

STATE OF CALIFORNIA

Public Utilities Commission  
San Francisco

**M e m o r a n d u m**

**Date:** August 3, 2020

**To:** The Commission  
(Meeting of August 6, 2020)

**From:** Hazel Miranda, Director  
Office of Governmental Affairs (OGA) – Sacramento

**Subject:** **Commission Position on Energy Resource Legislation – AB 1720 (Carrillo): Energy: long-duration energy storage: environmental review and procurement (amended 7/27/20)**

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**RECOMMENDED POSITION: OPPOSE**

**REASON:** AB 1720 (Carrillo): Energy: long-duration energy storage: environmental review and procurement undermines the goals of the Integrated Resource Planning (IRP) process and compromises its holistic approach by favoring a specific clean energy resource. Senate Bill (SB) 350 (de Leon, 2015), requires the California Public Utilities Commission (CPUC) to adopt an IRP process that identifies a balanced energy resource portfolio that meets California’s greenhouse gas (GHG) emission reduction goals, while maintaining electric service reliability, at the lowest possible cost to ratepayers.

On March 26, 2020, the CPUC adopted Decision (D.) 20-03-028 on the 2019-20 electric resource portfolio to inform the individual IRPs and Transmission Planning Process. Specifically, D. 20-03-028 –

1. Adopted an optimal portfolio of energy resources for use in long-term electricity planning, known as the Reference System Portfolio (RSP), to be used as guidance by all Load-Serving Entities (LSEs – electric investor owned utilities (IOUs), community choice aggregators (CCAs) and electric service providers (ESPs)) required to file individual IRPs in 2020;
2. Indicated 14,500 MW of new supply-side renewables, 8,900 MW of new battery storage and 973 MW of new long-duration energy storage resources needed by 2030, to stay on track to meet the state’s GHG emission reduction target, which is also consistent with new near-term procurement of 3,300 MWs ordered in IRP Procurement Track Decision (D.) 19-11-016; and

3. Maintains a 2030 GHG planning target of 46 million metric ton carbon dioxide equivalent (MMTCO<sub>2</sub>e) for the electric sector. The 46 MMTCO<sub>2</sub>e target is within the 30–53 MMTCO<sub>2</sub>e range established by the California Air Resource Board (CARB) for the electric sector and is 26 percent below the actual GHG emissions for the electric sector in 2017. It is also 56 percent below GHG emissions for the electric sector in the year 2000, which represents the equivalent of taking 12.5 million passenger vehicles off the road each year. This GHG target was previously adopted in the prior IRP cycle via D.18-02-018, and the target is still on track to meet the state’s statutory goal of reducing economy-wide GHG emissions to 40 percent below 1990 levels by 2030. LSEs are required to present portfolios based on their respective share of this adopted 46 MMTCO<sub>2</sub>e target as well as for a 38 MMTCO<sub>2</sub>e scenario target.

A critical outcome of the IRP process is to better optimize clean energy resources so that GHG emission reduction targets are met at the lowest possible cost to ratepayers. Indeed, the IRP process aims to move away from a siloed procurement strategy based on specific energy resource types or program targets. An IRP, in its most basic form, represents a technology-neutral analysis leading to an optimized portfolio of energy resources to serve load constrained by certain factors. Granting certain types of energy resources (e.g., long-duration energy storage) procurement priority is contrary to the statutory objective of the IRP process, specifically the requirement that the CPUC identify a “diverse and balanced portfolio of resources” (Public Utilities Code Section 454.51). Creating a pool of clean energy resources and making it as inclusive as possible is important in achieving the important legislative requirements embodied in SB 350 (de Leon).

