



CITY OF GLENDALE, CALIFORNIA
REPORT TO THE:

Joint City Council Housing Authority Successor Agency Oversight Board

September 9, 2014

AGENDA ITEM

Report: Status of Glendale Water & Power (GWP) Energy Storage Procurement Target

- 1. Motion adopting an energy storage target equal to the 1.5 MW of existing energy storage, and directing Glendale Water & Power (GWP) to return to Council with an update regarding energy storage procurement under the Integrated Resource Planning process

COUNCIL ACTION

Public Hearing Ordinance Consent Calendar Action Item Report Only
Approved for 9/9/14 calendar

ADMINISTRATIVE ACTION

Submitted by:
Stephen M. Zurn, General Manager - GWP

Prepared by:
Ramon Z. Abueg, Chief Assistant General Manager

Lon L. Peters, Integrated Resources Planning Administrator

Approved by:
Scott Ochoa, City Manager

Reviewed by:
Yasmin K. Beers, Assistant City Manager

Michael J. Garcia, City Attorney

Robert P. Elliot, Director of Finance *RD*

Signature

RECOMMENDATION

It is recommended that the City Council (Council) approve Glendale Water & Power's current installed energy storage capacity of 1.5 MW as GWP's energy storage procurement target for the purpose of compliance with California Assembly Bill No. 2514 (2010), California Public Utilities Code Section 2835, *et seq.* (AB 2514), "An act to amend Section 9620 of, and to add Chapter 7.7 (commencing with Section 2835) to Part 2 of Division 1 of the Public Utilities Code, relating to energy." In addition, it is recommended that Council direct GWP staff to report on energy storage options as part of the Integrated Resource Plan (IRP) process approved by Council on August 19, 2014, with a recommendation regarding a revised energy storage procurement target once the IRP is complete.

BACKGROUND/ANALYSIS

Assembly Bill No. 2514 (AB 2514), signed by the Governor on September 29, 2010, requires the governing board of a local publicly-owned electric utility to open a proceeding by March 1, 2012 to determine appropriate targets, if any, for procuring technically viable and cost-effective energy storage systems. Under AB 2514, Council is required by October 1, 2014 to adopt an initial energy storage system procurement target, if determined to be appropriate, to be achieved by December 31, 2015, with a second target to be achieved by December 31, 2020.

An energy storage system must be cost-effective and reduce emissions of greenhouse gases, reduce demand for peak electrical generation, defer or substitute for an investment in generation, transmission, or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid.

On January 26, 2010, the City Council authorized the City of Glendale to enter into contracts to participate in a program through the Southern California Public Power Authority (SCPPA) to deploy a thermal energy storage project in Glendale with Ice Energy, Inc. The project included the upgrade of HVAC systems at City of Glendale facilities and the procurement, installation and maintenance of Ice Bear thermal energy storage units throughout the Glendale Water & Power (GWP) service territory. The Ice Bear units reduce peak electrical demand by utilizing electric energy to produce ice at night during off-peak hours and then use the ice for cooling during the day.

The City Council authorized a total project cost not to exceed \$4,250,000. Subsequent to the original approval by City Council, the \$3.2 million portion of the project for the purchase and installation of the Ice Bear units was incorporated into the larger U.S. Department of Energy (DOE) modernization grant project. The expected life of the Ice Bear Units is 17 to 25 years. As part of the DOE project, GWP ultimately installed 166 Ice Bear units on City and customer premises which represent approximately 1.5 MW of energy storage. To date, all units have been functioning as designed with proper maintenance.

The growing array of technologies of energy storage is highly application and site-specific. Since energy storage could be a key component for efficient use of intermittent resources such as renewable energy, GWP Staff recommends valuing and quantifying the benefits of viable and cost-effective energy storage system options in the IRP process. Any recommendation for a new procurement target for energy storage will be brought back to Council once the IRP process approved by Council on August 19, 2014 has been completed and the results evaluated.

