs
AES Clean Energy Development, LLC
2180 South 1300 East Suite 600
Salt Lake City, Utah 84106-4462
dan.patry@aes.com

Date: August 29, 2023