

October 29, 2013

California Energy Commission

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California Energy Commission  
Docket Office, MS-4  
Re: Docket No. 13-IEP-1A  
1516 Ninth Street  
Sacramento, CA 95814-5512  
docket@energy.state.ca.us

Re: *Southern California Edison Company's (SCE's) Comments on the California  
Energy Commission Docket No. 13-IEP-1A: Draft 2013 IEPR*

To Whom It May Concern:

Southern California Edison (SCE) appreciates the opportunity to provide comments on the California Energy Commission's (Energy Commission's) 2013 Integrated Energy Policy Report (2013 IEPR): Draft Lead Commissioner Report (Draft Report). SCE would like to acknowledge the Energy Commission staff for their efforts in completing the Draft Report, which covers many important energy and environmental policy issues that impact California's energy future. In this cover letter, SCE summarizes its most significant concerns about policies raised in the Draft Report. Attachment 1 to this letter provides greater detail on specific subject areas and Attachment 2 includes specific redlined recommended verbiage changes.

SCE is generally supportive of the policy recommendations outlined in the Draft Report. In particular, SCE commends the Energy Commission for refining its electricity demand forecast by including additional transportation electrification elements and improved delineation of energy efficiency (EE) savings. SCE looks forward to continuing its collaboration with Energy Commission staff to incorporate additional information into future demand forecasts, including further granularity for EE savings, demand response, and additional transportation electrification elements. SCE believes inclusion of these items is essential for ensuring accurate quantification and incorporation of all factors influencing the demand forecast and that it will provide a more accurate reflection of California's future electricity outlook.

SCE also encourages continued and enhanced engagement of stakeholders in the forecasting process to ensure that all stakeholders have ample opportunity to provide updated data throughout the development of the demand forecast. SCE recommends that the Energy Commission continue its efforts to foster greater transparency and collaboration among stakeholders going forward so that both the Energy Commission and stakeholders are better

informed, and to ensure that feedback and further analysis can be incorporated in a timely manner.

SCE also agrees with the Energy Commission that preferred resources, such as energy efficiency, demand response, and distributed generation will play an essential role in California's energy future. As the State expects system-wide and local-area reliability needs to be met increasingly with ambitious levels of preferred resources, utilities will need to ensure that these resources are available and able to perform where and when needed to meet reliability needs, while ensuring grid stability and resiliency. For this to occur, state policies must begin to shift away from requiring utilities to procure preferred resources in a manner that solves for individual compliance targets, and move towards encouraging the procurement of a more balanced portfolio of supply-side and demand-side preferred resources that will solve for reliability needs.

SCE recognizes the importance of investing in technology to facilitate the state's transition to an increasingly de-carbonized grid, and to that end, is engaged in a number of research and development projects, such as the Irvine Smart Grid Demonstration, which will inform how advanced technologies of the Smart Grid can operate effectively to facilitate California's transition to a clean energy future. SCE is also proposing a Preferred Resources Living Pilot program (Pilot) as a means of informing future policy decisions surrounding the procurement of preferred resources and their ability to meet local reliability needs. SCE looks forward to collaborating with the Energy Commission, CPUC, California Independent System Operator, and interested stakeholders to move forward with its proposed Pilot. In particular, SCE is eager to participate in the CPUC's November 6, 2013 Workshop, "Defining the Living Pilot, a Symposium of Ideas," which will initiate a collaborative stakeholder process by engaging participants in discussions about the types of preferred resources, market strategies, and advanced technologies that SCE should consider in the Pilot. As SCE moves forward with the proposed Pilot, SCE hopes to actively engage with stakeholders to inform and develop responsible strategies that advance the state's preferred resources goals in a manner that is consistent with SCE's mission to safely provide reliable and affordable electricity to its customers.

Although SCE acknowledges the importance of preferred resources in advancing California's energy and environmental policy goals, SCE also strongly supports a balanced approach for addressing local reliability needs in Southern California, particularly in light of the recent San Onofre Nuclear Generation Station (SONGS) shutdown and the State Water Resources Control Board regulations to retire coastal plants that utilize Once-Through Cooling (OTC) technology. SCE supports a strategy that includes further development of preferred resources, transmission facilities, and additional conventional gas-fired generation where necessary to maintain grid stability and reliability. SCE also believes that efforts to assure reliable service should be consistent with reasonable costs to all ratepayers.

As noted in the Draft Report, another important means of facilitating California's clean energy future—and particularly the generation projects necessary to meet the state's environmental policy targets and reliability needs—is to facilitate transmission infrastructure

permitting that supports needed energy resources. SCE supports the Energy Commission's recommendations to identify and designate transmission corridors in order for transmission projects to be planned and built in an efficient and environmentally responsible manner to interconnect generation projects. SCE notes that in order to ensure the effectiveness of transmission corridors, it is important that they be seamless, continuous, and allow for adequate flexibility so that utilities are able to site and plan their projects responsibly within the corridor boundaries. SCE looks forward to collaborating with the Energy Commission and other stakeholders to facilitate the designation of corridors in order to support the timely and responsible development of transmission projects, and the generation projects that they support, in a safe and reliable manner. SCE also recommends that the Energy Commission look to land-use planning efforts, like the Desert Renewable Energy Conservation Plan (DRECP), to inform the siting of these corridors in a manner that is consistent with the DRECP's conservation and renewable energy goals.

As discussed earlier, SCE acknowledges the State's interest in preferred resources and is engaged in a number of research and development efforts to support and inform preferred resources policy, including EE standards and particularly Zero Net Energy (ZNE) projects and programs. SCE has participated actively in many ZNE projects since the inception of the California Long Term Energy Efficiency Strategic Plan (CLTEESP) and the establishment of the CPUC's goals for ZNE buildings. SCE has gained valuable insight from its experience in these efforts, and is eager to collaborate with the Energy Commission and stakeholders to help responsibly shape ZNE measures. SCE recommends that, in order to ensure greater success with ZNE standards, the definition of ZNE should incorporate enough flexibility to allow for any building to participate as a ZNE building. ZNE buildings should require all cost-effective EE and DR measures to achieve building performance targets, while ensuring grid stability and reliability, and allowing for flexibility by including both on-site and off-site renewable generation to meet a building's energy production needs. SCE offers more detailed comments regarding ZNE in its attached comments. SCE will also be submitting additional joint comments with Pacific Gas & Electric, San Diego Gas & Electric, and Southern California Gas Company that specifically address the definition of "Zero Net Energy" and its implications on the utility and building industries.

SCE appreciates the opportunity to submit comments and looks forward to its continuing collaboration with Energy Commission throughout the development of the IEPR. Please do not hesitate to contact me at (916) 441-2369 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Very truly yours,

*/s/ Manuel Alvarez*

Manuel Alvarez

**Attachment 1**

**ATTACHMENT 1**  
**SCE'S COMMENTS ON THE DRAFT IEPR**

**CHAPTER 1: Energy Efficiency**

**A. The Benefits of Energy Efficiency Standards**

Southern California Edison (SCE) commends the Energy Commission for its successful building and efficiency standard programs, which have been an effective means for achieving the state's ambitious energy and environmental policy goals. SCE looks forward to continuing its collaboration with the Energy Commission and stakeholders to provide consumers with further energy-savings and financial benefits as the state looks to increasingly rely on preferred resources such as Energy Efficiency (EE) to meet reliably needs.

**B. Comprehensive Energy Efficiency Program for Existing Buildings**

SCE has long been a national leader in energy efficiency and has coordinated with state and federal governments, as well as the private sector, to develop and implement successful EE programs and policies to provide California consumers with financial and energy-savings benefits. SCE is eager to continue working with its customers to meet EE goals for existing buildings, and is currently collaborating with the California Public Utilities Commission (CPUC), building owners, and residents to further enhance EE in buildings throughout SCE's service territory.

In 2009, the California Legislature approved The Comprehensive Energy Efficiency Program for Existing Buildings (EEPEB),<sup>1</sup> which requires the Energy Commission to (1) report on its progress for implementing California's home energy rating program, and (2) develop a comprehensive program to achieve greater energy savings in the state's existing residential and commercial building stock. In the 2013 Draft Integrated Energy Policy Report (IEPR) (Draft Report), the Energy Commission discusses these efforts as part of its *Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings*<sup>2</sup> (Draft Action Plan). The Draft Action Plan includes a proposal to develop a roadmap, pursuant to Assembly Bill 758,<sup>3</sup> that continues existing EE programs and measures, and supports future EE efforts by providing strategies for understanding and overcoming market barriers.<sup>4</sup> SCE has reviewed the Draft Action Plan and commends the Energy Commission for its recommendations to employ a wide array of tools and pathways to achieve meaningful energy savings in California's existing buildings. The strategies outlined in the Draft Action Plan have potential for deep energy savings, and could provide meaningful improvements in California's existing buildings.

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<sup>1</sup> California Energy Commission, Comprehensive Energy Efficiency Program for Existing Buildings, <http://www.energy.ca.gov/ab758/>

<sup>2</sup> California Energy Commission, *Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings*, June 2013, <http://www.energy.ca.gov/2013publications/CEC-400-2013-006/CEC-400-2013-006-D>

<sup>3</sup> Assembly Bill No. 758 (Skinner, Chapter 470, Statutes of 2009), [http://www.energy.ca.gov/ab758/documents/ab\\_758\\_bill\\_20091011\\_chaptered.pdf](http://www.energy.ca.gov/ab758/documents/ab_758_bill_20091011_chaptered.pdf)

<sup>4</sup> See Draft Report, at p. 24

SCE generally supports the Energy Commission's Draft Action Plan and is working towards similar EE goals, such as improving compliance with building codes, developing a more comprehensive marketing, education and outreach strategy, and developing a knowledgeable workforce that is trained in EE best practices. SCE looks forward to its ongoing collaboration with the Energy Commission, CPUC, and both public and private industry stakeholders to achieve its EE goals and inform EE measures going forward.

SCE has also identified gaps in the Draft Action Plan, including areas of ongoing investor-owned utility (IOU) program activity, such as:

- Program Funding
- Multifamily Programs
- Low-Income Programs
- Plug Loads
- Cost-Effectiveness
- Behavior Intervention Strategies

SCE recommends that the Energy Commission coordinate with IOUs and other stakeholders to address these gaps in its Final Action Plan. Doing so would ensure a more comprehensive energy efficiency approach that leverages existing IOU programs and services.

