

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Promote Consistency in  
Methodology and Input Assumptions in Commission  
Applications of Short-run and Long-run Avoided Costs,  
Including Pricing for Qualifying Facilities.

Rulemaking 04-04-025  
(Filed April 22, 2004)

**POST-WORKSHOP REPLY COMMENTS OF THE NATURAL RESOURCES  
DEFENSE COUNCIL AND UNION OF CONCERNED SCIENTISTS ON THE  
DRAFT E3 AVOIDED COST REPORT**

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For  
THE UNION OF CONCERNED  
SCIENTISTS

September 3, 2004

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The Natural Resources Defense Council (NRDC) and Union of Concerned Scientists (UCS) respectfully submit these post-workshop reply comments on the Commission's draft report entitled "A Forecast of Cost Effectiveness Avoided Costs and Externality Adders" (Draft Report) dated January 8, 2004, in accordance with the schedule set forth in the Order Instituting Rulemaking for this proceeding.

In these comments, NRDC and UCS respond to the opening comments of other parties providing redline edits to the Draft E3 Report. (We refer to SDG&E and SoCal Gas jointly as the Sempra Parties, as those companies filed joint comments.) Our comments elaborate on the following points:

- Avoided costs for energy efficiency should be approved as soon as possible.
- The avoided cost methodology should properly account for carbon dioxide emissions as proposed by E3, and the proposed modifications of SCE and the Sempra Parties to Section 2.4 on Environmental Avoided Cost should be rejected.
- SCE and the Sempra Parties have improperly dismissed the importance of climate impacts and discounted the value of carbon emissions to zero, and their proposed changes to the E3 report on these issues should be rejected.
- SCE's proposal to largely eliminate the transmission and distribution element of the avoided costs should be rejected.

**Avoided costs for energy efficiency should be approved as soon as possible.**

We concur with the urgency expressed in opening comments by PG&E, SDG&E, and TURN to adopt avoided costs to use in evaluating energy efficiency programs. For example, we agree with TURN that the Commission should issue an Interim Order

approving time-differentiated costs for energy efficiency based on the E3 report as soon as possible (pp. 2-3). The Commission has approved a portfolio of energy efficiency programs through the end of 2005. In order for the 2006 programs to be as effective as possible, the portfolio development and program selection process must occur in early 2005, and the updated avoided costs must be available for this process. We urge the Commission to ensure that updated avoided costs are available for energy efficiency by early 2005.

Based on parties' comments, it is clear that numerous issues will have to be addressed if the Draft Report is to be used to assess the value of resources such as distributed generation or QF pricing. NRDC and UCS urge the Commission not to let approval of the avoided costs for the purposes of evaluating energy efficiency programs be delayed by consideration of these other issues.

**The avoided cost methodology should properly account for carbon dioxide emissions as proposed by E3. The proposed modifications of SCE and the Sempra Parties to Section 2.4 on Environmental Avoided Cost should be rejected.**

In our pre-workshop reply comments on June 18, 2004, UCS and NRDC argued that in its avoided cost framework the E3 report had appropriately included a value to represent the financial risk associated with carbon dioxide emissions. We incorporate those comments by reference, but do not repeat them herein. Instead, we respond below to the flawed proposals by SCE and the Sempra Parties to modify Section 2.4 of the report; we urge the Commission to reject their proposals and to leave intact the E3 report's current section on valuing carbon emissions.

In its June 24, 2004 written comments, E3 responds to several issues raised by parties.<sup>1</sup> On p. 15 of its comments, E3 states:

“In addition to the precedent for the use of CO<sub>2</sub> externalities in the evaluation of efficiency programs in California since 1994, there is significant likelihood that the US and California will be a participant in the CO<sub>2</sub> market over the life of the efficiency measures (as long as 20 years).”