FISCAL IMPACT

Setting the current 1.5 MW procurement of energy storage as the City's energy storage target has no fiscal impact, other than an annual \$61,000 maintenance fee for the current Ice Bear units installed and already budgeted under Account No. 43110-552-921-14707.

ALTERNATIVES

Alternative 1: Approve the current energy storage procurement of 1.5 MW as the City's energy storage target.

Alternative 2: The City Council may consider any other alternative not proposed by staff.

CAMPAIGN DISCLOSURES

Not applicable

EXHIBIT(S)

Exhibit 1: Assembly Bill (AB) No. 2514

MOTION

Moved by Council Member _____, seconded by Council Member _____, that, in accordance with the requirements of California Assembly Bill 2514 (2010), Public Utilities Code Section 2835, *et seq.*, the City Council hereby adopts the existing procurement of 1.5 megawatts (MW) of energy storage within Glendale Water & Power's service territory as the City of Glendale's energy storage target. The City Council directs Glendale Water & Power staff to report on energy storage options and provide an energy storage procurement recommendation to the City Council as part of the Integrated Resource Plan (IRP) process approved by the City Council on August 19, 2014.

Vote as follows:

Ayes:

Noes:

Absent:

Abstain:

APPROVED AS TO FORM
Christine Joshi
Senior Assistant City Attorney
Date: *September 3, 2014*

Assembly Bill No. 2514**CHAPTER 469**

An act to amend Section 9620 of, and to add Chapter 7.7 (commencing with Section 2835) to Part 2 of Division 1 of, the Public Utilities Code, relating to energy.

[Approved by Governor September 29, 2010. Filed with
Secretary of State September 29, 2010.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2514, Skinner. Energy storage systems.

Under existing law, the Public Utilities Commission (CPUC) has regulatory authority over public utilities, including electrical corporations, as defined. The existing Public Utilities Act requires the CPUC to review and adopt a procurement plan for each electrical corporation in accordance with specified elements, incentive mechanisms, and objectives. The existing California Renewables Portfolio Standard Program (RPS program) requires the CPUC to implement annual procurement targets for the procurement of eligible renewable energy resources, as defined, for all retail sellers, including electrical corporations, community choice aggregators, and electric service providers, but not including local publicly owned electric utilities, to achieve the targets and goals of the program.

The existing Warren-Alquist State Energy Resources Conservation and Development Act establishes the State Energy Resources Conservation and Development Commission (Energy Commission), and requires it to undertake a continuing assessment of trends in the consumption of electricity and other forms of energy and to analyze the social, economic, and environmental consequences of those trends and to collect from electric utilities, gas utilities, and fuel producers and wholesalers and other sources, forecasts of future supplies and consumption of all forms of energy.

Existing law requires the CPUC, in consultation with the Independent System Operator (ISO), to establish resource adequacy requirements for all load-serving entities, as defined, in accordance with specified objectives. The definition of a "load-serving entity" excludes a local publicly owned electric utility. That law further requires each load-serving entity to maintain physical generating capacity adequate to meet its load requirements, including peak demand and planning and operating reserves, deliverable to locations and at times as may be necessary to provide reliable electric service. Other existing law requires that each local publicly owned electric utility serving end-use customers to prudently plan for and procure resources that are adequate to meet its planning reserve margin and peak demand and operating reserves, sufficient to provide reliable electric service to its customers. That law additionally requires the utility, upon request, to provide

the Energy Commission with any information the Energy Commission determines is necessary to evaluate the progress made by the local publicly owned electric utility in meeting those planning requirements, and requires the Energy Commission to report the progress made by each utility to the Legislature, to be included in the integrated energy policy reports. Under existing law, the governing body of a local publicly owned electric utility is responsible for implementing and enforcing a renewables portfolio standard for the utility that recognizes the intent of the Legislature to encourage renewable resources, while taking into consideration the effect of the standard on rates, reliability, and financial resources and the goal of environmental improvement.

