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**REDDING ELECTRIC UTILITY**  
Energy Services Division

## ESCP-02 Energy Storage Compliance Plan (AB 2514 & AB 2227– Public Utilities Code Sections 2835-2839)

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## 1. Introduction/Background

Redding Electric Utility (REU) started analyzing energy storage technologies in 2004. In 2005, REU installed its first thermal energy storage (TES) devices within its service territory (a chiller-based TES system at Redding Municipal Airport and a direct expansion TES system at the Redding Fire Department).

Subsequent to REU's continued pursuit of cost-effective TES installations throughout the Utility's service territory, Assembly Bill (AB) 2514 (Energy Storage Bill) was introduced to the California Legislature by Assembly woman Skinner in 2010. This bill passed and was signed into law (Public Utilities Code Section 2835-2839) by Governor Arnold Schwarzenegger September 29, 2010.

This energy storage law requires the governing board (City Council) of a local, publicly-owned electric utility by March 1, 2012, to open a proceeding to determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems and, by October 1, 2014, to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by the utility by December 31, 2016. The law includes a second target to be achieved by December 31, 2020. The law further specifies:

Section 2836 - As part of this proceeding, the governing board may consider a variety of possible policies to encourage the cost-effective deployment of energy storage systems, including refinement of existing procurement methods to properly value energy storage systems.

- The governing board shall adopt the procurement targets if determined to be appropriate pursuant to paragraph (1) by October 1, 2014.
- The governing board shall reevaluate the determinations made pursuant to this subdivision not less than once every three years (in September 2017 and September 2020).

Section 2836.4 - An energy storage system may be used to meet the resource adequacy requirements established by a local, publicly-owned electric utility pursuant to Section 9620 if it meets applicable standards.

Section 2836.6 - All procurement of energy storage systems by a load-serving entity or local, publicly-owned electric utility shall be cost-effective.

## 2. Energy Storage Procurement Plan

### 2.1 Plan Overview

The purpose of the ESCP is to identify the policies and procedures for REU to meet the requirements set forth with AB 2514 and the Energy Storage section of the Public Utilities Code (Sections 2835-2839).

- a) The ESCP incorporates REU's TES Program with the legislative mandate requiring utilities to review various energy storage technologies and to set procurement and periodic review targets.
- b) Under AB 2514, each utility is to review the applicability of various storage technologies to their local operating requirements and identify which of those, if any, would benefit the utility's electric service requirements. REU has completed an assessment of its TES Program and determined the Program to be beneficial in assisting the overall operating conditions of the Utility.

Under ESCP-01, REU had a procurement target of 3.6 MW to be installed and operational by July 1, 2017. That target was obtained and REU is now in the Operations and Maintenance (O&M) phase for the TES Program as it is now configured. Due to the current (no growth) load forecast and adequate power supplies available for the foreseeable future, no further additions to REU's energy storage capabilities are contemplated at this time. During the next review period, as part of ongoing Integrated Resource Plan (IRP) efforts, REU will analyze the value of all qualified energy storage technologies as defined by AB 2514, including TES. The existing TES assets are expected to have an effective 20-year plus life span. While the TES systems have been proving to be quite reliable, some routine maintenance will be needed over the multi-year time period that the equipment is expected to be in service.

### 2.2 Compliance Periods

AB 2514 established the following compliance periods:

1. On or before March 1, 2012, REU must initiate a proceeding to determine appropriate storage targets.
2. Procurement targets must be adopted by October 1, 2014.
3. Review initial storage targets by September 2017.
4. Review the storage targets set in September 2017 by September 2020.

AB 2227 established the following compliance periods:

1. On or before January 1, 2017, REU must report to the California Energy Commission (CEC) demonstrating that it had complied with storage targets adopted by City Council on October 1, 2014.
2. By January 1, 2021, in similar fashion as Item 1 above, again file a progress report with the CEC, related to City Council adopted targets on October 1, 2017.

## 2.3 Definitions of Energy Storage Technologies

AB 2514 specifically defines what constitutes and qualifies as an energy storage system. The definition as stated in the law (section 2835 (a)(1) – (2)(A)) is: “commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy.” An “energy storage system” shall do one or more of the following:

- (1) Use mechanical, chemical, or thermal processes to store energy that was generated at one time for use at a later time.
- (2) Store thermal energy for direct use for heating or cooling at a later time in a manner that avoids the need to use electricity at that later time.
- (3) Use mechanical, chemical, or thermal processes to store energy generated from renewable resources for use at a later time.
- (4) Use mechanical, chemical, or thermal processes to store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time.

## 3. ESCP Review Requirements

Redding adjusts its load forecast annually. This forecast will be used to anticipate the ESCP’s needs in future years. This ESCP will be updated as appropriate to reflect Redding’s periodic review of loads and available power resources, including energy storage technologies.

- a) Redding will review the initial procurement targets set in September 2014 no later than September 2017, and again no later than September 2020.

AB 2227 added to the requirements of AB 2514 minimally in that local, publically-owned electric utilities, such as REU shall submit a report to the Energy Commission demonstrating that it had complied with the energy storage system procurement targets and policies adopted by the City Council in September 2014 by January 1, 2017, and in similar fashion by January 1, 2021. Basically, AB 2227 provides for routine progress reports to the CEC.