BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems.	R.10-12-007 Filed December 16, 2010

COMMENTS OF ALTON ENERGY ON PROPOSED DECISION ADOPTING ENERGY STORAGE PROCUREMENT FRAMEWORK AND DESIGN PROGRAM

Hal Romanowitz, P.E.
Chief Executive Officer & Party Rep
ALTON ENERGY, INC.
4039 Alton Way
Escondido, California 92025
Telephone: (661) 747-0990
Facsimile: (661) 825-8299
Email: hal@altonenergy.com

Jonathan Word
Director of Strategic Operations
ALTON ENERGY, INC.
4039 Alton Way
Escondido, California 92025
Telephone: (602) 540-6309
Facsimile: (661) 825-8299
Email: word@altonenergy.com

September 23, 2013

TABLE OF CONTENTS

I. INTRODUCTION. 1

II. THE COMMISSION SHOULD EXPLICITLY STATE ITS SUPPORT FOR LARGE-SCALE PUMPED HYDROELECTRIC RESOURCES, AND MAKE SPECIFIC RECOMMENDATIONS FOR ITS PROCUREMENT IN AN EFFECTIVE ALL-SOURCE PROCUREMENT PROCESS IN OTHER PROCEEDINGS. 2

III. LARGE-SCALE MARKET TRANSFORMATION POTENTIAL OF PUMPED HYDRO STORAGE, AND UNIQUE ABILITY TO ENABLE CALIFORNIA TO MEET ITS EMISSIONS REDUCTION GOALS. 3

IV. THE COMMISSION SHOULD RECOMMEND A SPECIFIC STUDY AND ANALYSIS OF PUMPED HYDRO STRORAGE, 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 4

V. IMPORTANCE OF CREATING A PATH FORWARD FOR LARGE PUMPED HYDRO STORAGE 5

VI. CONCLUSION. 7

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems.	R.10-12-007 Filed December 16, 2010

COMMENTS OF ALTON ENERGY ON PROPOSED DECISION ADOPTING ENERGY STORAGE FRAMEWORK AND DESIGN PROGRAM

Pursuant Rule 14.3 of the California Public Utilities Commission's ("Commission's") Rules of Practice and Procedure, Alton Energy hereby submits these comments on the *Proposed Decision Adopting Energy Storage Framework and Design Program*, issued September 3, 2013 ("Proposed Decision").

I. INTRODUCTION.

Alton Energy appreciates the extensive efforts of the Commission in this Proceeding, and specific interest in its Market Transformation Goals for energy storage. We find it unfortunate that although AB 2514 does not call for the exclusion of any technology, particularly not the most cost-effective one, that large pumped hydro has drawn special attention for its treatment in this Proceeding. We do, however, appreciate the Commission's specific recognition that "these types of projects offer the same or better potential benefits as all of the other emerging storage technologies…" In response to the Proposed Decision's framework, Alton Energy has several suggestions for how the Commission may more specifically support a viable procurement process for large pumped hydro storage. We appreciate the time and consideration of these comments.

II. THE COMMISSION SHOULD EXPLICITLY STATE ITS SUPPORT FOR LARGE-SCALE PUMPED HYDROELECTRIC RESOURCES, AND MAKE SPECIFIC RECOMMENDATIONS FOR ITS PROCUREMENT IN AN EFFECTIVE ALL-SOURCE PROCUREMENT PROCESS IN OTHER PROCEEDINGS.

Alton Energy recommends that the following changes be made in the Findings of Fact and Conclusion of Law of the Proposed Decision. A page citation to the Proposed Decision is provided in brackets for the finding or conclusion for which a modification is proposed. Added language is indicated by **bold type**. An "**Added Finding of Fact"** or **"Conclusion of Law"** is so indicated**.**

Proposed Findings of Fact:

1. [65] Add a new Finding of Fact Number 10 as follows: **Pumped storage offers the same or better potential benefits as all of the emerging technologies targeted by the Energy Storage Procurement Framework and Design Program regardless of whether or not it is directly co-located with a preferred resource.**

2. [65] Add a new Finding of Fact Number 11 as follows: **Pumped storage may effectively compete against traditional generation procurement included in other Commission proceedings, including, without limitation, the LTPP. Such procurement competition may meet the Guiding Principles of Section 4.1.**

3. [66] Modify Finding of Fact Number 17 as follows: Energy storage has multiple attributes and functions that cross the spectrum of wholesale and retail markets and transmission, distribution **and generation** services.