This bill would require the CPUC, by March 1, 2012, to open a proceeding to determine appropriate targets, if any, for each load-serving entity to procure viable and cost-effective energy storage systems and, by October 1, 2013, to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by each load-serving entity by December 31, 2015, and a 2nd target to be achieved by December 31, 2020. The bill would require the governing board 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, and a 2nd target to be achieved by December 31, 2021. The bill would require each load-serving entity and local publicly owned electric utility to report certain information to the CPUC, for a load-serving entity, or to the Energy Commission, for a local publicly owned electric utility. The bill would make other technical, nonsubstantive revisions to existing law. The bill would exempt from these requirements an electrical corporation that has 60,000 or fewer customers within California and a public utility district that receives all of its electricity pursuant to a preference right adopted and authorized by the United States Congress pursuant to a specified law.

Under existing law, a violation of the Public Utilities Act or any order, decision, rule, direction, demand, or requirement of the CPUC is a crime.

Because certain of the provisions of this bill require action by the CPUC to implement, a violation of these provisions would impose a state-mandated local program by creating a new crime. Because certain of the bill's requirements are applicable to local publicly owned electric utilities, the bill would impose a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for specified reasons.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) Expanding the use of energy storage systems can assist electrical corporations, electric service providers, community choice aggregators, and local publicly owned electric utilities in integrating increased amounts of renewable energy resources into the electrical transmission and distribution grid in a manner that minimizes emissions of greenhouse gases.

(b) Additional energy storage systems can optimize the use of the significant additional amounts of variable, intermittent, and offpeak electrical generation from wind and solar energy that will be entering the California power mix on an accelerated basis.

(c) Expanded use of energy storage systems can reduce costs to ratepayers by avoiding or deferring the need for new fossil fuel-powered peaking powerplants and avoiding or deferring distribution and transmission system upgrades and expansion of the grid.

(d) Expanded use of energy storage systems will reduce the use of electricity generated from fossil fuels to meet peak load requirements on days with high electricity demand and can avoid or reduce the use of electricity generated by high carbon-emitting electrical generating facilities during those high electricity demand periods. This will have substantial cobenefits from reduced emissions of criteria pollutants.

(e) Use of energy storage systems to provide the ancillary services otherwise provided by fossil-fueled generating facilities will reduce emissions of carbon dioxide and criteria pollutants.

(f) There are significant barriers to obtaining the benefits of energy storage systems, including inadequate evaluation of the use of energy storage to integrate renewable energy resources into the transmission and distribution grid through long-term electricity resource planning, lack of recognition of technological and marketplace advancements, and inadequate statutory and regulatory support.

SEC. 2. Chapter 7.7 (commencing with Section 2835) is added to Part 2 of Division 1 of the Public Utilities Code, to read:

CHAPTER 7.7. ENERGY STORAGE SYSTEMS

2835. For purposes of this chapter, the following terms have the following meanings:

(a) (1) "Energy storage system" means 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" may have any of the characteristics in paragraph (2), shall accomplish one of the purposes in paragraph (3), and shall meet at least one of the characteristics in paragraph (4).

(2) An "energy storage system" may have any of the following characteristics:

(A) Be either centralized or distributed.

(B) Be either owned by a load-serving entity or local publicly owned electric utility, a customer of a load-serving entity or local publicly owned electric utility, or a third party, or is jointly owned by two or more of the above.

(3) An “energy storage system” shall be cost effective and either reduce emissions of greenhouse gases, reduce demand for peak electrical generation, defer or substitute for an investment in generation, transmission, or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid.

(4) An “energy storage system” shall do one or more of the following:

(A) Use mechanical, chemical, or thermal processes to store energy that was generated at one time for use at a later time.

(B) 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.

(C) Use mechanical, chemical, or thermal processes to store energy generated from renewable resources for use at a later time.

