

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

Order Instituting Rulemaking to Implement
the California Renewables Portfolio Standard
Program.

Rulemaking 04-04-026
(Filed April 22, 2004)

**PETITION OF THE CALIFORNIA WIND ENERGY ASSOCIATION AND THE
GREEN POWER INSTITUTE FOR MODIFICATION OF
DECISION 05-12-042: INTERIM OPINION ADOPTING METHODOLOGY FOR THE
2005 MARKET PRICE REFERENT**

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June 25, 2007

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I. INTRODUCTION

Pursuant to Rule 16.4 of the California Public Utilities Commission's ("Commission") Rules of Practice and Procedure, the California Wind Energy Association ("CalWEA") and the Green Power Institute ("GPI") respectfully submit this Petition to Modify Decision 05-12-042: Interim Opinion Adopting Methodology for the 2005 Market Price Referent ("Petition to Modify"). CalWEA and GPI seek an order modifying Decision 05-12-042 to include a greenhouse gas ("GHG") adder in the 2007 and successive Market Price Referent ("MPR") for the Renewables Portfolio Standard ("RPS") solicitations.

The Commission issued Decision 05-12-042 on December 15, 2005 and concluded that the inclusion of a GHG adder in the MPR was premature due to a lack of GHG regulatory programs or "concrete market impacts."¹ In the fall of 2006, however, the California Legislature passed Assembly Bill 32 ("AB 32") and Senate Bill 1368 ("SB 1368"), effective January 1, 2007, which require state-wide regulation and reduction of California's GHG emissions. CalWEA

¹ See D.05-12-042 at 48 (Dec. 15, 2005).

submitted comments on Resolution E-4049,² requesting that the Commission include a GHG adder in the 2006 MPR in light of the new regulatory programs.³ The Commission rejected CalWEA's comments, stating Resolution E-4049 merely applied the formula established in Decision 05-12-042 and was not the appropriate vehicle to modify a Commission decision.⁴ CalWEA and GPI now request that the Commission revisit Decision 05-12-042 and modify it to include a GHG adder in the 2007 MPR for the RPS solicitations.

This Petition to Modify could not have been presented within one year of the effective date of Decision 05-12-042 (December 15, 2005) as required by Rule 16.4(d) because AB 32 and SB 1368 did not become effective until January 1, 2007.⁵ Based on this new legislation, CalWEA and GPI respectfully request that the Commission consider this Petition to Modify timely pursuant to Rule 16.4(d). CalWEA and GPI also request that the Commission modify Decision 05-12-042 to include a GHG adder in the 2007 MPR for the RPS solicitations and in future MPRs.

II. DISCUSSION

A. AB 32 and SB 1368 Commit California to a Comprehensive Regulatory Program to Reduce GHGs

In Decision 05-12-042, the Commission declined to consider how to account for GHG emissions in the MPR until "these policy discussions are translated into regulatory programs or

² Resolution E-4049 implemented the methodology in Decision 05-12-042 and adopted the 2006 MPR for use in the 2006 RPS solicitations.

³ See comments submitted on Dec. 1, 2006, attached at Appendix A.

⁴ See Resolution E-4049 at 17 (Dec. 14, 2006).

⁵ Rule 16.4(b) states that "Any factual allegations must be supported with specific citations to the record in the proceeding or to matters that may be officially noticed. Allegations of new or changed facts must be supported by an appropriate declaration or affidavit." Rule 13.9: Official Notice of Facts, states that "official notice may be taken of such matters as may be judicially noticed by the courts of the State of California." California Evidence Code § 451(a) states that a court must take notice of "the decisional, constitutional, and public statutory law of this state and of the United States" Thus, the Commission can take official notice of the enactment of AB 32 and SB 1368.

other sufficiently concrete market impacts.”⁶ The Commission supported the idea, however, that the MPR should include a GHG adder when the costs of mitigating carbon emissions became an “out-of-pocket expense incurred by the conventional fired generator.”⁷

