

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Integrate and Refine
Procurement Policies and Consider Long-Term
Procurement Plans

Rulemaking 12-03-014
(Filed March 22, 2012)

**COMMENTS OF ALTON ENERGY, INC.
ON ALJ QUESTIONS FROM 9/4/13PRE-HEARING CONFERENCE
ON TRACK 4 ISSUES**

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Pursuant to the instructions of Administrative Law Judge David Gamson (“ALJ Gamson”) at the September 4, 2013, Pre-Hearing Conference (“PHC”) and subsequent September 16, 2013, Assigned Commissioner and Administrative Law Judge’s Ruling Regarding Track 2 and Track 4 Schedules, Alton Energy provides comments on the questions posed at the PHC by ALJ Gamson for comment regarding Track 4 policy-related issues. We limit our comments to Questions 1 (pertaining to the mix of resources), Question 2 (pertaining to the interaction of Track 4 with Commissioner Peterman’s September 3, 2013, Proposed Decision on Energy Storage (“PD”)), Question 4 (regarding an appropriate timeline for new resource procurement), and Question 7 (regarding Preferred Resource recommendation and LCR supply).

QUESTION 1 – Does it matter which resources are procured or what the mix of resources would be?

California has an urgent necessity to focus on meeting the ARB 2050 Goal¹ to reduce Emissions by 80%. Most gas generation will need to retire before 2050, or the State will fail to

¹ Governors Executive Order S-3-05, now an ARB Goal to reduce Emissions by 80% from 1990 levels by 2050

meet the ARB 2050 Emissions Goal. To meet this Goal, major new zero-carbon energy additions that are Firmed and Shaped by energy storage must be procured. Bulk Energy Storage, coupled with wind and solar, must be encouraged and allowed to compete in direct competition with any fossil energy procurement. They can do so cost effectively, now.

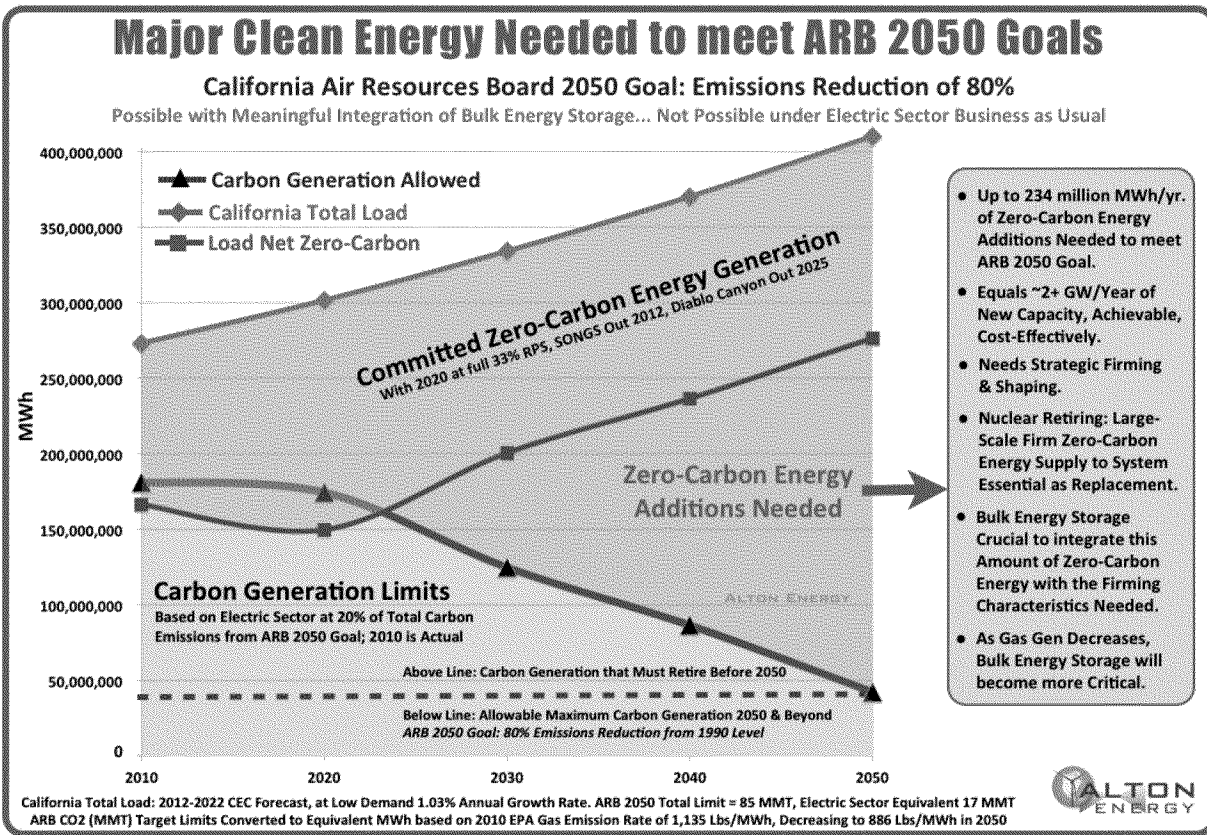
We commend the acknowledgement of many Parties, in their conclusion that GHG Emissions is an important point for consideration in this Proceeding. However, we believe the timing and magnitude of the need is widely underestimated, and the need is for early, aggressive procurement of future clean energy so that it is available in the volumes needed to meet established future Goals. Emissions reduction needs to be a critical core driver behind the architecture of any meaningful Long Term Procurement Process.

