STATE OF CALIFORNIA — Public Utilities Commission
San Francisco

M e m o r a n d u m

Date: May 5, 2010

To: The Commission
(Meeting of May 6, 2010)

From: Edward F. Randolph, Director
Office of Governmental Affairs (OGA) — Sacramento

Subject: **AB 2514 (Skinner) – Energy Storage Systems.**
As Amended: April 28, 2010

LEGISLATIVE SUBCOMMITTEE RECOMMENDATION: OPPOSE UNLESS AMENDED

SUMMARY OF BILL:

This bill would require the CPUC to create, by January 1, 2013, requirements for electrical corporations to meet procurement requirements for energy storage systems by 2015 and 2020. The proceeding to create these requirements must be initiated by April 1, 2011 and the decision on requirements must be revisited every three years. The California Energy Commission (CEC) would be required to make certain recommendations for storage in the Integrated Energy Policy Report (IEPR) and consider storage in other publications.

SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:

This bill creates an aggressive timeline for CPUC to develop requirements for electrical corporations to procure energy from energy storage systems or storage services. Staff resource constraints may restrict the CPUC's ability to perform the complex analysis required to properly implement this bill. The bill may also limit the CPUC's ability to develop appropriate complementary policies to facilitate the beneficial, cost-effective use of energy storage technologies. While this bill provides CPUC the authority to set the form and level of the storage procurement requirements, the CPUC would not have the flexibility to set the timeline for compliance.

While energy storage may be a critical part of meeting California's GHG goals, we should carefully develop policies to promote cost-effective market development of energy storage systems. There is little evidence that a portfolio requirement for energy

storage will be the most cost-effective means of promoting new markets for energy storage systems.

SUMMARY OF SUGGESTED AMENDMENTS:

1) **Provide consistency between available staff resources and mandatory regulatory timelines.** Currently, the CPUC does not have any staff devoted to storage, yet this bill requires CPUC to initiate a complex storage proceeding by April 1, 2011. It is imperative that CPUC have available staff to implement the proceeding and perform the complex analysis required by the bill. As shown in the optimistic timeline below, unless the authorization to hire new staff can be significantly accelerated, the CPUC should not be required to initiate the proceeding before March 1, 2012 or establish requirements by January 31, 2013.

September, 2010	AB 2514 is signed
July, 2011	CPUC posts positions for new staff
December, 2011	New hires begin work
March 1, 2012	Proceeding initiated
January 31, 2013	Procurement targets adopted

2) **Provide the CPUC flexibility to consider other regulatory and policy tools to support the deployment of energy storage technologies, as appropriate, in the context of broader energy policy objectives, including renewable energy integration, greenhouse gas emissions reduction, and minimizing costs.** Requiring a specific level of deployment of storage technologies may not provide efficient incentives for cost-effective storage. Therefore, the bill should encourage the CPUC to consider a variety of policy tools to support energy storage, and carefully select an approach. Further, the bill should encourage the CPUC to consider other programs and policies that may be impacted by and also impact energy storage deployment. The CPUC should consider these costs and benefits in addition to commercialization and deployment risks in establishing any timelines and targets for storage deployment.

3) **Provide clarity that any new requirements would apply equally to all load-serving entities.** The legislation should clarify that all load serving entities, including both CPUC-jurisdictional entities (e.g. electrical corporations, community choice aggregators and energy service providers) and non-CPUC-jurisdictional entities (e.g. municipal utilities). The April 14 draft is clear that electrical corporations and publicly owned utilities are included, but does not specify community choice aggregators and energy service providers.

DIVISION ANALYSIS (Energy Division):

The bill would add P.U. Code Sections 2835-2839, amend 9615 and 9620; and amend Section 25302 of the Public Resource Code. Together, these changes:

Define "energy storage system," find that there are barriers to the deployment of storage, and identify the benefits of storage. In this bill, the legislature finds that energy storage is necessary for renewables integration and may reduce costs, but that there are "significant" barriers to obtaining these benefits. The definition of storage is appropriately broad.