In the fall of 2006, the California Legislature enacted AB 32 and SB 1368 and translated those policy discussions into definitive, concrete law that authorized the creation of regulatory programs to curb GHG emissions. Specifically, AB 32 requires the California Air Resources Board (“CARB”), in consultation with the Commission, to approve state-wide GHG emissions limits to reduce GHG emissions to 1990 levels by the year 2020.⁸ To this end, AB 32 directs CARB to create a permanent program regulating GHGs by Jan. 1, 2012.⁹ AB 32 also gives CARB the authority and discretion to impose both early action and permanent control measures prior to 2012.¹⁰ Additionally, SB 1368 requires the Commission to adopt interim GHG emission performance standards by February 1, 2007.¹¹ These GHG emission performance standards apply to all new, significant long-term procurement commitments by the regulated California electric utilities for base load generation. New gas-fired generation resources developed in California must therefore consider the costs of GHG mitigation as a real, out-of-pocket expense to be faced during their operating life. Because AB 32 and SB 1368 mandate the creation of a regulatory regime to control GHGs, the time has come to account for GHG emissions in the 2007 MPR for RPS solicitations.

Entities opposing inclusion of GHG adder in the MPR may argue that new combined cycle gas turbines (“CCGTs”) in California are not yet required to further reduce their GHG

⁶ See D.05-12-042 at 48.

⁷ *Id.*

⁸ See Cal. Health and Safety Code § 38550 (2006).

⁹ See *id.* at § 38562(a).

¹⁰ See *id.* at § 38563.

¹¹ See Cal. Public Utilities Code § 8341(d)(1) (2006).

emissions, because a new CCGT will meet the emission performance standard enumerated in SB 1368. A new CCGT built today, however, will be subject to AB 32's permanent GHG regulations by January 1, 2012, if not before. Depending on how these regulations are designed, they may affect new CCGTs directly or indirectly. At a minimum, CalWEA and GPI request that the Commission adopt a GHG adder that assumes CCGTs will be subject to out-of-pocket GHG emission control costs no later than January 1, 2012.

B. The Commission Has Approved A Model for the Avoided Costs Of GHG Emissions To Determine The Market Impacts Of GHG Emissions Controls And Should Employ It To Calculate A GHG Adder For The 2007 MPR And Successive MPRs.

In several regulatory contexts, the Commission has already adopted and is using GHG emission costs to calculate costs to ratepayers for new electric resources. The Commission should utilize these GHG emission costs to calculate a GHG adder for the 2007 MPR and successive MPRs. The exclusion of GHG emission costs from the MPR discriminates against new renewable generation as compared to other types of electric resources.

i. GHG Adders in Demand-side Energy Efficiency Projects

The Commission considers GHG emission costs when evaluating whether to fund energy efficiency programs that have long-term impacts on energy usage. Energy efficiency programs are demand-side resources that result in a long-term reduction in GHG emissions. In order to evaluate these energy efficiency programs, the Commission uses Energy and Environmental Economics 's ("E3") avoided cost model to assign a value to avoided GHG emissions from a CCGT.¹²

¹² See D.05-04-024 at 48 (April 7, 2005).

New base load renewable resources developed under the RPS program have precisely the same impact — they are a carbon-free, supply-side resource that avoids the GHG emissions from a new CCGT that would be built in the absence of the RPS generation. If GHG costs are included in evaluating carbon-free demand-side resources, they also should be employed in valuing comparable supply-side projects under the RPS program. Indeed, a set of Commission-approved avoided costs for GHG emissions already exists.¹³ A copy of the E3 avoided cost values for GHG emission is included in Appendix B¹⁴. The Commission can use these Commission-approved E3 avoided costs to place a cost on the GHG emissions from the new CCGT used to set the 2007 MPR and successive MPRs.

ii. GHG Adders in Utilities' Regular Procurement Solicitations

The Commission also employed E3's avoided costs model as a basis for valuing GHG emissions in Decision 04-12-048. In this Decision, the Commission used E3's GHG values in order to compare bids for fossil-fueled projects and renewable resources projects submitted in response to the utilities' regular procurement solicitations.¹⁵ Pursuant to Decision 04-12-048, the bid of a fossil-fueled project will be increased by the cost of GHG emission mitigation using E3's GHG values. The Commission's decision mandates that the utilities may accept a renewable bid as long as it does not exceed a competing fossil bid by more than the costs of mitigating the fossil fueled plant's GHG emissions.¹⁶

The MPR process is conceptually identical. It involves comparing the bid of a new renewable project against a competing fossil-fueled resource (in this case, the new CCGT used to

¹³ For example, the Commission uses E3's avoided cost model. E3's avoided costs of GHG emissions increase from \$8 per ton CO₂ in 2004 to over \$20 per ton CO₂ in 2023. See The E3 Avoided Cost Calculation spreadsheet at http://ethree.com/cpuc_avoidedcosts.html.