Unfortunately, very few parties have highlighted the importance and significance of paying attention to the long-term California Air Resources Board (ARB) 2050 Emission Reduction Goal of 80% reduction from 1990 levels. It is crucial pay careful attention to the State Goal's impact on the electric sector.

After extensive analysis we come to a simple conclusion that it is near impossible to meet the ARB 2050 Goal without substantial and continued integration of carbon-free wind and solar that is firmed and shaped by large utility-scale Bulk Energy Storage.

Alton Energy submits the below graphic to demonstrate the massive scale of the zero-carbon energy that is needed through 2050.² The need is reasonably well accommodated through 2020 by the existing supply of Hydro and Nuclear, in combination with existing and committed renewable generation.

² Alton Energy Analysis of ARB Emissions Goals through 2050, added to multiple past CPUC filings by Alton Energy



However, from 2020 to 2050, the need for additional new zero-carbon energy generation is substantial, about ~234 million MWh/year by 2050, requiring over 2,000 MW of new capacity per year (wind and solar, with storage) to meet this widening gap. There are limited viable solutions to meet the increasingly stringent ARB 2050 Emission Goals. However, such is possible with meaningful integration of bulk energy storage coupled with clean zero-carbon energy (wind + solar), but it will not be possible under Business as Usual. If gas power continues to be procured as the default, the emissions impact will preclude the possibility of reaching ARB 2050 Emissions Reduction Goals and cause substantial stranded cost from the gas generation as Procurement Planning awakens and shifts to a zero-carbon focus.

The renewable energy (in the Green Band in the above chart) is currently being integrated at low costs by coordination with Hydro Generation, and with CCGT and CT Gas Turbines (included in the Carbon Generation band of the graphic). Although it has been argued in CAISO

and CPUC Forums that the 33% RPS generation in the system by 2020 may be adequately integrated with existing system resources, this perspective fails to adequately consider longer-term ARB 2050 Goal impacts, beyond the widely studied 33% Goals. As California progresses down the path to reduced carbon emissions in the generation mix, it becomes clear that the ability of gas turbines to respond to the increasing need to integrate intermittent renewables will be extremely limited, and very expensive.

Bulk Energy Storage, and specifically Pumped Hydro, is the most cost-effective, proven, reliable technology to meet this need. However, there are major market barriers that prevent bulk energy storage from being built in California, and until such barriers are removed there will not be energy storage of the magnitude that is needed to help transform the electric sector to meet ARB Goals. Time is of the essence.

We commend the substantial progress made in the Energy Storage Proceeding, but due to the magnitude of the need demonstrated in the above ARB 2050 Emissions Reduction chart and other analyses, we recommend that the Energy Storage Procurement Target from that Proceeding be considered just as the first step in the right direction, and that much more bulk energy storage will be required in the near future.

We would like to emphasize the importance pumped hydro storage to be evaluated on a level playing field in this Proceeding and all other procurement Proceedings to be able to compete fairly with all forms of capacity and generation. Indeed, there will be instances when other technologies have their appropriate place in the energy mix; but when barriers are broken down, pumped hydro storage proves itself to be a very cost-effective solution to solve many of the issues facing the evolving electric grid, especially when coupled with large volumes of carbon-free energy. Bulk energy storage, and specifically pumped hydro, has the ability to

transform the electric sector at the scale needed, as a means to an end of a carbon intensive industry that is environmentally and economically destructive.

