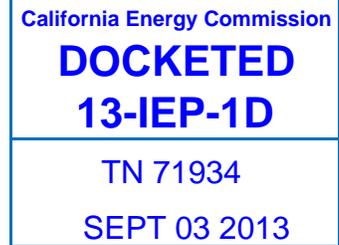


September 3, 2013



California Energy Commission
Docket Office, MS-4
Re: Docket No. 13-IEP-1D
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-IEPR-1D Workshop on Evaluation of Electricity System Needs in 2030*

To Whom It May Concern:

On August 19, 2013, as part of the California Energy Commission's ("Energy Commission's") 2013 Integrated Energy Policy Report ("2013 IEPR") process, the Energy Commission held a Lead Commissioner Workshop to address the Evaluation of Electricity System Needs in 2030 ("the Workshop"). Southern California Edison ("SCE") participated in the Workshop and appreciates the opportunity to provide these written comments.

As mentioned in SCE's presentation, SCE is an active participant in a number of future needs assessments that focus on the planning, permitting, and procurement of energy resources and associated electrical infrastructure to meet reliability and preferred resource goals. These assessments include: the California Public Utility Commission's ("CPUC's") 2012 Long Term Procurement Plan ("LTPP") proceeding, the California Independent System Operator's ("CAISO's") Transmission Planning Process ("TPP"), the Energy Commission's Desert Renewable Energy Conservation Plan ("DRECP"), and a joint effort with San Diego Gas & Electric ("SDG&E") on the Southern California Reliability Project, which is addressing reliability issues in Southern California in light of the San Onofre Nuclear Generating Station ("SONGS") retirement. Coordination and collaboration among agencies and stakeholders on these and other assessments will be instrumental in planning for the electrical system needs of the future; however, uncertainty remains as to how energy industry trends will evolve beyond the current planning horizons of the efforts that are underway.

California's Energy Action Plan, developed by the Energy Commission and the CPUC, has guided the State's energy policies in a carbon-constrained world with an increasing emphasis on higher levels of preferred resources in utility portfolios, such as energy efficiency ("EE"), demand response ("DR"), and renewable energy resources including distributed energy resources. 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 ("ISGD"), which will inform how the advanced technologies of the Smart Grid can operate effectively when deployed in an integrated framework to facilitate the State's transition to a cleaner energy future. SCE is also proposing a Preferred Resources Living Pilot program as a means of informing future policy decisions surrounding the procurement of preferred resources and their ability to meet local reliability. A key component of this program, discussed in further detail below, will be leveraging SCE's extensive experience in developing and managing EE, DR, and Advanced Technology projects and programs. SCE believes that efforts such as ISGD and the proposed Preferred Resources Living Pilot are essential for informing energy and environmental policy at the State and local level, and that they should be considered in decision-making for long-term energy plans and procurement efforts going forward.

In addition to utility conducted research, development, and demonstration projects to inform the State's future energy system needs, SCE recommends that the Energy Commission and other state agencies focus on a number of key issues that will influence the ability to provide sustainable, safe and reliable electric service to customers. These factors include investment decisions, utility compensation, system operation, and oversight needs. Rate design will also play an integral role in determining the sustainability of an industry structure necessary to support a clean energy future, and should be given considerable attention. Furthermore, supporting the integration of increasing amounts of preferred resources will require new investments in generation, transmission, and distribution infrastructure. Such investments should be guided by planning that is informed by sound science and land-use considerations, and that aims to synchronize planning efforts, so as to ensure that development occurs in an efficient yet responsible manner. The DRECP and similar efforts informed by land-use planning should continue to be utilized and supported to achieve long-term State energy and environmental policy goals.

A. Proposed Preferred Resources Living Pilot Program

To inform future procurement of preferred resources, SCE is proposing a Preferred Resources Living Pilot ("Living Pilot") program to provide greater certainty about the ability and availability of preferred resources to perform when called upon to meet local reliability needs. The Living Pilot would allow for measurement, assessment, and continuous improvement to create a better understanding of resource attributes and the value of increased levels of preferred resources. Additionally, the Living Pilot would help to inform the architecture for securing the electric grid and facilitating energy transactions. SCE plans to work closely with the Energy Commission, CPUC, CAISO, and other stakeholders in designing and collaborating on the

Living Pilot. This effort would allow SCE to develop a balanced portfolio of supply and demand resources, including energy efficiency and demand response, that provides desired performance attributes while achieving societal objectives.