¹⁴ The full E3 electric avoided cost model is available at http://www.ethree.com/cpuc_avoidedcosts.html.

¹⁵ See R.04-04-003 at 152 (adopting D.04-12-048).

¹⁶ *Id.*

set the MPR) to determine how much of the cost of the new renewable project will be assigned directly to ratepayers. To be consistent with the bid evaluation methodology adopted in Decisions 04-12-048 for utilities' regular procurement solicitations, the MPR also should include a GHG adder to accurately calculate the total costs of the CCGT used to set the MPR.

iii. GHG Adders in Cost Evaluation of New Generation Projects

Finally, the Commission has begun to incorporate GHG values into its evaluation of the costs that ratepayers should bear for new utility-owned electric resources. In late 2006, the Commission issued an order that amended the cost-effectiveness calculations for the steam generator replacement project (SGRP) at the San Onofre Nuclear Generation Station (SONGS) to include a GHG adder based on the E3 values.¹⁷ These cost-effectiveness calculations assume that if the SGRP does not proceed and SONGS is prematurely retired in 2012, the generation will have to be replaced with new gas-fired CCGT generation.¹⁸ The Commission included the GHG adder based on the GHG emissions from a new CCGT because GHG emissions will add to the cost of the CCGT replacement generation.

Similarly, the MPR is a benchmark that reflects the costs of the CCGT replacement generation a utility would have to procure absent new RPS generation. Thus, the MPR should also include a GHG adder. Notably, if the Commission is evaluating the ratepayers' responsibility for utility-owned resource additions — such as the new steam generators at SONGS — against CCGT costs that include a GHG adder, then the 2007 MPR and successive MPRs should also include a GHG adder. Failure to do so would unduly discriminate against new RPS generation.

¹⁷ See A.04-02-06 (Nov. 30, 2006).

¹⁸ See D.05-12-040 at 22.

In sum, with the passage of AB 32 and SB 1368, California has moved from mere policy discussions to concrete regulatory programs with market impacts for generators that emit GHGs. As a result, the time is ripe for the Commission to revisit Decision 05-12-042 and modify it to include a GHG adder in the 2007 MPR and successive MPRs.

C. An Accurate MPR Will Ensure The Success Of the RPS Program

As stated in Decision 05-12-042, "the MPR is a key component of the RPS Program."¹⁹ The MPR establishes, among other things, the basis for the use of Supplemental Energy Payments ("SEP"), which the California Energy Commission awards pursuant to Pub. Res. Code § 25743(b)(1). These SEP payments cover the above-market costs of renewable resources and provide additional resources to allow utilities to fulfill their obligations under the RPS.

The SEP fund, however is not unlimited, and once the SEP fund is exhausted, the utilities obligation to purchase electricity from renewable sources ends. Public Utilities Code § 399.15(b)(5). If the SEP fund is insufficient to cover the above-market costs of renewable generation during a particular year, the utilities are not obligated to meet their remaining RPS requirements for that year. An MPR that is too low will result in higher SEP payments, thereby depleting the SEP fund more quickly and resulting in less development of new renewable generation than would be cost-effective using an MPR that reflects the reality of California's decision to regulate GHG emissions from all sources. Thus, the MPR must accurately reflect the represent the true presumptive cost of electricity from a CCGT to ensure the success of the RPS program.

¹⁹ D.05-12-042 at 4.