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<sup>1</sup> Written comments of E3 dated 6-24-04, posted on E3 website:  
[http://www.ethree.com/CPUC/E3Response\\_6-24-04.doc](http://www.ethree.com/CPUC/E3Response_6-24-04.doc)

SCE and the Sempra Parties are suggesting the Commission cease the current practice of including certain emissions costs, namely those for CO<sub>2</sub>, in calculating avoided costs. We strongly disagree, for reasons discussed below.

On p. 91 of the E3 report, SCE provides redline edits that would remove and reverse the substantial conclusion that CO<sub>2</sub> is “highly likely” to be regulated “and become part of the marginal cost of using fossil fuel during the time period of the analysis.” SCE’s suggestion is to remove this cost component from the computation of avoided costs. SCE also inserts a discussion of California’s pursuit of policies that “favor environmentally benign resource choices.” We strongly support policies, such as the Energy Action Plan’s preferred “loading order,” that encourage environmentally preferable resources. However, the existence of such policies does not argue *against* including a cost for carbon emissions in the avoided costs; instead, it argues *for* including such a cost, since it demonstrates that California clearly recognizes the value that avoiding emissions provides.

SCE also downplays the role of signatories to the Kyoto Protocol by recharacterizing their “commitment to mitigate climate change” to a meager “concern regarding GHG emissions.” The Sempra Parties misrepresent actions being taken by other countries to reduce greenhouse gas emissions, stating “most of the world has taken no action including the U.S.” (Sempra Parties, redline to p. 92 of E3 report) Their proposed statement is misleading, as more than 60 countries have ratified the Kyoto Protocol according to the UNFCCC,<sup>2</sup> and the E3 report reviews the greenhouse gas trading that is occurring in Europe.

We question whether the Sempra Parties are attempting to rewrite history by proposing to eliminate references to activity in the northeastern states toward developing a cap and trade system for carbon and California’s legislation to limit CO<sub>2</sub> emissions from cars. These are important actions that reflect commitments on behalf of individual states, which the Sempra Parties are unfairly attempting to minimize (see Sempra Parties suggested redlines to pp. 92-3 of E3 report). And here in California, Governor Schwarzenegger has endorsed the regional initiative among the Governors of California,

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<sup>2</sup> United Nations Framework Convention on Climate Change, “Kyoto Protocol Status of Ratification,” July 29, 2004, <http://unfccc.int/resource/kpstats.pdf>.

Oregon, and Washington to reduce greenhouse gas emissions, and he has stated that he intends to develop a greenhouse gas reduction target for the state.<sup>3</sup>

SCE interjects a discussion in Section 2.4.4, arguing that the particular form of regulation will impact the cost risk to which the utilities and / or its customers are exposed. We agree that future carbon regulation might take different forms, but as with all other risks, this information can be used to select a reasonable value (or range of values) to represent the cost exposure. It is illogical to conclude from the variation in possible forms of carbon regulation that carbon emissions cost will be zero over the timeframe covered by the report, as SCE proposes.

The Sempra Parties go even further to claim that CO<sub>2</sub> regulations or taxes are “highly unlikely” since tax increases are unfavorable to creating a “better business climate.” This argument should be rejected on the grounds that carbon values need not be set through the institution of new taxes, and on the grounds that the Parties have provided no supporting evidence that a State policy of creating a “better business climate” would prevent or make less likely the imposition of climate change mitigation measures. Indeed, as we discussed above, the Governor has stated his intent to set a target to reduce the state’s greenhouse gas emissions, and the legislature is also clearly concerned about CO<sub>2</sub> emissions, as evidenced by the passage of California’s law limiting these emissions from vehicles.

The Sempra Parties also state that “[t]he probability California utilities will be subject to CO<sub>2</sub> regulations after implementing an aggressive increase in renewables procurement, and the retirement of inefficient gas plants is highly unlikely.” However, the Parties provide no supporting evidence for this statement. And indeed, although California’s utilities have performed relatively better than most utilities around the country in pursuing lower emitting resources, the fact remains that California’s utilities are major emitters of carbon dioxide; combined, the major California IOUs emit tens of millions of tons of CO<sub>2</sub> every year.

