DOCKETED	
Docket Number:	22-IEPR-01
Project Title:	2022 Integrated Energy Policy Report Update
TN #:	242429
Document Title:	Form Energy Comments on the Draft Scoping Order for the 2022 Integrated Energy Policy Report Update
Description:	N/A
Filer:	System
Organization:	Form Energy, Inc.
Submitter Role:	Public
Submission Date:	3/22/2022 5:04:44 PM
Docketed Date:	3/23/2022

Comment Received From: Form Energy, Inc.
Submitted On: 3/22/2022
Docket Number: 22-IEPR-01

Form Energy Comments on the Draft Scoping Order for the 2022 Integrated Energy Policy Report Update

Additional submitted attachment is included below.

March 22, 2022

California Energy Commission
Docket Unit
Docket No. 22–IEPR–01
715 P Street
Sacramento, CA 95814

Subject: Form Energy, Inc. Comments on the Draft Scoping Order for the 2022 Integrated Energy Policy Report Update, Docket #22–IEPR–01

Form Energy, Inc. ("Form Energy") appreciates the opportunity to comment on the California Energy Commission's (CEC) Draft Scoping Order for the 2022 Integrated Energy Policy Report Update. Form Energy supports the CEC's ongoing efforts to develop and maintain analytical tools to inform energy system policies, regulations, and investments. In order to allow for effective reliability planning in California's increasingly decarbonized grid, we recommend two key additions to the scope of the 2022 Integrated Energy Policy Report (IEPR). First, the CEC should commit to developing more diverse hourly demand forecasts that reflect at least 1-in-5, 1-in-10, and 1-in-20 weather years. Second, we encourage the CEC to work collaboratively with the California Public Utilities Commission (CPUC) to review and improve renewable generation profiles to accurately capture typical and atypical weather impacts on generation.

About Form Energy
Form Energy is developing a new class of multi-day energy storage systems. Our goal is to enable a fully renewable electric grid that's reliable and cost-effective year-round, even in the face of multi-day weather events. Our first commercial product is a rechargeable, iron-air battery capable of delivering electricity at rated capacity for 100 hours at system costs competitive with conventional power plants and at less than 1/10th the cost of lithium-ion systems. With over 200 employees, Form Energy has offices in the San Francisco Bay Area; Somerville, MA; and the Greater Pittsburgh area. We have secured over $350M in funding from impact-oriented investors.

Recommendation #1: The CEC should commit to developing more diverse hourly demand forecasts that reflect at least 1-in-5, 1-in-10, and 1-in-20 weather years
Historically, state energy agencies have conducted resource planning and capacity expansion modeling using hourly demand forecasts based on 1-in-2 weather years, supplemented with

historic production reserve margins (PRM), to achieve a 0.1 loss of load expectation standard. This historical approach assumes that deviations from "average" conditions, as represented by the 1-in-2 year demand forecasts, can be accounted for with a simple percentage margin. In today's grid, atypical weather magnifies reliability risks because the availability of generation is increasingly weather-dependent. Moreover, climate change is increasing both the prevalence and severity of extreme weather events.

At this point, both energy system analyses and real-world events indicate that average conditions no longer drive reliability risks and resource needs. However, the CPUC's Decision 21-06-035 in Rulemaking 20-05-003 (Integrated Resource Planning) explained that the CPUC cannot sufficiently plan for atypical weather conditions in capacity expansion planning because it relies on demand forecasts produced by CEC, which currently only produces a 1-in-2 demand forecast. We urge the CEC to rectify this issue by developing 1-in-5, 1-in-10, and 1-in-20 hourly demand forecasts as part of the 2022 IEPR Update.

Recommendation #2: The CEC should collaborate with the CPUC to review and improve renewable generation profiles to accurately capture typical and atypical weather impacts on generation

Form Energy's analysis of the CPUC's renewable generation datasets has identified significant discrepancies between the renewable energy profiles used in RESOLVE and other public sources of renewable energy profiles, including SERVM datasets. We are concerned that small discrepancies in generation shapes and capacity factors may have an outsized impact on optimal resource portfolios in scenarios with high levels of renewables.

We recommend that, as part of the 2022 IEPR Update, the CEC collaborate with the CPUC to audit and refresh the renewable energy profiles used in agency capacity expansion modeling. Key goals should include: 1) developing realistic 8,760 generation capacity factors and shapes over typical and atypical years; 2) assessing how those shapes may change over time due to climate change (to inform decisions about what profiles should constitute typical and atypical profiles in future years); and 3) aligning the generation profiles used in capacity expansion modeling and production cost modeling.

Conclusion

Form Energy appreciates the opportunity to provide public comment. We look forward to continuing to collaborate with CEC staff on these important issues.

Respectfully,

Sophie Meyer
Policy Advisor, Western States
Form Energy, Inc.
smeyer@formenergy.com