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Mark E. Nelson
Director
Generation Planning & Strategy

February 27, 2008

Ms. Mary D. Nichols
Chair, California Air Resources Board
California Environmental Protection Agency
1001 I Street
Sacramento CA, 95814

Re: SCE Comments on the Economic and Technology Advancement Advisory Committee Report to the California Air Resources Board

Dear Ms. Nichols,

Southern California Edison (SCE) appreciates the opportunity to submit these comments regarding the Economic and Technology Advancement Advisory Committee's (ETAAC) report to the California Air Resources Board (CARB), "*Technologies and Policies to Consider for Reducing Greenhouse Gas Emissions in California*" (Report).

In Assembly Bill (AB) 32, California established an aggressive goal of reducing statewide greenhouse gas (GHG) emissions. Technological advancement in all sectors will be an important part of California's efforts to achieve this goal. SCE already has many development efforts underway which look to helping the State achieve the mandates of AB 32. Additionally, SCE is committed to working with the CARB, ETAAC, other state agencies and stakeholders to achieve the State's GHG reduction goal.

The Price Signal Created by a Market Based Approach Promotes Technological Innovation

GHG emission reduction presents a unique opportunity for a broad-based approach to technical innovation. Because the atmosphere does not benefit more from a ton of reduced emissions sourced in one region or sector over a ton of emissions reduced in any other region or sector, innovative means of reducing emissions, either through innovations in energy, manufacturing, and transportation, will have value worldwide. In addition to supporting available, dynamic, and broad-reaching potential solutions for emissions reductions, SCE also looks forward to supporting the most efficient technical solutions for reducing emissions.

The Report suggests various financial incentives as well as programmatic approaches to promoting specific technical innovations for GHG reduction. SCE supports a market-based approach to emission reductions within a cap-and-trade framework in which emission allowances and emission offsets act to direct GHG reduction expenditures in the most economically efficient manner. As such, SCE suggests that the most effective regulatory approach to reducing GHG is to implement a cap-and-trade structure. Establishment of a

8631 Rush Street
Rosemead, CA 91770
626-302-2305

market price for emissions will present California entities with a strong financial incentive to conduct research and development activities into viable and effective technologies. SCE cautions the CARB to avoid providing specific technologies preferred status through targeted programs that may exclude other viable, and potentially more efficient, technologies.

Emissions Abatement is a Long Term Challenge

SCE notes that innovation in the energy market often involves long-term generation investment. CARB should recognize that investment in technologies with the potential to help California meet its 2020 reduction goals may not be effective in addressing California's longer term emission reduction goals. Thus it is critically important that the State not impose regulations that would destroy the economic value of existing resources. Such action would send a chilling signal to the investment community and would substantially slow the development of innovative technologies that will be needed in order for California to meet its emission reduction goals.

Carbon Trust Fund

The Report recommends the creation of a California Carbon Trust Fund to oversee green technology innovation and investment. A market-based approach provides an incentive to develop technology in an effective and efficient manner. SCE cautions the ETAAC and CARB against developing a program that may create a preferred technology list at the expense of alternative effective and efficient technological innovation. SCE notes that the best way to promote efficient technological innovation is to let allowance value flow back through the market so that the market may make effective and efficient technology choices.

Additionally, such a programmatic approach should not prejudge any specific allocation approach. SCE is concerned that the funding for such a program anticipates other regulatory decisions. Specifically, SCE has suggested that under a cap-and-trade program, allowances should be allocated in a manner that mitigates the economic displacement resulting from the development of an emissions cap. This proposal includes allocating allowance value to offset the increased costs to ratepayers and other harmed entities. Such allocation will mitigate the economic harm to ratepayers and will provide needed assurances to the investment community that California promotes continued infrastructure investment. SCE is concerned that ETAAC is anticipating the allowance allocation decision by suggesting how proceeds from a state auction could be spent. The decision as to how to allocate allowances involves an important process and policy decision. Such decisions must be made independent of other regulatory discussions. Accordingly, SCE encourages CARB not to prejudge an allocation procedure by considering how proceeds from a potential allowance auction be spent.

The Role of Direct Access

The Report suggests that opening the retail electricity markets to direct access (DA) could provide a means to reduce emissions from the electricity sector. The Report suggests such reductions could be achieved by offering retail purchasers the opportunity to procure energy from energy service providers (ESPs) that procure a level of renewable generation greater than

the 20% renewable portfolio standard (RPS) level. We do not think the facts support the proposition that more DA will lead to lower GHG emissions. In 2006, while SCE procured nearly 17% of its retail energy sales from eligible renewable resources, fully 41% of its energy was generated from low or zero emission generating resources including large hydroelectric power and nuclear generation.[1] ESPs have historically procured energy via market purchases. Since little or no nuclear generation is available for market purchases in California, ESPs must purchase energy from a pool that was 29% coal fired in 2006.