SCE commends the Energy Commission for prioritizing cost-effective solutions as a core objective for its Draft Action Plan. SCE recommends, however, that the Energy Commission provide a more detailed description of how cost-effectiveness measures will be determined, implemented, and quantified as it finalizes the Action Plan. There are key differences between the cost-effectiveness methodologies used by the CPUC and the Energy Commission, and these differences may result in discrepancies in cost-effectiveness interpretations and expectations. Cost-effectiveness is a necessary component for evaluating the Action Plan's short- and long-term strategies. SCE therefore recommends that the Energy Commission actively engage the CPUC to fully understand these issues and resolve any outstanding discrepancies. SCE also notes that, as an IOU, it is legally bound by the CPUC's cost-effectiveness rules and emphasizes the importance of close collaboration and coordination with the CPUC in developing cost-effectiveness thresholds. As the Action Plan is finalized, SCE recommends that the Energy Commission ensure alignment with the CPUC's objectives, directives, and the resources allocated to the IOUs.

SCE recommends that the Final Action Plan highlight any areas of uncertainty and issues that require further investigation. In those instances, SCE recommends that the Energy Commission engage closely with IOUs and other stakeholders to address and mitigate these issues and identify data gaps. For instances where implementation details cannot be incorporated, SCE also recommends the Energy Commission consider explicit acknowledgment of gaps along with a proposal for closing them.

The Draft Report discusses the various strategies outlined in the Draft Action Plan<sup>5</sup> including the "No Regrets Strategy," "Voluntary Pathway," and "Mandatory Approaches." SCE believes that all of these strategies have merit and potential. SCE also notes, however, that enhanced data reporting and management via a centralized database, as implied in the "No Regrets Strategy," could be costly and may result in

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<sup>5</sup> See Draft Report at p. 24-26.

significant risk in terms of the IOUs' obligation to ensure confidentiality and privacy of customer information. A centralized database may also be duplicative of existing efforts by utilities, governmental agencies, and other stakeholders. For example, the IOUs have developed Universal Audit Tools (UAT) to provide an online, customer-driven resource to enable customers to better understand their energy usage, identify savings opportunities, and engage with available utility programs and services. In addition, the Environmental Protection Agency's (EPA) Energy Star Portfolio Manager serves as a national industry standard for commercial building benchmarking. SCE encourages the Energy Commission to engage stakeholders in an effort to evaluate and consider leveraging existing tools before embarking upon any new rulemaking as it develops its Action Plan.

SCE appreciates the Draft Action Plan's focus on Standards Compliance Enforcement for additions and alterations to existing buildings. The IOUs' Statewide Codes and Standards (C&S) Program serves many industries and professions; however, retrofits and additions make up much of the construction work and therefore warrant additional attention through C&S activities. SCE looks forward to collaborating with the Energy Commission's Building Standards Office to develop programs that expand upon existing, effective compliance improvement and enhancement efforts.

In general, SCE supports the use of targeted marketing, education and outreach to motivate building owners and managers to make EE improvements to existing buildings in conjunction with the IOUs' demand-side management (DSM) programs and their local marketing efforts. SCE actively engages in "targeted marketing," which includes targeting aspects such as social context, lifestyle, regional differences, cultural norms, and habits in marketing strategies. An example of this approach can be seen in SCE's "Lifestyle Plans" which offer bundled solutions through programs and services offered to specific customer segments. The Lifestyle Plan approach embraces the full range of DSM options to help customers meet their energy, budget, and environmental needs and goals. SCE's DSM vision encourages customers to move beyond one-time "single energy actions" and drives customers toward ongoing, permanent behavior changes that are paramount to living an "energy-management lifestyle."

SCE also agrees that a highly skilled and well-trained workforce is essential to strengthening and growing California's green economy, as outlined in the No Regrets Strategy. SCE supports the Draft Action Plan's strategy to create strong partnerships with energy, labor and education entities to coordinate and augment existing workforce efforts.<sup>6</sup> SCE and other IOUs are currently actively working towards this goal through their coordination of a statewide network of "Energy Centers" that have extensive experience in creating and disseminating high-quality programs, and providing workforce, education, and training curriculums that are integral to building a skilled workforce. Energy Centers provide services such as training courses, seminars, workshops, clean energy technology demonstration, equipment efficiency testing, interactive training exhibits and lectures.

SCE strongly recommends that existing IOU EE programs be leveraged so as to prevent duplicative pathways and market confusion. SCE currently has an expansive array of energy efficiency, demand response, and distributive generation offerings that assist its customers with determining the right mix of measures for potential upgrades that range from no cost items to higher cost retrofits.

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<sup>6</sup> See Draft Report as p. 36

SCE also notes that the Draft Report discusses “efforts to help achieve all cost-effective energy efficiency,” which include: advancing mechanisms to finance energy efficiency measures, advancing locational and peak period energy efficiency, and increasing natural gas end-use efficiency.<sup>7</sup> SCE would like to clarify that there are currently three types of EE Potential in the 2012 and 2013 EE Potential Studies: (1) technical potential, (2) economic potential; and (3) market or achievable potential, which are defined as follows:

1. **Technical Potential:** The amount of energy savings that would be possible if the highest level of efficiency for all technically applicable opportunities to improve EE were taken into account, including retrofit measures, replace-on-burnout measures, and new construction measures.
2. **Economic Potential:** Economic potential is a subset of technical potential and represents the total EE potential that is available when EE is limited to only cost-effective measures.
3. **Market or Achievable Potential:** A subset of economic potential, achievable potential represents EE savings that could be expected in response to specific levels of incentives and assumptions about market influences and barriers.

It is critical that the correct terminology be utilized when discussing EE. For instance, using the phrase “all cost-effective energy efficiency” inaccurately implies that economic potential is synonymous with achievable potential. Economic potential represents all cost-effective EE potential. By contrast, achievable potential takes into account considerations other than cost effectiveness, such as barriers to market EE widget adoption, customer awareness, and customer willingness to adopt.

SCE therefore recommends that the Energy Commission use the term “market or achievable potential” when referring to EE that can be captured by voluntary IOU and publicly-owned utility (POU) programs.

### **C. Zero-Net Energy (ZNE) Buildings**

SCE is currently coordinating with Pacific Gas & Electric (PG&E), San Diego Gas & Electric (SDG&E), and the Southern California Gas Company, as well as staff from the Energy Commission and the CPUC to discuss ZNE, including the definition of “Zero Net Energy” and its implications on the utility and building industries. SCE plans to continue working collaboratively with these parties, and will be sending additional comments on ZNE in a separately filed joint letter with PG&E, SDG&E and Southern California Gas Company.

SCE recognizes the importance of arriving at a mutually agreeable and workable definition for “Zero Net Energy” that can be incorporated into residential and commercial building codes. SCE believes that the definition presented by the Energy Commission in the Draft Report is a good starting point, but that the definition and metrics for ZNE should be improved and clarified to more accurately capture both energy consumption and production, and to allow for greater flexibility and equity so that all buildings have the opportunity to become ZNE.

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<sup>7</sup> See Draft Report at p. 21.

SCE's July 18, 2013 presentation<sup>8</sup> at the Energy Commission's IEPR Workshop on "The Definition of ZNE in Newly Constructed Buildings in California" recommended that the Energy Commission adopt an asset-based definition of a ZNE building, in which the amount of energy produced by a building is equal to the amount of energy consumed by that building. By definition, ZNE buildings should require all "market or achievable" EE and demand response (DR) measures to achieve building performance targets, while ensuring grid stability and reliability, and allowing for flexibility by including both on-site and off-site renewable generation to meet a building's energy production needs. Flexibility would allow for market forces to identify the lowest first cost and grid integration cost Distributed Generation (DG) solutions for all building types, and would also allow for incorporation of additional learning from residential rate reform, DG grid impact studies, and Net Energy Metering (NEM) updates. Flexibility is also vital for ensuring that retrofit goals for ZNE are attainable. Finally, with respect to Time-Dependent Valuation (TDV), flexibility would allow for research to identify modifications necessary to more appropriately value DG production.

SCE's specific comments on this chapter of the Draft Report are informed by the key principles for ZNE set forth below. SCE recommends that the Energy Commission incorporate these key principles in its ZNE measures.

- ZNE should be delivered at the lowest possible cost to all customers. Lowest cost includes the following attributes:
  - Flexibility for each customer will ensure the least-cost option is available;
  - There should be no hidden subsidies as a result of ZNE;
  - Costs should not be shifted from participating customers to non-participating customers;
  - "Locking in" the benefits of DG should be avoided for ZNE, as the probability of benefits materializing is uncertain given the current state of the technology;
  - Technical solutions that could mitigate some grid side concerns with DG currently exist, but come with added costs that should be factored into ZNE considerations.
- ZNE may require more than one definition, or may need to incorporate greater flexibility into the currently proposed definition to appease a wide range of stakeholders. For instance:
  - The California Long Term Energy Efficiency Strategic Plan (CLTEESP) has goals for ZNE new construction that will likely lead to a ZNE Code asset based definition.
  - Lack of customer understanding of TDV and ZNE (*i.e.*, customers' unrealistic expectation that they will have zero bills with ZNE) will result in the building market and general public not embracing a code-only definition. Flexibility to explore more operational based definitions is therefore necessary to gaining market traction.
  - IOUs engage all aspects of the market. In addition to code development, the IOUs play a role in the broader building market, and as such will need to be agile enough to work with different stakeholders' understanding of ZNE.
- ZNE will impact other policies and should be carefully managed alongside those policies to avoid conflicting end-results:
  - California's Loading Order for Electricity Resources should be considered in implementing ZNE measures (including EE, Demand Response, and DG), and any

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<sup>8</sup> SCE Presentation: IEPR Lead Commissioner Workshop Zero Net Energy Buildings: Key Principles for Consideration. July 18, 2012. [http://www.energy.ca.gov/2013\\_energypolicy/documents/2013-07-18\\_workshop/presentations/03\\_Alvarez\\_SCE\\_Presentation\\_IEPR\\_Workshop\\_ZNE.pdf](http://www.energy.ca.gov/2013_energypolicy/documents/2013-07-18_workshop/presentations/03_Alvarez_SCE_Presentation_IEPR_Workshop_ZNE.pdf)

synergies among technologies should be captured (*e.g.*, DR-enabled EE, DR-enabled DG).

- SCE's Demand-Side Management (DSM) programs serve a wide range of purposes and stakeholders. SCE's DSM efforts will continue to explore ZNE in the greater context of its DSM portfolio and the corresponding CPUC approved Program Implementation Plans (PIPs).
- The rising costs of providing electricity can be compounded by the reduction in sales caused by increased DG penetration, driven by ZNE and lower technology costs.
- ZNE inherently involves DG, which blurs the line between supply and demand side policies (*e.g.*, wholesale market impacts associated with increased DG penetration).
- Reliability requirements (*e.g.*, spinning reserves) may reduce some of the anticipated benefits of DG associated with ZNE.

