

Rulemaking 06-02-013(Long-Term Procurement Phase)

Exhibit No. _____

Witnesses Dr. Richard Ferguson

Commissioner Michael R. Peevey

ALJs Carol A. Brown

**CENTER FOR ENERGY EFFICIENCY AND
RENEWABLE TECHNOLOGIES**

PREPARED TESTIMONY

Volume 1 of 1

LONG-TERM PROCUREMENT PHASE

Rulemaking 06-02-013

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CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES
PREPARED TESTIMONY
VOLUME 1 OF 1
R.06-02-013: LONG-TERM PROCUREMENT PLAN PHASE

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I.

INTRODUCTION

The Center for Energy Efficiency and Renewable Technologies (CEERT) is a coalition of environmental organizations, renewable energy developers, and energy efficiency and ultra-clean distributed generation providers who share the policy goal of improving air quality in the electric generation sector in California through reduced dependence on fossil fuels and increased reliance on energy efficiency and renewable resources. Among other things, CEERT actively supports the regulatory and legislative initiatives aimed at addressing the threat of global warming by mandating reductions in greenhouse gas (GHG) emissions in California from the generation of electricity, among other sources.¹ This goal has direct implications for the long-term procurement plans of the investor-owned utilities (IOUs) at issue in this proceeding.

In the Assigned Commissioner’s Ruling and Scoping Memo on the Long Term Procurement Phase in Rulemaking (R.) 06-02-013 (“Scoping Memo”), the IOUs were provided guidance on the Commission’s expectations for their 2006 long-term procurement plans (LTPPs) on “key goals the Commission will use as it reviews the LTPPs.”² One of the eight key “goals” identified was the following: “6. IOU 2006 Long-Term Procurement Plans Will Include Greenhouse Gas Forecasts for its Ten-Year Resource Plan and a Discussion of Compliance with the Commission’s GHG Policies” (“Goal 6 (GHG Policy Compliance)”).

To meet this Goal 6 (GHG Policy Compliance), the Scoping Memo directs each IOU “to demonstrate compliance with the Commission’s policies related to GHGs,” “include GHG forecasts as part of their ten-year resource plans,” “indicate which methodology and assumptions it is using in making its GHG calculations,” and “ensure that its LTPP comports with the direction given in Assembly Bill (AB) 32 and Senate Bill (SB) 1368, if signed into law.”³ AB 32 (California Global Warming Solutions Act of 2006) and SB 1368 (Greenhouse Gases

¹ See, e.g., Commission Rulemaking (R.) 06-04-009 (integration of GHG emissions standards into procurement policies); Assembly Bill (AB) 32 (“California Global Warming Solutions Act of 2006” (Health & Safety Code §38500, et seq.) (Stats. 2006 Ch. 488.))

² Scoping Memo, at p. 15; see also, at p. 2.

³ Scoping Memo, at p. 24.

Emission Performance Standard for Baseload Electrical Generating Resources) were signed into law in September 2006 before the 2006 LTPPs were submitted by the IOUs in December 2006.⁴

The Scoping Memo also directed the IOUs to file their 2006 LTPPs in accordance with an outline provided in an accompanying Attachment A (“Master Outline”). Consistent with the “key goals” established by the Scoping Memo for the review of the IOUs 2006 LTPPs, the Master Outline includes several instances in which each IOU must describe, among other things, how GHG emissions and emissions reduction are reflected in the IOU’s procurement plan, project valuation process, and evaluation of candidate resource plan(s), and how “the proposed GHG emissions portfolio standard will affect procurement practices.”⁵

On January 17, 2007, an Administrative Law Judge’s (ALJ’s) Ruling on Time Extension and Revised Schedule (“January 2007 ALJ’s Ruling”) was issued in R.06-02-013. In addition to extending the time for intervenors to submit testimony to March 2, 2007, intervenors were also asked to follow the outline established by the Scoping Memo for the IOUs LTPPs. Intervenors were also directed to use a separate volume of testimony for each utility “unless it is an identical response for each utility – then one volume could suffice.”⁶ Further, while intervenors were directed to follow the Master Outline, the January 2007 ALJ’s Ruling allows intervenor testimony to skip any part of that outline on which comment is not being provided and “go directly” to that section on which comment is provided.⁷

The purpose of this Prepared Testimony is to examine whether and to what extent Goal 6 (GHG Policy Compliance) has been effectively addressed in the IOUs LTPPs and what next steps must be taken to achieve California’s GHG emissions reduction goals in the electric generation sector. In following the guidance of the January 2007 ALJ’s Ruling for intervenor testimony, CEERT’s Prepared Testimony fits best in Volume 2, Section I. B. (Discussion on Recent/Upcoming Policy Issues of the Master Outline) and describes, in particular, how GHG emissions reduction policy and goals affect, and require changes to, the procurement practices and long-term procurement plans of the IOUs today.⁸ Because CEERT’s analysis and recommendations herein apply equally to all of the IOUs, this testimony is provided in one volume.

⁴ AB 32 (see n. 1, *supra*) and SB 1368 ((Public Utilities (PU) Code §8340, et seq.) (Stats. 2006 (Ch. 598)). .

⁵ Scoping Memo, Attachment A, at pp. 8, 20, 22.

⁶ January 2007 ALJ’s Ruling, at p. 3.

⁷ January 2007 ALJ’s Ruling, at p. 4.

⁸ Scoping Memo, Attachment A, at p. 22.

II.
VOLUME 2.I.B.:
DISCUSSION ON RECENT/UPCOMING POLICY ISSUES

A. California’s New Greenhouse Gas Reduction Goals Will Require Major Changes In IOU 2006 Long-Term Procurement Plans.

1. Introduction

The number one new energy policy that directly affects and alters traditional approaches to long-term procurement planning is California’s commitment to reducing Greenhouse Gas (GHG) emissions in the electric generation sector. While the Scoping Memo in this proceeding anticipated this significant policy shift, the general guidance provided at that time as to how this goal should be incorporated in the IOUs 2006 long-term procurement plans (LTPPs), which cover the next ten years of IOU resource decisions, was left somewhat vague. The result has been IOUs’ LTPPs that, while acknowledging the existence of both Commission and legislative actions (i.e., AB 32) aimed at GHG emissions reduction, suggest that there is too much “regulatory uncertainty” regarding the implementation of these laws to make proactive changes today in their LTPPs in response.⁹

CEERT does not believe that leaving this issue to future discussion is appropriate, especially given the targets set by AB 32 for GHG emissions reduction. The California Air Resources Board (CARB) and the Commission have recently identified schedules for developing the input and “guidelines” needed for establishing a GHG emissions cap on all major sources, including the electricity and natural gas sectors, to reduce statewide emission of GHGs to 1990 levels as required by AB 32.¹⁰ While these guidelines are being developed, the IOUs’ LTPPs offer an opportunity today to ensure that actual resource choices will be made through the planning period that will put the IOUs on course for meeting the state’s GHG reduction goals.