Require CPUC to Establish Procurement Targets. By April 1, 2011, CPUC must open a proceeding and, by January 1, 2013, adopt two "appropriate energy storage system procurement targets" for each electrical corporation. The first requirement shall be achieved by January 1, 2015; the second by January 1, 2020. These requirements shall be re-evaluated at least once every 3 years. (§2836(a)(1-3)) There are no explicit requirements on the details of these procurement targets. Presumably, the CPUC would retain the flexibility to determine the form and the level of the requirements. For instance, the bill does not preclude the CPUC from setting the level of the target to zero if there is an effective level of investment However, the CPUC shall consider information from pilot projects, CAISO data, and interactions with other programs (explicitly: efficiency) in order to set targets that are viable and cost-effective. (§2836.2(a-d))

Require that storage be considered in the renewable energy procurement plans described in P.U. Code 399.11. The RPS procurement plans would be required to include provisions to meet the storage procurement targets and achieve other benefits of storage. Storage would be procured through annual solicitations in which third party owned systems would compete with any proposals for utility-owned storage resources.

Require the CEC to analyze storage. Beginning with the 2011 Integrated Energy Policy Report (IEPR), each IEPR "shall identify, evaluate and recommend the best technologies and locations" in CA for storage. Further, the CEC "shall consider the role and benefits" of storage in *all* plans and reports related to electricity. This requirement may be overbroad and burdensome.

Storage may count toward Resource Adequacy (RA). P.U. Code 2836.4 states that if storage systems meet the "applicable standards" for RA, they shall be counted toward utilities' RA obligations. The CPUC already has authority to determine how resources are counted toward RA obligations and has not specified such standards for storage technologies. The CPUC is not explicitly required to create these standards by this legislation.

CPUC does not have the resources to meet the timelines in this bill. This bill requires CPUC to initiate a proceeding by April 1, 2011 and set requirements by

January 1, 2013. Currently, CPUC has no staff resources devoted to storage. Energy Division does have a Budget Change Proposal for three storage analysts; however even if this proposal is approved, further staff would be needed promptly. In order to comply with this bill, CPUC must be given new staff resources and the deadlines for the regulatory process must provide time for these new staff to begin their work.

California's energy policy goals may be better served if the CPUC is given the flexibility and resources to explore appropriate regulatory treatment and incentives to encourage investment in energy storage. Electric energy storage is an emerging industry that offers the possibility to solve a number of major obstacles to the achievement of a sustainable electricity future. It can effectively address problems such as the integration of intermittent renewables and can provide quick-response ancillary services from non-GHG-emitting facilities. Determining the appropriate role for energy storage in achieving the state's renewable energy and greenhouse gas emissions goals may best be achieved through a comprehensive energy storage proceeding at the CPUC. To best capture the value of energy storage for the grid requires consideration of how it impacts and influences generation, demand response, transmission, and distribution. Out of such a proceeding, the CPUC could determine appropriate policies, programs and incentive mechanisms.

The bill as currently written specifies the policies the CPUC should use to require the deployment of energy storage technologies on a specific timeline. **Providing a general mandate to the CPUC to explore appropriate regulatory treatment of energy storage would be more appropriate.** The CPUC currently has the authority to encourage utility procurement of energy storage. Appropriate deployment of storage is an important goal and a multi-faceted approach would be required to have a significant impact.

PROGRAM BACKGROUND:

Procurement: Coordinated utility procurement resumed in 2003 and has been guided by the biennial Long-Term Procurement Plans (LTPP) beginning in 2004 (D.04-12-048). The LTPP allows for greater head-to-head competition and provides guidelines on all-source solicitations, resolves cost recovery issues, and begins integrating renewables procurement with general procurement. Resource Adequacy promotes infrastructure investment by requiring that Load Serving Entities procure capacity so that it is available to the California Independent System Operator (CAISO) when and where needed.

Renewable Portfolio Standard (RPS): Established in 2002, under Senate Bill 1078 (Sher) and accelerated in 2006 under Senate Bill 107 (Simitian), California's Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires electric corporations to increase procurement from eligible renewable energy resources by at least 1% of their retail sales annually, until they reach 20% by 2010.