We suggest that the Commission in this Proceeding honor this need by immediately working to consider and procure cost-effective clean energy solutions with pumped hydro storage, in place of their current efforts to procure new gas generation that certainly appears likely to be stranded before it is set to retire. Well positioned pumped storage projects that can meet the California need are located strategically at favorable locations in California that can be effectively and timely integrated to provide energy security and reliability, cost effectively, and at the same time accelerate the state's ability to meet its GHG Goals.

As SCE has pointed out in its testimony, the addition of strategic well positioned and conceived transmission expansion can become one of the most important parts of a resource expansion Plan that expands resources available to meet local capacity needs, to provide highly cost effective long term solutions, and also reduce GHG Emissions. Transmission expansion, coupled with Large Pumped Hydro Storage, Wind Generation, and Solar Generation can provide a superior long term solution to California's energy addition needs.

It is well known that expansion of the magnitude of resources included in balancing needs creates substantial efficiencies and typically reduces the need for additional resources. We believe that creative transmission expansion, as well as the inclusion of large pumped hydro storage, along with wind and solar generation in combination can create major improvements and the form of Market Transformation the Commission has been attempting to achieve in the Storage Proceeding. We look forward to contributing in this Proceeding, as we have in the Storage Proceeding, and in the past on Tehachapi Renewable Transmission Project to help create successful and effective solutions that meet the state's important cost and GHG Goals.

Question 2 – Comment on the interaction between Track 4 and Commissioner Peterman’s Proposed Decision on energy storage.

Pumped Hydro Energy Storage needs to be allowed to compete on a Level Playing Field in all Procurement Processes. This Proceeding must be brought together regarding the importance to plan for and facilitate clean energy with bulk energy storage to be able to qualify and compete on a level playing field with fossil fueled power procurement, and not be blocked by Planning failures. There is a clear AB 2514 mandate to facilitate all cost-effective energy storage. The Loading Order dictates wind and solar before gas generation. Pumped Hydro storage, plus wind, plus solar is more cost-effective and a better fit than is new gas generation, even before adding in the huge exposure of gas to stranded costs and escalation. As an absolute minimum, this least-cost, best-fit clean energy must be fostered to compete, fairly. Pumped hydro storage in the Energy Storage Proceeding has demonstrated its cost-effectiveness, has been encourage by the Commission, but has not been able to compete directly (above 50 MW) in the Energy Storage Proceeding due to “Sheer Size.” It is here in the LTPP that pumped hydro storage has the ability to truly create the Market Transformation goals needed to bring California to its ultimate clean energy low carbon potential.

To meet the ARB 2050 Emissions Goals, Distributed & Bulk Energy Storage, and specifically Pumped Hydro, must be included in any Procurement. This will enable wind and solar generation, including major solar roof additions, to remain an effective and essential portion of the future clean energy mix. Large-scale energy storage will be needed to maintain strong integration capabilities of variable renewable energy as gas generation decreases. Pumped hydro storage is the most cost-effective and proven form of energy storage, and can compete directly with gas, and complement gas, if allowed to be procured on a level playing

field. It is also important that in this Proceeding, Pumped Hydro Storage, when cost-effective, should be allowed to compete fairly with all forms of conventional fossil generation.

We respectfully request to the Commission that Pumped Hydro be considered for inclusion in this Proceeding to assist in removing substantial market barriers, and providing a means towards financing and construction. A primary objective of this Proceeding should be to eliminate obstacles to the cost-effective procurement of pumped hydro storage with wind and solar to compete directly and fairly against new gas generation.

Most importantly, if California is to have any realistic chance of meeting the ARB 2050 Emissions Goals, it is crucial that Pumped Hydro Storage be included in any Procurement Process.

It is critical that in order for California to meet its state environmental goals, that this Proceeding and other parallel Proceedings and Forums (including RA, LCR, Flexible Capacity, and RPS procurement) create a process that considers the importance of cost-effective bulk energy storage to be able to compete on a level playing field with fossil fueled power procurement. This is especially the case where bulk energy storage directly facilitates large-scale integration of renewable energy.

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integration of carbon-free energy, and displacing and avoiding the unneeded dispatch of inefficient high heat rate gas generation.

I. THE COMMISSION SHOULD RECOMMEND A SPECIFIC STUDY AND ANALYSIS OF PUMPED HYDRO STORAGE, TO QUANTIFY ITS MARKET VALUES AND BARRIERS OF ENTRY, TO ILLUSTRATE HOW IT CAN BE AN EFFECTIVE COMPONENT OF A LOW CARBON ENERGY ALL-SOURCE PROCUREMENT PROCESS.