SCE will continue to collaborate with the Energy Commission and other stakeholders on ZNE and ZNE-related (*e.g.*, DG or DSM) matters to provide further clarity on the issues identified in the Draft Report. SCE will also continue to leverage knowledge gained in policy and program discussions to ensure that our principles are met.

With respect to SCE's specific comments on Chapter 1 of the Draft Report, pages 27 and 37 of the Draft Report state that "the Energy Commission should adopt triennial building standards updates that increase the energy efficiency of newly constructed buildings by 20-30 percent in every triennial update to achieve ZNE standards for newly constructed homes by 2020." SCE is concerned that this approach may not be consistent with the Energy Commission's current Home Energy Rating System (HERS) Program. SCE recommends that this goal to be clarified in greater detail, and that the Energy Commission ensure its consistency with the HERS scale approach, which assigns a score of 30-40 for "ZNE Ready" buildings, as described on page 30 of this chapter.

Another recommendation set forth in the Draft Report on page 27 is that "the Energy Commission should adopt reach standards for newly constructed buildings that provide best practices energy efficiency levels for the marketplace to strive for and to serve as a means to pull the industry rapidly to the level needed to achieve ZNE goals." SCE notes that voluntary reach codes are already in place under Title 24, Part 11 of the California Code of Regulations setting forth the California Green Building Standards Code (otherwise known as CalGreen Code). Local governments are also able to adopt reach codes by city or county ordinance after applying for and obtaining approval from the Energy Commission.

SCE has a number of concerns about the Draft Report's definition of ZNE on page 28, the Draft Report: "A ZNE Code Building is one where the societal value of the amount of energy provided by on-site renewable energy sources is equal to the value of the energy consumed annually by the building at the level of a single "project" seeking development entitlements and building code permits, measured using the California Energy Commission's Time Dependent Valuation (TDV) metric. A ZNE Code Building meets Energy Use Intensity by building type and climate zone that reflect best practices for highly efficient buildings."

First, the terms "on-site," "project," and "collocated" are not specifically defined by the CalGreen Code, which may cause confusion for building developers and other stakeholders. SCE recommends using the term "premises," which is defined in Rule 1 of the CPUC approved IOUs' tariffs as "[a]ll of the real property and apparatus employed in a single enterprise on an integral parcel of land undivided, excepting in

the case of industrial, agricultural, oil field, resort enterprises, and public or quasi-public institutions, by a dedicated street, highway, or other public thoroughfare, or a railway. Automobile parking lots constituting a part of, and adjacent to, a single enterprise may be separated by an alley from the remainder of the premises served.”

Second, the CalGreen Code currently only includes regulated energy uses. SCE recommends that the Energy Commission clarify whether or not a ZNE Code Building would also only include energy uses that are regulated.

Third, SCE recognizes that the ZNE Code is based upon simulations that assume average weather conditions (for a specific climate zone), fixed occupancy (the number of people, schedules, level of activity, etc.), and does not consider any behavioral variances. SCE recommends that these assumptions be clearly articulated in the definition, and that they be updated accordingly in code cycles.

Fourth and finally, SCE recommends that the definition of ZNE allow for sufficient flexibility by allowing both on-site and off-site renewable generation, so that all buildings have the potential to become ZNE.

Page 29 of the Draft Report states: “[t]here will be particular buildings or situations where it will be infeasible for the building to meet the ZNE Code Building requirements. In adopting the ZNE Building Code requirements, the Energy Commission will use normal building code practice to establish specific exceptions for these cases. An example of a possible exception would be allowing the use of off-site renewable energy sources where the site cannot accommodate collocated generation of any sort.” SCE’s July 18, 2013 comments at the Energy Commission’s Lead Commissioner Workshop on the Definition of Zero Net Energy in Newly Constructed Buildings in California recommended that “off-site” renewable energy be considered an eligible source of renewable energy for ZNE buildings. SCE’s, PG&E’s, and Sempra’s joint written comments on the workshop reiterated that recommendation. Although the Draft Report did not incorporate these recommendations, SCE acknowledges that allowing for exceptions (with further explanation and clarification) may be a reasonable compromise. As discussed above, SCE recommends that if the proposed ZNE definition is adopted by the Energy Commission, specific terms within the definition should be clearly defined and explained.

On pages 30-31, the Draft Report states, “ZNE Code Buildings will be required to incorporate on-site renewable sources to serve the remaining energy demands of the building after energy efficiency capital improvements. Each single project seeking development entitlements and building permits must install enough renewable energy on-site to reduce the TDV energy of the project to zero. The single project would typically be a single building but could include a bigger project that is seeking (or has approved) development entitlements for more than one building.” As previously noted, SCE recommends that the terms “on-site” and “project” are clearly defined and explained in the final 2013 IEPR.

On page 31, the Draft Report states, “The Building Energy Efficiency Standards will set requirements for each ZNE Code Building that include energy-use intensities for each major end-use (for example, space heating, space cooling, lighting, water heating) in TDV energy. These energy-use intensities will be based on evaluation of best practices for highly efficient buildings during Standards update proceedings.” SCE notes that best practices must be consistent with the Warren-Alquist Act’s cost-effectiveness and feasibility requirements.

#### **D. Utility Progress on Achieving Energy Efficiency Targets**

SCE fully supports the collaboration of “[t]he CPUC, California Independent System Operator, and Energy Commission [] to develop the data and tools needed to advance energy efficiency in specific, targeted areas to avoid development or upgrades to transmission and distribution systems as well as generation.”<sup>9</sup> SCE is currently coordinating with the Energy Commission to develop the methodology required to extract busbar-specific EE program savings. This methodology will look to the EE savings at the substation transmission load busses used in the CAISO Transmission Planning Process (TPP) studies. SCE recommends that the following additional issues be further addressed regarding the development of the necessary data and tools for this analysis.

First, because not all EE savings at the busbar level can be directly tied to a particular service account, it can be difficult to distribute the EE savings from certain upstream and midstream EE programs (*e.g.*, compact fluorescent light bulb purchases that are not tied to specific customers/locations) and new constructions. It is therefore essential to develop a sound methodology for distributing EE savings to relevant service accounts served by a busbar. Spreading non-specific service account EE savings to a busbar population, will inject an unknown amount of error into the busbar EE analysis

Second, EE potential forecasts (based on saturation surveys) are not currently designed to be accurate at geographic areas smaller than a building climate zone due to the limited size of the sample population. As EE potential forecasts are pushed to smaller geographic areas, forecasting error magnifies as it is spread over fewer service accounts. It is therefore essential that stakeholders determine the amount of “acceptable error” in procurement planning activities. Given the negative consequences of over or under procuring resources, SCE recommends a flexible procurement strategy for resource planning.

Third, SCE is committed to protecting its customer’s confidentiality. Thus far, providing aggregated EE savings by busbar has not implicated customer confidentiality concerns. Confidentiality concerns may be triggered, however, if EE savings data is requested by sector (residential, commercial, industrial, agricultural, etc.). The proper treatment of confidential customer information is a serious issue that should be addressed.

Finally, page 38 of the Draft Report states that “[t]he CPUC and Energy Commission will collaborate to analyze the near-and longer-term savings impacts of energy efficiency codes and standards and their interaction with other efficiency programs.” SCE supports transparent collaboration and the use of EE Potential and Evaluation, Measurement, and Verification (EM&V) studies to help calculate the overlap between EE imbedded in the Energy Commission’s load forecast and SCE EE Programs. SCE commends Energy Commission and the Demand Analysis Working Group (DAWG) for providing a forum in which to discuss load forecasting-specific topics, and facilitating inter-agency and IOU coordination and collaboration in California. SCE supports the continued use of the DAWG in furtherance of these collaborative efforts.

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<sup>9</sup> See Draft Report at p. 38.

## **E. Geothermal Heat Pump and Ground Loop Technology**

On page 34, the Draft Report references AB 2339, which requires the Energy Commission to evaluate and recommend policies and implementation strategies to overcome barriers to the deployment of geothermal heat pump (GHP) ground loop technologies. SCE acknowledges that no mandates currently exist for the inclusion of GHPs in the CalGreen Code. Although there are no unique policy barriers to proposing inclusion of GHPs into the code as a compliance option, SCE recognizes that technical barriers do currently exist. For example, presently, no accurate methodology exists for simulating the performance of a GHP without knowing soil conditions.

On page 39 of the Draft Report, the Energy Commission recommends the geothermal heat pump industry to, “Submit an Alternative Calculation Methodology application to the Energy Commission consistent with the 2013 Building Energy Efficiency Standards, Section 10-109(c)(2).” SCE cautions that it may be too late to submit an Alternative Calculation Methodology (ACM) application, especially if the proposal has not already been approved by the Energy Commission in meeting its requirements for energy savings, cost effectiveness and feasibility. SCE looks forward to its ongoing collaboration with the Energy Commission and continues to support the Energy Commission in meeting its goals to achieve all cost-effective, feasible energy savings solutions.

## **CHAPTER 2 – Demand Response**

### **A. Demand Response Efforts in California**

As previously stated in SCE’s written comments<sup>10</sup> on the June 17, 2013 Lead Commissioner Workshop on Increasing Demand Response Capabilities in California, SCE plans to collaborate with the Energy Commission, CPUC, California Independent System Operator (CAISO) and other stakeholders to conduct a Preferred Resource Living Pilot Program (the pilot). Through the pilot, SCE hopes to determine the value and ability of preferred resources, including demand response, to meet local area reliability needs in areas impacted by the retirements of existing generators with once through cooling systems (OTC) and the San Onofre Nuclear Generating Station (SONGS). SCE looks forward to its continued collaboration with the Energy Commission and stakeholders on the pilot, as well as additional DR efforts.

### **B. Demand Response Challenges**

Page 50 of the Draft Report contends that “[e]xisting DR programs in Southern California have seriously underperformed.” SCE disagrees. In SCE’s experience, DR programs have been successful in Southern California. As the Draft Report acknowledges in its citation of the CPUC’s May 1, 2013 Staff Report: “Lessons learned from Summer 2012 Southern California Investor Owned Utilities ‘Demand Response Programs,” comparing the 2012 ex-post results to the 2012 Resource Adequacy load forecast is not an accurate method for determining the performance of DR programs because the ex-post results are in response to operational needs, not resource planning needs. The CPUC’s report also noted that the SCE and SDG&E’s DR programs that performed well in 2012 yielded load impacts that were either consistent with, or better than, the day-ahead forecasts. DR programs with mixed performance were not consistent with the day-ahead forecast, but sometimes exceeded the forecast. Because the Draft Report incorrectly suggests that all existing DR programs in Southern California are “seriously under-performing,” SCE recommends that this statement be removed in the final IEPR report.