Demand Response (DR): DR is a resource that allows end-use electric customers to reduce their electricity usage in a given time period, or shift that usage to another time period, in response to a price signal, a financial incentive, an environmental condition or a reliability signal. DR saves ratepayers money by lowering peak time energy usage, which are high-priced. This lowers the price of wholesale energy, and in turn, retail rates. DR may also prevent rolling blackouts by offsetting the need for more electricity generation and can mitigate generator market power.

> In this proceeding (R.07-01-041), a multi-agency effort that involves the participation of the CEC, develops DR programs and dynamic pricing tariffs as a resource to enhance electric system reliability, reduce power purchase and individual consumer costs, and protect the environment. The proceeding authorized the State Pricing Pilot (SPP) research project, a two-year pricing research project designed to estimate the demand response and price elasticities for a representative sample of residential and small commercial customers (approximately 2,000 customers) on time differentiated rates (TOU and CPP rates), information, and/or technology treatments. The SPP will also evaluate customers' preferences to different tariff attributes, and market shares for specific TOU and dynamic rates, control technology, and information treatments under alternative deployment strategies. The SPP results will provide key inputs for the Advanced Metering Infrastructure (AMI) business case analysis and rate design options. The proceeding also reviews the utilities' applications for the implementation of an Advanced Metering Infrastructure (AMI) and associated recovery and proposed dynamic pricing tariffs.

Distributed Generation Programs: The Self-Generation Incentive Program (SGIP) was established in 2001 and is one of the largest distributed generation incentive programs in the United States, with approximately 1,200 projects totaling 300 megawatts on-line at the end of 2007. The program provides up-front, capacity-based incentives for clean, distributed generation technologies at customer sites.

Historically SGIP eligibility has been determined by the CPUC and has included both renewable and highly efficient fossil fuel powered systems[1]. Eligible technologies have included solar photovoltaics (PV), wind, fuel cells, microturbines, internal combustion engines and small gas turbines. With the passage of SB 1 (Murray, 2006) and the creation of the California Solar Initiative in 2007, solar PV was removed from SGIP. AB 2778 (Lieber, 2006) further limited SGIP eligibility to wind and fuel cell technologies only, effective January 1, 2008.

Per D. 08-11-044, SGIP now provides incentives for energy storage systems that are coupled with eligible SGIP technologies, currently wind and fuel cell technologies. Due to limitations established in AB 2778, energy storage systems not connected with wind

[1] All fossil fuel powered combustion technologies that have participated in SGIP have been required to operate in a combined heat and power application, which maximizes operating efficiency by capturing and utilizing waste heat.

or fuel cells (for example, stand-alone storage or storage coupled with solar) are not eligible under the program.

California Solar Initiative (CSI): The CSI provides incentives for solar system installations to customers of the state's three IOUs. The CSI Program provides upfront incentives for solar systems installed on existing residential homes, as well as existing and new commercial, industrial, government, non-profit and agricultural properties within the service territories of the IOUs.

The CSI Program was authorized by the Commission through a number of regulatory decisions throughout 2006. In addition, the legislature expressly authorized the Commission to create the California Solar Initiative in 2006 in SB 1 (Murray). When it launched in January 2007, the CSI Program built upon nearly 10 years of state support for solar, including other incentive programs such as the Emerging Renewables Program (ERP) and the Self-Generation Incentive Program (SGIP).

Distributed "roof-top solar", such as is incented by CSI, would have enhanced economic viability if combined with energy storage technology that could reduce the impact of natural fluctuations in the energy supplied to the grid or customers. Currently, no energy storage technologies attached to solar PV systems are eligible for incentives.

LEGISLATIVE HISTORY:

This bill is similar to AB 44 (Blakeslee) which would establish incentives for energy storage systems. This bill is currently in the Senate Energy, Utilities and Communications Committee.

FISCAL IMPACT:

This bill would require a new proceeding to establish a regulatory program to oversee the use of energy storage technologies. There are no dedicated, permanent staff resources dealing with energy storage technologies.