LSEs are currently developing their individual IRPs to be submitted to the CPUC by September 1, 2020. Each of the LSE’s individual IRPs must propose how it will meet its share of the 2030 46 MMTCO<sub>2</sub>e GHG target, and other policy goals, given its unique resources and local community preferences, as well as address expected impacts on disadvantaged communities. Once LSE IRPs are filed, the CPUC will review, approve, and aggregate these individual portfolios into a Preferred System Portfolio (PSP). Once the PSP is adopted by the CPUC, likely by the first quarter 2021, it will serve as the primary energy resource guidance plan for each LSE’s procurement decisions over the next 10 years until further updates and modifications are made in future IRP future cycles. Importantly, the PSP will also serve as a guide for any potential new resource procurement the CPUC determines necessary for achieving the state’s goals across the IRP planning horizon.

A new legislative energy resource procurement requirement will short circuit and undermine this process and could result in an energy resource mix that falls significantly short of meeting the goals established in SB 350 (de Leon, 2015). Finally, a new legislative energy resource procurement requirement will likely lead to hundreds of millions, if not billions, of dollars in additional, unnecessary, and avoidable long-term costs that will ultimately be borne by all LSE ratepayers.

## **SUMMARY OF BILLS & STATUS**

### ***AB 1720 (Carrillo): Energy: long-duration energy storage: environmental review and procurement (amended 7/27/20)***

Status – Senate Energy, Utilities & Communications Committee: Bill Hearing on 8/3/20

This bill would –

- 1) Require the CPUC, by January 4, 2021, to report to the Governor, the California Independent System Operator (CAISO), the Department of Water Resources (DWR), and the California Energy Commission (CEC) on the specific types and amount of long-duration energy storage and in-service dates of that storage included in the Integrated Resource Plans (IRPs) submitted by the individual load-serving entities (LSEs).
- 2) Requires the California Public Utilities Commission (CPUC), in the report, to state whether it will issue an order on or before March 1, 2021, requiring LSEs in the aggregate, to procure, at a minimum, the amount of long-duration energy storage capacity identified in the CPUC's 2019-20 IRP Reference System Plan (RSP) Decision for the 38 MMTCO<sub>2e</sub> GHG reduction target which equates to roughly 1,600 MWs of new long-duration energy storage capacity.
- 3) Requires DWR, if the CPUC does not issue that order, to procure that amount of long-duration energy storage capacity, as specified, and would specify that the long-duration energy storage capacity is procured on behalf and for the benefit of the customers of the LSE.
- 4) Provides that the costs incurred by DWR resulting from the procurement are recoverable as a revenue requirement from all LSE customers.
- 5) Requires the CPUC, upon request by the DWR, to order the electric investor owned utilities (IOUs) to act as the agent of the department, to provide billing, collection, and other related services on terms and conditions that reasonably compensate the electrical corporations for their services, and to adequately secure payment to the department.
- 6) Establishes the Long-Duration Energy Storage Account in the DWR Electric Power Fund as a repository for moneys recovered from the customers of LSEs.
- 7) Continuously appropriate moneys in the account to the department for purposes of the procurement, thereby making an appropriation.

- 8) Requires the CPUC and the CEC to timely incorporate consideration of long-duration energy storage systems, as defined, into their energy and resource planning.
- 9) Requires the CPUC and the CEC to consider measures to advance described objectives for long-duration energy storage, including support through research and development, demonstration, procurement, and incentives.
- 10) Prohibit the San Diego County Water Authority from prequalifying or shortlisting or awarding a contract to perform any portion of a long-duration energy storage project, except as provided.