D. The Findings Of Fact And Conclusions Of Law In D.05-12-042 Should Be Modified To Include A GHG Adder

For the foregoing reasons, CalWEA and GPI respectfully request that the Commission Modify Decision 05-12-042 to include a GHG adder. CalWEA and GPI respectfully request that the Commission modify Findings of Fact in Decision 05-12-042 to read:

32. The greenhouse gas adder adopted in D.04-12-050 is an element of the long-term market price of electricity in California.

Additionally, CalWEA and GPI respectfully request that the Commission modify the Conclusions of Law in Decision 05-12-042 to read:

4. The greenhouse gas adder developed in D.04-12-050 should be an element of the MPR calculation for 2007.

In addition, CalWEA and GPI request that the Commission include specific values for the GHG adder. The Commission has already adopted these values for use in evaluating other long-term electric resource options, as discussed *supra*. The Commission should assemble these values into a GHG adder and include it in the 2007 MPR benchmark for the value of new renewables to California ratepayers.

The following tables provide two options for calculating a GHG adder for the 2007 MPR, using the Commission's adopted costs of mitigating greenhouse gas emissions. The first option (Table 1) assumes that GHG mitigation costs begin immediately, because all new resources will consider GHG control costs over their expected life. The second option (Table 2) assumes, more conservatively, that CCGTs will not incur GHG control costs until January 1, 2012. For both options, the GHG adder is levelized over the appropriate contract term at a discount rate of 8.50%, which is the 20-year weighted average cost of capital used in the 2006 MPR calculation. Because GHG mitigation costs are assumed to grow over time, under both options CalWEA's and GPI's proposed GHG adders vary depending on the start date for the RPS project. For the

first option (immediate consideration of GHG control costs), CalWEA's and GPI's GHG mitigation costs range from \$4.66 to \$7.00 per MWh for project start dates ranging from 2007 to 2012. For the second option (GHG control costs begin in 2012), the GHG adder ranges from \$2.11 to \$7.00 per MWh for project start dates that vary from 2007 to 2012.²⁰

Table 1 – GHG adders assuming 2007 start GHG regulation (\$/MWh)

Project Operation	10 year	15 year	20 year
2007	4.66	5.11	5.54
2008	4.89	5.37	5.81
2009	5.13	5.64	6.09
2010	5.39	5.91	6.38
2011	5.66	6.21	6.69
2012	5.94	6.51	7.00

Table 2 – GHG adders assuming 2012 start for GHG regulation (\$/MWh)

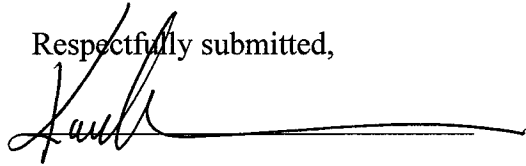
Project Operation	10 year	15 year	20 year
2007	2.14	3.012	3.80
2008	2.74	3.67	4.32
2009	3.41	4.28	4.90
2010	4.17	4.95	5.54
2011	5.01	5.69	6.23
2012	5.94	6.51	7.00

III. CONCLUSION

For the foregoing reasons, the CalWEA and GPI respectfully request the Commission modify Decision 05-12-042 to include a GHG adder in the annual MPR for the RPS solicitations.

²⁰ Spreadsheets showing the details of the calculations underlying Tables 1 and 2 are attached at App. B. The values for the GHG adder shown in Tables 1 and 2 above differ slightly from those included in CalWEA's December 1, 2006 comments on the draft 2006 MPR, principally as a result of minor changes that were made between the draft and final 2006 MPR values. CalWEA has also modified its calculation of the GHG adder to incorporate line losses to the load center. If the 2007 MPR calculation makes changes in CCGT heat rates, line losses, or weighted average cost of capital, the GHG adder calculation should be adjusted correspondingly. CalWEA and GPI have provided Energy Division with the spreadsheets in App. B so this can be accomplished expeditiously, if needed.

Respectfully submitted,



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EXHIBIT A

Crossborder Energy

Comprehensive Consulting for the North American Energy Industry

December 1, 2006

Mr. Honesto Gatchalian
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RE: Comments on Draft Resolution E-4049 on the 2006 Market Price Referent

Dear Mr. Gatchalian:

The California Wind Energy Association (CalWEA) and the California Cogeneration Council (CCC) are pleased to present the following comments on Draft Resolution E-4049 ("Draft Resolution") circulated by the Energy Division on November 17, 2006. The Draft Resolution calculates values for the 2006 Market Price Referent (MPR) for use in the 2006 Renewables Portfolio Standard (RPS) solicitations.