The Draft Report makes recommendations for gaining customer acceptance for DR through conducting independent assessments to help advance market outreach. SCE supports this recommendation. SCE believes, however, that this should be done in conjunction with an assessment to customers’ financial savings expectations associated with load shed. SCE surveys have found that customers typically reported higher expectations than what they were realistically able to achieve.

Also, as the state moves towards relying more heavily on DR and other preferred resource to meet reliability needs, the Energy Commission should be aware of the potential challenges these efforts may cause for participating DR customers. In SCE’s experience, customer awareness of DR activities and programs does not appear to be the most significant barrier in participation/compliance.<sup>11</sup> Conversely, SCE has found that customers are aware of available programs and recognize the need to “manage electricity use

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<sup>10</sup> [http://www.energy.ca.gov/2013\\_energypolicy/documents/2013-06-17\\_workshop/comments/Southern\\_California\\_Edisons\\_Comments\\_the\\_CECs\\_Demand\\_Response\\_Workshop\\_2013-07-01\\_TN-71508.pdf](http://www.energy.ca.gov/2013_energypolicy/documents/2013-06-17_workshop/comments/Southern_California_Edisons_Comments_the_CECs_Demand_Response_Workshop_2013-07-01_TN-71508.pdf)

<sup>11</sup> Residential Demand Response Marketing Education & Outreach Exploratory Baseline Study Program Year 2012. Integral Analytics. June 27, 2013.

in the summer.” Instead, lack of participation is more closely tied to the perception that households have little load to shed, as well as a strong desire for comfort and control. About 40% to 50% of respondents agree or strongly agree that they do not have the ability, or time to manager their load any more so than they currently do. While SCE agrees that providing customers with AutoDR enabling technology could lead to more effective load reductions, 40% or more of Californians say that comfort is more important to them than saving money on their electric bill.

## **CHAPTER 3: Bioenergy Status and Issues**

### **1. Biomass Technical Potential and Development Goals**

Page 55 of the Draft Report addresses the inability of in-state biomass resources to meet demand by 2050. The Draft Report, however, appears to advance two competing and irreconcilable propositions on this issue, namely that in-state supplies of biomass would meet 7 to 61 percent of demand to reduce greenhouse gas emissions 80 percent below 1990 levels by 2050, but that even under ambitious assumptions, the ability to gather biomass residues for energy production would not meet this demand. SCE therefore requests that the Energy Commission clarify these statements and explain whether the inability to meet demand is due to: (1) a lack of sufficient available resources, or, (2) difficulty in obtaining a sufficient amount of available resources due to other constraints.

### **2. Biopower Status**

#### **a. Existing Procurement Programs Are Suitable for the Procurement of Bioenergy**

The Draft Report's claim that "the lack of bioenergy projects participating in the Renewable Auction Mechanism (RAM) represents the difficulty of competing against other renewable technologies that have lower cost and/or higher subsidies," and that the new pricing mechanisms in the Renewable Market Adjusting Tariff (Re-MAT) are too low to spur development of small biopower technologies is unfounded.<sup>12</sup> The RAM and Re-MAT programs each have a baseload category which allows projects, like bioenergy, to exclusively compete with similar resource type projects and not against other technologies. Additionally, it is premature to make a determination on Re-MAT pricing structures as the program has not yet completed its first bi-monthly auction. Moreover, the pricing mechanisms implemented in Re-MAT have been put in place to minimize costs to customers and maintain protections against customer exposure to excessively priced contracts. SCE is concerned that any changes to Re-MAT could undermine the carefully balanced Re-MAT program structure that the CPUC adopted after broad-ranging, comprehensive debate and extensive deliberations over the two-year Re-MAT program implementation period. Rather than proposing wholesale changes to the Re-MAT program now, the market adjusting mechanism should be given adequate time to respond to market conditions and allow bioenergy developers to respond to pricing signals.

The Draft Report also notes that "the cost of financing can also pose a barrier to development," and that "federal incentives are declining,"<sup>13</sup> however, SCE notes that there are currently several grant options available for bioenergy projects and this concern does not merit wholesale changes to the RAM and Re-MAT programs.<sup>14</sup>

Moreover, SCE notes that other issues, such as interconnection delays, are equally likely to slow the development of biopower projects. As stated in the Draft Report, biopower interconnection takes longer than other renewable resources, and at the same time, there are few bioenergy projects in the California

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<sup>12</sup> See Draft Report pp. 58-59.

<sup>13</sup> See Draft Report pp. 57-58.

<sup>14</sup> Woody Biomass Utilization Grants [http://ucanr.edu/sites/WoodyBiomass/Grants\\_2/](http://ucanr.edu/sites/WoodyBiomass/Grants_2/)

Independent System Operator interconnection queue.<sup>15</sup> The RAM and Re-MAT programs each have requirements of when a project must achieve commercial operation.<sup>16</sup> Unless bioenergy projects apply for interconnection and complete the necessary studies that are essential steps in the development for new generation projects, these projects will be unable to sign a power purchase agreement (PPA), regardless of price signals and competition in the various programs.

**b. Existing procurement practices are in place to develop a higher-value portfolio, although additional practices could be implemented to further these efforts.**

The Draft Report recommends that the CPUC “modify procurement practices to develop a higher-value portfolio”<sup>17</sup> by expanding evaluation and selection criteria to include “integration benefits, reduction in forest fires that threaten public health and safety and damage transmission lines, reduce transmission and distribution costs, increased investment in disadvantaged communities and create green jobs.” As discussed in SCE’s 2013 Renewables Portfolio Standard Procurement Plan (2013 RPS Plan),<sup>18</sup> SCE evaluates renewable proposals on a least cost, best fit (LCBF) basis. This methodology includes a number of quantitative and qualitative components. As further described in the public Appendix H.1 to SCE’s 2013 RPS Plan, the following quantitative criteria are reflected in selection rankings: capacity benefit, energy benefit, ancillary services, debt equivalence, contract payments, congestion cost, and transmission cost. There are also a number of qualitative factors that are considered in bid evaluation, as fully described in Appendix H.1 to SCE’s 2013 RPS Plan.

SCE has consistently advocated for the use of integration cost adders in its LCBF analysis, which would make baseload resources more competitive compared to intermittent resources. As further described in Appendix H.1., “integration costs, where applicable, are the additional system costs required to provide sufficient ancillary service capability including load following and frequency regulation to integrate renewable resources.”<sup>19</sup> In the CPUC’s proposed decision, conditionally accepting SCE’s 2013 RPS Plan<sup>20</sup>, the CPUC declines to accept the use of non-zero integration cost adders as part of the LCBF evaluation of bids and contracts. As a result, the CPUC will currently not allow SCE to consider integration adders in its RPS solicitation; however, SCE will continue to encourage the CPUC to allow integration adders in the future, as they will help SCE more accurately assess the value of various resources, leading to a “higher value” portfolio.

SCE recognizes the Energy Commission’s effort to recommend meaningful modifications to the LCBF methodology and agrees that certain adjustments can be made to improve the methodology. As

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<sup>15</sup> Currently, there are seven generation interconnection projects in the queue with an estimated 100 MW in bioenergy sourced renewable energy.

<sup>16</sup> The RAM program requires a project to achieve commercial operation within twenty-four months of the CPUC’s approval of the RAM PPA. The Re-MAT program requires a project to achieve commercial operation within twenty-four months of the execution of a Re-MAT PPA.

<sup>17</sup> See Draft Report at p. 71.

<sup>18</sup> SCE filed its Amended 2013 RPS Plan with the CPUC on August 28, 2013 in Rulemaking (R.) 11-05-005.

<sup>19</sup> See R.11-05-005, SCE’s 2013 RPS Plan, Appendix H.1 at 5.

<sup>20</sup> See R.11-05-005, CPUC’s Proposed Decision Conditionally Accepting 2013 RPS Procurement Plans and Integrated Resource Plan and On-Year Supplement, dated October 15, 2013 at pp. 26-27.

mentioned above, SCE agrees that incorporating integration costs in bid rankings would meaningfully improve the LCBF process. With respect to the other proposed modifications to the procurement process, SCE believes that reduced transmission and distribution costs are already being evaluated appropriately in the LCBF and that reductions in forest fires, increased investment in disadvantaged communities, and the creation of green jobs, are not appropriate modifications to the LCBF assessment. Such benefits are, at best, extremely difficult to quantify and to accurately apply in LCBF evaluations and thus should not be included in the evaluations.

### **3. Biofuels Production**

No comment.

### **4. Biomethane Production**

The Draft Report's states that "...the RPS no longer allows biomethane delivered through the natural gas pipeline to be eligible as a renewable resource unless the project provides environmental benefits to California."<sup>21</sup> However, this statement is only applicable to electrical generating facilities using biomethane delivered through a common carrier pipeline (1) under a new biomethane procurement contract or contract amendment executed on or after March 29, 2012, (2) under a biomethane procurement contract reported to the Energy Commission on or after March 29, 2012, or (3) associated with adjustments to existing biomethane procurement contracts reported to the Energy Commission prior to March 29, 2012.<sup>22</sup> Other biomethane resources are not required to meet standards in order to be considered renewable resources. The Energy Commission should therefore clarify this statement so that it is clear exactly when Biomethane is considered eligible as a renewable resource.

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<sup>21</sup> See Draft Report at p. 66.

<sup>22</sup> See Renewables Portfolio Standard Eligibility, Seventh Edition, Section II.C.2.c

## **CHAPTER 4: Electricity**

### **A. Renewed Focus on Interagency Coordination**

SCE supports efforts to continue and enhance interagency coordination and collaboration among the Energy Commission, CPUC, and CAISO. SCE also supports efforts to increase transparency of the agencies' respective procurement and transmission planning efforts to ensure that stakeholders are better informed, and have adequate opportunity to participate in stakeholder proceedings as needed.

### **B. Preliminary Forecast of California Energy Demand**

SCE commends the Energy Commission for its efforts in fostering greater transparency and collaboration among stakeholders in its California Energy Demand Forecast (Demand Forecast), and for refining its Demand Forecast by including additional transportation electrification elements and improved delineation of EE savings load forecasts. SCE encourages continued efforts to develop an increasingly transparent and inclusive stakeholder process with opportunities for stakeholders to provide early and ongoing input to help better inform the demand forecast, provide greater consistency, and incorporate further analysis and feedback in a timely manner.

On October 15, 2013, SCE submitted detailed comments following the IEPR Lead Commissioner Workshop on the Revised Demand Forecast, including the following recommendations for improvements as the Energy Commission develops its final demand forecast:

- Incorporation of updated Electric Vehicle (EV) and electrification load forecasts into final forecast;
- Adjustment of peak demand forecast for SCE planning area using actual observed annual peak demand for 2013;
- Avoidance of potential "double counting" for non-event based Demand Response (DR) programs in the overall peak demand forecast;
- Explicit incorporation of total EE savings impacts in overall demand forecast; and
- Collaboration with utilities and other stakeholder to resolve remaining discrepancies in the Demand Forecast, particularly the EE Potential Study and Decay Methodology.