This Commission should encourage a separate CPUC Study and Workshop in the LTPP Process (and other Proceedings) specifically of pumped hydro storage, so that it is given sufficient consideration to enable its very cost-effective and valuable services to enter the market without delay in a meaningful way. This will analyze how Pumped Hydro can be an instrumental component of a cost-effective Low Carbon Energy All-Source Procurement Process, to achieve GHG emissions reduction goals as SONGS and OTC plant retirement replacements are procured. This study should be given official notice in the LTPP proceeding. This Workshop shall not delay the opportunity for pumped hydro storage to compete immediately in all Procurements.

Question 4 – What is the appropriate timeline for new resource procurement which may be authorized in Track 4?

In this Proceeding, Pumped Hydro Storage can essentially be procured in a way that is not that different from gas power procurement. The core difference is that the barriers are removed for pumped hydro storage and a procurement process is initiated so that it can compete for the market need that is established. Bilateral negotiation will likely be helpful for more effective early procurement of bulk energy storage, due to the diversity of the alternative technologies and scale, with lack of a recent procurement history, to enable standardized terms

and conditions to be worked out in a meaningful and timely way. Proper Terms and Conditions are a major factor in gaining cost-effectiveness.

Longer term contracts, in line with the long proven life (75-100 years) of pumped hydro, can allow for even lower long-term levelized cost of capacity and generation procurement. Such long-term contracts are typically performance and milestone based, need not be front-loaded, and are reviewed and approved by the Commission. We believe 30+ year contracts are best, 25 year a minimum, and even longer contracts have substantial potential to produce the lowest costs when projects are able to organize and structure to take advantage of longer terms, which serve to benefit ratepayers.

Portfolio planning such as the LTPP should consider bulk energy storage requirements, such as pumped hydro. A framework is needed that considers the longer lead-time requirements for such large projects to be able to compete with other technologies that may have shorter development cycles. This will allow for many of the most cost-effective projects in California to get financed and built.

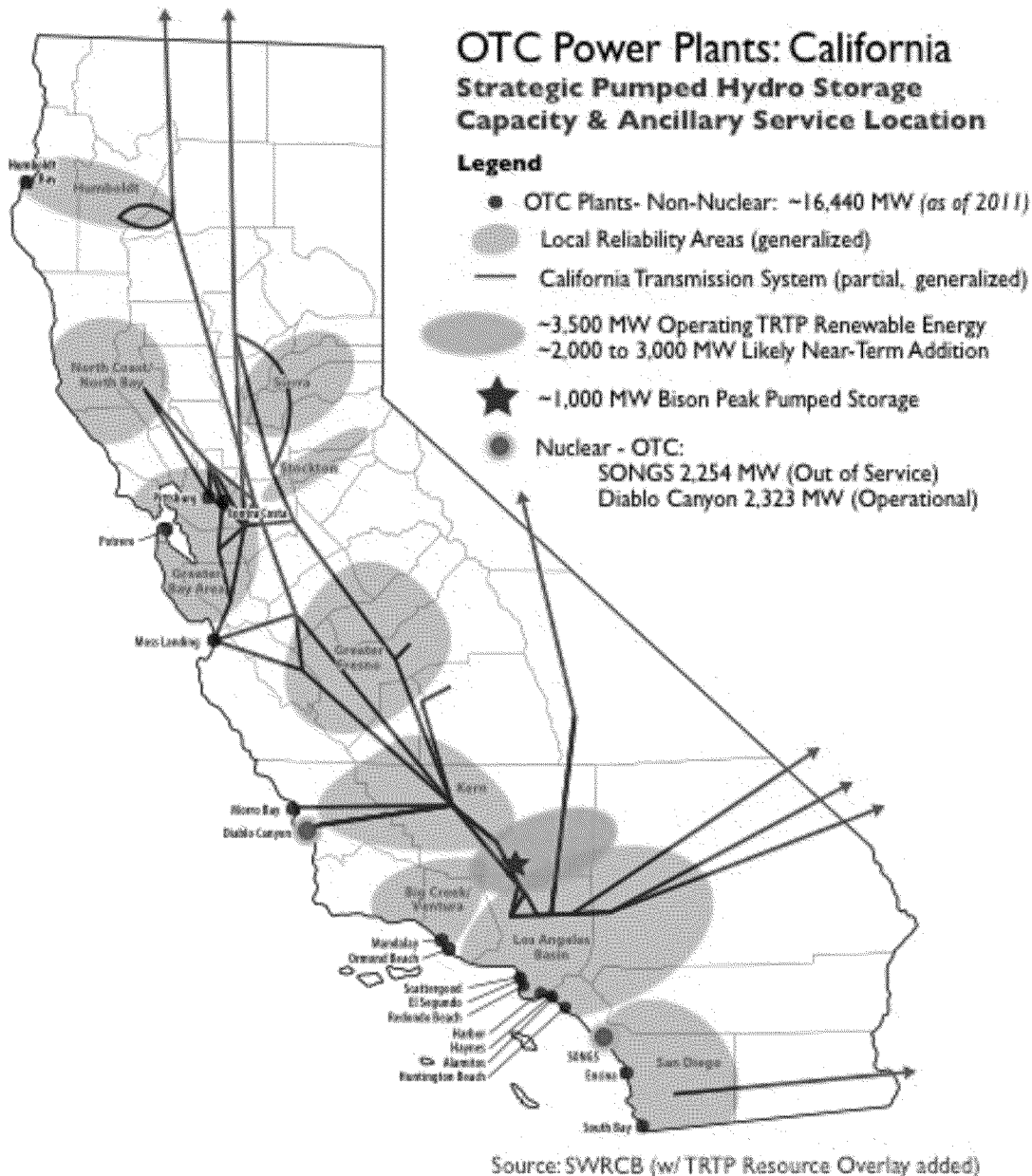
In order to cost-effectively convert the best technologies and projects to reality and into the California Energy Mix, in our competitive environment, we need both long-term financeable procurement and an appropriate scale of procurement if we are to successfully achieve our desired clean energy future. Long-term procurement with bilateral negotiation and project lead-time consideration of at least 4-7 years is important to achieve the lowest cost and lowest carbon energy for California, which can only be achieved through meaningful procurement of bulk energy storage. We urge the Commission in this Proceeding to take all possible steps now, to help facilitate the State meeting ARB's 2050 Goals, so that the citizens of California benefit from the cleaner energy supply that can ultimately be achieved, cost-effectively.