CalWEA / CCC have reviewed and offer the following comments on Draft Resolution E-4049. In general, CalWEA / CCC appreciate the completeness and transparency of the MPR process – the key assumptions underlying the proposed MPR are available and well-documented in the Draft Resolution, and Energy Division staff has conducted an open, informal, and inclusive process for making changes to the MPR input assumptions and calculation methods.

CalWEA / CCC fully support the 2006 MPR calculation that is presented in Draft Resolution E-4049, but submit that the 2006 MPR also should include an adder representing the costs to control the greenhouse gas (GHG) emissions from a new gas-fired combined-cycle (CCGT) power plant in California. In the most recent decision modifying the MPR methodology (D. 05-12-042), the Commission declined to adopt a GHG adder for the 2005 MPR, but stated on pages 47-48 that it would re-visit this issue once "these policy discussions are translated into regulatory programs or other sufficiently concrete market impacts." The order, at page 47, makes clear that the MPR should include a GHG adder when the costs of mitigating carbon emissions become an "out-of-pocket expense incurred by the conventional fired generator."

The "policy discussions" on GHG regulation that were taking place a year ago, and that are referenced on pages 47-48 of D. 05-12-042, now have produced definitive, concrete legislative action: this fall Governor Schwarzenegger signed AB 32 and SB 1368, which together commit California to a comprehensive regulatory program to control GHG emissions,

including emissions from the energy sector. AB 32 authorizes the California Air Resources Board (CARB), in consultation with the Commission, to adopt a comprehensive program of GHG regulation statewide, including both early action and permanent control measures. Under AB 32, CARB's permanent program of GHG regulation must be in place by January 1, 2012. SB 1368 requires the Commission to adopt an interim GHG Emission Performance Standard by February 1, 2007; this GHG EPS will apply to all new, significant long-term procurement commitments by the regulated California electric utilities for base load generation. CalWEA / CCC believe that these concrete legislative steps to adopt a comprehensive program of GHG regulation in California make clear that new gas-fired generation in California must consider the costs of GHG mitigation as a real, out-of-pocket expense that such a project will face during its operating life. As a result, the time has come for the RPS MPR to include a GHG adder.

In addition, in a number of its regulatory activities, the Commission already has adopted and is using GHG emission costs to determine the costs that ratepayers should bear for new electric resources. This is precisely the role of the MPR with respect to new renewable resources, and the exclusion of GHG emission costs from the MPR threatens to discriminate against new renewable generation in comparison to other types of electric resources. For example, the Commission considers GHG emission costs in its evaluation of whether to fund energy efficiency programs that have long-term impacts on energy usage. The Commission does these evaluations using the E3 avoided cost model.¹ E3's avoided costs of GHG emissions increase from \$8 per ton CO₂ in 2004 to over \$20 per ton CO₂ in 2023.² Thus, there is already a set of Commission-approved avoided costs for GHG emissions that can be used to place a cost on the GHG emissions from the new CCGT that is the basis for the MPR. Energy efficiency programs are demand-side resources that result in a long-term reduction in GHG emissions, which the E3 model values based on the avoided GHG emissions from a CCGT. New base load renewable resources developed under the RPS program have precisely the same impact – they are a carbon-free supply-side resource that avoids the GHG emissions from the new CCGT that would be built in the absence of the RPS generation. As a result, if GHG costs are included in evaluating carbon-free demand-side resources, they also should be employed in valuing comparable supply-side projects under the RPS program.

Furthermore, in D. 04-12-050, the Commission also adopted the use of the E3 GHG values for comparing fossil-fueled and renewable resources that bid into the utilities' regular procurement solicitations. In these solicitations, the bid of a fossil-fueled project will be increased by the cost of GHG emission mitigation, also using the E3 GHG costs. Thus, the utilities may accept a renewable bid so long as it does not exceed a competing fossil bid by more than the costs of mitigating the fossil plant's GHG emissions. The MPR process is conceptually identical – it involves comparing the bid of a new renewable project against a competing fossil-fueled resource (the new CCGT used to set the MPR), to determine how much of the costs of the

¹ See D. 05-04-024.

