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## **The California Energy Storage Initiative**

**David Spielberg**

David Spielberg  
Orrick Herrington & Sutcliffe LLP  
405 Howard Street  
San Francisco, CA 94105  
[dspielberg@orrick.com](mailto:dspielberg@orrick.com)  
415-773-5590

# THE CALIFORNIA ENERGY STORAGE INITIATIVE

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Orrick Herrington & Sutcliffe LLP  
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Energy storage has been hailed as the “next big thing” in the power industry and the “holy grail” for renewable energy. The California Public Utilities Commission has called energy storage “a ‘game changer’ for our electric grid.”<sup>1</sup> While these characterizations may be a bit hyperbolic, it is clear that energy storage is becoming an increasingly important part of our energy infrastructure. Over a year ago, the U.S. Department of Energy estimated that the “energy storage business could grow from \$200 million in 2012 to a \$19 billion industry by 2017.”<sup>2</sup> Energy storage systems are now viewed as preferred resources in a number of solicitations and RFOs, including energy procurement by the three branches of the U.S. armed forces, so that developers are being encouraged – if not required – to include energy storage options in their bids to make them more attractive. As we pursue ever more ambitious goals of substantially increasing renewable energy resources and reducing greenhouse gas emissions, new energy storage projects will play a very important role in achieving these aims and may transform the way power is delivered in this country.

Energy storage is key to increasing the integration of renewable energy resources into the electric grid. A number of states have seen enormous growth in intermittent renewable resources, particularly wind and photovoltaic solar. Storage can both mitigate the effects of intermittency, such as over-generation and congestion, and reduce price volatility by transferring supply from periods of low demand to periods of high demand. The benefits of energy storage are not, however, limited to renewables integration. Storage can also address grid reliability issues, such as load pockets and inadequate or overburdened transmission or distribution facilities, and may allow utilities and system operators to postpone or even eliminate the need for costly network upgrades. Behind the meter energy storage provides both system benefits, through demand response and load shedding during periods of high demand, and benefits to the end user, by reducing energy costs and limiting exposure to forced curtailments. When coupled with generation from renewable resources, a behind the meter system can also help a company achieve sustainability goals.

This paper examines several aspects of California’s energy storage initiative, particularly the required procurement of energy storage by California’s three major investor-owned utilities. Since many of the energy storage projects that will be built in California will be built by private developers, it is important that the contractual and regulatory structures be commercially viable and financeable and fairly allocate risk among the project developers and the utilities purchasing the project’s energy storage capacity. This paper addresses some of the key legal and contractual issues that should be considered currently in developing energy storage projects in

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<sup>1</sup> See CPUC Decision 13-10-040, October 17, 2013, Concurrence of Commissioner Mark J. Ferron and President Michael R. Peevey.

<sup>2</sup> See “Grid Energy Storage”, U.S. Department of Energy, December, 2013, page 9, citing IMS Research Report “The Role of Energy Storage in the PV Industry -- World -- 2013 Edition.”

California. However, these issues will continue to evolve, and new ones will emerge, as California's energy storage program is further developed through efforts presently being undertaken by the California Public Utilities Commission, the California Independent System Operator and the California Energy Commission.<sup>3</sup> The landscape is ever changing and will have to be revisited regularly.

### **California's Energy Storage Initiative**

On September 29, 2010, the California legislature enacted Assembly Bill (AB) 2514, which required the California Public Utilities Commission (CPUC) to determine the "appropriate targets" for California's investor-owned utilities for procurement of "viable and cost-effective energy storage systems to be achieved by December 31, 2015 and December 31, 2020."<sup>4</sup> Publicly-owned utilities have a similar requirement, but delayed by one year (i.e. December 31, 2016 and December 31, 2021).<sup>5</sup> The express aim of AB 2514 was to promote and encourage growth and innovation in the development of energy storage projects by providing a market for them.

After a lengthy stakeholder proceeding, the CPUC issued a decision on October 17, 2013<sup>6</sup> adopting an energy storage procurement framework and setting procurement targets for each of California's three investor-owned utilities. (The CPUC had already authorized Southern California Edison in February 2013 to procure at least 50 MW of storage capacity as part of its RFO for local capacity requirements in the Los Angeles basin.) The decision required the procurement of a total of 1325 MW of energy storage capacity by 2020 with intermediate biennial targets. All storage projects must be installed and operational by the end of 2024. The specific procurement targets are as follows:

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<sup>3</sup> See *Advancing and Maximizing the Value of Energy Storage Technology; A California Roadmap*, issued by the California Independent System Operator, the California Public Utilities Commission and the California Energy Commission, December 2014.

<sup>4</sup> California Public Utilities Code §2836(a)(1)

<sup>5</sup> California Public Utilities Code §2836(b)(1)

<sup>6</sup> Decision 13-10-040

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