SCE would like to refer the Energy Commission to its October 15, 2013 letter<sup>23</sup> for additional detail on these topics. Of particular concern to SCE is the issue of peak demand for SCE's planning area. As mentioned in SCE's comment letter, SCE recommends that the Energy Commission adjust its peak demand for SCE's planning area by using the actual observed annual peak demand rather than the projected peak demand, because the actual peak was significantly higher than the projected peak. SCE has been in discussion with the Energy Commission staff on this issue and looks forward to continuing coordination with the Energy Commission to resolve this issue. Please refer to Section C in the cited letter for further detail.

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<sup>23</sup> [http://www.energy.ca.gov/2013\\_energypolicy/documents/2013-10-01\\_workshop/comments/Southern\\_California\\_Edison\\_Comments\\_2013-10-15\\_TN-72075.pdf](http://www.energy.ca.gov/2013_energypolicy/documents/2013-10-01_workshop/comments/Southern_California_Edison_Comments_2013-10-15_TN-72075.pdf)

In addition to its previously submitted comments, SCE provides the following new comments and recommendations:

First, SCE commends the Energy Commission's efforts in improving timing and alignment of the demand forecast. SCE believes those efforts will improve planning efforts in California and ensure the consistency of the forecast.

Second, SCE recommends that the Energy Commission foster enhanced collaboration among all stakeholders for incorporating refined climate change impacts in future forecast cycles, including additional examination of assumptions, data, methods, and models.

Third, SCE believes that it is essential for the Energy Commission to work with a broad base of stakeholders in planning for a more disaggregated forecast. SCE recommends that the Energy Commission allow for greater stakeholder engagement in determining the next level of disaggregation, the modeling approach, the critical data need and availability, and the processes required for this further disaggregation effort. SCE recommends that the Energy Commission utilize the existing DAWG forum to better plan for the future development effort in this area. SCE believes that it is important for the Energy Commission to build a transparent process with all stakeholders and allow for sufficient time in developing a more granular forecast to ensure the quality and consistency of the forecast.

**C. Resource Adequacy of Publicly Owned Utilities**

No comment.

**D. The Need for New Electricity Infrastructure**

No comment.

**E. Updated Estimates of New Generation Costs**

SCE recommends removing Figure 10 (pg. 103) and the related discussion, which erroneously compares the levelized cost of energy (“LCOE”) from a Solar Photovoltaic plant to that from a Combined Cycle Gas Turbine. As SCE discussed in its written comments for the March 27, 2013 Staff Workshop on the Cost of New Renewable and Fossil-Fueled Generation in California, the LCOE estimates provided by the Energy Commission cannot be used as a basis for comparing cost-effectiveness. Specifically, the values shown only report developer costs and do not account for differences in value among the resources studied. For example, the Energy Commission does not account for differences in energy value, capacity value, integration cost, or asset life. As SCE demonstrated in its May 16, 2011 presentation to the Energy Commission, without quantitative estimates for these values, the Energy Commission may create a fundamental misunderstanding of the costs associated with different types of generation.<sup>24</sup> Further, for the purpose of discussing cost trends, Figure 7 (pg. 100) and Figure 8 (pg. 101) are sufficient.

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<sup>24</sup> [http://energy.ca.gov/2011\\_energy/policy/documents/2011-05-16\\_workshop/presentations/Southern\\_California\\_Edison\\_2011-05-03.pdf](http://energy.ca.gov/2011_energy/policy/documents/2011-05-16_workshop/presentations/Southern_California_Edison_2011-05-03.pdf)

Additionally, SCE seeks further justification for the difference in the capacity factors for IOU and Merchant generators shown in Figure 9 (pg. 102). In California, both IOU and merchant-owned generation participate in the centralized wholesale energy markets run by the CAISO. This market dispatches resources based on the supply bids provided by resources in the market each day. Assuming that these markets are reasonably competitive, these supply bids should reflect each unit's operating costs. Therefore, SCE would not expect ownership to impact the capacity factor of any given resource.

## **CHAPTER 5: Strategic Transmission Investment Plan**

### **A. Approved Transmission Projects to Meet 2020 Renewable Goals**

A number of the projects listed in the Draft Report's Approved Transmission Projects to Meet 2020 Renewable Goals are SCE proposed projects. SCE would like to provide edits and updates for the project descriptions as follows:

First, page 108 of the Draft Report's description of the Tehachapi Renewable Transmission Project (TRTP) should be updated to reflect that the expected in-service date for all segments is late 2015 or early 2016.

Second, the description of the Coolwater-Lugo Transmission Project (formerly Coolwater-Jasper-Lugo or South of Kramer) on page 109 of the Draft Report should be updated. Currently, the Jasper Substation project is being developed separately from the Coolwater-Lugo project. The Jasper Substation project is expected to be in service by 2015, prior to the Coolwater-Lugo project's expected in service date of 2018. Although being developed separately from the Coolwater-Lugo project, it is expected that Coolwater-Lugo's transmission lines will loop into the proposed Jasper Substation once it is constructed. The description of Coolwater-Lugo should also be updated to reflect that the project will consist of "**34 miles** of a new 220 kV double-circuit transmission line," and "replacement of **29 miles** of 220 kV transmission line with **14 miles** of double-circuit 220 kV and **17 miles** of 500 kV transmission lines."

Third and finally, the Pisgah-Lugo project on page 109 should be removed from the list of "Approved Transmission Projects to Meet 2020 Renewable Goals." The CAISO Generation Interconnection Transmission Planning division pulled the Pisgah-Lugo 500 kV Upgrades Project from its base case on January 31, 2012.<sup>25</sup> CAISO also currently shows that the Q68 K-Road Calico Solar Project has been withdrawn from the generation project queue,<sup>26</sup> consistent with the description in the Draft Report.<sup>27</sup> Moreover, the Draft Report notes that, without the Pisgah-Lugo project, "there are still enough transmission projects already identified to support California's 33 percent RPS." Accordingly, this project should not be listed as "approved to meet 2020 renewable goals," and should be removed from the Draft Report.

Please reference Attachment 2 for SCE's redline of the Draft Report's project descriptions.

### **B. California ISO's Potential Long-Term Transmission Alternatives in Light of San Onofre Shutdown**

SCE recommends expanding the discussion on page 111 of the Draft Report on transmission corridor designations. SCE agrees that the results of the energy agencies' analyses of appropriate solutions to address reliability concerns associated with the SONGS shutdown could be used to identify **both new and expanded** transmission corridors for designation. SCE fully supports the designation of new and

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<sup>25</sup> [http://www.caiso.com/Documents/TechnicalReport\\_cluster1\\_2DeliverabilityRe-Assessment.pdf](http://www.caiso.com/Documents/TechnicalReport_cluster1_2DeliverabilityRe-Assessment.pdf)

<sup>26</sup> The California ISO Controlled Grid Generation Queue0 CISO Withdrawn  
[http://www.caiso.com/Documents/TechnicalReport\\_cluster1\\_2DeliverabilityRe-Assessment.pdf](http://www.caiso.com/Documents/TechnicalReport_cluster1_2DeliverabilityRe-Assessment.pdf)

<sup>27</sup> See Draft Report at p. 109.

expanded corridors to facilitate the timely siting, permitting, licensing and construction of transmission infrastructure as needed to address grid reliability concerns associated with the SONGS shut down. Transmission corridors should be seamless, contiguous, and strategically sized, on public and private lands, so as to facilitate transmission upgrades and additions in a safe and reliable manner.

In addition, SCE recommends clarifying the text in the third paragraph on page 111 to read: “the San Onofre switchyard needs to remain **in operation** in order to **manage real-time reliable power flows in bi-directional mode** from the north **and south** into Northern San Diego County.”

Please reference Attachment 2 for SCE’s redline of the Draft Report’s text.

### **C. In-State Coordinated Land-Use and Transmission Planning Efforts**

SCE agrees that improved coordination of land-use and transmission planning efforts will facilitate project permitting to meet California’s renewable energy and reliability needs in a safe, reliable and affordable manner. In fact, SCE has voiced its public support for -- and has actively participated in -- land-use planning efforts, such as the Desert Renewable Energy Conservation Plan (DRECP) and its associated Transmission Technical Group (TTG), which examined the amount of acreage needed to accommodate transmission infrastructure additions and necessary upgrades to deliver renewable resources from designated Development Focused Areas in the DRECP to population load centers.

A key strategy for facilitating land-use and transmission planning efforts is the designation of transmission corridors. SCE recommends that State and regional planning efforts, such as the Western Electricity Coordinating Council (WECC), should continue to be coordinated with the Energy Commission’s DRECP and related planning efforts to identify transmission corridors to facilitate transmission upgrades and additions in a safe and reliable manner.

Pages 111-112 in the Draft Report highlight the CAISO’s efforts to improve planning through the Generator Interconnection and Deliverability Allocation Procedures (GIDAP) and Transmission Planning Process (TPP). The Draft Report notes that the current GIDAP and TPP planning processes are a “reasonable approach.” But the Draft Report also acknowledges that this approach “means generators are not included in the TPP until they have spent considerable time and resources negotiating power purchase agreements (PPAs) and started the environmental permitting process ... it does not ensure that transmission will be built by the time generation is commercially available ... the delay or lack of synchronization creates significant risk for generators because their PPAs often require their generation to be fully deliverable during peak conditions. Full deliverability typically requires transmission upgrades.” These assertions are essentially valid, but there are several market, regulatory, and customer service constraints from both generator and transmission owner perspectives that should be considered.

For example, elimination of interconnecting generators’ full deliverability requirements could adversely impact SCE’s ability to meet its RPS requirement over the long term. The CAISO has already implemented queue management modifications that are responsive to generators’ needs, such as for generation interconnected to TRTP. CAISO sent letters notifying generators in the queue that specified that Queue Cluster 1 and Queue Cluster 2 generation was considered deliverable, but that generation later in the queue was not. There may be options available in queue management that will obviate the need for PPA requirements regarding the elimination of deliverability requirements.

The Draft Report also discusses areas where the synchronization of generation development and the necessary transmission to reliably interconnect and deliver that generation can be improved on page 113. Strategies mentioned include (1) reducing the number of significant and costly interconnection upgrades by eliminating or modifying the deliverability requirements in PPAs for renewable generators; and (2) planning, licensing, and developing transmission to specific areas where the state wants to encourage the development of renewable resources before the generators are committed through PPAs or environmental permitting.

