

**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)

**PRE-WORKSHOP OPENING COMMENTS OF THE NATURAL RESOURCES
DEFENSE COUNCIL ON THE DRAFT AVOIDED COST REPORT**

June 4, 2004

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Introduction

The Natural Resources Defense Council (NRDC) respectfully submits these pre-workshop opening 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. NRDC is a non-profit membership organization with a long-standing interest in minimizing the environmental, public health and economic costs of the reliable energy services that Californians demand.

NRDC commends E3 and the Energy Division for producing a comprehensive and well thought-out Draft Report. We appreciated the opportunity to provide input as the report was being drafted, and we look forward to working with all parties in this proceeding to swiftly finalize the report for use in the energy efficiency proceeding.

Our comments elaborate on the following points:

- Updated avoided costs for energy efficiency must be available by early 2005.
- It is unclear whether the avoided costs appropriately account for the hedge value of energy efficiency in the longer-term.
- The report should provide guidance as to when markets for electricity and natural gas should be considered sufficiently liquid to warrant the use of forward market prices.
- The draft report appropriately develops a reasonable value for the cost of carbon dioxide emissions.
- The discount rate used for evaluating the cost-effectiveness of energy efficiency investments is too high.

- Not all elements of the avoided costs are applicable for all distributed generation technologies.

Updated avoided costs for energy efficiency must be completed by early 2005.

In R.01-08-028, the Commission is currently in the process of developing a comprehensive long-term framework for the energy efficiency programs. The Commission plans to begin implementing this framework starting with program year 2006. In order for the programs to be as effective as possible, they must be approved six months prior to the start of the program year; thus, the portfolio development and program selection process must occur in early 2005, and the updated avoided costs are a critical component necessary for this process. We urge the Commission to ensure that updated avoided costs are available for energy efficiency by early 2005. The Commission should also be mindful that some time will be needed to develop methods for using the new avoided costs in the energy efficiency proceeding; transitioning from annual average statewide avoided costs to detailed costs differentiated by time and geography will require some adjustments in the energy efficiency proceeding.

It is unclear whether the avoided costs appropriately account for the hedge value of energy efficiency in the longer-term.

The Draft Report states that the avoided costs include the “hedge value” that efficiency programs provide (p. 12), but it is unclear whether this is true in the longer-term as well as the near-term. We agree that the use of forward prices in the near-term – for delivery at a fixed price – adequately captures the hedge value provided by efficiency. However, in the longer-term the Draft Report calculates the avoided cost based on the cost of owning and operating a combined-cycle gas-fired generator; to appropriately value the fixed-price energy provided by the efficiency programs, the avoided cost should represent a combined cycle unit that provides fixed cost energy. It is unclear whether the natural gas price forecast, which is a large driver in the cost of operating the plant, is a spot market forecast or whether it accounts for the hedge value. The Draft Report states that the fuel costs are based on a forecast of “annual prices for natural gas delivered to generators in the utility’s service area.” (p. 68) Studies by researchers at Lawrence Berkeley National Laboratory have shown that natural gas spot price forecasts are

systematically lower than forward gas prices (that lock in the price of gas).¹ The Draft Report should clarify how the avoided costs account for the hedge value provided by energy efficiency programs in the longer-term.

The report should provide guidance as to when markets for electricity and natural gas should be considered sufficiently liquid to warrant the use of forward market prices.

NRDC appreciates that the Draft Report is designed to allow the Energy Division to easily update the avoided costs on a regular basis. Forward market prices are some of the key inputs to the avoided cost calculation. Over the last few years, markets for electricity and natural gas have suffered from a lack of liquidity and a lack of public confidence in the prices they report. NRDC urges the Commission to provide guidance in the final report as to when markets for electricity and natural gas should be considered sufficiently liquid to warrant the use of forward market prices, and what course of action should be taken if the markets are not sufficiently liquid.

The draft report appropriately develops a reasonable value for the cost of carbon dioxide emissions.

NRDC agrees with the Draft Report that it is quite likely that carbon dioxide emissions will be regulated within the twenty-year timeframe addressed in the analysis, and a cost for carbon emissions must be included in the avoided cost stream. The cost of carbon emissions as part of the avoided cost stream can be seen from at least two perspectives: either as a financial risk or as an environmental externality. From the “externality” perspective, it is clear that carbon dioxide emissions, as a primary contributor to global warming, impose a societal cost that is not adequately captured in the “market” price for power, and therefore must be added in to the avoided costs. From the “financial risk” perspective, it is clear that carbon dioxide emissions will likely be regulated within the timeframe addressed in the analysis, and therefore an imputed cost of carbon emissions must be added to the avoided costs. In this perspective, developing an imputed cost of carbon emissions is no different from developing an expected forecast of natural gas prices – both are unknown and the Commission must make the best estimate it can. The

¹ See, e.g., Bolinger, M., R. Wiser, and W. Golove, *Accounting for Fuel Price Risk When Comparing Renewable to Gas-Fired Generation: The Role of Forward Natural Gas Prices*, Lawrence Berkeley National Laboratory, LBNL-54751, January 2004.

Draft Report assesses the range of likely future scenarios of regulation of carbon emissions, and the associated costs of those emissions. While it is on the low end of the range, the analysis settles on a reasonable expected cost of carbon emissions, that is consistent with a similar analysis conducted by PacifiCorp in its recent Integrated Resource Plan.

The discount rate used for evaluating the cost-effectiveness of energy efficiency investments is too high.

The Draft Report uses the discount rate established in the Energy Efficiency Policy Manual (8.15%). A nominal discount rate of 8.15% is approximately equivalent to a real discount rate of 6% (this, of course, depends on inflation), which is unrealistically high. A discount rate in the context of energy efficiency should reflect society's preference for receiving a benefit this year rather than in the future. Discount rates tend to be higher the more risk is involved. Since energy efficiency investments reduce societal risk and provide cost savings and environmental benefits that remain valuable well into the future, NRDC urges the PUC to adopt a discount rate in the range of 2% - 3% real. This is consistent with the 3% real discount rate that has been used for many years by both the CEC in evaluating energy efficiency standards and the Northwest Power Planning Council.² We expect that the Commission will consider the appropriate discount rate in the energy efficiency proceeding (R.01-08-028) when it updates the policy rules, however, since the discount rate is a key input to the avoided cost calculation, we note the issue in this proceeding as well.

Not all elements of the avoided costs are applicable for all distributed generation technologies.

NRDC cautions the Commission against adopting a universally applicable avoided cost stream. The Commission should expressly consider the benefits of each resource type, so that only appropriate benefits are conferred upon the resources under consideration. For example, to a large extent the Draft Report's avoided costs could be applied for use in evaluating distributed generation (DG) applications; however, the externality adders would not be appropriate for all DG technologies. While the same emissions credit level could be applied to zero emission technologies such as solar (since both energy efficiency and solar displace all of the emissions

² CEC, *Life Cycle Cost Methodology: 2005 California Building Energy Efficiency Standards*, Publication #400-02-009, March 11, 2002, p. 2.

for each kWh produced), the emissions credit level would need to be revisited for non-zero emission DG technologies.

NRDC appreciates the opportunity to comment on the Draft Report.

Dated: June 4, 2004

Respectfully submitted,



Devra Bachrach
Natural Resources Defense Council

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the **“Pre-Workshop Opening Comments of the Natural Resources Defense Council on the Draft Avoided Cost Report”** (R.04-04-025) on all known parties of record in this proceeding by delivering a copy via email or by mailing a copy properly addressed with first class postage prepaid.

Executed on June 4, 2004 at San Francisco, California.



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