

DOCKETED	
Docket Number:	21-ESR-01
Project Title:	Energy System Reliability
TN #:	253527
Document Title:	Comments of the California Municipal Utilities Association on Lead Commissioner Workshop on Senate Bill 423 Emerging Renewables
Description:	N/A
Filer:	System
Organization:	California Municipal Utilities Association
Submitter Role:	Public Agency
Submission Date:	12/5/2023 1:28:37 PM
Docketed Date:	12/5/2023

*Comment Received From: California Municipal Utilities Association
Submitted On: 12/5/2023
Docket Number: 21-ESR-01*

**Comments of the California Municipal Utilities Association on Lead
Commissioner Workshop on Senate Bill 423 Emerging Renewables**

Additional submitted attachment is included below.

STATE OF CALIFORNIA ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:
Energy System Reliability

Docket No. 21-ESR-01

**COMMENTS OF THE CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION ON
THE NOVEMBER 17, 2023 LEAD COMMISSIONER WORKSHOP ON SENATE BILL
423 EMERGING RENEWABLE AND FIRM ZERO CARBON RESOURCES**

I. INTRODUCTION

Pursuant to the October 31, 2023 Notice of Availability in the Docket 21-ESR-01, the California Municipal Utilities Association (“CMUA”) provide these written comments on the California Energy Commission (“CEC” or “Commission”) Lead Commissioner Workshop on Senate Bill (“SB”) 423 Emerging Renewable and Firm Carbon Resources (“Workshop”), held November 17, 2023.

II. COMMENTS

CMUA thanks the Commission for exploring the development and challenges of emerging renewable and firm carbon resources. This is an important topic since firm resources will play an important role in diverse portfolios to maintain reliability in an affordable manner. CMUA emphasizes that hybrid resources, solar and/or wind + storage, should not be included as a firm carbon resource. Including these resources runs contrary to the letter and intent of the legislation and misconstrues that value of the SB 423 assessment.

SB 423 was passed by the Legislature and signed into law in 2021 with the goal of bolstering grid reliability and resiliency. Towards that end, the bill found and declared that California has been a “global leader in solar energy and lithium-ion battery storage deployment, and these resources are increasingly and urgently needed to boost electrical grid reliability and

support the state’s transition to clean energy in a cost-effective manner,” but that “additional resources are needed to provide for a clean, reliable, and resilient electrical grid.”¹ The findings and declarations further highlight the need to develop additional clean energy resources like long-duration energy storage and geothermal.

Legislative analyses also indicate the intent of the legislation is to assess firm carbon resources that do not include hybrid resources. For example, the Senate Floor analysis states that wind and solar have “inescapable variability” which means “other resources are necessary to provide generation when these resources are not able to provide electrons to the grid.”² The analysis further noted that “Batteries have been improving, and can help make up for fluctuations that last for multiple hours, but they cannot make up for the longer fluctuations. Other firm zero-carbon resources include: geothermal, offshore wind, green electrolytic hydrogen, long-duration energy storage, and multi-day energy storage.”³

The law defines a firm zero-carbon resource as having high availability for the duration of multiday extreme or atypical events, including periods of low renewable generation.⁴ Hybrid resources, by definition, cannot be available during periods of low generation because the generating portion of the hybrid resource – the solar or wind – would be the generation experiencing issues producing electrons. Furthermore, the CEC’s presentation shows that the capacity factor of solar + storage is below 50%.⁵ This does not meet the test of high availability. The CEC’s initial modeling also shows that in 2033, there could be nighttime load issues due to

¹ Senate Bill 423 (2021).

² Senate Rules Committee, Energy: Firm Zero-Carbon Resources, (Sept. 10, 2021).

³ *Id.* CMUA is reciting the analysis language here; we do not necessarily endorse the inclusion of all these resources as “firm.”

⁴ Cal. Pub. Resources Code § 25305.5 (2023).

⁵ *Presentation of Lead Commissioner Workshop on Senate Bill 423 Emerging Renewable and Firm Zero Carbon Resources 11-17-2023*, Cal. Energy Commission (Nov. 17, 2023) (TN #253179) at Slide 17.

battery depletion therefore indicating that batteries do not have high availability unless they are able to be charged by a renewable resource.⁶

Additionally, geothermal and hydroelectric generation not properly characterized as low-emission resources. They are renewable resources in the case of geothermal, and zero-carbon for hydroelectric. CMUA agrees with the Sacramento Municipal Utility District (“SMUD”) comments⁷ and urge the Commission to recognize that these resources should be recategorized from low-emission resources to zero-emission resources to be consistent with state policy.

The workshop presentation also appears to indicate that a portfolio of non-firm resources can replace the reliability benefits of firm resources, if there are “about 20% more dispatchable use-limited resources”.⁸ It is not clear how this could be the case, especially since the multi-day results provided in the presentation concludes that by 2033, the expansion of energy storage, which are considered dispatchable use-limited resources, along with demand response, leads to more issues overnight when batteries are depleted. This issue needs to be explored further and costs should be examined. The SB 100 process is also taking a deeper look at reliability and potentially, power flow modeling.

SB 423 is complementary to the SB 100 study as it takes a deeper dive into firm clean resources. From the inaugural SB 100 study, California will need significantly more solar, wind, and battery storage.⁹ The value of SB 423 is to consider other resources to broaden the portfolio and determine what other assets can help maintain reliability at an affordable rate. By including hybrid resources in the SB 423 process, its value is diminished as the focus gets lost. Thus,

⁶ *Id.* at Slide 36.

⁷ *Comments of Sacramento Municipal Utility District on Lead Commissioner Workshop on Senate Bill 423 Emerging Renewable and Firm Zero Carbon Resources*, (Dec. 4, 2023), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253515&DocumentContentId=88739>. (TN# 253515)

⁸ *Presentation of Lead Commissioner Workshop on Senate Bill 423 Emerging Renewable and Firm Zero Carbon Resources 11-17-2023*, Cal. Energy Commission (Nov. 17, 2023) (TN #253179) at Slide 30.

⁹ *See generally* Cal. Energy Commission 23-SB-100.

hybrid resources should not be included in the consideration of emerging renewable and firm resources.

CMUA would like to express support for hydrogen and carbon capture and sequestration (“CCS”) technology discussed at the workshop.¹⁰ CMUA members are investing in hydrogen projects as hydrogen can serve as a firm, low- or zero-carbon resource that contributes to reliability. CCS also has the potential to contribute to system and local reliability. These new technologies can both contribute to reliability and reduce emissions and should be recognized and utilized as firm zero-carbon resources.

III. CONCLUSION

CMUA appreciates the opportunity to provide these comments and look forward to continuing to work with the Commission in this proceeding.

Date: December 5, 2023

Respectfully submitted,

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¹⁰ *Presentation of Lead Commissioner Workshop on Senate Bill 423 Emerging Renewable and Firm Zero Carbon Resources 11-17-2023*, Cal. Energy Commission (Nov. 17, 2023) (TN #253179) at Slide 12.