A full-time PURA V and two full-time PURA IVs, three full-time PURA IIIs, one full-time PPS, one full-time ALJ II, and one full-time PUC III would be needed on an ongoing basis to establish a regulatory program for energy storage, implement the provisions of this bill, monitor compliance with the law and Commission decisions, monitor procurement of storage services, and monitor the impacts on ratepayers of energy storage technologies paid for by ratepayer funds. Establishment of the program details would require a ratemaking proceeding. The ratemaking proceeding, implementation of the provisions of the bill and ongoing monitoring activities would be led by a senior PURA V analyst with extensive experience in procurement and electric utility avoided cost and a junior PURA III analyst with experience in energy storage. The ratemaking proceeding would be administered by an ALJ II with support from a PUC III in addition to the PURA V and PURA III. The oversight of utility procurement of storage services would be lead by two PURA IVs with experience in procurement and supported by two

PURA IIIs with experience in regulatory oversight and a PUC III with experience in compliance and enforcement. These analysts would also be required to coordinate with the CEC on compliance oversight and development of the analysis required by this bill. One PPS would oversee the activities of the six PURAs described above.

STATUS:

AB 2514 is currently in the Assembly Appropriations Committee.

SUPPORT/OPPOSITION:

Support: 123 Systems, Inc.
ltairnano Inc.
Breathe California
California Attorney General (Sponsor)
California Energy Storage Alliance
CALMAC Manufacturing Corporation
Clean Power Campaign (if amended)
Coalition to Advance Renewable Energy through Bulk Storage (CAREBS)
Debenham Energy, LLC
Dow Kokam, LLC
ElectronVault, Inc.
Energy Company, Panasonic Corporation
EnerSys
EnerVault Corporation
EVAPCO, Inc.
FAFCO Inc.
Fluidic Energy, Inc.
Ice Energy, Inc.
MegaWatt Storage Farms, Inc.
Mohr Davidow Ventures
Natgun Corporation
Pearl Street Liquidity Advisors, LLC.
Polaris Venture Partners
PowerGenix Systems, Inc.
Prudent Energy International, Inc.
PVT Solar, Inc.
Rockport Capital Partners
SAIL Venture Partners
Samsung SDIA, Inc.
SANYO North America Corporation
SEEO, Inc.
SustainX, Inc.
Union of Concerned Scientist (UCS)
XtremePower

Opposition: California Manufacturers & Technology Association (CMTA)
California Municipal Utilities Association (CMUA)
California Association of Small and Multi-jurisdictional Utilities (CASMU)
California Coalition of Utility Employees (CCUE)
California Large Energy Consumers Association (CLECA) (unless amended)
Division of Ratepayer Advocates (DRA) (unless amended)
Northern California Power Agency (NCPA)
Pacific Gas and Electric Company (PG&E) (unless amended)
San Diego Gas & Electric (SDG&E) (unless amended)
Southern California Edison (SCE) (unless amended)
The Utility Reform Network (TURN)

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Date: May 5, 2010

BILL LANGUAGE:

BILL NUMBER: AB 2514 AMENDED
BILL TEXT

AMENDED IN ASSEMBLY APRIL 28, 2010
AMENDED IN ASSEMBLY APRIL 14, 2010
AMENDED IN ASSEMBLY APRIL 7, 2010

INTRODUCED BY Assembly Member Skinner

FEBRUARY 19, 2010

An act ~~to amend Section 25302 of the Public Resources Code, and~~ to amend Sections 9615 and 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.

LEGISLATIVE COUNSEL'S DIGEST

AB 2514, as amended, 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 Energy Commission, beginning November 1, 2003, and every 2 years thereafter, to adopt an integrated energy policy report which includes an assessment and forecast of system reliability and the need for resource additions, efficiency, and conservation.~~