⁹ See, e.g., Pacific Gas and Electric Company (PG&E) LTPP, Vol.2.I.B., at p.I-6 (“AB 32 may impact electricity procurement within the planning horizon of this LTPP,” but the regulations “are not known at this time” and “the impacts on electricity procurement are also unknown.”). See also, Southern California Edison Company (SCE) LTPP, Vol.2.II.B., at p. 5; Vol.1A.II.B.4.g, at p. 19 (“details regarding the implementation of AB 32 ... are not known at this time,” however, “changes in GHG rules in the future will impact the LTPP.”) CEERT notes that San Diego Gas and Electric Company (SDG&E) took a slightly more proactive approach to this issue by “urg[ing] the Commission to use a flexible compliance mechanism to meet GHG targets, and to take a leadership role in the creation of international trading mechanisms.” (SDG&E LTPP, Vol.2.I.B., at p. 2.)

¹⁰ R.06-04-009 Scoping Memo, at pp. 8, 18, 20-23.

It is, therefore, CEERT's central recommendation in this testimony that the Commission order the currently proposed LTPPs to be amended immediately to reflect the changes in resource planning that will be required to achieve the goals of AB 32. The changes in electric energy resources needed to meet the AB 32 goals by the year 2020 are far-reaching, and the 14 years in which they must be accomplished is a dauntingly short amount of time. The state's transmission system will require substantial upgrades in order to access the renewable energy resources that are needed to reduce GHG emissions, and transmission lead times are long, as the Tehachapi experience has demonstrated.

Because AB 32-compliant resource scenarios are quite different from those included in the IOUs' current LTPPs, successful implementation of AB 32 requires those long term planning scenarios to be amended as soon as possible to plan for the energy resources needed to reduce GHG emissions consistent with this state's goals. Without immediate clarification of the expectations that AB 32 places on individual load serving entities, including the IOUs, AB 32-compliant resource planning cannot begin in earnest. CEERT believes, therefore, that it is incumbent on the Commission in this proceeding to direct that such deficiencies in the current IOU LTPPs be corrected immediately.

2. Summary of Conclusions Used to Guide CEERT's Recommendations

The following is a summary of the conclusions that guide CEERT's recommendations on the IOUs' long term procurement plans:

a. California Utilities Need Interim Guidelines for AB 32 Compliance In Order to Amend Long Term Procurement Plans Immediately.

In order for the utilities to prepare AB 32 compliant plans, the Commission must, on an interim basis, provide the utilities with utility-specific GHG emission targets for the year 2020 and guidelines regarding the use of offsets for AB 32 compliance so that interim procurement planning can begin by amending the current LTPPs. Given the time constraints imposed by AB 32, this planning must begin now.

California IOUs must begin formulating AB 32-compliant long-term procurement plans immediately to reflect the profound changes in electric energy resource planning and procurement that have resulted from AB 32 and to ensure that California's climate change goals will be achieved. If IOUs wait until a final AB 32 GHG emissions cap is in place to even *begin*

planning for these changes, there will not be enough years remaining to make the physical changes to California's electric generation and transmission facilities that are required.

CEERT believes that it is urgent that the Commission act immediately to identify and adopt these interim targets and rules. CEERT, therefore, recommends, as discussed further herein, that the Commission establish interim guidelines on AB 32-compliant targets and compliance rules on an urgency basis and order the IOUs to amend their current LTPPs consistent with these guidelines on an expedited basis.

b. Emission Reduction Targets and Compliance Guidelines are Essential for Development of AB 32-Compliant Procurement Plans.

In this testimony, CEERT illustrates how emission reduction targets and the schedules for attaining them shape AB 32-compliant energy resource plans. The illustrative resource scenarios discussed below are based on statewide goals. Individual IOU planning scenarios will be different, depending on, among other things, individual targets, current resources, and load growth projections. However, the statewide scenarios presented herein vividly demonstrate the role that emission reduction targets and schedules play in the development of procurement plans consistent with AB 32 goals.

c. Rules Governing Utility Flexibility Allowed in Meeting Emissions Targets are Essential to Procurement Planning.

In addition to utility-specific emission reduction targets, procurement plans will depend on the flexibility allowed in meeting targets. In particular, utilities must know the extent to which they can rely on offsetting emission reductions – from other California sectors, other states, or even other countries – for compliance purposes. There is a wide range of opinion regarding the use of offsets for AB 32 compliance and developing appropriate rules will be contentious and take considerable amounts of time.

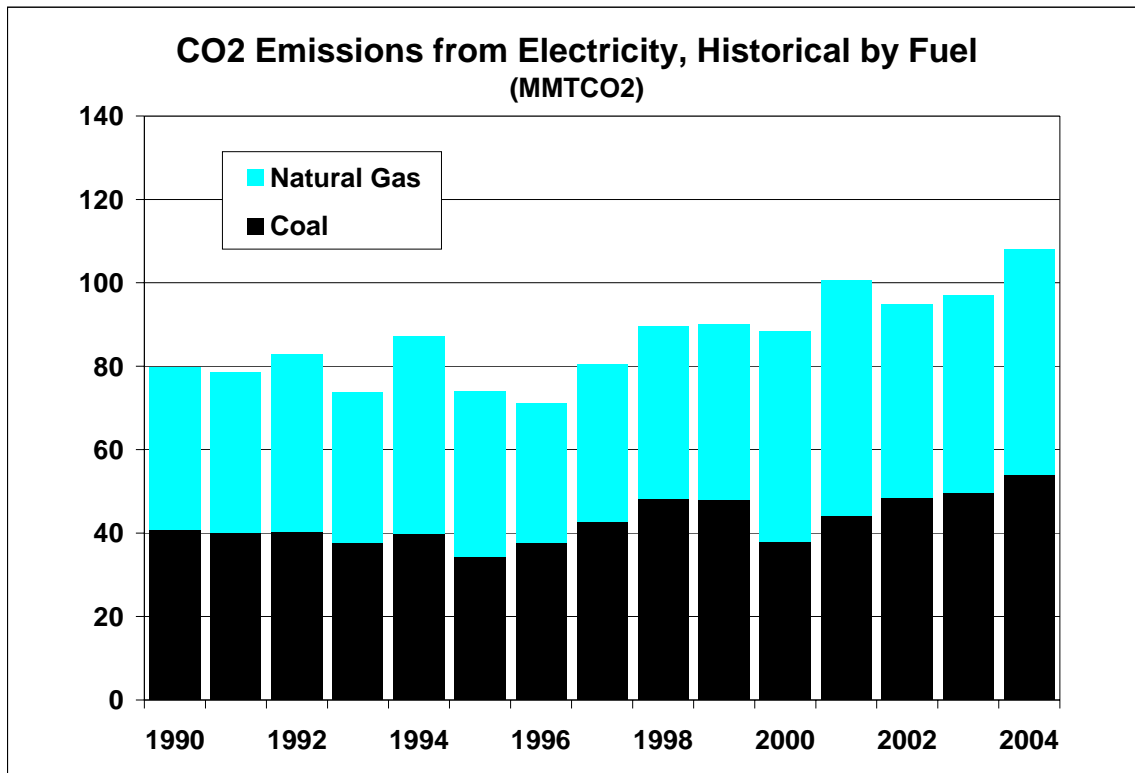
In the interest of accelerating the development of AB 32-compliant procurement plans, CEERT recommends that the interim compliance rules regarding the use of offsets be kept as simple and straightforward as possible. Modifications to these interim rules can be made when final rules have been established. Suggestions for these interim compliance rules are discussed below in the recommendations section.