The California Public Utilities Commission (CPUC) is currently investigating the possibility of re-opening the California market to DA. SCE suggests because any low emission claims made by DA supporters are highly speculative, CARB should include no discussion of this issue until it is finally evaluated by the CPUC.

Benefits of Electrification

The Report describes various low and zero emission technology vehicle opportunities.[2] Many of these opportunities entail moving from liquid fuel internal combustion technologies to electricity. While the electricity sector can be a valuable tool in California's efforts to reduce GHG emissions and SCE welcomes the opportunity to contribute to emission reductions via electrification of processes traditionally powered by fossil fuel combustion engines, the effect of such initiatives will be to increase demand for electricity. This could result in an increase in the emissions directly attributed to the electricity sector. For this reason, as electrification projects become operational, CARB will need to recognize corresponding effects on California's electricity generation. At a minimum, electricity ratepayers should be protected from paying for emission reductions more properly attributed to non-electric sectors.

SCE announced its support of the Low Carbon Fuel Standard (LCFS) at the Governor's signing of the executive order in January 2007, and we are active in the rulemaking process at CARB for LCFS. SCE sees the need for innovative financial solutions to encourage transportation technologies that reduce GHGs and is interested in being part of these solutions. The Ford-SCE partnership is an example of SCE's willingness to explore new solutions and its openness to doing so with government entities. Additionally, SCE supports use of incentive funds for achieving research, demonstration and commercial deployment of clean transportation technologies, such as AB 118, Proposition 1B, the Carl Moyer Program, and federal tax credits. SCE also suggests that CARB evaluate the benefits of including GHG reductions as a goal under existing air quality improvement funds such as the Carl Moyer fund.

SCE also supports research and development programs for vehicle technologies to be used as energy storage for the electricity grid. However, both the potential and economics of such programs are unclear. It may be that batteries (with specifications that match electric vehicle (EV) or plug-in hybrid electric vehicle (PHEV) batteries) make more sense when used in new or stationary applications. This too should be researched and tested. Secondary use of PHEV and EV batteries is also important to research. To this end, SCE supports policies to encourage off-peak use of electricity including for electrification loads which achieve net reductions in GHG.

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[1] SCE Power Disclosure Report as filed with the California Energy Commission.
[2] ETAAC Report at 3-23.

SCE supports the Report's call for additional analysis, and cautions that solutions such as waste-derived biofuels should not be assumed to be the best use of that feedstock for transportation (i.e, tons of crop or waste per mile). It may make more sense for such feedstocks to supply bio-hydrogen or bio-electricity. In addition, if subsidies or mandates are applied to an end-use such as biofuels, the market will be distorted, with feedstocks going into biofuels rather than bio-electricity. This has already happened with mandates for biofuels and renewable electricity.

SCE Supports All Cost Effective Energy Efficiency

The ETAAC Report suggests additional Energy Efficiency (EE) measures to reduce GHG emissions. SCE supports all cost effective EE and supports the application of current EE guidelines to all entities within the electricity sector, including energy service providers and public utilities. Through the resource stacking order, the State has implemented a method by which additional EE will become cost effective as the retail price of energy increases under an emissions cap. SCE supports this approach to expanding EE efforts and recognizes that as the retail price increases, various EE efforts may become cost effective.

The ETAAC Report Should Recognize the Substantial Benefits Provided By Nuclear Power

Given the urgency and reality of the global climate issue, SCE believes that nuclear power should be an available solution for global climate change issues. As a complement to other innovative technology solutions suggested in the Report, SCE recommends that the ETAAC conclude that near-term action be taken to ensure that nuclear power can be a timely option for addressing of global climate change issues. Such near-term actions should include identifying viable sites and seeking a Nuclear Regulatory Commission (NRC) Early Site Permit (ESP) for one or more such sites. As an early step, an ESP would reduce uncertainties, provide some assurances of project feasibility, and meaningfully accelerate the availability of a new plant once it is decided one should be developed.

The current moratorium does not preclude obtaining an ESP as a means of being able to deploy new plants in a timely manner if determined to be appropriate. Nuclear generation of electricity provides substantial environmental, fuel diversity, and reliability benefits. California needs to be prepared to expand the supply of nuclear power as a means of meeting GHG reduction goals in a proven and achievable manner.

In addition to obtaining an ESP, the benefits of nuclear power can be prolonged through license renewal for existing facilities. California's nuclear power plants have proven benefits; nuclear power is a safe, reliable source of energy. Additionally, because nuclear power emits a negligible amount of GHG, nuclear power is a technology that will not only serve to achieve the 2020 emissions cap, but also the more aggressive 2050 emission reduction goals. Additionally, because the NRC has already established the process and requirements for license renewal, existing regulatory structure is sufficient to process a license renewal.