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 April 1, 2011, to open a proceeding to establish procurement targets for each electrical corporation for viable and cost-effective energy storage systems and, by January 1, 2013, to adopt an appropriate energy storage system procurement target to be achieved by each electrical corporation by January 1, 2015, and a 2nd target to be achieved by January 1, 2020. The bill would require the governing board of a local publicly owned electric utility, by April 1, 2011, to open a proceeding to establish procurement targets for the utility for viable and cost-effective energy storage systems and, by January 1, 2013, to adopt an appropriate energy storage system procurement target to be achieved by the utility by January 1, 2015, and a 2nd target to be achieved by January 1, 2020. The bill would additionally require each local publicly owned electric utility, commencing January 1, 2012, to develop and submit to the Energy Commission a plan to implement a 5-year program to employ distributed thermal, mechanical, or electrochemical energy storage systems to maximize shifting of electricity use for air-conditioning and refrigeration from peak demand periods to offpeak periods. The bill would require each electrical corporation and local publicly owned electric utility to report certain information to the CPUC, for an electrical corporation, or to the Energy Commission, for a local publicly owned electric utility. ~~The bill would require the Energy Commission to include certain information relative to energy storage systems in the integrated energy policy report, commencing with the report to be made by November 1, 2011.~~ The bill would make other technical, nonsubstantive revisions to existing 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.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

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 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. Section 25302 of the Public Resources Code is amended to read:~~

~~25302. (a) Beginning November 1, 2003, and every two years thereafter, the commission shall adopt an integrated energy policy report. This integrated report shall contain an overview of major energy trends and issues facing the state, including, but not limited to, supply, demand, pricing, reliability, efficiency, and impacts on public health and safety, the economy, resources, and the environment. Energy markets and systems shall be grouped and assessed in three subsidiary volumes:~~

~~(1) Electricity and natural gas markets.~~

~~(2) Transportation fuels, technologies, and infrastructure.~~

~~(3) Public interest energy strategies.~~

~~(b) The commission shall compile the integrated energy policy report prepared pursuant to subdivision (a) by consolidating the analyses and findings of the subsidiary volumes in paragraphs (1), (2), and (3) of subdivision (a). The integrated energy policy report shall present policy recommendations based on an indepth and integrated analysis of the most current and pressing energy issues~~

~~facing the state. The analyses supporting this integrated energy policy report shall explicitly address interfuel and intermarket effects to provide a more informed evaluation of potential tradeoffs when developing energy policy across different markets and systems.~~

~~(c) The integrated energy policy report shall include an assessment and forecast of system reliability and the need for resource additions, efficiency, and conservation that considers all aspects of energy industries and markets that are essential for the state economy, general welfare, public health and safety, energy diversity, and protection of the environment. This assessment shall be based on determinations made pursuant to this chapter.~~

~~(d) Beginning November 1, 2004, and every two years thereafter, the commission shall prepare an energy policy review to update analyses from the integrated energy policy report prepared pursuant to subdivisions (a), (b), and (c), or to raise energy issues that have emerged since the release of the integrated energy policy report. The commission may also periodically prepare and release technical analyses and assessments of energy issues and concerns to provide timely and relevant information for the Governor, the Legislature, market participants, and the public.~~

~~(e) (1) For purposes of this subdivision, "energy storage system" has the same meaning as in Section 2835.1 of the Public Utilities Code.~~

~~(2) Beginning November 1, 2011, and every two years thereafter, the integrated energy policy report, prepared by the commission pursuant to subdivision (a), shall do all of the following:~~

~~(A) Identify, evaluate, and recommend the best technologies and locations in the state for energy storage systems to achieve the purposes set forth in subdivision (a) of Section 2837.~~

~~(B) Evaluate the potential capacity and benefits of energy storage systems to the electrical transmission and distribution grid.~~

~~(C) Identify and recommend locations where the interconnection costs for energy storage systems located on the transmission and distribution grid would be minimized.~~

~~(f) In preparation of the report, the commission shall consult with the following entities: the Public Utilities Commission, the Office of Ratepayer Advocates, the State Air Resources Board, the Electricity Oversight Board, the Independent System Operator, the Department of Water Resources, the California Consumer Power and Conservation Financing Authority, the Department of Transportation, and the Department of Motor Vehicles, and any federal, state, and local agencies it deems necessary in preparation of the integrated energy policy report. To assure collaborative development of state energy policies, these agencies shall make a good faith effort to provide data, assessment, and proposed recommendations for review by the commission.~~