## **CURRENT LAW**

Existing law:

- Requires each electric investor owned utility (IOU) to file with the California Public Utilities Commission (CPUC) a proposed electricity procurement plan, and requires the CPUC to review and accept, modify, or reject that plan.
- The procurement plan must include, among other elements, a showing that the electric IOU will first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible. (Public Utilities Code Section 454.5)
- Requires the CPUC to a) identify a diverse and balanced portfolio of resources needed to ensure a reliable electricity supply that provides optimal integration of renewable energy in a cost-effective manner. The portfolio shall rely upon zero carbon-emitting resources to the maximum extent reasonable and be designed to achieve any statewide greenhouse gas (GHG) emissions limit established pursuant to the California Global Warming Solutions Act of 2006; b) direct each electric IOU to include, as part of its proposed procurement plan, a strategy for procuring best-fit and least-cost resources to satisfy the portfolio needs identified by the CPUC; and c) ensure that the net costs of any incremental renewable energy integration resources procured by an electric IOU to satisfy the need identified by the CPUC. (Public Utilities Code Section 454.51, emphasis added)
- Requires the CPUC to adopt a process for each Load-Serving Entity (LSE) – electric IOUs, community choice aggregators and electric service providers - to file an Integrated Resource Plan (IRP) to ensure LSEs meet the GHG emissions reduction targets for the electricity sector; procure at least 50 percent eligible renewable energy resources by December 31, 2030; enable each LSE to fulfill its obligation to serve its customers at just and reasonable rates; minimize impacts on ratepayers' bills; ensure system and local reliability; strengthen the diversity, sustainability, and

resilience of the bulk transmission and distribution systems, and local communities; enhance distribution systems and demand-side energy management; and minimize localized air pollutants and other GHG emissions, with early priority on disadvantaged communities. (Public Utilities Code Section 454.52)

- Requires that the California Energy Commission (CEC) set statewide targets that will achieve a cumulative doubling of energy efficiency savings from all electricity and natural gas retail end-users by 2030, to the extent that is feasible, cost-effective and will not adversely impact public health and safety. (Public Resources Code Section 25310(c))
- Requires the CPUC to establish targets for all potentially achievable cost-effective electricity efficiency savings. (Public Utilities Code Section 454.55)
- Requires the CPUC to establish targets for all potentially achievable cost-effective natural gas efficiency savings; and that natural gas IOUs shall first meet their unmet resource needs through all available natural gas efficiency and demand reduction resources that are cost effective, reliable, and feasible. (Public Utilities Code Section 454.56)
- Requires each publicly owned utility (POU) to adopt and regularly update an IRP substantially similar to the IRPs developed by LSEs, to be reviewed by the CEC. (Public Utilities Code Section 9621)
- Allows the CPUC to collect up to \$83 million annually until December 31, 2019 and use these funds to provide incentives for distributed energy resources, including energy storage systems, until January 1, 2021. (Public Utilities Code Section 379.6)
- Directs the CEC and the CPUC, where feasible, to authorize procurement of resources to provide grid reliability services that minimize reliance on system power and fossil fuel resources and, where feasible, cost effective, and consistent with other state policy objectives, increase the use of large- and small-scale energy storage. (Public Utilities Code Section 400)
- Requires the CPUC to determine appropriate targets, if any, for LSEs to procure energy storage systems. Requires LSEs to meet any targets adopted by the CPUC by 2015 and 2020. Requires POUs to set their own targets for the procurement of energy storage and then meet those targets by 2016 and 2021. (Public Utilities Code Section 2835 et seq.)
- Requires LSEs and POUs to comply with the Renewables Portfolio Standard and delegate's authority to CPUC and the CEC, respectively. (Public Utilities Code Sections 399.11 – 399.32)

- Requires all LSEs, including POUs, to procure 50 percent of their annual electricity retail sales from eligible renewable energy resources by 2030. (Public Utilities Code Section 399.11 et seq.)
- Requires the CPUC to evaluate the potential for all types of long duration bulk energy storage as part of a new or existing proceeding. (AB 33 (Quirk, Chapter 680, Statutes of 2016) Findings and Declarations)

### **CRITICAL ANALYSIS:**

The new long-duration energy storage procurement requirements in AB 1720 (Carrillo) undermines the integrity of the Integrated Resource Planning (IRP) process, analyses, and Decision (D.) 20-03-028 by –