² The E3 Avoided Cost Calculation spreadsheet is available at http://ethree.com/cpuc_avoidedcosts.html.

new renewable project will be assigned directly to ratepayers. To be consistent with the bid evaluation methodology adopted in D. 04-12-050, the MPR also should include GHG mitigation costs in the total costs of the MPR's CCGT.

Finally, this Commission has begun to incorporate GHG values into its evaluations of the costs that ratepayers should bear for new utility-owned electric resources. Yesterday, the Commission issued an order amending the cost-effectiveness calculations for the steam generator replacement project (SGRP) at the San Onofre Nuclear Generation Station (SONGS) to include a GHG adder based on the E3 values.³ These cost-effectiveness calculations assume that, if the SGRP does not proceed and SONGS is prematurely retired in 2012, the generation will have to be replaced with new gas-fired CCGT generation.⁴ The GHG adder adopted in yesterday's order is based on the GHG emissions from these CCGTs and adds to the costs of the CCGT replacement generation. Similarly, the MPR is a benchmark that reflects the costs of the CCGT replacement generation that would have to be procured in the absence of new RPS generation. Thus, the MPR also should include a GHG adder. CalWEA is particularly concerned that the MPR include a GHG adder if the ratepayers' responsibility for utility-owned resource additions, such as the new steam generators at SONGS, is being evaluated against CCGT costs that include a GHG adder. Given the Commission's decision yesterday to use a GHG adder as part of the CCGT costs used to evaluate the SONGS SGRP, it would be unduly discriminatory not to include a GHG adder in the 2006 MPR.

In response to this request, CalWEA / CCC expect that the utilities may continue to attempt to argue, as they have in the past when other parties have proposed a GHG adder to the MPR, that GHG regulation still has not reached the point where "sufficiently concrete market impacts" can be identified. CalWEA / CCC disagree, and believe that AB 32 and SB 1368 have moved California beyond mere "policy discussions" on the regulation of GHGs. This legislation will have clear and concrete market impacts, including the exclusion of new, uncontrolled coal-fired generation from the California market. Any new generation resource developed in California today now knows that, after February 1, 2007, it must limit its GHG emissions to no higher than a CCGT (per SB 1368) and that it will be subject to comprehensive GHG regulation no later than January 1, 2012 (per AB 32). Based on Paragraph 5 of the Governor's Executive Order S-20-06, signed October 17, 2006, California appears headed toward a market-based system of GHG regulation that will place a definite, transparent cost on GHG emissions. Thus, these regulations will cause generators that burn fossil fuels to incur real, out-of-pocket expenses for GHG mitigation.

The utilities also may argue that, under SB 1368, new CCGTs in California are not yet required to control their GHG emissions, because a new CCGT will meet SB 1368's EPS. However, a new CCGT may be subject to early action control measures under AB 32 and will be subject to AB 32's permanent GHG regulations no later than January 1, 2012. Thus, at a minimum, the Commission should adopt a GHG adder that assumes that a new CCGT will be subject to out-of-pocket GHG emission control costs no later than January 1, 2012.

³ See Proposed Decision of ALJ O'Donnell in A. 04-02-026, Agenda Item No. 4, Agenda 3183 (November 30, 2006). The final decision number is not yet available.

⁴ See D. 05-12-040, at 22.

As the Commission already has adopted values for GHG mitigation costs that are used to evaluate other long-term electric resource options (including energy efficiency programs and utility-owned options such as the SONGS SGRP), these values readily can be assembled into a GHG adder that should be included in the 2006 MPR benchmark for the value of new renewables to California ratepayers.