B. Energy Resource Scenarios in AB 32-Compliant Procurement Plans Will Be Fundamentally Different from Planning Scenarios in Current LTTPs.

Supply scenarios used for utility procurement planning must produce an energy resource mix that results in emissions at or below required levels. Reduced levels of emissions must, therefore, be *inputs* to planning scenarios and utility procurement plans, rather than *outputs*.

Carbon dioxide emissions from electricity generation for California consumption increased from 79.8 million metric tons of carbon dioxide (MMTCO₂) in 1990 to 107.9 MMTCO₂ in 2004¹¹ as shown in **Figure 1**.

Figure 1
Greenhouse Gas Emissions from Electric Generation to Serve California



¹¹ Emission totals are from the Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004, Table 6, California Energy Commission. Publication number CEC-600-2006-013-SF, December 2006.
<http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF>

The data cited here do not reflect the upward revisions indicated by letter of Rosella Shapiro (CEC) to Linda Murchison (CARB) dated January 23, 2007.

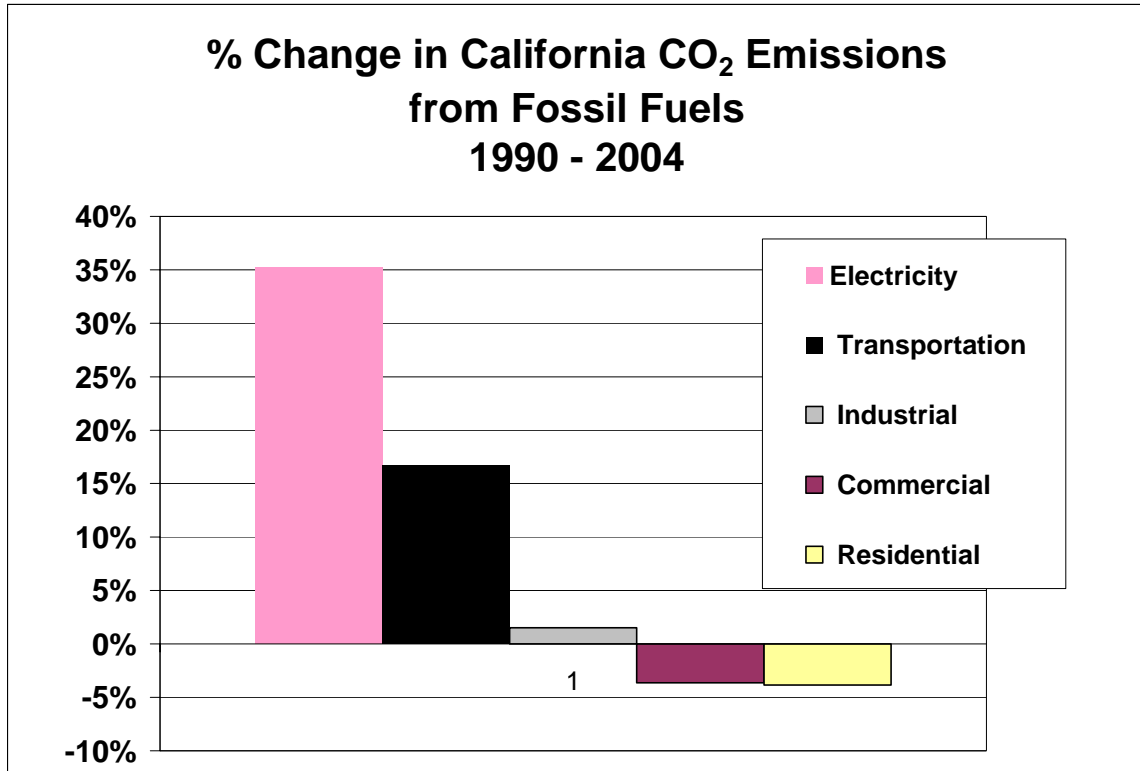
Carbon dioxide emissions from individual fuels have been estimated from the California Energy Commission's gross system power data provided at www.energy.ca.gov/electricity/gross_system_power.html together with estimated emissions factors.

Future utility planning scenarios will be constrained by emission limits. Unacceptably high levels of greenhouse gas emissions in California are the result of over-reliance on coal and natural gas as fuels for electric generation. As a result, IOU long-term procurement plans should have smaller amounts of coal- and gas-fired generation resources and larger amounts of non-fossil resources. Procurement plans constrained by emissions limits would also be fundamentally different from the IOUs' current LTPPs.

1. Emissions From the Electricity Sector Must Be Reduced to 1990 Levels or Below for California to Meet the AB 32 Statewide GHG Reduction Goals.

GHG emissions from the electricity sector are increasing twice as fast as emissions from any other sector, including transportation, as shown in **Figure 2**.¹² Electricity generation accounts for 32% of California's gross carbon dioxide emissions. Emissions from the transportation sector are larger, but are not growing as rapidly. The residential, commercial and industrial sectors have relatively low emissions, and these have not changed significantly since 1990. Emissions from the residential and commercial sectors have decreased somewhat.

Figure 2
Percentage Change in California Greenhouse Gas Emissions by Sector, 1990-2004