1. Encouraging the development of several proposed pumped hydro-electric storage resources identified by the sponsors of this bill – Eagle Mountain Pumped Storage Project (1,300 MW)<sup>1</sup> and the San Vicente Energy Storage Facility (500 MW)<sup>2</sup> – whose capacity, when combined (1,800 MW), far exceeds the optimal amount of long-duration energy storage (973 MW) identified in D. 20-03-028. This will have the impact of eliminating the need for other energy resources identified in the IRP process that would provide similar benefits, at lower costs, and create additional uncertainty for individual LSEs as to which energy resources, and in what amounts, they should plan to procure to achieve their share of the 2030 46 million metric ton of carbon dioxide equivalent (MMTCO<sub>2e</sub>) greenhouse gas (GHG) emission reduction target;
2. Imposing unreasonable and arbitrary procedural and approval deadlines on the California Public Utilities Commission (CPUC);
3. Utilizing an unadopted, lower GHG emissions reduction target (38 MMTCO<sub>2e</sub>) as the foundation for the studies required by the bill;
4. Overriding the established trajectory of the existing IRP proceeding (Load-Serving Entity (LSE) – electric investor owned utilities (IOUs), community choice aggregators (CCAs) and electric service providers (ESPs) - individual IRPs are due to the CPUC on September 1, 2020 and long-lead time, diverse resources analyses are planned to be scoped in the IRP proceeding beginning in Fall 2020);

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<sup>1</sup> Eagle Mountain Pumped Storage Project – Project Description: <http://www.eaglecrestenergy.com/project-description.html>

<sup>2</sup> San Vicente Energy Storage Facility: <https://www.sdcwa.org/san-vicente-energy-storage-facility>

5. Disregarding LSE efforts to explore the procurement of long-duration energy storage resources (recent CCA long-duration storage Request for Information<sup>3</sup>) and the CPUC specifically encouraging LSEs to initiate procurement and planning activities within their individual IRP portfolios to bring long-duration energy storage resources to market; and
6. Subjecting LSE ratepayers to hundreds of millions, if not, billions of dollars of additional, long-term electric procurement costs when they are already burdened with utility wildfire mitigation, renewable power generation and end-use electrification costs, while experiencing a decline in income as a result of the economic contraction due to the COVID-19 pandemic.

As referenced above, D. 20-03-028 (adopted by the CPUC on March 26, 2020) -

1. Established an optimal portfolio of energy resources for use in long-term electricity planning, known as the RSP, to be used as guidance by all LSEs required to file individual IRPs in 2020;
2. Indicated 14,500 MW of new supply-side renewables, 8,900 MW of new battery storage and 973 MW of new long-duration energy storage resources needed by 2030 compared to the 2017-18 IRP results to stay on track to meet the state's 2030 GHG emissions reduction target.
3. Maintains a 2030 GHG planning target of 46 MMTCO<sub>2</sub>e for the electric sector. The 46 MMTCO<sub>2</sub>e target is within the 30–53 MMTCO<sub>2</sub>e range established by California Air Resource Board (CARB) for the electric sector and is 26 percent below the actual GHG emissions for the electric sector in 2017. It is also 56 percent below GHG emissions for the electric sector in the year 2000, which represents the equivalent of taking 12.5 million passenger vehicles off the road each year. This GHG emissions reduction target was previously adopted in the 2017-18 IRP cycle via D.18-02-018, and the target is still on track to meet the states statutory goal of reducing economy wide GHG emissions to 40 percent below 1990 levels by 2030. LSEs are required to present portfolios based on their respective share of this adopted 46 MMTCO<sub>2</sub>e target as well as portfolios based on a 38 MMTCO<sub>2</sub>e scenario GHG emissions reduction target.