The Sempra Parties seem to argue that because the values of carbon have a wide range based on the sources cited in the E3 report, that the values are thus speculative and

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<sup>3</sup> Letter from California Environmental Protection Agency Secretary Tamminen to the Director of the Washington State Department of Ecology, June 23, 2004.

the final result should be zero. This is illogical. The utilities perform (or, should be performing) numerous scenario analyses as part of their resource planning activities. These scenarios, such as the high, medium, and low load forecasts used in their current long-term electric resource plans, necessarily vary over a wide range. The utilities have selected the medium-load scenario as their preferred planning case, but recognize factors that could cause load to deviate significantly from that “base” case. A variety of factors lead to multiple scenarios for carbon values. This multitude of scenarios does not suggest the value should be zero, but rather that a reasonable value should be selected for planning purposes.

The Sempra Parties state that “generation from bio-gas, bio-mass and renewable projects utilizing natural gas may not reduce emissions” (p. 33 of comments). We urge caution in considering this statement relative to carbon dioxide emissions, as the renewable portion of the fuel used in these plants *would* result in reduced carbon emissions as compared to conventional gas-fired generation.

The issue of determining a value for carbon dioxide emissions has also been raised in proceeding R.04-04-003 in the context of the utilities’ long-term procurement plans, because the financial risk associated with CO<sub>2</sub> emissions should not only be a factor in determining the avoided costs of energy efficiency, but should also be a factor in considering investments in any carbon emitting resources. Any values adopted by the Commission should be consistent across proceedings, in keeping with the intent of the “umbrella” nature of R.04-04-003. Both NRDC and UCS examined, in our respective opening testimony in R.04-04-003 on the utilities’ long-term plans, the various state, regional, and federal activities regarding greenhouse gas emissions, which reveal a strong likelihood that carbon emissions will be regulated within the timeframe addressed in the analysis.

We believe the carbon dioxide values proposed in the E3 report are conservative, but represent a reasonable starting point. We do not believe the value of avoided carbon emissions will be zero over the 20-year time span of the E3 analysis, as suggested by SCE and the Sempra Parties, and the adopted methodology should reflect a realistic value for the cost of these emissions. In its filed testimony in R.04-04-003 UCS recommended that the Commission direct the utilities to model the impacts of carbon costs on their

resource plans across a range starting at no less than \$8 per ton of CO<sub>2</sub>. NRDC's filed testimony in that proceeding recommends that the Commission adopt a cost of at least \$12 per ton beginning in 2008 to use as an imputed cost in resource evaluations. These values are consistent with the E3 report, which examines a range of carbon values from \$5 to \$69 per ton of CO<sub>2</sub>, and uses \$8 per ton as a levelized cost in its analysis, based on a cost trend of \$5 per ton in the near-term, \$12.50 per ton by 2008, and higher values thereafter.

In consideration of the well-reasoned arguments in the E3 report for including a value for the avoided financial risk associated with carbon emissions, we strongly disagree with SCE's and the Sempra Parties' suggested modifications to Section 2.4, and urge the Commission to leave intact the current E3 section on Environmental Avoided Cost.

**SCE and the Sempra Parties have improperly dismissed the importance of climate impacts and discounted the value of carbon emissions to zero, and their proposed changes to the E3 report on these issues should be rejected.**

As explained above, we are concerned that SCE and the Sempra Parties have dismissed the importance of climate impacts resulting from carbon dioxide emissions in their comments. While the Commission does not need to rule on the impacts of global warming in this proceeding, we offer the following additional comments to clarify the record. In particular, we oppose the Sempra Parties' proposed removal of this statement from p. 91 in the E3 report: "The challenge of climate change is here to stay." Their proposal is contrary to the California Energy Commission's finding that "Global climate change is real...and matters to California. The repercussions of a change in climate are serious. They challenge the state's infrastructure investments and touch all sectors of the economy: water supply, agriculture, forestry, energy production, health, transportation, tourism and others."<sup>4</sup> We again dispute the Sempra Parties' presumed assertion that climate change is not a persisting challenge.

