

**Comments presented by Sierra Club Angeles Chapter regarding
Docket No. 12-IEP-1C: Planning Electricity Infrastructure in Southern California**

Contextual Comments

Three primary planning principles

We urge the Commission, through the IEPR, to craft policies that set California on a trajectory to achieve an exemplary sustained orderly development emphasizing a portfolio predicated primarily on: 1) energy conservation, 2) energy efficiency, and 3) renewable energy.

Principle one: energy conservation

The Club strongly supports the Commission to emphasize policies in its 2012 IEPR that recognize energy conservation as the optimal approach, and the least expensive option within a balanced energy portfolio. We submit that the public is not hearing nearly enough from public officials and utilities about the need for energy conservation. California has a very long distance to travel before it reaches a place where it can state that it has successfully appealed to the public to act conscientiously to the issues of resource depletion, pollution, protection of our natural heritage, and climate change.

Principle two: energy efficiency

The history of energy efficiency projections has consistently demonstrated that government and utility estimates have low-balled readily achievable and cost-effective energy savings available. For example energy savings of 45% in new buildings are now readily achievable with current technology, including building envelope testing, measurement and validation prior to turning the building over for occupancy. The higher energy savings of 30-45% should be the common target for energy efficiency in new buildings and not relegated to “reach standards.” It is important that Building Standards require that the building envelope integrity be tested, validated, and remediated (if necessary) prior to turning a building over to its occupants.

Principle three: renewable energy

Consistent with Governor Brown’s position, the IEPR should model renewable energy scenarios that go beyond the “33% by 2020” statutory requirement. The Commission should focus the IEPR’s attention on the opportunities for renewables to play a very large in replacing retiring OTCs. Instead of just replacing old gas-fired plants with new ones, there is a more desirable alternative strategy, the “Green Energy Replacement.” This strategy involves phased replacement with solar power generation, peak demand programs and energy efficiency. This strategy has several advantages and benefits: costs will be much lower, ratepayer costs will be contained, utilities will be helped to close their RPS gap, damage to public health can be reduced, attainment of AB 32 goals can be helped, and more local jobs will be provided. As mentioned in our comments to the 2011 IEPR, an OTC “Green Energy Replacement” strategy is outlined in *“Renewables Cost-Effective Replacement for*

Distributed generation

In support of the Governor’s 12 GW goal for distributed generation (DG), we urge the Commission to continually address the many barriers to DG. The IEPR could usefully focus more fully on what are the real (as opposed to imagined or rhetorical) barriers, and what is being done or could be done to remove them. In fact, the Club believes that 16 GW of DG could be achieved by 2020, if barriers were removed and incentives adopted, such as Feed-In Tariffs.

We urge the Commission to give strong support for Feed-In Tariffs - or what is now called CLEAN (Clean Local Energy Accessible Now). CLEAN programs maximize economic benefits, leverage private investment dollars to meet community goals, reduce electric bills for ratepayers, achieve national, state, or local climate and sustainability targets, and provide a safer, more resilient energy infrastructure. CLEAN programs should be given more prominence and highlighted as potentially the most powerful engine available to massively scale up investment in renewable energy sources. The IEPR should note the advantages for California of a fully integrated, comprehensive CLEAN program. Such programs are clearly being demonstrated throughout the world where such robust programs have resulted in the fastest and largest installation of renewable capacity (e.g., Germany, France, and Britain). The IEPR should spell out, at least in summary, key elements of a truly strong California CLEAN program, based on the most successful CLEAN examples elsewhere, and should explain the limitations of current programs and CPUC proceedings.

A new generation of engineers and policy-makers see substantial financial rewards for those who succeed in DG, clean electric power generation, smart grid, and storage. California policy-makers should do all within their power to help facilitate outcomes where the state emerges as clear global entrepreneurial and policy leaders in response to the challenges of fossil fuel depletion, price-volatility, environmental degradation, and climate change.