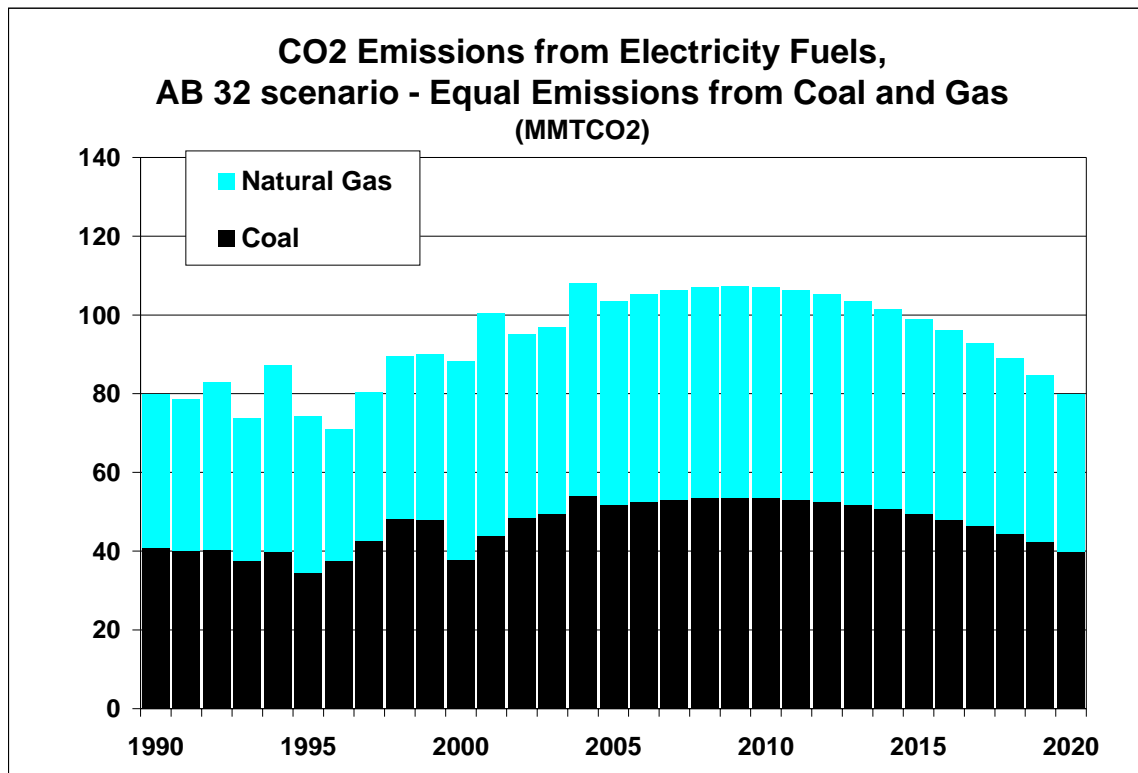
¹² Ibid.
R06-02-013 (Long-Term Procurement Phase)
CEERT Prepared Testimony

CEERT believes that in order for California to meet its statewide AB 32 goals, emissions from the electricity sector must be reduced to 1990 levels or below. Fortunately, electric generation from currently available commercial non-fossil technologies can be expanded to reduce emissions from the electricity sector below 1990 levels. CEERT expects that all California utilities will be required to reduce GHG emissions, and plans to do so should begin as soon as possible. It would be imprudent for the utilities to do otherwise.

2. The Resources Used to Meet California’s Electric Energy Demand Must Change for the State to Achieve Its Greenhouse Gas Reduction Goals.

To significantly reduce carbon dioxide emissions from California’s electricity sector, the use of coal and gas as fuels for electricity generation must be reduced substantially until and unless the carbon in these fuels is recovered and permanently prevented from entering the atmosphere as carbon dioxide. An illustrative scenario showing GHG reductions from gas- and coal-fired power that reduces electric sector emissions to 1990 levels by 2020 is shown in **Figure 3**.

Figure 3
 Illustrative Scenario that Reduces GHG Emissions
 From Gas- and Coal-Fired Electric Generation



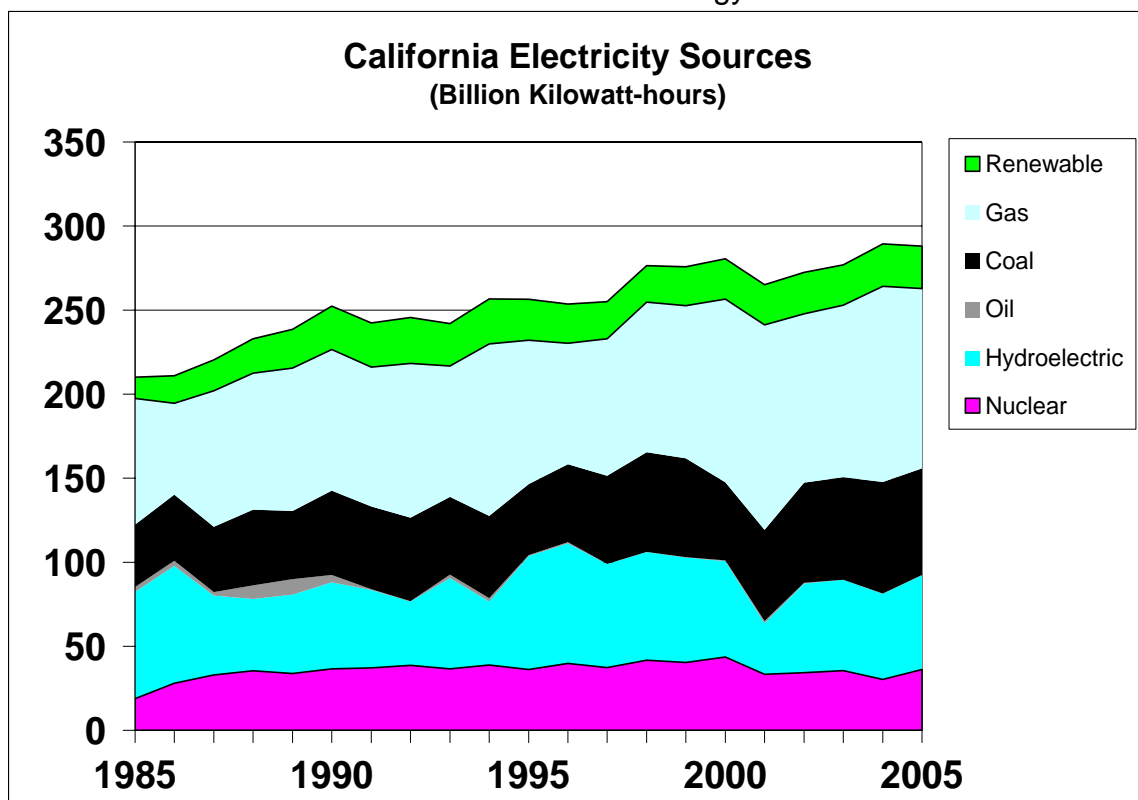
C. To Meet California’s Greenhouse Gas Reduction Goals, IOU 2006 Long-Term Electric Energy Procurement Plans Must And Can Rely on Technologies That Are Now Commercially Available.

This section describes the commercially available electric generation technologies on which procurement plans are based and the changes in this resource mix that will be required to meet the state’s climate change goals. Commercially available generation technologies fall into five energy resource categories: hydroelectricity, nuclear, coal, gas and renewables.¹³

California’s historical reliance on these resources is shown in **Figure 4** below.

The question facing California is how the use of these energy resources must change in the future to meet growing demand and satisfy climate change goals. The answer to this question will be determinative of future utility procurement plans.