SCE Supports Continued Research on Carbon Capture Technologies

As the Report recognizes, the implementation of carbon capture and sequestration in geological formations will be difficult. In order to bring this technology to a level indicative of readiness for use on an industrial scale in the mid-term future, research needs to be done now. SCE is prepared to help lead the way in developing sequestration.[3] In addition, regulatory frameworks will need to be created for sequestration to play a part in reducing greenhouse gases.

California's Current Renewable Portfolio Standard

SCE supports the current Renewable Portfolio Standard (RPS). Specifically, in order for the State to realize the value of renewable generation, the RPS standard must be applied consistently across the electricity sector. Maximum possible renewable energy procurement can only be facilitated if the investor owned utilities (IOU), the publicly owned utilities (POU) and the ESPs are subject to the same regulatory and contracting obligations.

While the lack of transmission infrastructure continues to be the largest barrier to bringing sufficient renewables online, consideration of what is necessary for achieving integration of future renewable projects to meet the 20 percent goal continues to be an unexplored area. There are operational challenges, economic impacts, and reliability issues that should be fully understood to ensure grid integrity is not sacrificed.

To this end, CARB should encourage programs and studies which seek to explore improvements in technology and infrastructure. This will move the State toward the goal of ensuring safe and reliable system deliveries as greater levels of renewables resources quickly come on-line.

Electricity Storage

SCE has reviewed the Report as it relates to the use of bulk stationary energy storage in the integration of intermittent renewable resources, such as wind. SCE concurs there is a need to develop a better understanding of new storage technologies and gain experience on SCE's system via CEC and/or Department of Energy-funded research and development. One proposal SCE could put forth would be to compare the NaS battery and a flow battery within SCE's existing Tehachapi wind farm area to better understand the attributes of such technologies and their uses.

SCE also encourages a review of existing market mechanisms. The review should target changes in utility tariffs and rate mechanisms that can be developed to provide opportunities for cost-effective storage to be compensated for its role in integrating intermittent renewable generation. Developing and implementing such mechanisms will help to make greater use of storage to reduce greenhouse gas.

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[3] In May 2007, SCE filed an application at the CPUC for funding to study the feasibility of Clean Hydrogen Power Generation, including studying geologic sequestration. A CPUC decision on the application is imminent.

Combined Heat and Power Facilities Are Not Always Efficient

SCE supports the use of clean, efficient combined head and power (CHP), however, it is important to note that all CHP is not created equal. SCE agrees that the State should adopt performance, emissions, and efficiency standards to maximize operations and ensure that customers receive all the benefits claimed by CHP advocates. If the objective is to reduce emissions and promote more efficient uses of technology, the Report should recognize that CHP is not appropriate for all applications and certainly should not replace cleaner, more efficient, and more cost-effective alternative forms of generation.

SCE disagrees with the suggestion that CHP be treated as an energy efficiency measure. While the multiple outputs of CHP meet separate needs, there is no reduction in a facility's electric usage or heating needs simply because a facility is using a CHP system. Energy efficiency projects reduce usage and therefore reduce the facility's total energy requirements.

Lastly, SCE opposes any mandatory purchase obligation or special treatment of CHP systems. SCE currently offers at least 13 different interconnection, power purchase and market based sales opportunities for CHP facilities. Additionally, SCE has at least six specific contracting methods for purchasing electricity generated by CHP facilities. SCE suggests that additional sales opportunities for CHP will create real potential for electricity ratepayers to cross subsidize the thermal product created by the CHP facilities. Electricity ratepayers should not be burdened with subsidization of the thermal output of these CHP facilities. These thermal uses can be served using lower emitting renewable technologies.

ETAAC Comments on the Report of the California Market Advisory Committee

ETAAC was asked to comment on the Report of the California Market Advisory Committee "*Recommendations for Designing a Greenhouse Gas Cap-and-Trade System for California*" (CMAC Report). SCE refers CARB to comments provided on the CMAC Report in July of 2007.

Thank you again for the opportunity to submit these comments. SCE looks forward to working with CARB, other state agencies and stakeholders to achieve the emission reduction goals established in AB 32.

Best Regards,

Mark Nelson
Director – Generation Planning and Strategy
Southern California Edison

cc: Bob Epstein
Vice Chair, Economic and Technology Advancement Advisory Committee
California Environmental Protection Agency
1001 I Street
Sacramento, CA 95814

James Goldstene
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Mike Schieble
Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Linda Adams
Secretary, Cal EPA
1001 I Street
Sacramento, CA 95814

Brian Prusnek
Deputy Cabinet Secretary
Governor's Office
State Capitol Building
Sacramento, CA 95814

Michael R. Peevey
President, CPUC
505 Van Ness Avenue
San Francisco, CA 94102

Eileen Tutt
Assistant Secretary, Cal EPA
1001 I Street
Sacramento, CA 95814