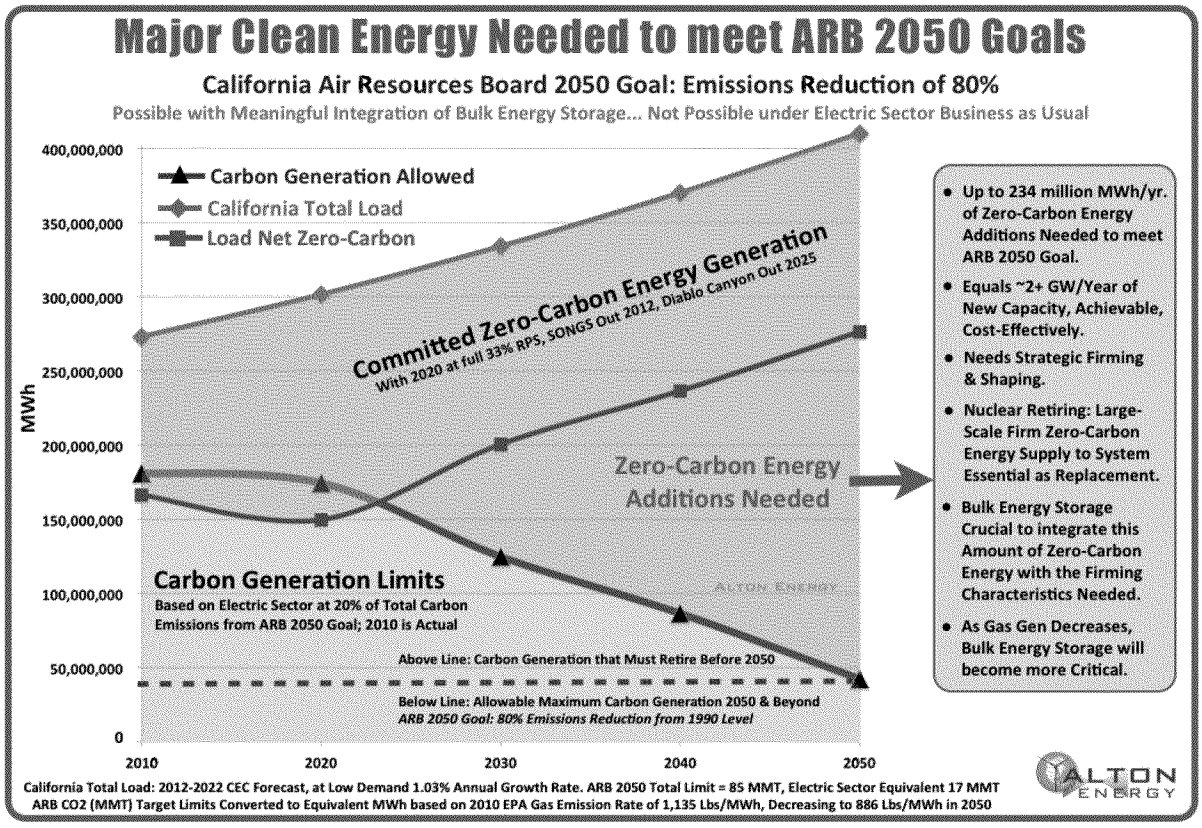
Proposed Conclusion of Law:

1. [67] Modify Conclusion of Law Number 9 as follows: **Although** it is reasonable to exclude pumped storage projects 50 MW and over from participating in the Energy Storage Procurement Framework and Design Program, **pumped storage is consistent with the Guiding Principles of Section 4.1.**

2. [67] Add Conclusion of Law Number 10 as follows: **It is reasonable to encourage pumped storage to compete in procurement competition included in other Commission proceedings, including, without limitation, the LTPP.**

III. LARGE-SCALE MARKET TRANSFORMATION POTENTIAL OF PUMPED HYDRO STORAGE, AND UNIQUE ABILITY TO ENABLE CALIFORNIA TO MEET ITS EMISSIONS REDUCTION GOALS.

It is critical that the Commission support the creation of a Low Carbon Energy All-Source Procurement Process, that enables California to meet its emission reduction goals, and allows for a market transformation to take place on a large scale.



In the July 19 Reply Comments Alton Energy submitted the above graphic to demonstrate the massive scale of the zero-carbon energy that is needed through 2050.[1] The need is reasonably well accommodated through 2020 by the existing supply of Hydro and Nuclear, in combination with existing and committed renewable generation. 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

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

this widening gap. There are limited viable solutions to meet the increasingly stringent ARB 2050 Emission Goals. 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.[2]

It is critical that Market Transformation on a sufficient scale proceed soon so that these goals can be met cost-effectively and timely. Our proposed Finding of Facts and Conclusions of Law changes will help facilitate this, consistent with AB 2514 Objectives.