Figure 4
Historical California Electric Energy Resources



It would be imprudent for utilities to plan to meet loads in the next two decades with technologies that are not now commercially available. While CEERT expects technologies to

¹³ A small fraction of California’s electric energy has been obtained from petroleum in the past, and a minimal amount continues to be generated at refineries. We assume that future oil-fired generation will continue to be minimal in the foreseeable future and will not be included in this discussion.

continue to improve in the future, it is highly unlikely that a major new technology will be developed in the next few years that will provide large amounts of electric energy before 2020. Long-term utility electric energy resource plans must project generation from existing commercially available technologies forward through 2020 in amounts that satisfy AB 32 goals.

New sources of hydroelectricity are unlikely to become available in the foreseeable future. In addition, climate change is expected to alter the state's hydrological system, and these changes may result in less hydroelectricity. California law prohibits new nuclear plants until the radioactive waste these plants generate can be safely sequestered.¹⁴ CEERT, therefore, believes that additional nuclear energy is also unlikely. It would be imprudent for long term procurement plans to rely on additional hydroelectricity or nuclear energy.

For purposes of this discussion, it is assumed that electric energy obtained from hydro and nuclear remains at 2005 levels through 2020 on average. Hydro generation varies from year to year as shown in Figure 4. Other resources must be available to accommodate dry hydro years or nuclear outages and must be planned for, but for purposes of this general discussion hydro and nuclear are treated as if they remain constant.

The growth in coal- and gas-fired generation shown in Figure 4 must be reversed to meet the AB 32 goals. Indeed, emissions from these fuels may be required to be reduced *below* 1990 levels to offset emissions from the transportation sector, as discussed above. Decisions about the future use of coal and gas are a major priority for the development of a California electric energy resource plan.

Unless the coal industry succeeds in commercializing carbon recovery technologies, limiting climate change will require a future electricity system that relies much more heavily on non-fossil energy resources. These resources do not provide the operational flexibility that natural gas can provide. In a climate-neutral electricity system, natural gas will increasingly be used for balancing the system in real time, rather than as a baseload resource.

The recent trend in gas-fired generation has been to maximize the efficiency with which gas is used to generate electricity. A large amount of efficient combined-cycle capacity has been built in the West in the last decade. However, these plants are relatively inflexible and unsuited for the provision of load following and other ancillary services. In the effort to make gas turbines more efficient, these generators have also become less flexible.

¹⁴ Public Resources Code §25524.2.

Since AB 32 goals will constrain the use of natural gas, resource plans must consider the value of this fuel to balance the system and provide reliability. Decisions about the natural gas generating technologies to be emphasized in the future must be a major component of the resource plan but are not required for the establishment of interim guidelines.

As shown in Figure 4, the role of energy from renewable energy resources can be seen as filling the gap between the total needed to keep the lights on and the energy supplied by the other four resource groups – hydro, nuclear, coal and gas. With hydro and nuclear unlikely to increase, coal and gas required to decrease, and demand expected to grow, much more electricity from renewable resources obviously will be needed. The major goal of electric energy resource plans is to ensure that the infrastructure needed to rapidly increase renewable energy supplies is in place when needed.

D. Reductions in Greenhouse Gas Emissions Must Rely on Appropriate Electric Energy Options and Resource Scenarios.

Reducing greenhouse gas emissions requires using less coal and natural gas until technologies are developed to recover the carbon in these fuels and prevent it from entering the atmosphere. Reductions in electricity from coal and gas can be achieved in many ways, however. These energy options are examined through electric energy resource scenarios as described in this section.

1. Illustrative California Electric Energy Resource Scenarios

a. Purpose of Illustrative Scenarios

CEERT has examined several statewide electric energy resource scenarios to illustrate the changes that are needed to reduce GHG emissions from the electricity sector. The data inputs for these scenarios are:

- Population data from the California Department of Finance (DOF)^{15,16};
- Electricity data from the California Energy Commission (CEC)¹⁷; and
- Emission data also from the CEC¹⁸.

¹⁵ DOF. *California Population Estimates, with Components of Change and Crude Rates*. Table E7. July 1, 1900-2005. <www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/documents/E-7_1900-Jul05.xls>

¹⁶ DOF. California Population Projections. Table P-1.

<http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Projections/P1/documents/P-1_Tables.xls>

¹⁷ CEC. California Electrical Energy Generation, 1983 to 2005.

<http://www.energy.ca.gov/electricity/ELECTRICITY_GEN_1983-2005.XLS>

In addition, certain assumptions must be made in order to construct scenarios. The major assumptions used in the CEERT scenarios, each of which could be modified and treated as sensitivities, are:

- Hydroelectricity and nuclear electricity remain at 2005 levels for the reasons discussed above;
- The efficiencies with which coal and gas are used to generate electricity remain at 2004 levels; and
- The recent trend in per capita electricity consumption continues into the future.

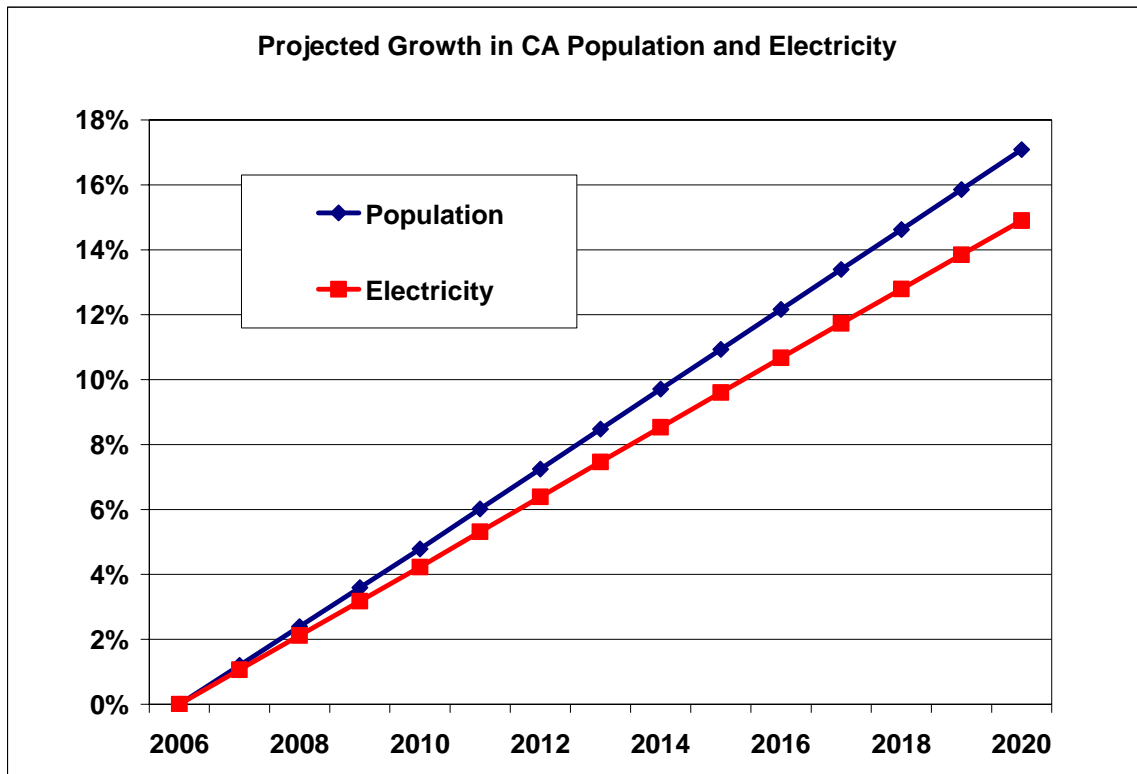
The scenarios also require assumptions about how fast the desired emission reductions occur. It seems unreasonable to assume that reductions will begin immediately and continue at a constant rate. For illustrative purposes only, these scenarios assume that reductions begin gradually and accelerate over time through the year 2020.