With regard to the first strategy to reduce the number of upgrades, SCE notes that the 33% Renewable Portfolio Standard is based on actual meter spin. If certain upgrades are needed for new renewable generators to deliver their power, then changing the generation interconnection process to avoid costly and lengthy lead time upgrades may not be an appropriate strategy. If the electrical grid experiences interconnection of more resources than can be reasonably accommodated, it could result in (1) only a subset of generators being allowed to generate electricity, while other generators are forced to stand by, or (2) pro-rata curtailment of all generation to fit in the available existing system capacity.

SCE therefore suggests the following revision to this strategy: “Reducing the number of significant and costly interconnection upgrades by **modifying** the deliverability requirements in PPAs for renewable generators, **provided such modifications do not adversely impact a utility’s ability to meet service commitments to customers, reliability standards, and other state and federal regulatory policy requirements.**”

SCE generally supports the second strategy to direct development to appropriate areas that are widely agreed upon by stakeholders. For example, SCE has publicly expressed support for land-use planning efforts like the DRECP. SCE recognizes, however, that stakeholders may be critical of a perceived “build it and they will come approach.”

SCE would also like to recommend including a third strategy for improving land use and transmission planning efforts, namely identifying and designating transmission corridors for new policy, economic and reliability need-based major transmission projects (approved by CAISO in its GIDAP and annual TPP processes), and initiating a corridor designation process as needed to accommodate new transmission upgrades and additions in a safe, responsible and reliable manner.

In paragraph 2 on page 114, the Draft Report states that “[r]equiring full deliverability for future PPAs for renewable generators in the state may not be a cost-effective strategy and should be considered in light of the billions of dollars in transmission investments the requirements trigger. If major transmission upgrades were not required for remote renewable resources to meet the terms of their PPAs, then the synchronization issue would disappear.” In response, SCE notes that any modification of deliverability requirements should be accomplished only after it can be determined by the CAISO and/or appropriate regulatory agency that requiring less than full deliverability will not result in a less reliable energy system that negatively impacts electricity consumers. A less reliable system also could cost consumers billions of dollars in lost revenues triggered by power outages, and is likely to spur other negative impacts to consumers, including customer safety issues, security issues, and other inconveniences.

In reference to potential corridor opportunities discussed on page 117, the Draft Report discusses the Presidential Memorandum titled “Transforming our Nation’s Electric Grid through Improved Siting, Permitting, and Review.” The Memorandum mentions the need to “collaborate with State, local, and tribal

governments to ensure, to the extent practicable, that energy corridors can connect effectively between Federal Lands.” SCE supports inter-agency collaboration and agrees that collaboration among state, local, and tribal governments will be essential in designating energy corridors. SCE does, however, have two concerns.

First, on September 23, SCE commented on the Department of Energy’s draft Integrated, Interagency Pre-Application (IIP). SCE stated that it “supports that the draft IIP process would be a voluntary, add-on process, allowing project proponents to determine if the IIP process will be beneficial for their particular project. However, the draft IIP appears to be more of a collaborative overlay solution on top of existing, complex inter-government process issues, rather than a solution that aggressively cuts through and replaces interagency, bureaucratic red tape and results in a more timely authorization process.” The draft IIP’s failure to adequately integrate federal, state, and local agency participation raises concern about the feasibility of implementing true inter-agency collaboration for such a process.

Second, although inter-agency collaboration is a good first step, to substantively shorten transmission project permitting/construction deadlines, agencies must effectuate process reforms. Process reforms could include concurrent/collaborative agency review, condensed review/approval time frames, utilization of regulatory “screens” that facilitate expedition of project approvals, agency waivers/partial waivers when a transmission project meets state policy goals (e.g., RPS), deferral of agency jurisdiction to another agency (especially where duplication exists), among others.

Page 118 of the Draft Report states that “[i]n the December 2012 TTG report prepared for the DRECP, the TTG indicated the potential need for an additional high-voltage electrical transmission line parallel to the Interstate 10 corridor in four of the five alternatives that were analyzed.” However, the last paragraph of page 115 in the Draft Report also states, “The TTG was assigned the responsibility **to develop an estimate of the land (acreage)** that could be affected by transmission upgrades needed to connect and deliver specific amounts of renewable power from within DFAs of the DRECP to the ultimate buyers of the renewable energy under various alternatives developed by the REAT.” SCE participated actively in the DRECP and the TTG, and, as per the statement on page 115, would like to clarify that the TTG report was not a siting exercise, but an estimate of land (acreage) that would be needed to accommodate transmission upgrades and additions, thus rendering the statement on page 118 as irrelevant or invalid.

#### **D. Transmission Opportunities to Enable Higher Levels of Renewables**

As discussions of moving beyond the 33 percent RPS continue, the application of renewable resources to meet reliability needs should be seriously considered. On page 93, the Draft Report states that “RPS renewables make little difference in displacing capacity that must be located in transmission-constrained areas along the coast.”

SCE strongly believes that transmission infrastructure additions and upgrades should be consistent with objectives to safely deliver reliable and affordable electricity to customers. SCE cautions that additional transmission infrastructure to transport renewable resources from out of state could have high cost impacts to customers. SCE believes that meeting reliability needs should remain a priority.

#### **E. Emerging Trends in the Western Interconnection**

No comment.

## **CHAPTER 6: Nuclear Power Plants**

The majority of SCE's comments for Chapter 6 on Nuclear Power Plants are directed at clarifying the factual circumstances surrounding the January 2012 events at SONGS, and the following decommissioning of Units 2 and 3. More detailed clarifications and suggested language revisions can be found in Attachment 2, which includes redline edits.

### **1. Implementing AB 1632 Report and 2011 IEPR Recommendations**

The second paragraph on page 133 of the Draft Report states that "San Onofre was taken offline due to unexpected degradation of the newly installed steam generator tubes in both Units 2 and 3." To clarify, in January 2012, SCE took Unit 2 offline for a regularly scheduled, routine refueling outage. The work conducted during the refueling outage included the inspection of the steam generators. Later that month, SCE removed Unit 3 from service because of a steam generator tube leak. SCE first focused its efforts on the restart of Unit 2. SCE ultimately decided to remove the fuel from the Unit 3 reactor vessel. SCE completed the removal of spent fuel from Unit 3 on October 5, 2012.

### **2. Diablo Canyon**

No comment.

#### **a. San Onofre Nuclear Generating Station**

##### **i. Seismic and Tsunami Hazards**

The Seismic and Tsunami Hazards section should be updated to indicate that SCE is not planning to complete the work required by the Nuclear Regulatory Commission (NRC) in the NRC 50.54(f) letter.

SCE submitted a letter to the NRC dated September 30, 2013 regarding the NRC's Fukushima Lessons Learned Near-Term Task Force Recommendations. SCE informed the NRC that the seismic, flooding, and emergency actions required by the NRC in their March 12, 2012 50.54(f) letter are no longer applicable to San Onofre Units 2 and 3 because the units have permanently ceased operation.

In Advice Letter 2930-E dated August 13, 2013, SCE informed the CPUC's Energy Division of the scope of the seismic studies that will be completed. The activities include the geophysical data re-analysis, the GPS array, onshore studies, and shallow marine surveys. The high energy marine surveys, seismic monitoring, and the seafloor sediment sampling and age dating will not be completed. The Advice Letter was approved by the Energy Division in a September 18, 2013 letter. The San Onofre Independent Peer Review Group will continue to review and report on ongoing seismic studies.

##### **ii. Vulnerabilities**

SCE recommends the following two corrections to the Draft Report's Vulnerabilities section. First, that section needs to be updated to reflect the current information regarding spent fuel storage. The Draft Report states, "San Onofre has 2,346 spent fuel assemblies in wet storage and 792 assemblies in dry cask storage." Currently, there are 2,776 spent fuel assemblies in wet storage at San Onofre Units 2 and 3, and a total of 1,187 spent fuel assemblies in dry cask storage, which also includes fuel assemblies from Unit 1.

Second, this section contains figures for the gallons of water per minute used at SONGS that are inconsistent with current planned operation, stating that it used an estimated “200,000 to 500,000 gallons of water per minute.” The footnote referencing this inaccurate figure (footnote #293) should be deleted. The spent fuel pools at San Onofre Units 2 and 3 are cooled by two systems: a closed, Component Cooling Water System, and a Salt Water Cooling System, which uses ocean water for cooling. The Salt Water Cooling System for each unit has four saltwater cooling pumps available, each pump capable of providing 17,000 gpm. Currently, one saltwater cooling pump is operating at each unit. When Units 2 and 3 were both in operation, the ocean water flow from the circulating water and saltwater cooling systems combined was over 1,600,000 gallons of water per minute.

### **iii. Economic Considerations**

SCE proposes several corrections to the Draft Report Economic Considerations section. First, page 145 of the Draft Report should be updated from March 31, 2013 to June 30, 2013 for the collection of costs to decommission SONGS Units 2 and 3. During the August 13, 2013 State Senate Committee hearing, Stephen Pickett, SCE’s Executive Vice President of External Relations, testified that SCE collected costs through June 30, 2013.

Second, on page 146, in the same paragraph, the Draft Report states that “SCE completed the transfer of fuel from the Unit 2 reactor to the spent fuel pool on July 18, 2013, and sent a letter to the NRC on July 23, 2013, certifying that the fuel was removed from the Unit 2 reactor. Once the NRC certifies the Unit 2 defueling, the nuclear plant will have a possession-only license rather than an operating license and will no longer be authorized to place fuel in the reactor vessel.” To clarify, SCE is no longer licensed to operate the units with the submittal of the cessation of power letter dated June 12, 2013 and the certification of defueling letters dated June 28, 2013 and July 22, 2013. There is no requirement for the NRC to issue a certification or modify the license. SCE also recommends removing the phrase “possession-only license.”

Third, in the same paragraph, on page 146, the Draft Report states that “SCE currently anticipates Units 2 and 3 decommissioning activities to commence in mid-2015.” SCE recommends that the Energy Commission delete this sentence because SCE has not yet stated when decommissioning activities will begin.

Please see Attachment 2 for redline suggestions for revised language for this section.

### **3. Japan Lessons Learned- NRC Near-Term Task Force Recommendations**

By letters dated September 30, 2013, SCE requested that the NRC rescind its Order on mitigation strategies, its Order regarding the installation of spent fuel pool level instrumentation, and its 50.54(f) requirements for the reevaluation of seismic and flooding hazards and emergency planning. Due to the permanent shut down of San Onofre Units 2 and 3, these Orders and requirements are no longer applicable. Footnote #301 should therefore be deleted as not applicable to this discussion

Please refer to Attachment 2 for redline suggestions for revised language for this section.

### **4. Federal Efforts on Nuclear Waste Transport, Storage, and Disposal**

No comment.