The Living Pilot would target the south Orange County area to procure competitively priced preferred resources to meet local reliability needs while ensuring grid stability and resiliency. The pilot would include:

- Performance attributes to support reliability and economic needs (location, sizing, timing, duration, integration);
- Metrics, measurements, and reporting protocols to inform efficacy of various preferred resources;
- Application, as appropriate, of Smart Grid architecture to ensure grid stability and resiliency;
- Monitoring to ensure anticipated savings/reductions are achieved, and to inform procurement going forward.

SCE plans to leverage its extensive experience in developing and managing Advanced Technology, EE, and DR programs to identify and pursue competitively priced Preferred Resources to capture synergies, such as DR-capable EE (e.g., Heating Ventilation and Air Condition (“HVAC”) with DR capability) and DR-enabled DG (e.g., solar photovoltaic (“PV”) with smart inverters/storage), and to identify and pursue advanced technologies to ensure grid stability and resiliency, while supporting energy transactions. SCE’s Living Pilot would allow measurement, assessment, critique, and continual improvements to the program, which would be used to create a better understanding of the resource attributes and value to increase procurement of Preferred Resources.

B. Irvine Smart Grid Demonstration (ISGD)

The U.S. Department of Energy (“DOE”), as part of the American Recovery and Reinvestment Act of 2009, awarded SCE \$ 40 million in matching funds to conduct an end-to-end demonstration of numerous Smart Grid technologies to test the interoperability and efficacy of key elements of the grid, from the transmission level through the distribution system and into the home. The Irvine Smart Grid Demonstration (“ISGD”) will be a deep vertical dive that tests multiple components of an end-to-end Smart Grid and will provide a living laboratory for simultaneously demonstrating and assessing the interoperability of, and interaction between, various Smart Grid technologies and systems. ISGD is being deployed in Irvine, California at the University of California, Irvine and in Newport Beach, CA at the MacArthur substation.

ISGD will allow SCE, project participants, and the DOE to verify the viability of Smart Grid technologies to operate effectively and with adequate cyber security measures when deployed in an integrated framework. The project will also help provide a means to quantify the costs and benefits of these technologies in terms of overall energy consumption, operational efficiencies, system reliability and societal and environmental benefits. ISGD will also allow SCE to test and validate the applicability of demonstrated Smart Grid elements for the Southern

California region and the nation as a whole. The scope of ISGD includes the following Sub-Projects:

- Sub-Project 1—Zero Net Energy (“ZNE”) Homes through Smart Grid Technologies
- Sub-Project 2—Solar Shade-enabled Plug-in Electric Vehicle (“PEV”) Charging
- Sub-Project 3—Distribution Circuit Constraint Management with Energy Storage
- Sub-Project 4—Advanced Volt/VAR Control (“AVVC”)
- Sub-Project 5—Self-Healing Distribution Circuits
- Sub-Project 6—Deep Grid Situational Awareness
- Sub-Project 7—Interoperability and Cyber Security: Secure Energy Network (“SENet”), and Substation Automation System
- Sub-Project 8—Workforce of the Future

SCE believes that ISGD and similar research and development projects will help to provide key data on Smart Grid technology to help inform future efforts and policy decision-making related to advanced grid technologies for electricity system needs for 2030 and beyond.

C. Many Fundamental Issues Remain Unaddressed As the Structure of the Energy Industry Evolves Through 2030 and Beyond

Recent policy initiatives advanced by various state agencies clearly demonstrate a strong preference to move towards a different industry structure where energy efficiency, demand response, distributed energy resources, and energy storage play a much more prominent role in operating the electricity system of the future. In addition, the expectation is that the electric distribution grid will become much smarter with the deployment of various advanced technologies, and will co-exist with an equally smart platform to manage the customer load behind the meter. However, as mentioned in SCE’s presentation at the Workshop, SCE believes that several key issues related to investment, compensation, operation, and oversight, should be addressed as the industry evolves towards a potentially different structure in 2030 and beyond.

For example, at present, the vast majority of electricity infrastructure investments throughout the value chain are made or financed by the utility distribution companies, with an expectation that their volumetric sales will allow them to recover the cost of these investments through regulated rates. Going forward, sizeable investment will be necessary to maintain and enhance electricity infrastructure to support the integration of increasing levels of distributed energy and storage resources; however, it is unclear whether cost recovery based on volumetric sales is sustainable or equitable. This concern is demonstrated by an increasing number of customers opting for self-generation under current rules, which allows them to avoid paying fixed costs, and instead, shift those costs to customers who do not participate in self-generation.