IV. THE COMMISSION SHOULD RECOMMEND A SPECIFIC STUDY AND ANALYSIS OF PUMPED HYDRO STRORAGE, 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, and shall not delay a Final Decision in this Proceeding.

[2] Alton Energy July 19 Reply Comments

V. IMPORTANCE OF CREATING A PATH FORWARD FOR LARGE PUMPED HYDRO STORAGE

It is clear that meeting the State GHG goals as enumerated by ARB will require the most optimal combination of low-cost intermittent renewables and low-cost energy storage to achieve a cost-effective firm energy supply for California, as fossil generation phases out to achieve overall state GHG goals with lowest impact to consumer and business interests and activity. Achieving such State GHG goals most cost-effectively is a primary objective of AB 2514.

A careful analysis of the implications of the EPRI Cost-Effectiveness Analysis in this Proceeding is most critical to understand the gross importance of setting in place now a way forward for the single most cost-effective energy storage technology, large pumped hydro, in order to effectively achieve state goals. However, it is important to note that the EPRI analysis fails to incorporate GHG emissions factors into its calculations. This is a critical factor that the Commission should not ignore in its decision-making.

In the EPRI analysis Chapter 4, pages 4-8 through 4-14, and specifically page 4-13 (also see A-2, A-23), it is clear that large pumped hydro storage is predominately the most cost-effective of all energy storage technologies compared with the Cost of New Entry Gas (CONE), and considering the volume of the regulation market. Its operating characteristics afford the most reliable way to couple intermittent renewables at large scale to provide firm dispatchable near-zero carbon energy at lowest cost.

Failure to include the Market Transformation necessary to achieve these emissions goals most cost-effectively would be a failure to meet the objectives of AB 2514.

On page 33 it expresses that "we are sympathetic to parties' arguments that pumped storage complies with storage definitions under AB 2514. However, the sheer size of pumped storage projects would dwarf other smaller, emerging technologies; and as such, would inhibit

the fulfillment of market transformation goals. The majority of pumped storage projects are 500 MW and over, which means a single project could be used to reach each target within a utility territory. Therefore, we find it is appropriate to exclude large-scale pumped storage projects from the procurement mechanism outline in this decision."

- We are concerned that the above conclusion is contradictory to the basis of this Proceeding which is highlighted on page 6 of the PD: "The Proposed Plan was issued against the backdrop of the overall objectives for energy storage articulated in AB 2514":[3]
    - "Energy storage has the potential to transform how the California electric system is conceived, designed, and operated. In so doing, energy storage has the potential to offer services needed as California seeks to maximize the value of its generation and transmission investments: optimizing the grid to avoid or defer investments in new fossil-power plants, integrating renewable power, and minimizing greenhouse emissions."

On page 34 it states that "…our purpose in making this exclusion in not to discourage pumped storage projects. On the contrary, these types of projects offer the same or better potential benefits as all of the emerging storage technologies targeted by this program; it is simply their scale that is inappropriate for inclusion here."

- If energy storage is to have any real potential to transform how the California electric system is conceived, designed, and operated, this Proceeding certainly should not rule out the most cost-effective forms of energy storage because of "sheer size." It is the

[3] Page 6 of PD

integration of bulk energy storage at substantial scale that will truly transform the California energy sector to one that is carbon free and more efficient.

- We do not suggest that large pumped hydro storage should swallow up the potential market for other emerging energy storage technologies, but we do strongly urge the Commission to support and All-Source Procurement Process that fairly considers large pumped hydro storage. There are many market barriers that have been communicated by many parties in this proceeding, and the true benefits of large-scale pumped hydro storage will not come to fruition unless it is giving the proper consideration and focus that it merits.

With the inclusion our suggested modifications to the Findings of Fact and Conclusions of Law Section I above, the Proposed Decision will create the opening for a path forward for large pumped hydro storage, consistent with AB 2514, and the Commission's Market Transformation Goals.

VI. CONCLUSION.

Alton Energy appreciates this opportunity to submit comments to the Proposed Decision.

Respectfully submitted,

/s/
Hal Romanowitz
CEO & Party Rep
ALTON ENERGY, INC.

/s/
Jonathan Word
Director of Strategic Operations
ALTON ENERGY, INC.

Date: September 23, 2013