## **5. Permanent Closure of San Onofre Nuclear Generating Station**

The Permanent Closure and Decommissioning section of the Draft Report on pages 153-154 states that, “SCE has indicated it intends to file a decommissioning plan by the end of 2014.” SCE recommends a minor correction based on Stephen Pickett’s Senate testimony in which he states that a Post Shutdown Decommissioning Activities Report (decommissioning plan) will be submitted mid-2014.

The Draft Report’s San Onofre Nuclear Generating Station recommendations section recommends that “SCE should continue to complete *AB 1632 Report*-recommended studies as they apply to the security of spent fuel storage facilities at San Onofre and provide updates to the Energy Commission and CPUC on its progress.” It should be noted that the only remaining AB 1632 Report studies to be completed are the seismic studies, which are the subject of SCE’s Advice Letter 2930-E as discussed above.

## **CHAPTER 7: Natural Gas**

### **1. Natural Gas Outlook**

Page 160 of the Draft Report states that “staff used past natural gas forecast results ... to produce error bounds around price results of three common cases.” SCE does not recommend relying on past forecasts to create future forecasts. Errors on new forecasts can differ substantially from old forecasts in terms of magnitude, shape, and seasonality because of changes in underlying assumptions. Instead of utilizing past forecasts, SCE recommends the Energy Commission calculate error bounds using data from its current forecasts.

Figure 12 on Page 160 shows the Common Case Forecasts with Adjusted Error Bands, consisting of High, Reference, and Low cases. The Draft Report explains that in the 2013-2014 timeframe, due to price drops, “effects of the recent recession caused demand to be stagnant.” Although SCE acknowledges that the recession is a significant contributing factor to these price decreases, the Draft Report’s explanation does not take into account the increase in gas supply, which SCE believes is the dominant contributor to lower prices. Gas supply in recent years has been increasing substantially due to advances in the Montney, Marcellus, and Utica shale plays.

SCE also recommends that each curve on the Common Case Forecasts chart in Figure 12 have its own Upper and Lower Error Bounds, rather than having a single Upper Error Bound and Lower Error Bound for all three cases.

### **2. Natural Gas from Shale Formations**

No comment.

### **3. Natural Gas and Electricity Generation Industry Interface**

Figure 15 on page 163 shows a noticeable drop in California Natural Gas Demand for Power Generation in the “High Demand/Low Price Case” between the years 2018-2019. SCE recommends that the Energy Commission discuss the factors contributing to this projected decrease in the final report.

### **4. Natural Gas Infrastructure**

Paragraph 4 on page 168 states, “For most of California, there is ample pipeline capacity to meet demand, and there are no anticipated supply issues. In southern California, however, there could be supply constraints because of greater demand from the closing of San Onofre and ramping requirements needed to integrate renewable generation.” SCE recommends that the Energy Commission expand its scope to also take into account US exports to Mexico, which have increased more than 100% in recent years, and which are forecasted to continue to rise beyond 2020. This factor could potentially impact demand, leading to a tightening of supply, decreasing inventories, and an increase in natural gas prices.

### **5. Other Natural Gas Issues**

No comment.

## **CHAPTER 8: Transportation Energy**

### **A. Alternative and Renewable Fuel and Vehicle Technology Program**

SCE would like to clarify that the Renewable Fuel Standard (RFS) is not fuel neutral and does not include the many low carbon fuels included in California's Low Carbon Fuel Standard (LCFS) including electricity, natural gas, and hydrogen. As the RFS is extended beyond its 2022 expiration, the Energy Commission, other state agencies, and the State of California may wish to consider advocating for a more fuel neutral RFS to replace the current RFS program.

### **B. Transportation Energy Trends – Transportation Demand Forecast and Supply / Demand Balance**

SCE appreciates the Energy Commission's inclusion of high speed rail, existing light rail, and port electrification into the Transportation Demand Forecast, as noted in the California Energy Demand 2014-2024 Revised Forecast<sup>28</sup> and the Draft Report<sup>29</sup>. SCE is in the process of updating its forecast for other types of transportation electrification (other than light duty Plug-in Electric Vehicles (PEVs)) and looks forward to continuing its collaboration with the Energy Commission to provide additional information and updates in the near-future, as well as in future IEPR cycles.

SCE also appreciates the inclusion of high, medium, and low cases for light duty PEVs in the forecast,<sup>30</sup> as SCE and other stakeholders had requested in earlier comment letters. Acknowledging that the forecast is yet-to-be finalized, and is based on 2012 Energy Commission analysis, SCE recognizes that the forecast does appear to closely resemble the high, medium, and low cases that SCE presented at the August 21, 2013 Joint IEPR/Transportation Workshop on Transportation Energy Demand Forecasts and Analyses. At the workshop, SCE recommended using the number of PEVs from these cases; however, there appears to be significant discrepancy between SCE's and the Energy Commission's resulting gigawatt-hours (GWh) per year figures for these three cases. The Energy Commission appears to be using a very low kilowatt-hour (kWh) per unit (<1,900 kWh per PEV per year in residential charging), which is equivalent to driving only 5,200 miles per year. By contrast, SCE uses 4,400 kWh per PEV per year per residence in its forecasts, which is based on an approximate 12,000 miles per year driving average. SCE recommends that the Energy Commission collaborate with utilities to develop a more realistic kWh per PEV per year estimate based on annual driving of at least 10,000 miles per year.

SCE would also like to correct the Energy Commission's statements on pages 186 and 193 of the Draft Report that the federal tax credit for battery electric vehicles and plug-in hybrids electric vehicles (EVs and PHEVs) does not expire after 200,000 of each model are sold. Instead, the tax credit begins to

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<sup>28</sup> Volume 1: Statewide Electricity Demand, End-User Natural Gas Demand, and Energy Efficiency, pp. 3, 12, 46-48

<sup>29</sup> See Draft Report at p. 85, and Appendix G.

<sup>30</sup> See Draft Report at p. 85, Volume 1: Statewide Electricity Demand, End-User Natural Gas Demand, and Energy Efficiency, p. 15, 20, 44-46

phase down after each manufacturer reaches 200,000 EVs and/or PHEVs sold, and expires one year after the 200,000 unit per manufacture threshold is met.<sup>31</sup>

In addition, Figure 27 on page 188 correctly shows that significant greenhouse gas (GHG) reductions are attributable to the increase in EVs. As a result, it would be more accurate to edit the description on page 193 to read as follows: “Electric vehicles offer a significant reduction in GHG emissions compared to gasoline or diesel-fueled vehicles **today and this only increases as** renewable electricity is **further added to the electricity mix.**” See Attachment 2 for a redline of this edit.

Finally, SCE believes that it would be more accurate to state that **many** automakers produce an all-electric or plug-in hybrid electric vehicle (rather than “virtually every”) on page 193. Several automakers including Volkswagen, Hyundai-Kia, Subaru, Volvo, Mazda and Land Rover do not have EVs or PHEVs. In 2018, the Zero Emissions Vehicle (ZEV) mandate will result in 16 or more automakers producing EVs and/or PHEVs. Those automakers coming to market will help further accelerate the proliferation of PEVs and begin to address the current problem of not having enough PEV model choices for consumers in the various market segments

### **C. Challenges to Achieve Alternative Fuel Growth Potential and Ensure an Adequate Transportation Energy System**

SCE would like to clarify that the roadmap being developed by the CAISO, referenced in the second paragraph of page 200, is not focused on vehicle-to-grid. The Energy Commission and CAISO held a recent workshop on this roadmap, which focused on the broader topic of vehicle integration, which includes vehicle-to-grid technologies as well as other technology options such as managed charging.

SCE strongly supports the Energy Commission’s recommendations to “develop a multi-year strategy to fund electric, hydrogen, and natural gas vehicle rebates,” and “advance multiple objectives of transportation electrification.” SCE recommends that both the California Air Resources Control Board (CARB) and the California air districts be included in discussions related to these recommendations, particularly in advancing broader transportation electrification.

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<sup>31</sup> [http://www.irs.gov/Businesses/Plug-In-Electric-Vehicle-Credit-\(IRC-30-and-IRC-30D\)](http://www.irs.gov/Businesses/Plug-In-Electric-Vehicle-Credit-(IRC-30-and-IRC-30D))

## **CHAPTER 9: Climate Change**

### **A. Climate Change Consensus Documents**

No comment.

### **B. Climate Change Research and Projections**

SCE commends the Energy Commission’s continued research efforts on climate change impacts and the energy sector, as outlined in the Draft Report. This research helps California’s utilities understand vulnerabilities and develop adaptation strategies in order to ensure that electricity customers are protected from the impacts of climate change and extreme weather events.

SCE looks forward to coordinating with the Energy Commission and stakeholders to better understand the adaptive capacity already built in to our systems, and to determine additional opportunities for improvement. Recognizing that SCE is an investor-owned utility and subject to substantial regulatory oversight, SCE recommends that the Energy Commission analyze potential regulatory barriers to climate change adaptation. Coordination between the Energy Commission and other regulatory state agencies on climate impacts and adaptive actions is essential and will be a significant factor for successful implementation of any climate change adaptation plans moving forward.

### **C. Impacts of Climate Change on Energy Supply**

No comment.

### **D. Impacts of Climate Change on Energy Demand**

No comment.

### **E. Climate Readiness Strategies**

No comment.

### **F. Future Climate Change Research Needs**

No comment.

### **G. California’s 2030 Electricity System**

No comment.

**Attachment 2**

**ATTACHMENT 2**  
**REDLINED EDITS TO THE DRAFT REPORT**

- Page 93, second paragraph

“SCE has ~~apparently~~ assessed five options for resolving the San Onofre outage. ....SCE has briefed various energy agencies and the California ISO from time to time ~~as the analysis progressed, but the detailed inputs, methods, and results have not yet been published.~~ ... SDG&E is ~~understood to be assisting collaborating with~~ SCE by reviewing analytical results and to be gaining knowledge of benefits of transmission lines interconnecting the SDG&E and SCE systems, ~~but details (scope, methods, assumptions, and results) are not known.~~ Both SCE and SDG&E filed testimony in the CPUC’s 2012 LTPP rulemaking (Track 4) concerning their ~~study details (scope, methods, assumptions, and results) and overall~~ views on the need for local capacity area resource additions.

- Page 108, first paragraph:

“SCE’s expected in-service date for all segments is ~~late 2015 or early 2016.~~”

- Page 109, second paragraph:

“SCE’s Coolwater-~~Jasper~~-Lugo project ~~includes~~ would loop into SCE’s proposed Jasper ~~220 kV~~ substation—a separate project, expected to be in-service by 2015. It would include ~~35~~ 34 miles of a new 220 kV double-circuit transmission line, and replacement of ~~28~~ 29 miles of 220 kV transmission line with ~~12~~ 14 miles of double-circuit 220 kV and ~~16~~ 17 miles of 500 kV transmission lines.”