b. Load Growth Assumed in Illustrative Scenarios

Total generation is assumed to depend primarily on the state's population. Population data and projections are obtained from DOF. For years in which no projection is available, the data has been interpolated. Historical electric generation data has been divided by historical population data to compute annual per capita electricity generation. The linear trend in per capita generation is also computed and projected into the future. Total generation in the future is then computed by multiplying population projections by the projected per capita generation. The results are shown in **Figure 5**. Since per capita consumption has been declining slightly, growth in electric generation is projected to be somewhat slower than population growth. Under these assumptions, California electricity requirements increase about 1% per year. Individual IOUs would expect somewhat different rates of growth. Changes in projected load growth due, for example, to increasing efficiency efforts or the use of electric energy for the transportation sector, could be treated as sensitivities to these projections. CEERT has not yet examined any sensitivities in which the historical trend in per capita electricity consumption changes in the future.

¹⁸ CEC. *Inventory of California Greenhouse Gas Emissions and Sinks, 1990 – 2004*
Publication # CEC-600-2006-013-SF. Table 6. December 2006 <<http://www.energy.ca.gov/2006publications/CEC-600-2006-013/figures/Table6.xls>>

Figure 5
Population and Electric Load Growth Projections Used in CEERT Scenarios

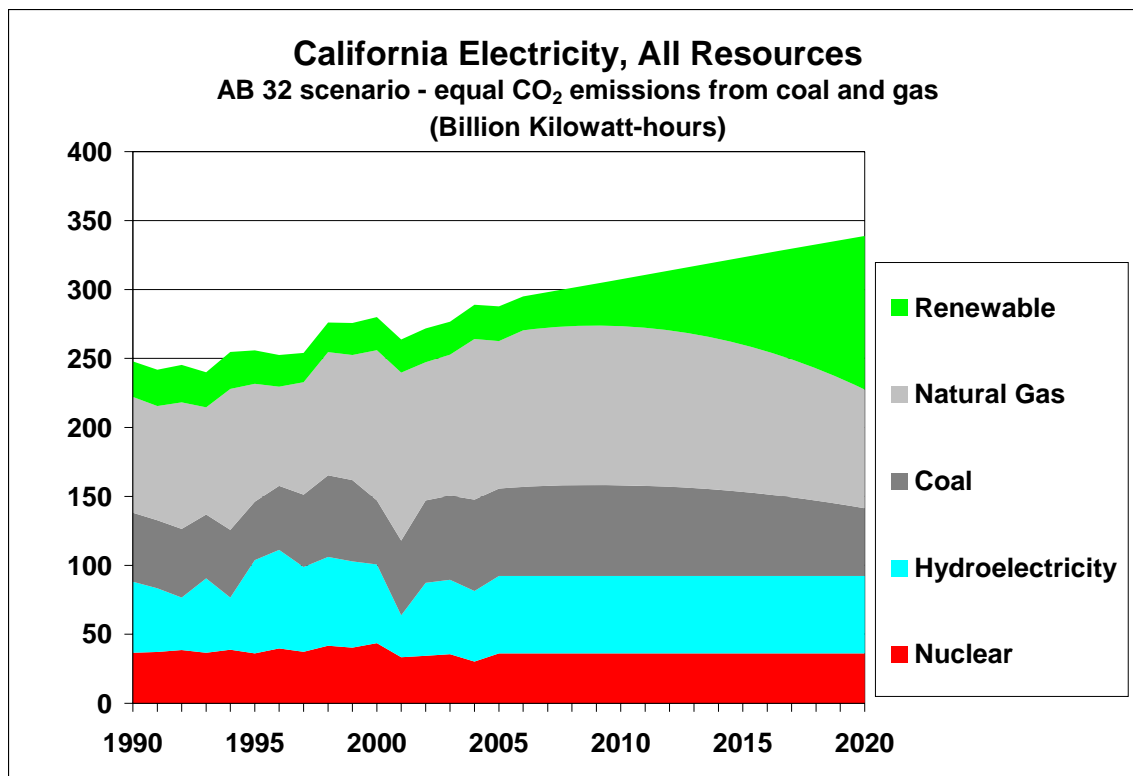


2. CEERT Illustrative Electric Energy Resource Scenarios

a. 50/50 Scenario

Statewide electric energy resource scenarios can be constructed with different emissions targets and with different amounts of coal- and gas-fired generation. In the 50/50 scenario, GHG emissions in 2020 have been set to 1990 levels, and the resulting emissions reductions are assumed to be obtained equally from coal- and gas-fired generation. The results are shown in **Figure 6** as follows:

Figure 6
California Electric Energy Resources in the 50/50 Scenario



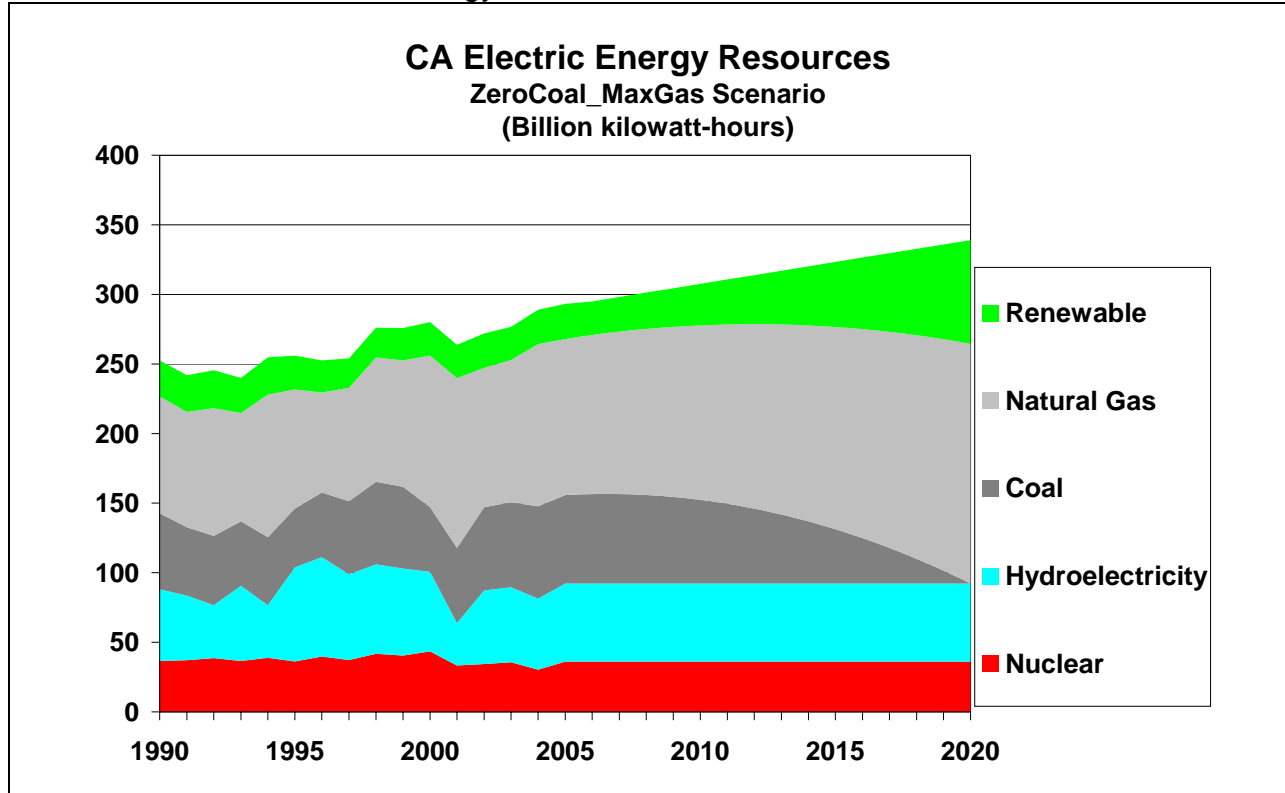
In the 50/50 scenario, all load growth is filled by generation from renewable energy resources. This is a general feature of all scenarios in which 2020 emissions are set to 1990 levels or lower. In addition, the 50/50 scenario reduces total generation from coal and gas and therefore requires additional energy from renewable resources. In this scenario, the fraction of generation from renewables in 2020 is estimated to be 33%.¹⁹

b. The ZeroCoal_MaxGas Scenario

To answer the question of how much the California electricity system could rely on fossil generation and still reduce emissions to 1990 levels, a scenario was constructed in which the use of coal-fired generation is eliminated by 2020. In the ZeroCoal_MaxGas scenario, fossil-fueled generation is 100% gas-fired by the year 2020. The results of this scenario are shown in **Figure 7** as follows:

¹⁹ Coincidentally, the 33% renewable fraction in the year 2020 that appears in the 50/50 scenario is the same as proposed in the state’s Energy Action Plan and in some legislative proposals. This congruence appears entirely coincidental since the 50/50 scenario was not the basis for the EAP choice of 33%.

Figure 7
California Electric Energy Resources in the ZeroCoal_MaxGas Scenario



Note that in this scenario, load growth must be met with additional renewable generation, as in the 50/50 scenario. However, additional generation from natural gas increases and replaces coal and little additional renewable generation is required.

This scenario has two drawbacks. The first is that the state’s electricity system becomes heavily dependent on natural gas. In 2020 slightly more than half of all generation in this scenario is gas-fired. Electricity prices would be heavily dependent on the volatile price of natural gas, and system reliability would depend on imported liquefied natural gas.

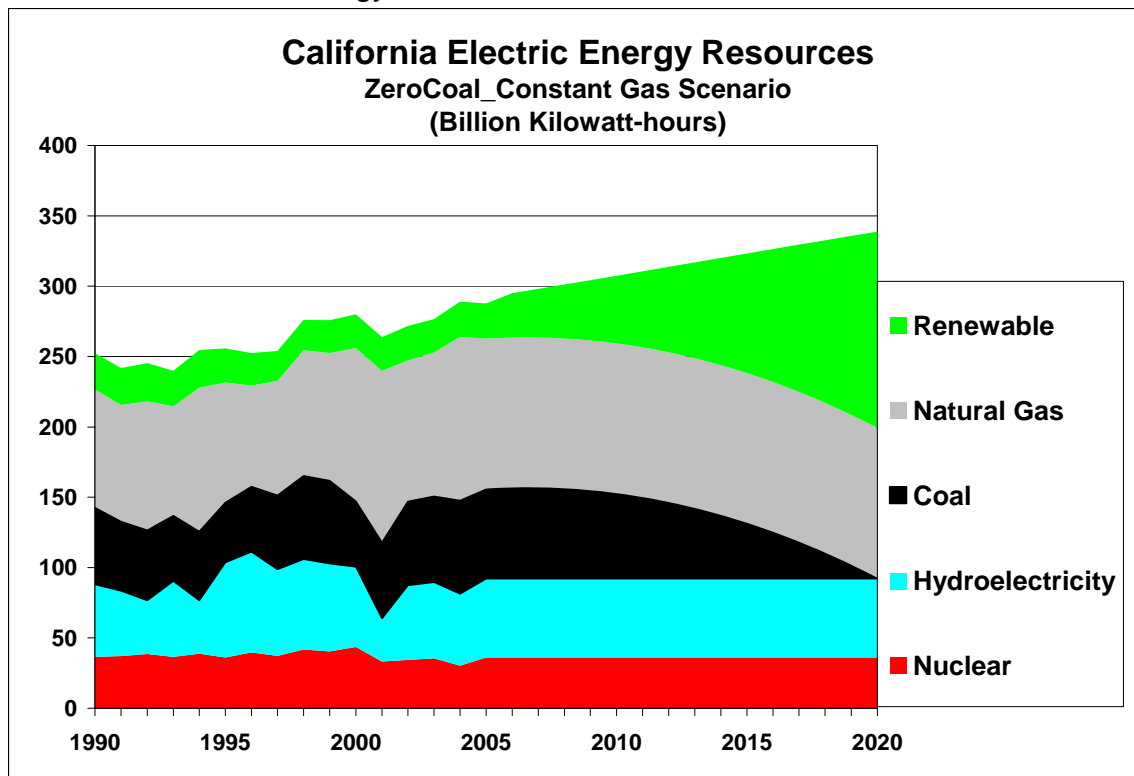
The second drawback is that the ZeroCoal_MaxGas scenario fails to prepare for the years after 2020. Further reductions in greenhouse gas emissions will certainly be required after 2020 to limit climate change. It is imprudent to invest in increasing amounts of gas-fired generation in the next few years only to reduce it after 2020.

c. The ZeroCoal_ConstantGas Scenario

In this scenario, the use of coal is eliminated as an electricity source by 2020 but instead of allowing gas to increase to replace coal, gas-fired generation is maintained at current

levels. The scenario is referred to as the ZeroCoal_ConstantGas scenario and the results are shown in **Figure 8**.

