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June 18, 2008

Mr. Kevin Kennedy
Program Evaluation Branch
Office of Climate Change
Air Resources Board
1001 I Street
Sacramento, CA

Re: Sempra Energy Comments on Cost-Effectiveness

Dear Mr. Kennedy:

Sempra Energy submits these comments concerning the staff's white paper on cost-effectiveness and discussions held at the AB 32 Technical Stakeholder Working Group meeting on this topic on June 3, 2008. In addition, Sempra Energy is in receipt of the letter from numerous environmental parties to you, dated June 2, 2008 on the issue of cost effectiveness.[1] Sempra Energy opposes Approaches 1 and 2 discussed at the workshop based on a cost of a bundle of strategies or cost of the last ton reduced. Both of these approaches essentially result in a program which "costs what it costs" with no actual cost restraint. For the same reason, we oppose the approach proposed by the environmental parties that cost effectiveness is a relative term that is only useful in comparing measures proposed to meet the 2020 GHG goals of the state. AB 32 does not require achievement of the 2020 emission reduction goals irrespective of the cost. Instead, "cost effective" should be used as a cost containment element of AB 32 that balances the many objectives of AB 32.

At the outset, Sempra Energy would note that the requirement and need for cost-effectiveness determinations only relate to possible adoption of command and control regulations to implement AB32. Because the identification of which future technologies will ultimately be most cost effective is not currently known, command and control regulation should be minimized. This will maximize opportunities for lower cost reduction technologies, and as a result incentives for new technology development, while minimizing cost on ratepayers. It will also maximize the likelihood that California

[1] Letter from the Natural Resources Defense Council, Union of Concerned Scientists, Environmental Defense Fund, Coalition for Clean Air, Californians Against Waste, Center for Energy Efficiency and Renewable Technologies, California Wind Energy Association, and The Nature Conservancy.

will be able to generate incremental businesses and business revenues as a result of GHG regulation.

Sempra Energy believes that to the extent ARB relies on command and control regulation, it should choose a dollar per ton of CO2e figure as a guide to cost- effective actions as proposed in Approach # 3 discussed at the June 3rd workshop. Based on the information available, a cost figure based on the European Union market trading price and reference to studies of cost effectiveness of measures on a national basis should inform the ARB as to the cost per ton CO2e it should adopt. This figure would be subject to change over time as the impacts of global warming are better understood and costs of new, GHG-reducing technologies change.

Throughout AB 32, the phrase "technologically feasible and cost-effective" appears. Whether a measure is "technologically feasible" is a "yes" or "no" question. A technology is determined to be technologically feasible if it is capable of being put into place at present or the near future – it cannot be a speculative or unproven technology. Section 38562 (e) requires scientific and economic assessment of technological capabilities when adopting the regulations. Likewise, cost-effective should be a "yes" or "no" question. If a technology meets the criteria of being technologically feasible, it must also be "cost-effective." In the Staff paper recommendation and the environmental parties' letter, a technology would be cost-effective if it is less than the cost of the most expensive measure required to meet the State's 2020 GHG goal. However, for the most expensive measure needed, there is no "yes" or "no" question as to whether it is cost-effective. If ARB adopts measures needed to meet 2020 GHG goals, and the most expensive measure costs $1,000 per ton CO2e or $10,000 per ton, this determines the extent to which all other measures are defined as "cost-effective" since they would be less than that value. However, the choice of the most expensive measure has no cost-effectiveness criteria. If ARB determines a technologically feasible measure is necessary for achieving the 2020 emission goal, it is automatically "cost-effective." Hence, the definition proposed by Staff and the environmental parties renders the term "cost-effective" meaningless; if ARB adopts a measure, it is cost-effective regardless of the cost.

Sempra does not believe AB 32 intended for unlimited costs to be imposed on the citizens of California in the name of GHG reductions. Section 38561 (d) provides for the state board to evaluate the total costs of the program. In Section 38562 (b) (5), cost-effectiveness is to be considered. However, it cannot be "considered" if measures deemed necessary to meeting the 2020 goal are automatically cost-effective.

Further, imposing much higher costs on businesses and consumers in California than may be put in place potentially nationally or internationally will be counter-productive to the necessary expansion of GHG regulations. Other western states and the federal government may not adopt anything at all if the expense seems overwhelming as the recent demise of the Warner-Lieberman GHG reduction bill demonstrates. Finally, a

high cost-effectiveness standard will encourage leakage; whatever reductions are achieved in California will end up in some other locale as businesses, jobs, and employees leave California.