For background, the CPUC adopted D. 18-02-018 in February 2018, pursuant to Senate Bill (SB) 350 (de Leon, 2015), which formally established the two-year IRP process. The stakeholder informed IRP process employs a thorough, technology-neutral analysis to identify an optimal portfolio of energy resources needed by California's electric sector to meet the state's 2030 GHG emission reduction target. In this way, the IRP process has moved away from the historical siloed procurement strategy based on specific energy resource types. Instead, the IRP process optimizes across all potential energy

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<sup>3</sup> Peninsula Clean Energy – Request for Information overview:  
<https://www.peninsulacleanenergy.com/previousrfo/rfi-long-duration-storage/>

resources to achieve GHG emission reductions at least cost to ratepayers, while maintaining electric service reliability.

As noted above, the IRP is a two-year process. The first year of the IRP cycle is designed to evaluate the appropriate GHG emission planning target for the electric sector and LSEs, and to identify the optimal mix of energy resources to meet the state's GHG emission reduction and electric service reliability goals. The second year of the IRP cycle is designed to consider the portfolios and actions each LSE proposes for meeting these goals, to allow the CPUC to review each LSE plan and aggregate LSE energy resource portfolios into a single system-wide portfolio (Preferred System Portfolio (PSP)), and to consider whether further action is needed to meet state goals. D. 20-03-028 is the culmination of the first year of the 2019-20 IRP cycle and this is the second time the CPUC has undertaken an IRP cycle.

LSEs are currently developing their individual IRPs using the RSP adopted in D.20-03-028 as a guide, and they are due to be filed to the CPUC on September 1, 2020, for review, approval, and aggregation into the PSP. D.20-03-028 not only adopted the RSP but also specifically encouraged LSEs to initiate procurement and planning activities within their individual IRP portfolios to bring long-duration energy storage resources to market. The CPUC expects LSEs to explain how they plan to support the development of long-duration storage within their individual IRPs.

The CPUC also indicated in D.20-03-028 that it plans to consider procurement action after it has reviewed LSE individual IRPs as well as conducts further analysis regarding the need for other types of long-lead time resources (including geothermal and off-shore wind) that could provide resource diversity and meet capacity needs in the 2026 and 2030 timeframes, respectively. D.20-03-028 clearly stated the CPUC's intent to address long-duration energy storage this year within the procurement track of the IRP proceeding (Rulemaking (R.)16-02-007). The CPUC is optimistic that LSEs have the capacity, ability, and policy motivation to procure the optimal portfolio of energy resources identified in the RSP. The CPUC is also confident that it has the necessary tools to not only conduct thorough analysis that can strengthen the justification for procurement of long-duration energy storage resources, but that it has the statutory authority to ensure that these resources, as well as others identified in the RSP, will be procured to achieve California's 2030 electric sector GHG emissions reduction target and beyond.

**Finally, compromising the ability of LSEs to procure energy resources to meet their ratepayer needs and circumventing the transparent, comprehensive and stakeholder informed IRP process will likely lead to hundreds of millions, if not billions, of dollars in additional, unnecessary and avoidable long-term costs that will ultimately be borne by all LSE ratepayers.** Ratepayers in electric IOU territories are already experiencing increases in electric rates and bills that are primarily being driven by billions of dollars in needed infrastructure safety and reliability investments (i.e. utility wildfire risk reduction measures) and various existing clean energy and



energy access/assistance programs, including but not limited, to the Renewables Portfolio Standard procurement targets, IRP GHG emission reduction targets, Net Energy Metering tariffs, Self-Generation Incentive Program, California Alternate Rates for Energy program, Family Electric Rate Assistance program, Energy Saving Assistance program, Disadvantaged Community - Green Tariff, Community Solar Tariff and Single-Family Affordable Solar Home programs, various transportation electrification supporting infrastructure program and the Building Initiative for Low-Emissions Development program and the Technology and Equipment for Clean Heating initiative.