~~(g) The commission shall provide the report to the Public Utilities Commission, the Office of Ratepayer Advocates, the State Air Resources Board, the Electricity Oversight Board, the Independent System Operator, the Department of Water Resources, the California Consumer Power and Conservation Financing Authority, and the Department of Transportation. For the purpose of ensuring consistency in the underlying information that forms the foundation of energy policies and decisions affecting the state, those entities shall carry out their energy related duties and responsibilities based upon the information and analyses contained in the report. If an entity~~

~~listed in this subdivision objects to information contained in the report, and has a reasonable basis for that objection, the entity shall not be required to consider that information in carrying out its energy-related duties.~~

~~(h) The commission shall make the report accessible to state, local, and federal entities and to the general public.~~

~~SEC. 3.~~ *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 an electrical corporation or local publicly owned electric utility, a customer of an electrical corporation 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, 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 offpeak times for use at a later time without substantial reliance on fossil fuels.

(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 without substantial reliance on fossil fuels.

(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 without substantial reliance on fossil fuels.

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

(c) "Offpeak" means, in reference to electrical demand, a period that is not within a peak demand period.

(d) "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 an electrical corporation 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.

(e) "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 customer or third party.

2836. (a) (1) On or before April 1, 2011, the commission shall open a proceeding to establish procurement targets for each electrical corporation for viable and cost-effective energy storage systems.

(2) On or before January 1, 2013, the commission shall adopt appropriate energy storage system procurement targets to be achieved by each electrical corporation by January 1, 2015, and a second target to be achieved by January 1, 2020.

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

(b) (1) On or before April 1, 2011, the governing board of each local publicly owned electric utility shall initiate a process to establish procurement targets for the utility for viable and cost-effective energy storage systems.

(2) On or before January 1, 2013, the governing board shall adopt appropriate energy storage system procurement targets to be achieved by the utility by January 1, 2015, and a second target to be achieved by January 1, 2020.

(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 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 pursuant to subdivision (a) of Section 2836, the commission shall do all of the following:

(a) Consider existing 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 energy efficiency or other means of reducing electrical demand 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 that are established are technologically viable and cost effective.

2836.4. (a) An energy storage system shall be used to meet the resource adequacy requirements established for an electrical corporation pursuant to Section 380 if it meets applicable standards.

(b) An energy storage system shall 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 an electrical corporation 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 do all of the following:

(a) Require the utility to procure new energy storage systems that are sufficient to allow the electrical corporation to meet the energy storage system procurement targets adopted pursuant to Section 2836. The plan shall address the acquisition and use of energy storage systems in order to achieve the following purposes:

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

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

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

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

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

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

(7) Avoid or defer investments in transmission and distribution system upgrades.

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

(b) Consider and incorporate, where feasible, the Energy Commission's evaluation of energy storage systems, including locations where the interconnection costs for energy storage systems located on the transmission and distribution grid would be minimized, as identified in the Integrated Energy Policy Report prepared pursuant to Section 25302 of the Public Resources Code.

2838. (a) (1) By January 1, 2015, each electrical corporation shall submit a report to the commission demonstrating that it has complied with the energy storage system procurement targets adopted by the commission pursuant to subdivision (a) of Section 2836.

(2) By January 1, 2020, each electrical corporation shall submit a report to the commission demonstrating that it has complied with the energy storage system procurement targets 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.

2839. (a) (1) By January 1, 2015, 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 adopted by the governing board pursuant to subdivision (b) of Section 2836.

(2) By January 1, 2020, 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 adopted by the governing board pursuant to subdivision (b) of Section 2836.

(b) (1) Within 60 days of receipt of a report required by subdivision (a), the Energy Commission shall notify a local publicly

owned electric utility if the report fails to demonstrate compliance with the energy storage system procurement target requirements.

(2) Within 60 days of receiving a notice of deficiency pursuant to paragraph (1), a local publicly owned electric utility shall submit an energy storage system procurement compliance plan to the Energy Commission setting forth a program for compliance with the energy storage system procurement targets within six months of the required date for submittal of the compliance plan.