The cost effectiveness of the most expensive measure adopted by the ARB should be developed in relationship to national and international GHG efforts and the cost per ton CO2e those entities are willing to undertake. The EU carbon trading market provides one estimate of the cost of GHG reduction net of co-benefits. The RGGI trading regime, upon reaching a stage 2 trigger, will allow use of allowances from the EU, and so places a limit on what the RGGI states are willing to pay for GHG reductions.[2] Implicitly, the RGGI states are setting a cost-effectiveness criterion equal to the EU price. The studies in Appendix A to the Staff paper cite a number of studies that show state and global potential willingness to spend to reduce GHG emissions. For Arizona, it appears to be perhaps $65 per ton (Exhibits 6-11); for New Mexico, $105/ton (Exhibits 12-14); the McKinsey & Company study indicates substantial GHG reductions in the U.S. and the Western U.S. for less than $50 per ton (Exhibits 15 and 21); and the IPCC lists a large number of measures up to $50/ton for all but the cement industry (Exhibits 27-29). Likewise, the recent EIA analysis of the Lieberman-Warner GHG Reduction bill had most scenarios with the cost per ton of reduction at less than $50/ton by 2020.[3]

The Staff paper considers using the EU market price but dismisses it for a number of reasons. First, the Staff paper indicates the market only covers only a subset of the emitting sectors, so the marginal cost may not be the same. While that is possibly true, through the use of offsets, actions in those other sectors will be reflected in the market GHG price, and the EU does allow for offsets in other sectors through the Joint Implementation process. So while the market does not cover all sectors, it reflects marginal reductions from all sectors.

Second, the Staff paper indicates that the better comparison would be all the measures the EU has undertaken to meet its Kyoto commitment. The California legislature has adopted mandates for energy efficiency, renewables and transportation measures not dissimilar to the EU. While there are certainly differences, they are probably no greater

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[2] Regional Greenhouse Gas Initiative, *Overview of the RGGI CO2 Budget Trading Program*, December 20,2007, "A stage two trigger event occurs if the twelvemonth rolling average CO2 allowance price is equal to or greater than the stage two trigger price. The stage two trigger price is set at $10 in 2005 dollars, and will be adjusted up or down each year according to the consumer price index plus two percent. If a stage two trigger event occurs ... CO2 offset allowances may be awarded for the permanent retirement of greenhouse gas allowances or credits that have been issued pursuant to any mandatory carbon constraining program outside the United States that places a specific tonnage limit on greenhouse gas emissions, or greenhouse gas emissions reduction credits certified pursuant to the United Nations Framework Convention on Climate Change (UNFCCC) or protocols adopted through the UNFCCC process."

[3] Energy Information Administration, *Energy Market and Economic Impacts of S. 2191, the Lieberman-Warner Climate Security Act of 2007,* April, 2008, Figure ES-2, values for 2012 – 2020 for all scenarios except the no international offset and limited alternatives case.

than the differences of mandates among EU countries. The differences in mandates should not discount the EU market measure totally and allow for unlimited costs to be imposed on California citizens.

Next, the Staff paper suggests that the EU market price is based on the stringency of the cap and internal policies of the 27 participating countries and the fact that banking was not allowed between the first and second compliance periods. Banking, however, will be allowed with the next period and so the fact that it was not allowed in the first period is irrelevant. And while it is true that the stringency of the cap will determine the price, the aggregate cap for Annex 1 countries under the Kyoto Protocols is 5 percent less than 1990 levels by 2012.[4] So the EU cap would seem highly relevant to AB 32 target of 1990 levels by 2020. Further, the fact that the EU market price will change in the future should not be a deterrent to its use in that it would be expected that the ARB would change its cost-effectiveness level based on new information about the impact of man-made actions on global warming and development of new GHG reducing technologies.

The fact that the current EU price is near $50/ton[5] and extensive reductions are available in the U.S. at less than $50/ton suggests using the EU price would be reasonable benchmark of cost-effectiveness. It would provide a clear threshold for the measures ARB is considering, creating a clear meaning of "cost-effective." It would also be consistent with Section 38564 of AB 32 that states, "The state board shall consult with other states, and the federal government, and other nations … to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs." California cannot alone impact global warming, national and international actions are necessary.[6] By linking the cost-effectiveness criteria to existing international actions, other states proposed actions (RGGI), and potential federal action, it will provide incentive for others to act.[7]

Lastly, the analysis of the cost-effectiveness of a cap-and-trade program, an alternate compliance mechanism, and the structure should not be influenced by co-benefits. A carbon market will value the GHG reduction net of co-benefits and should not be burdened with significant restrictions to deal with the Environmental Justice issues. Just as the EPA dealt with these issues separately in the SO2 cap-and-trade program; so should ARB.

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[4] Wikipedia, Kyoto Protocol, and the Market Advisory Committee Final Report, Appendix C, page 104. The Kyoto targets are from Wikipedia and the MAC report indicates the EU aggregate cap is set to meet Kyoto targets by 2012.
[5] Staff Paper, page 12.
[6] AB 32, Section 38501 (d)
[7] Sempra does not believe that this cost-effectiveness criteria applies to RD&D projects. Sempra fully supports funding of projects that are not currently technologically feasible or cost-effective, but are judged to have a probability of providing significant benefits in GHG reduction in the future beyond 2020.

Thank you for consideration of these comments.

Sincerely yours,

Taylor Miller

Taylor O. Miller

Cc: Chuck Shulock
Edie Chang