Question 7 – If you’re recommending Preferred Resources or energy storage to fill any need, it would be helpful to indicate how the attributes of such resources will meet LCR needs.

Bulk energy storage can strategically and cost-effectively compete to replace the to-be-retired OTC and SONGS capacity. The procurement policies and practices for energy and capacity in California need to provide bulk energy storage, specifically pumped hydro, a serious and fair opportunity to compete on a level playing field achieve this end.

We encourage cost-effective utility-scale large pumped hydro energy storage to be a primary and meaningful portion of both the procurement goals of this Proceeding.

The following is a map of the OTC plants in California. In addition, this map shows Bison Peak Pumped Storage Project, of at least 1,000 MW in capacity, and it’s strategic location in the heart of the Tehachapi Renewable Transmission Project area, able to utilize and add value to the massive investment in the already in-service extra high-voltage (EHV) transmission facilities, and the huge and expanding wind and solar intermittent renewable energy generation installations. These EHV transmission facilities, with minor planned upgrades, can deliver unprecedented value in firm dispatchable clean energy directly to the LA Basin Load Center.



Over the next 10 years in California, we do not have an energy supply shortage. We have a flexible capacity need, and the requirement for fast-ramping characteristics for an evolving electric grid. Most importantly, we have an urgent need to mitigate the carbon emissions of our future power sector. There is no possible way for the energy mix of California to ultimately be lower in carbon emissions without either large-scale energy storage plus intermittent renewables,

or massive high cost, un-proven at scale, and environmentally questionable long-term carbon capture and sequestration.

We do not need new gas capacity with a comparably high carbon output if we can accelerate the integration of the next generation solution that is able to offer the same value of operational characteristics, and is cost-effective. At most, if there is any need for additional new gas generation, it must be limited in quantity, short contract duration, and extremely high efficiency.

Bulk and Distributed Energy Storage is that next generation solution, and there is an urgent need to incorporate substantial new storage capacity into the California energy mix. When taking into consideration the Diversified Portfolio of our existing and future generation mix, energy storage even when taking on the characteristics of the energy it requires to charge, even if it has a round-trip efficiency loss, operational data shows energy storage is viable and proven, and has a very significant contribution to achieving our carbon emissions reduction goals. Bulk Energy Storage is the one and very best solution to a flexible, reliable, and low risk clean energy future.

II. CONCLUSION

We thank the Commission for consideration of these Comments. We look forward to collaborating further in this Proceeding to help facilitate a timely and meaningful framework for the successful creation of a cost-effective long-term opportunity for bulk energy storage,

specifically pumped hydro, with increased penetration of zero carbon resources into the California energy mix.

Respectfully submitted,

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Date: September 30, 2013