Currently, electric total System Average Rate (SAR) increases for Pacific Gas & Electric (PG&E) and Southern California Edison (SCE) have generally tracked inflation over the 2013- 2020 period. However, San Diego Gas & Electric (SDG&E's) total SAR increased at a faster rate than inflation over this period. Historically, while California's electric Residential Average Rates (RAR) have been higher than in most of the nation, bills have been lower, as residential usage in California is low compared to most of the United States. However, low usage is showing diminishing returns as a mitigating factor and may no longer be enough to limit residential ratepayer bill impacts. Further, the aggregated nature of average bill data can mask affordability concerns and requires analysis at a more geographically granular level. Declining electric IOU sales result in larger rate and bill increases as fixed costs are now paid for by fewer ratepayers.

Note that the estimated total wildfire mitigation costs alone, as reflected in PG&E and SCE's 2020 Wildfire Mitigation Plans submitted pursuant to SB 901 (Dodd, 2018) and AB 1054 (Holden, 2019) roughly translate to a 7 percent to 8 percent increase in residential ratepayer rates for every \$1 billion in corresponding revenue requirement not yet in rates. PG&E is projecting to spend a little over \$3 billion per year for the next three years including in 2020 and SCE is projecting to spend about \$1.5 billion per year for the next three years including 2020. SDG&E is planning to spend about \$500 million per year for the next three years including 2020. Note that SDG&E has a much smaller electric service territory, has been making wildfire risk reduction infrastructure investments since the late 2000s and as stated above their total SAR increased at a faster rate than inflation from 2013-2020.

While laudable in its intent, AB 1720 (Carrillo) works counter to the Legislature's foremost energy policy action from 2015 – SB 350 (de Leon). The CPUC continues to work with its sister agencies and institutions – CARB, California Energy Commission (CEC), and the California Independent System Operator (CAISO) – and dozens of stakeholders to coordinate IRP planning activities; engage in deep, thoughtful analyses supported by a robust and transparent modeling process; and guide LSE procurement of thousands of megawatts of new, clean energy capacity. The IRP process is a critical component for advancing California's clean energy markets and further reducing GHG emissions, while ensuring reliable electric service, at least cost to ratepayers. It is crucial for California's clean energy future to maintain the integrity of the IRP process.

Otherwise, it is highly likely that California's electric sector will fail to achieve its ambitious policy goals of clean, reliable, and affordable electricity.

### **CUMULATIVE RATEPAYER IMPACT**

**AB 1720 (Carrillo)** would lead to additional, substantial long-term electric ratepayer cost increases because the requirements in this bill are targeted at encouraging the development of several pumped hydro-electric energy storage resources that, when combining their capacity (roughly 1,300 MW – Eagle Mountain Pumped Storage Project - and 500 MW – San Vicente Energy Storage Facility - ), would far exceed the optimal amount of long-duration energy storage identified in the RSP to the tune of hundreds of millions, if not, billions of dollars.

### **STAFF CONTACTS:**

Hazel Miranda, Director

[Hazel.Miranda@cpuc.ca.gov](mailto:Hazel.Miranda@cpuc.ca.gov)

Grant Mack, Senior Legislative Consultant

[Grant.Mack@cpuc.ca.gov](mailto:Grant.Mack@cpuc.ca.gov)

Lori Misicka, Senior Budget Liaison

[Lori.Misicka@cpuc.ca.gov](mailto:Lori.Misicka@cpuc.ca.gov)

Marina MacLatchie, Associate Legislative Liaison

[Marina.Maclatchie@cpuc.ca.gov](mailto:Marina.Maclatchie@cpuc.ca.gov)

Emilio Perez, Associate Legislative Liaison

[Emilio.Perez@cpuc.ca.gov](mailto:Emilio.Perez@cpuc.ca.gov)

***AB 1720 (Carrillo): Energy: long-duration energy storage: environmental review and procurement (amended 7/27/20) -***

[http://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill\\_id=201920200AB1720&showamends=false](http://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201920200AB1720&showamends=false)