(D) Use mechanical, chemical, or thermal processes to store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time.

(b) “Load-serving entity” has the same meaning as defined in Section 380.

(c) “New” means, in reference to an energy storage system, a system that is installed and first becomes operational after January 1, 2010.

(d) “Offpeak” means, in reference to electrical demand, a period that is not within a peak demand period.

(e) “Peak demand period” means a period of high daily, weekly, or seasonal demand for electricity. For purposes of this chapter, the peak demand period for a load-serving entity shall be determined, or approved, by the commission and shall be determined, or approved, for a local publicly owned electric utility, by its governing body.

(f) “Procure” and “procurement” means, in reference to the procurement of an energy storage system, to acquire by ownership or by a contractual right to use the energy from, or the capacity of, including ancillary services, an energy storage system owned by a load-serving entity, local publicly owned electric utility, customer, or third party. Nothing in this chapter, and no action by the commission, shall discourage or disadvantage development and ownership of an energy storage system by an electrical corporation.

2836. (a) (1) On or before March 1, 2012, the commission shall open a proceeding to determine appropriate targets, if any, for each load-serving entity to procure viable and cost-effective energy storage systems to be achieved by December 31, 2015, and December 31, 2020. As part of this proceeding, the commission 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.

(2) The commission shall adopt the procurement targets, if determined to be appropriate pursuant to paragraph (1), by October 1, 2013.

(3) The commission shall reevaluate the determinations made pursuant to this subdivision not less than once every three years.

(4) Nothing in this section prohibits the commission's evaluation and approval of any application for funding or recovery of costs of any ongoing or new development, trialing, and testing of energy storage projects or technologies outside of the proceeding required by this chapter.

(b) (1) On or before March 1, 2012, the governing board of each local publicly owned electric utility shall initiate a process to determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems to be achieved by December 31, 2016, and December 31, 2021. 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.

(2) The governing board shall adopt the procurement targets, if determined to be appropriate pursuant to paragraph (1), by October 1, 2014.

(3) The governing board shall reevaluate the determinations made pursuant to this subdivision not less than once every three years.

(4) A local publicly owned electric utility shall report to the Energy Commission regarding the energy storage system procurement targets and policies adopted by the governing board pursuant to paragraph (2), and report any modifications made to those targets as a result of a reevaluation undertaken pursuant to paragraph (3).

2836.2. In adopting and reevaluating appropriate energy storage system procurement targets and policies pursuant to subdivision (a) of Section 2836, the commission shall do all of the following:

(a) Consider existing operational data and results of testing and trial pilot projects from existing energy storage facilities.

(b) Consider available information from the California Independent System Operator derived from California Independent System Operator testing and evaluation procedures.

(c) Consider the integration of energy storage technologies with other programs, including demand-side management or other means of achieving the purposes identified in Section 2837 that will result in the most efficient use of generation resources and cost-effective energy efficient grid integration and management.

(d) Ensure that the energy storage system procurement targets and policies that are established are technologically viable and cost effective.

2836.4. (a) An energy storage system may be used to meet the resource adequacy requirements established for a load-serving entity pursuant to Section 380 if it meets applicable standards.

(b) 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.

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

2837. Each electrical corporation's renewable energy procurement plan, prepared and approved pursuant to Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1, shall require the utility to procure new energy storage systems that are appropriate to allow the electrical corporation to comply with the energy storage system procurement targets and policies adopted pursuant to Section 2836. The plan shall address the acquisition and use of energy storage systems in order to achieve the following purposes:

(a) Integrate intermittent generation from eligible renewable energy resources into the reliable operation of the transmission and distribution grid.

(b) Allow intermittent generation from eligible renewable energy resources to operate at or near full capacity.

(c) Reduce the need for new fossil-fuel powered peaking generation facilities by using stored electricity to meet peak demand.

(d) Reduce purchases of electricity generation sources with higher emissions of greenhouse gases.