We urge the Commission to carefully clarify how much or how little more new natural gas capacity is necessary to back up or “integrate” new renewables. IOUs, POUs, and agencies have exaggerated the amount of capacity required to overcome intermittency of renewables. This has been a standard rationale to justify the statewide glut of unneeded natural gas generation capacity. The IEPR should give more prominence to the many non-fossil-fuel alternative ways of dealing with intermittency that are moving rapidly into market acceptance, have been deployed in other countries, and hold great promise in California. The Commission is encouraged to forge a path forward in strategic renewables and transmission – a path that greatly accelerate steps taken by the electric power sector to integrate renewable energy and develop at-scale storage of electric power.

Specific Issues for the June 22 Workshop

1. Once-Through Cooling

California's 17 aging once-through-cooling (OTC) gas-fired generation plants cause environmental damage to California's marine habitats and do not comply with EPA regulations. The challenge is how to replace their generating potential. Should we replace them with new, more efficient dry cooled gas fired generators? Or pursue a renewable energy scenario? The article, "*Renewables Cost-Effective Replacement for Aging Natural Gas Plants*," published in *Natural Gas & Electricity* (March 2010, Volume 26, Issue 8, Pages 4-8, DOI 10.1002/gas), updates an extensive analysis of this issue published by Pacific Environment in November 2009. (*Green Opportunity: How California Can Reduce Power Plant Emissions, Protect the Marine Environment, and Save Money*. Robert Freehling and Suzanne Doering; Editor: Rory Cox).

Instead of just replacing old gas-fired plants with new ones, the more desirable alternative strategy covered in this study, "*Green Energy Replacement*," involves replacement with solar power generation, peak demand programs and energy efficiency. This article concludes that the best strategy for utilities would be to implement a phased replacement within the next five years using the *Green Energy Replacement* approach. This strategy has several advantages and benefits: Costs will be much lower - the total cost for the low-cost scenario of gas-fired replacement is \$0.309/kWh vs. \$0.169/kWh for the low-cost Green Energy scenario for a net reduction of \$0.14/kWh or a 45% reduction in cost. This strategy costs less even without considering all external costs such as the environmental damage and carbon costs of the replacement gas plants.

Replacing OTC plants with renewables have the following advantages according to the above study:

- Help contain costs to electric customers – The report shows that if new gas plants replace the old ones, the costs for the generation from these plants will increase from \$0.09 - 0.153/kWh or 30-98%. By contrast, under the Green Energy Replacement scenario, the new rates would range from an increase of \$.013 to a decrease of \$.091kWh -- or an average overall decrease in rates from current costs. Furthermore, the renewables will supply dependably priced power that is not subject to the fluctuations of the natural gas market or to potential carbon charges.
- Help utilities close their RPS gap – California utilities need to meet, or stay ahead of their RPS goals. Eliminating 15,000 MWs of fossil fuel generation capacity, which on average runs only about 10 percent of the time, is an achievable way of helping the utilities catch up in meeting their legally required RPS.
- Reduce damage to public health – By replacing these aging gas fired plants with renewable energy and energy efficiency, the state will benefit by lower criteria

pollutants in crowded urban areas, reduced harm to its citizen's health, improved environmental justice.

- Help meet AB 32 goals - Replacing the old gas plants with new or rebuilt ones means a huge commitment of capital resources into more fossil fuel facilities, which will produce greenhouse gases for decades to come. Those same dollars put into renewable energy and energy efficiency will help keep rates down, by avoiding fuel costs and liability for the cost of emissions, and will put California on the track to a lower carbon footprint.

- Provide more local jobs – by installing locally sited renewables, co-generation and by ramping up efficiency projects, California can invest in our communities instead of sending money out of state for natural gas. This lower-cost conclusion is partly based on recent trends -- cost of conventional power plants is increasing while PV solar has experienced dramatic decreases. To replace old gas-fired plants with new ones would not only be very expensive to utilities and ratepayers but also would set back meeting the state's 33% RPS target by crowding out renewables with new natural gas power plants. Utilities can plan the timing of retiring and replacing OTC plants to coincide with implementing energy efficiency measures and installing new renewable energy generation. Through proper planning, the plants can be easily and cost effectively replaced.