Figure 8
California Electric Energy Resources in the ZeroCoal_Constant Gas Scenario



In this scenario, carbon dioxide emissions from the electricity sector in 2020 are 30 MMT (38%) lower than emissions in 1990. As discussed above, these additional reductions from the electricity may be needed to offset emissions from the transportation sector and enable the state to meet its overall target. This scenario requires that 41% of the state’s electricity be generated from renewable energy resources in the year 2020. The second advantage of the ZeroCoal_ConstantGas scenario is that it avoids building new gas-fired generation that will have to be retired or underutilized after 2020 to make further progress on global warming.

E. CEERT Recommendations to Restructure the IOUs’ Long-Term Procurement Plans

Based on the above analysis, CEERT offers the following recommendations for immediately amending the IOUs’ LTPPs by establishing interim emission reduction targets and interim compliance guidelines.

Recommendation 1: Amended LTPPs Should, on an Interim Basis, Use Each Utility’s 1990 GHG Emissions as the 2020 Target

As discussed above, the process of establishing a GHG emissions target for the electricity sector and further allocating allowed emissions between utilities will be lengthy and contentious. Procurement planning must begin on an interim basis without waiting for the allocations to be finalized. CEERT recommends that, on an interim basis, the Commission’s decision on the IOUs’ 2006 LTPPs direct each utility to proceed on the basis that GHG emissions from generation to supply that utility’s loads must be reduced to that utility’s 1990 levels by 2020.

Recommendation 2: The Commission Should Establish Interim Rules for Compliance with the Interim Emission Reduction Targets

A threshold issue for procurement planning is how much flexibility utilities will have in meeting their targets. The fundamental issue involves the extent to which offsets are allowed to be used for compliance with the established targets. As discussed above, CEERT anticipates that a final resolution will require considerable time to achieve and recommends that delays in procurement planning be avoided by the immediate adoption of interim guidelines that are simple and straightforward. CEERT recommends that the initial interim compliance guidelines eschew the use of offsets. That is, on an interim basis, procurement planning should be based on measured emission reductions from generation used to meet California loads. This interim rule can be amended in future years if and when offset verification, tracking and trading mechanisms are developed.

Recommendation 3: The Amended LTPPs Should Consider Future Changes in the Use of Natural Gas as an Electric Energy Resource

As the California electricity system changes from a primarily fossil-based system to a primarily non-fossil system in response to climate change, the role that gas-fired power plays in the system will change. The amended LTPPs should anticipate these changes. Increasingly, natural gas will be called upon to provide resource adequacy to compensate for changes in annual hydrological conditions, nuclear outages, and temperature extremes. In addition, a major role of gas-fired power will be to supply ancillary services needed to balance the system in real time. Planning for these changes requires consideration in the amended LTPPs.

Recommendation 4: A Collaborative Working Group Should be Established to Advise the Commission and Other Agencies on the Final Emissions Targets and Compliance Guidelines and Other Issues to be Addressed in Future LTPPs.

A reliable electricity system that reduces emissions of greenhouse gases is of vital interest to all Californians. The process of developing the definitive utility-specific emission reduction targets and guidelines to be used in future procurement planning by utilities and other load-serving entities must therefore involve the widest possible participation by stakeholders. CEERT proposes the immediate establishment of a collaborative stakeholder working group to advise the Commission, the Air Resources Board and other agencies. Participation in the working group should be open to all the electric service providers, including municipal and investor-owned utilities, other load serving entities, relevant state and federal agencies, the California ISO, electric generation industry members, consumer and public interest groups, and other interested parties. Since other states will be affected by California's plans, representatives from other Western states should also be welcome. CEERT recommends that the Commission support the formation of such a collaborative advisory working group.

III. CONCLUSION

CEERT believes that immediate interim decisions by the Commission on the issues discussed above are indispensable to begin successful planning for implementation of California's groundbreaking AB 32 legislation. CEERT, therefore, strongly recommends that the Commission order that current LTPPs be revised to reduce GHG emissions as required by AB 32. CEERT is prepared to assist the Commission in any way possible.

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

APPENDIX A

STATEMENT OF QUALIFICATIONS

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

STATEMENT OF QUALIFICATIONS OF DR. RICHARD FERGUSON

Q1 Please state your name and business address.

A1 My name is Richard Ferguson and my business address is PO Box 1045, Boonville, CA 95415. CEERT's offices are located at 1100 11th Street, Suite 311, Sacramento, CA 95814.

Q2 Briefly describe your present employment.

A2 I am Director of Research for the Center for Energy Efficiency and Renewable Technologies. I have held this position for approximately 14 years. As CEERT's research director, I am responsible for the preparation of technical information and materials and frequently present these materials to the California Energy Commission, the California Public Utilities Commission, and other agencies. I have personally visited most of California's major renewable resource areas and am familiar with the operations of many renewable resource generation facilities. I have also authored a series of reports on North American natural gas issues and served as facilitator to the Tehachapi Collaborative Study Group

Q3 Please summarize your professional background.

A3 My professional background includes:

Education:

BA, cum laude (Physics), Amherst College, Massachusetts;
PhD (Physics), Washington University, Missouri.

Academic:

Instructor, Department of Physics, UCLA
Instructor, Department of Physics, Cal Poly San Luis Obispo.

Other:

Energy Chairman, Sierra Club California
Consultant to energy oriented public interest organizations.
Director, California Power Exchange
Member, CEC PIER Transmission Program Advisory Committee

Facilitator, Tehachapi Collaborative Study Group

Q4 Have you previously testified at a hearing before the California Public Utilities Commission?

A4 Yes. I testified on behalf of CEERT in R.04-04-003 on the utilities' 2004 long-term procurement plans.

Q5 What is the purpose of your testimony?

A5 The purpose of my testimony is to sponsor the Prepared Testimony of the Center for Energy Efficiency and Renewable Technologies in the Long-Term Procurement Phase of R.06-02-013.

Q6 Does this conclude your statement of qualifications?

A6 Yes, it does.

CERTIFICATE OF SERVICE

I, Merrisa Moore, am over the age of 18 years and employed in the City and County of Sacramento. My business address is 1100 11th Street, Suite 311, Sacramento, California 95814.

On March 2, 2007, I served the within document **CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES PREPARED TESTIMONY IN THE LONG-TERM PROCUREMENT PLAN PHASE**, in R.06-02-013, with prescribed electronic service pursuant to Rule 1.10 of the Commission's Rules of Practice and Procedure on the service list in R.06-02-013 and with same day, hand-delivery of two hard copies each to Assigned Commissioner Peevey and Assigned ALJ Brown, at San Francisco, California.

Executed on March 2, 2007, at Sacramento, California.

/s/ MERRISA MOORE

Merrisa Moore