(e) Eliminate or reduce transmission and distribution losses, including increased losses during periods of congestion on the grid.

(f) Reduce the demand for electricity during peak periods and achieve permanent load-shifting by using thermal storage to meet air-conditioning needs.

(g) Avoid or delay investments in transmission and distribution system upgrades.

(h) Use energy storage systems to provide the ancillary services otherwise provided by fossil-fueled generating facilities.

2838. (a) (1) By January 1, 2016, each load-serving entity shall submit a report to the commission demonstrating that it has complied with the energy storage system procurement targets and policies adopted by the commission pursuant to subdivision (a) of Section 2836.

(2) By January 1, 2021, each load-serving entity shall submit a report to the commission demonstrating that it has complied with the energy storage system procurement targets and policies adopted by the commission pursuant to subdivision (a) of Section 2836.

(b) The commission shall ensure that a copy of each report required by subdivision (a), with any confidential information redacted, is available on the commission's Internet Web site.

2838.5. Notwithstanding any provision of this chapter, the requirements of this chapter do not apply to either of the following:

(a) An electrical corporation that has 60,000 or fewer customer accounts within California.

(b) A public utility district that receives all of its electricity pursuant to a preference right adopted and authorized by the United States Congress pursuant to Section 4 of the Trinity River Division Act of August 12, 1955 (Public Law 84-386).

2839. (a) (1) By January 1, 2017, a local publicly owned electric utility shall submit a report to the Energy Commission demonstrating that it has complied with the energy storage system procurement targets and policies adopted by the governing board pursuant to subdivision (b) of Section 2836.

(2) By January 1, 2022, a local publicly owned electric utility shall submit a report to the Energy Commission demonstrating that it has complied with the energy storage system procurement targets and policies adopted by the governing board pursuant to subdivision (b) of Section 2836.

(b) The Energy Commission shall ensure that a copy of each report or plan required by subdivisions (a) and (b), with any confidential information redacted, is available on the Energy Commission's Internet Web site, or on an Internet Web site maintained by the local publicly owned electric utility that can be accessed from the Energy Commission's Internet Web site.

(c) The commission does not have authority or jurisdiction to enforce any of the requirements of this chapter against a local publicly owned electric utility.

SEC. 3. Section 9620 of the Public Utilities Code is amended to read:

9620. (a) Each local publicly owned electric utility serving end-use customers, shall prudently plan for and procure resources that are adequate to meet its planning reserve margin and peak demand and operating reserves, sufficient to provide reliable electric service to its customers. Customer generation located on the customer's site or providing electric service through arrangements authorized by Section 218, shall not be subject to these requirements if the customer generation, or the load it serves, meets one of the following criteria:

(1) It takes standby service from the local publicly owned electric utility on a rate schedule that provides for adequate backup planning and operating reserves for the standby customer class.

(2) It is not physically interconnected to the electric transmission or distribution grid, so that, if the customer generation fails, backup power is not supplied from the electricity grid.

(3) There is physical assurance that the load served by the customer generation will be curtailed concurrently and commensurately with an outage of the customer generation.

(b) Each local publicly owned electric utility serving end-use customers shall, at a minimum, meet the most recent minimum planning reserve and reliability criteria approved by the Board of Trustees of the Western Systems Coordinating Council or the Western Electricity Coordinating Council.

(c) Each local publicly owned electric utility shall prudently plan for and procure energy storage systems that are adequate to meet the requirements of Section 2836.

(d) A local publicly owned electric utility serving end-use customers shall, upon request, provide the Energy Commission with any information the Energy Commission determines is necessary to evaluate the progress made by the local publicly owned electric utility in meeting the requirements of this section.

(e) The Energy Commission shall report to the Legislature, to be included in each integrated energy policy report prepared pursuant to Section 25302 of the Public Resources Code, regarding the progress made by each local publicly owned electric utility serving end-use customers in meeting the requirements of this section.

SEC. 4. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act or because costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.