2. San Onofre Nuclear Generating Station

The Sierra Club urges the Commission to recognize that should radioactivity be released from the San Onofre Nuclear Generating Station (SONGS), depending upon the size of the release, it is conceivable that the event could result in an unprecedented blow to the region's public health, environment, and the economy. Given what we know about nuclear power, and the recent series of events at the Fukushima-Daiichi plant, California is at a crossroads. In addition, thorough seismic studies for California need to be completed, peer-reviewed, transparently analyzed, and publicly discussed. The Club urges the Commission's statements in the IEPR to fully address the nuclear issue.

The Club recognizes the limitations on the Commission's jurisdiction in this matter, vis a vis the Nuclear Regulatory Commission. Yet we also fully acknowledge the substantial influence that the Commission can, and should, exert. We ask the Commission to do everything within the agency's power to block the re-start of the San Onofre Nuclear Generating Station units. In light of the shut down of the SONGS, we feel that it is incumbent upon the Commission to develop a robust scenario plan that is predicated on the phase out and shut down of California's reactors within the IEPR time period.

Regarding spent fuel pool safety, we support moving all older spent fuel in California to dry cask storage immediately. We ask the CEC to relay this comment to the NRC.

The specification of providing "at least one electrical power system to operate spent

fuel pool instrumentation and pumps at all times” is an inherent design flaw in that it institutionalizes a single point of failure for these demonstrably critical functions. The specification should be “at least two independent power systems to operate spent fuel pool instrumentation and pumps at all times,” We ask the CEC to relay this comment to the NRC.

Plant operators must be able to guarantee that the spent fuel pool monitors and instrumentation will be hardened, maintained or regularly replaced such that they will be available continuously, especially under severe accident conditions. We ask the CEC to relay this comment to the NRC.

We are extremely concerned that the liability coverage limit of approximately \$12.6 billion is woefully inadequate should a severe accident occur at SONGS. We are also concerned with the industry interpretation that there would be a requirement that individuals harmed by a nuclear accident would have to prove damages and adjudicate claims in state court. There is a population of 7.4 million people living within a 50 mile radius of SONGS. We ask the CEC to produce a post-accident litigation action plan in conjunction with the State Courts that would be provided to every Californian living within 50 miles of SONGS and Diablo Canyon.

It is clear that the prolonged outage at SONGS represents the potential for disruption to the electrical grid in southern California. We suggest that properly-planned renewable sources as described above for OTC replacement should replace SONGS in order to provide a safer and more reliable energy grid for Californians. As an example of how this might happen, Germany installed 7,400 MW of PV last year alone. This is more than the combined generating capacity of SONGS and Diablo Canyon. We ask that the CEC and the CPUC jointly produce a cost-benefit analysis comparing repairing SONGS versus replacement with renewables.

3. Air Quality Issues

Everyone recognizes the air quality health crisis in the South Coast Basin. As Dr. Wallerstein presented, current US EPA standards mandate a 65% reduction in NO_x emissions below the level that will be achieved with the implementation of all currently adopted rules and standards. Although natural gas power plant emissions are a small fraction of the total, they are significant and should not be increased. Thus the renewables replacement scenarios discussed above are important contributors to achieving healthy air quality.

4. & 5. Transportation Issues

We urge the Commission to continuously seek out opportunities for electrification of the transportation sector to contribute as a key component of distributed generation. In addition, the Commission should set standards and work with the utilities to ensure that all car electric batteries and chargers are equipped with the potential for two way connections to the grid so car batteries can be a resource for peak loads, as well as reducing or temporarily stopping charging during peak load periods.

In addition, we urge the Commission to model outcomes using assumptions that the public may reduce driving. Uncertainties in estimations of sufficient improvements in car and fuel efficiencies, in the time required, means that growth in net driving could undermine SB-375. Getting the car-and-light-duty-truck sector emissions to support the minimum climate-stabilization trajectory, such as Executive Order S-3-05, will require clean cars, clean fuels, *and less driving*. The Commission needs to actively support policy options such as support for active transportation (walking, bicycling, or other people-powered modes), support for transit, support for smart growth, support for complete streets, or pricing policies, such as unbundling the cost of providing and operating roads and parking. This comprehensive approach would greatly help the air quality issues.

Thank you for the opportunity to participate in this proceeding.