(3) The local publicly owned electric utility that submitted an energy storage system procurement compliance plan shall comply with the applicable energy storage system procurement targets within six months from the required date for submittal of the compliance plan and shall submit proof of compliance to the Energy Commission within 30 days of the expiration of the six-month period.

(c) 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.

(d) On or before July 1, 2011, the Energy Commission shall adopt regulations specifying procedures to enable local publicly owned electric utilities to comply with this chapter.

(e) 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. 4.~~ *SEC. 3.* Section 9615 of the Public Utilities Code is amended to read:

9615. (a) Each local publicly owned electric utility, in procuring energy to serve the load of its retail end-use customers, shall first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.

(b) On or before June 1, 2007, and by June 1 of every third year thereafter, each local publicly owned electric utility shall identify all potentially achievable cost-effective electricity efficiency savings and shall establish annual targets for energy efficiency savings and demand reduction for the next 10-year period. A local publicly owned electric utility's determination of potentially achievable cost-effective electricity efficiency savings shall be made without regard to previous minimum investments undertaken pursuant to Section 385. A local publicly owned electric utility shall treat investments made to achieve energy efficiency savings and demand reduction targets as procurement investments.

(c) Within 60 days of adopting annual targets pursuant to subdivision (b), each local publicly owned electric utility shall report those targets to the Energy Commission, and the basis for establishing those targets.

(d) Each local publicly owned electric utility shall report annually to its customers and to the Energy Commission. The report shall contain, but is not limited to, both of the following:

(1) Its investments in energy efficiency and demand reduction programs.

(2) A description of programs, expenditures, cost-effectiveness, and expected and actual energy efficiency savings and demand reduction results.

(e) Each local publicly owned electric utility shall also annually

develop and submit to the Energy Commission a report containing all of the following:

(1) The sources of funding for its investments in energy efficiency and demand reduction program investments.

(2) The methodologies and input assumptions used to determine cost-effectiveness.

(3) The results of an independent evaluation that measures and verifies the energy efficiency savings and reduction in energy demand achieved by its energy efficiency and demand reduction programs.

(f) (1) Each local publicly owned electric utility, by January 1, 2011, shall develop and submit to the Energy Commission a plan setting forth a program, to be implemented over the following five years, requiring the use of distributed thermal, mechanical, or electrochemical energy storage systems to maximize shifting of electricity use for air-conditioning and refrigeration from peak demand periods to offpeak times. The purposes of the program shall include reducing electricity demand during peak demand periods and reducing emissions of greenhouse gases, oxides of nitrogen, and particulate matter.

(2) In developing and implementing the plan required by this subdivision, each of the attributes that an energy storage system would provide, shall be considered and valued when determining if a proposed energy storage system is cost effective.

(3) Each local publicly owned electric utility, within one year of its issuance, shall consider and, where feasible, incorporate into the utility's plan required by this subdivision, the Energy Commission's evaluation of energy storage locations, technologies, and benefits as identified in the most current Integrated Energy Policy Report prepared pursuant to Section 25302 of the Public Resources Code.

(g) The Energy Commission shall include a summary of the information reported pursuant to subdivision (e) in the integrated energy policy report prepared pursuant to Chapter 4 (commencing with Section 25300) of Division 15 of the Public Resources Code. The Energy Commission shall also include, for each local publicly owned electric utility, a comparison of the local publicly owned electric utility's annual targets established in accordance with this section, and the local publicly owned electric utility's actual energy efficiency savings and demand reductions. If the Energy Commission determines that improvements can be made in either the level of a local publicly owned electric utility's annual targets to achieve all cost-effective, reliable, and feasible energy savings and demand reductions and to enable the local publicly owned electric utilities, in the aggregate, to achieve statewide targets established pursuant to Section 25310, or in meeting each local publicly owned electric utility's annual targets, the Energy Commission shall provide recommendations to the local publicly owned electric utility, the Legislature, and the Governor on those improvements.

~~SEC. 5.~~ *SEC. 4.* 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. 6.~~ *SEC. 5.* 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.