- Page 109, remove last paragraph:

~~“Project Requiring Reevaluation~~

~~Pisgah-Lugo: SCE’s Pisgah-Lugo project ... to support California’s 33-percent RPS.”~~

- Page 111, first paragraph:

“The results can be used to identify potential ~~new and / or expanded~~ transmission corridors for designation ~~to facilitate the timely siting, permitting, licensing and construction of any appropriate new transmission lines to address grid reliability concerns.~~”

- Page 111, third paragraph:

“The San Onofre switchyard needs to remain ~~in operation~~ in order to ~~flow power~~ manage real-time ~~reliable power flows in bi-directional mode~~ from the north ~~and south~~ into Northern San Diego County.”

- Page 113, fourth paragraph:

“~~Two~~ ~~Three~~ areas where the synchronization of generation development and the necessary transmission to reliably interconnect and deliver that generation to load can be improved include:

1. Reducing the number of significant and costly interconnection upgrades by ~~eliminating or~~ modifying the deliverability requirements in PPAs for renewable generators, ~~provided such modification does not adversely impact a utility's ability to meet service commitments to customers, reliability standards, and other state and federal regulatory policy requirements.~~

2. Planning, licensing, and developing transmission to specific areas where the state wants to encourage the development of renewable resources before the generators are committed through PPAs or environmental permitting.

3. Identifying and designating transmission corridors for new policy, economic and reliability need-based major transmission projects (approved by CAISO in its GIDAP and annual TPP processes), and initiating a Corridor Designation process as needed to accommodate new transmission upgrades and additions in a safe, responsible and reliable manner.

- Page 114, second paragraph:

“Requiring full deliverability for future PPAs for renewable generators in the state may not be a cost-effective strategy and ~~modification of deliverability requirements sh~~ould be considered in light of the billions of dollars in transmission investments the requirement triggers. If major transmission upgrades were not required for remote renewable resources to meet the terms of their PPAs, then the synchronization issue would disappear. ~~However, any modification of deliverability requirements should be accomplished only after it can be determined by the CAISO and/or appropriate regulatory agency that requiring less than full deliverability will not result in a less reliable energy system that negatively impacts electricity consumers. A less reliable system also could cost consumers billions of dollars in lost revenues triggered by power outages and is likely to negatively impact consumers in other ways—including safety, security, and convenience.~~”

- Page 117, third paragraph:

“The combination of the federal and state designations would provide a reasonable, well-considered transmission corridor ~~that is seamless, contiguous, and of adequate width to allow for flexibility in siting,~~ in a highly impacted part of the state, paving the way for any necessary future expansion of the high-voltage electrical transmission system area.”

- Pages 129-130, Recommendations:

**“Identify long-term transmission solutions and ways to reduce transmission permitting timelines.** The energy agencies should continue to work together to analyze and recommend the long-term potential transmission solutions to address reliability concerns associated with the recent shutdown of San Onofre, ~~as well as ongoing integration of distributed energy resources.~~ The energy agencies should ~~continue to explore ways to achieve develop solutions to timely effectuate~~ the Governor’s goals on reducing the permitting time for transmission projects in California.”

**“Evaluate deliverability requirements.** The cost-effectiveness, prudence, and alternatives for requiring full deliverability for future renewable generation that is procured to meet RPS requirements should be evaluated by California’s energy agencies in the overall context of long-term

planning for meeting RPS and greenhouse gas emission reduction goals, as well as the overall context of grid reliability, safety, security, and impacts on consumer convenience.”

**“Identify transmission corridors.** From a timing perspective, it makes sense to identify and designate, where appropriate, transmission corridors in advance of future generation development so that needed transmission projects can be permitted and built in an effective, environmentally responsible manner, reasonably contemporaneous with the generation development. The Energy Commission will initiate and work with the utilities; federal, state, and local agencies; and stakeholders to assess and identify transmission line corridors for any new policy, economic, and reliability need-based major transmission projects in California (approved by CAISO in its GIDAP and annual TPP processes) that are a high priority for designation such as those corridors that would ease the development of renewable energy resources. Appropriate corridors could be identified as a result of the Desert Renewable Energy Conservation Plan effort, future examination of opportunities and needs in the Central Valley and the ongoing San Onofre transmission alternatives under consideration.”

- Page 133, second paragraph:

~~“Beginning in~~ On January 9, 2012, San Onofre Unit 2 was taken offline for a scheduled refueling outage which included steam generator inspections. On January 31, 2012, San Onofre Unit 3 was removed from service due to a steam generator tube leak. The investigation of the steam generators on both units identified due to unexpected degradation of the newly installed steam generator tubes in both Units 2 and 3. ~~Damage to Unit 3 was extensive,~~ SCE first focused its efforts on the restart of Unit 2 and decided to remove the fuel from the Unit 3 reactor vessel which was completed on October 5, ~~and the fuel was removed in late~~ 2012.”

- Pages 143-144, paragraphs one through three in Seismic and Tsunami Hazards:

~~“SCE officials are consulting with NRC staff to understand how the regulatory requirements for the SSHAC process apply to San Onofre as they transition into decommissioning the plant. Seismic hazard analyses for SSC study Workshop 2 were held in August 2013. However, seismic activities are under review and likely will be terminated.~~

~~In a letter to the CPUC dated August 5, 2013, SCE stated that it is evaluating the scope of San Onofre seismic activities, and is planning to reduce the scope to only those activities that are required to fulfill NRC 50.54(f) requirements or are research projects that have already been initiated and are nearing completion. SCE indicated that AB 1632 recommendations to conduct high-energy two-dimensional/three-dimensional marine acoustic surveys are no longer required since San Onofre is not an operational plant and thus, SCE does not plan to complete them. The San Onofre Independent Peer Review Group will continue to review and report on ongoing seismic studies.~~

~~SCE is performing an evaluation of external flooding sources, including the effects of tsunamis, using guidance and methods consistent with the NRC's 10 CFR 50.54(f) request for information. This information is due to the NRC by March 2015. Previously completed tsunami analysis demonstrated no additional protection was warranted for San Onofre, however, updated tsunami hazard evaluations are not complete. Upon review of the evaluation results, SCE and the NRC staff will determine whether additional actions are necessary (for example, updating the design basis) to provide additional protection against tsunami hazards."~~

Please insert following updated material in place of above strike-through language:

SCE submitted a letter to the NRC dated September 30, 2013 informing the NRC that the Near Term Task Force Recommendations regarding seismic, flooding, and emergency planning are no longer applicable to San Onofre Units 2 and 3 because the units have permanently ceased operation.

In Advice Letter 2930-E dated August 13, 2013, SCE informed the CPUC Energy Division of the scope of the seismic studies that will be completed. The activities include the geophysical data re-analysis, the GPS array, onshore studies, and shallow marine surveys. The high energy marine surveys, seismic monitoring, and the seafloor sediment sampling and age dating will not be completed. The CPUC's Energy Division approved Advice Letter 2930-E by a September 18, 2013 letter. The San Onofre Independent Peer Review Group will continue to review and report on ongoing seismic studies.

- Page 144, under Vulnerabilities:

"San Onofre has ~~2,346~~ 2,776 spent fuel assemblies in wet storage and ~~792~~ 1,187 assemblies in dry cask storage."

- Page 144, same paragraph:

"Unlike cooling pools that require mechanically driven water circulation (a typical pump flow of 17,000 gallons per minute through the salt water cooling system ~~which is estimated to use between 200,000 to 500,000 gallons of water per minute at San Onofre~~),"

- Page 144, same paragraph:

Delete footnote #293: ~~"June 10, 2013 telephone conversation. Kathy Yhip of SCE and Joan Walter, Energy Commission."~~

- Page 145, under Economic Considerations:

“The cost to decommission San Onofre Units 2 and 3 is estimated to be \$4.1 billion. SCE’s share is \$3 billion, of which \$2.7 billion has been collected through ~~March 31~~, June 30, 2013.”

- Page 146, top paragraph:

~~“SCE completed the transfer of fuel from the Unit 2 reactor to the spent fuel pool on July 18, 2013, and sent a letter to the NRC on July 23, 2013 certifying that the fuel was removed from the Unit 2 reactor. Once the NRC certifies the Unit 2 defueling, the nuclear plant will have a possession only license rather than an operating license and will no longer be authorized to place fuel in the reactor vessel. submitted a cessation of operation of San Onofre Units 2 and 3 to the NRC on June 12, 2013. The transfer of fuel from the Unit 3 and 2 reactors was completed on October 5, 2012 and July 18, 2013, respectively. Letters dated June 28, 2013 and July 22, 2013 were sent to the NRC indicating the fuel had been permanently removed from Units 3 and 2, respectively. With the cessation of power operation and the defueling of the reactors letters, SCE is only licensed to possess the fuel from San Onofre Units 2 and 3.”~~

- Page 147, second paragraph and footnote 301:

~~“Seismic and flooding reevaluations for Diablo Canyon and San Onofre are due March 2015. [Footnote]#301”~~

~~“[Footnote] #301 In light of SCE’s recent decision to permanently cease operation of San Onofre Units 2 and 3, the NRC will discuss with the licensee the need for completing actions related to lessons learned from the Fukushima accident.”~~

- Insert after Paragraph 3 on Page 147:

~~“This order is no longer applicable to San Onofre Units 2 and 3 as indicated in SCE’s September 30, 2013 letter to the NRC.”~~

- Insert After First Sentence in Last Paragraph on Page 147:

~~“The seismic and flooding evaluation and emergency plan requirements are no longer applicable to San Onofre Units 2 and 3 as indicated in SCE’s September 30, 2013 letter to the NRC.”~~

- Pages 153-154:

~~“SCE has indicated it intends to file a decommissioning plan by the end of mid-2014.”~~

- Page 156, first bullet item under San Onofre Nuclear Generating Station:

~~“Complete and make available AB 1632 Report recommended studies on security of spent fuel that SCE has committed to complete. SCE should continue to complete AB 1632 Report recommended studies as they apply to the security of spent fuel storage facilities at San Onofre and provide updates to the Energy Commission and CPUC on its progress. SCE should complete the seismic studies that were identified in Advice Letter 2930-E which was approved by the Energy~~

Division on September 18, 2013. Results of the studies should be provided to the Energy Commission and CPUC.

- Page 193, last paragraph

“Electric vehicles offer a significant reduction in GHG emissions compared to gasoline or diesel-fueled vehicles today particularly if and this only increases as renewable electricity is ~~the source of vehicle charging~~ further added to the electricity mix.”