In R.04-04-003, UCS has called attention to an important scientific paper recently published in the *Proceedings of the National Academy of Sciences* that reveals that the

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<sup>4</sup> California Energy Commission, "Climate Change and its Impacts on California," July 2, 2004, [www.energy.ca.gov/global\\_climate\\_change/index.html](http://www.energy.ca.gov/global_climate_change/index.html).

impacts of climate change in California are likely to be substantially more severe in a higher greenhouse gas emissions scenario than a lower emissions scenario.<sup>5</sup> For example, the study predicts that, under a higher emissions scenario, average summer temperatures will rise by as much as 15°F by within the present century – nearly double the rise expected under the lower emissions scenario. Warming temperatures will have cascading effects on California’s human health, economy, and natural ecosystems. By 2090, heat-related mortality in Los Angeles is projected to increase by 5 to 7 times over historical levels – double the rise expected under the lower emissions scenario.

Changes to California’s hydrological regime are very likely to challenge the management of California’s reservoirs. The new scientific report finds that over the next few decades a warming climate could cause a 25 to 40% reduction in spring snow pack. If greenhouse gas emissions continue at their present high rate, then the snow pack losses by the end of the century could reach as high as 90% -- substantially higher than the losses projected under the lower emissions scenario. Declines in snow pack will significantly reduce California’s natural water storage capacity and would pose a serious challenge for water resource managers. New problems in water resource management could alter the availability of California’s 14 GW of hydroelectric facilities as well as imports of hydro-generated electricity from the Pacific Northwest that are needed to meet not only a substantial portion of California’s energy needs, but also to provide quickly-dispatchable energy for load balancing.

The study is unique in that it focuses on California-specific impacts, and highlights that the rate and severity of climate change in California depend on decisions influencing rates of greenhouse gas emissions. Thus, it is reasonable and prudent to include non-zero costs of avoided CO<sub>2</sub> emissions in calculating avoided costs.

**SCE’s proposal to largely eliminate the transmission and distribution element of the avoided costs should be rejected.**

Due to time constraints, we were unable to review SCE’s proposed changes to the transmission and distribution section of the E3 report in detail; however, it appears that

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<sup>5</sup> Hayhoe, K. et al., “Emissions Pathways, Climate Change, and Impacts on California,” Proceedings of the National Academy of Sciences, August 16, 2004. v. 101, no. 34, p. 12422-12427. <http://www.pnas.org/cgi/reprint/0404500101v1.pdf> (Accessed Aug. 16, 2004)

SCE is proposing to largely eliminate the transmission and distribution element of the avoided costs. (See SCE's proposed changes to Section 2.5.1, points 8 and 9.) SCE's proposed changes are unwarranted and should be rejected, as the E3 report already provides for the potential deration of near term T&D costs if particular plans in an area would not contribute to reduced T&D costs. But for most situations, energy efficiency investments provide long-term savings, and the reduced demand clearly provides a reduction in T&D costs, which should be reflected in the avoided costs.

NRDC and UCS appreciate the opportunity to respond to parties' opening comments on E3's Draft Report.

Dated: September 3, 2004

Respectfully submitted,

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For  
THE UNION OF CONCERNED  
SCIENTISTS

**CERTIFICATE OF SERVICE**

I, Jack McGowan, certify that I have, on this date, caused the foregoing POST-  
WORKSHOP REPLY COMMENTS OF THE NATURAL RESOURCES DEFENSE  
COUNCIL AND UNION OF CONCERNED SCIENTISTS ON THE DRAFT E3 AVOIDED  
COST REPORT to be served by electronic mail, or for any party for which an electronic mail  
address has not been provided, by U.S. Mail on the parties listed on the Service List for the  
proceeding in California Public Utilities Commission Docket No. R.04-04-025.

I declare under penalty of perjury, pursuant to the laws of the State of California, that the  
foregoing is true and correct.

Executed on September 3, 2004, at San Francisco, California.

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**Jack McGowan**