The Energy Commission should also give consideration to the following issues, given policy preferences that may consider a future with higher levels of preferred resources at the distribution level and behind the customer meter:

- Determining the entities responsible for making infrastructure investments in generation, transmission, distribution, and energy storage projects, given policy preferences to move towards ZNE buildings and communities that have smaller retail sales bases;
- Determining whether utilities would continue to have an obligation to be providers of last resort if the industry moves to a distributed generation based model;
- Maintaining societal equity such that utility costs caused by one customer (or group of customers) are not being inequitably forced upon other customers;
- Maintaining the distribution system in a safe, reliable, and orderly manner;
- Determining the entities responsible for ensuring safe and stable operation—particularly if ownership of electrical system components shifts to third parties located behind the meter;
- Determining how the distribution system will interface with the bulk-power network in such a way that the CAISO can obtain needed operational benefits without having to invest in back-up flexible central-station capacity; and
- Determining regulatory oversights as the current system evolves, with various components of the electrical system potentially owned and operated by many different entities, including end-use customers.

SCE recommends that the Energy Commission and other state agencies should now begin to focus on such issues in order to create a durable framework that will allow the policy preferences of the state to come to fruition towards 2030 and beyond.

D. The Current Rate Structure is Unsustainable

Under current Investor Owned Utility (“IOU”) tiered rate structure and Net Energy Metering (“NEM”) rules, customers who opt for self-generation are allowed to avoid paying the utilities’ fixed costs while shifting the costs to the rest of the customers, resulting in an increasingly smaller number of customers bearing the utility’s costs for providing reliable service. Not only does NEM allow customers to avoid paying fixed costs, including those associated with reliably connecting the customer to the grid; but, under the flawed tiered residential rate structure, NEM also allows high-usage customers to reduce their retail bill far more than the actual avoided costs in the wholesale energy market. The differences between the price NEM customers pay and the actual avoided costs of wholesale energy are being paid for by the remaining non-NEM customers. This cost-shift is not sustainable as an increasingly larger

number of customers pursue self-generation options. Proposals for increased fixed charges and flattening of tiered rate structures are currently being examined in the CPUC Residential Rate Design Rulemaking (R. 12-06-013). SCE suggests that the CEC also take this issue into account when recommending policies that influence the future evolution of the electricity industry in California.

E. Synchronization of Generation and Transmission Planning to Achieve Renewable Policy Goals Is Improved by Desert Renewable Energy Conservation Plan

Synchronized planning for renewable generation and associated transmission will be a critical component in planning for energy system needs through 2030 if large scale renewable generation will be needed to meet the State's energy and environmental goals. Both renewable generation and associated transmission can have significant land-use impacts. Minimizing these impacts will be important to reducing the total environmental impact, cost and development time needed to bring these projects into service. SCE believes that a more comprehensive, long-term land-use planning strategy, as provided by the Energy Commission's DRECP, could improve the synchronization of generation and transmission permitting, and that it will be a critical component in meeting policy goals and electricity system needs through 2030. SCE recommends that the Energy Commission continue to evaluate land-use issues and support strategies to encourage the optimal location new electricity infrastructure.

The DRECP, when complete, could provide the regulatory framework necessary to support investment in renewable energy resources and associated electrical transmission facilities; thereby facilitating responsible renewable resource and transmission planning needed to meet energy and environmental policy goals. For instance, despite aggressive renewable procurement, challenges to meeting the state's renewable energy goals remain. These challenges include permitting and siting renewable energy projects and related transmission facilities—two areas that the DRECP seeks to address. Similarly, transmission planning efforts have identified upgrades and additions needed to meet today's renewable energy goals; however, uncertainty remains as to the location, amount, and type of renewable energy resources that will be developed today, and in the future. Integration of land-use and transmission planning efforts, informed by the DRECP, could provide greater certainty; resulting in a more orderly, rational, timely, and cost-effective state and regional transmission planning and permitting process.

Coordination of state and regional planning efforts through the DRECP, including broad stakeholder participation and agency collaboration, is essential to achieving the State's environmental and renewable energy goals. For example, examination of successful transmission projects to identify best practices, including opportunities for improvement, could ensure that mitigation requirements are consistent across agencies, that duplicative technical and environmental analyses are eliminated, and that project "scope creep" is minimized. In addition, state and regional planning efforts, like WECC and others, should continue to be coordinated with DRECP and related planning efforts to identify potential transmission corridors that are seamless, contiguous, and strategically sized, on public and private lands, so as to facilitate transmission upgrades and additions to safely and reliability meet the state's renewable energy goals.

California Energy Commission

Page 7

September 3, 2013

In conclusion, SCE appreciates the Energy Commission's consideration of these comments and looks forward to its continuing collaboration with the Energy Commission. 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