Tables 1 and 2 below show two options for calculating a GHG adder for the 2006 MPR, using the Commission’s adopted costs of mitigating GHG emissions. The first option (Table 1) assumes that GHG mitigation costs begin immediately, because all new resources will consider GHG control costs over their expected life. The second option (Table 2) assumes, more conservatively, that CCGTs will not incur GHG control costs until January 1, 2012. For both options, the GHG adder is levelized over the appropriate contract term at a discount rate of 8.50%, which is the 20-year weighted average cost of capital used in the draft 2006 MPR calculation. Because GHG mitigation costs are assumed to grow over time, under both options CalWEA / CCC’s proposed GHG adders vary depending on the start date for the RPS project. For the first option (immediate consideration of GHG control costs), CalWEA / CCC’s GHG mitigation costs range from \$4.60 to \$7.00 per MWh for project start dates ranging from 2007 to 2012. For the second option (GHG control costs begin in 2012), the GHG adder ranges from \$2.11 to \$7.00 per MWh for project start dates that vary from 2007 to 2012. CalWEA / CCC provide with these comments spreadsheets showing the details of the calculations underlying Tables 1 and 2.

Table 1 – GHG adders assuming 2007 start for GHG regulation (\$/MWh)

Project Operation	10 year	15 year	20 year
2007	4.60	5.05	5.48
2008	4.83	5.30	5.76
2009	5.07	5.56	6.04
2010	5.32	5.84	6.35
2011	5.59	6.13	6.66
2012	5.87	6.44	7.00

Table 2 – GHG adders assuming 2012 start for GHG regulation (\$/MWh)

Project Operation	10 year	15 year	20 year
2007	2.11	3.08	3.76
2008	2.70	3.62	4.29
2009	3.37	4.22	4.87
2010	4.11	4.89	5.51
2011	4.94	5.62	6.22
2012	5.87	6.44	7.00

In sum, CalWEA / CCC believe that, with AB 32 and SB 1368, California has “crossed the Rubicon” of GHG regulation, moving from policy discussions to a concrete regulatory program that will impose real costs on generators that emit GHGs. As a result, the Commission needs to re-visit its determination in D. 05-12-042 that the MPR should not include the costs of GHG mitigation.

CalWEA has previously provided the Energy Division with CalWEA’s proposal for a GHG adder, in response to the Energy Division’s request for parties’ ideas on how the 2005 MPR calculation should be modified. CalWEA / CCC respectfully ask the Commission to consider, and to adopt, CalWEA’s GHG Adder as an integral component of the 2006 MPR.

CalWEA and CCC appreciate the Energy Division’s review of these comments. As requested in the cover letter to the Draft Resolution, we also include a subject index with the recommended changes to the Draft Resolution, a table of authorities, and a list of revised findings. Please do not hesitate to contact us with any questions or concerns.

Sincerely,

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On Behalf of
THE CALIFORNIA WIND ENERGY ASSOCIATION
THE CALIFORNIA COGENERATION COUNCIL

cc: Paul Douglas, Energy Division
Sean Gallagher, Energy Division Director
Commissioners
Service Lists for R.06-02-012 and R.06-05-027

Recommended Changes to the Draft Resolution

Draft Resolution E-4049 should be amended to include a greenhouse gas (GHG) adder to the 2006 market price referent (MPR).

Table of Authorities

Commission Decisions

- D. 04-12-050
- D. 05-04-024
- D. 05-12-040
- D. 05-12-042

California Statutes

- AB 32 (Health and Safety Code Sections 38500 *et seq.*)
- SB 1368 (Public Utilities Code Section 8340)

Executive Orders of the California Governor

- Executive Order S-20-06, signed October 17, 2006

Revised Findings

1. AB 32 and SB 1368 adopt a regulatory program to control greenhouse gas emissions in California. This program will have significant, concrete market impacts on the electric industry in California. As a result, the 2006 MPR should include an adder to incorporate the costs of GHG mitigation.
2. The Commission has adopted GHG mitigation costs in D. 05-04-024, as part of the E3 avoided cost model. These costs should be the basis for the GHG adder for the 2006 MPR.
3. With the exception of the addition of the GHG adder, the 2006 MPRs were calculated and released consistent with prior Commission decisions.
4. Party comments on the 2006 MPR will guide future MPR calculations.
5. The 2006 MPR values for baseload proxy plants have been finalized for use in the 2006 Renewables Portfolio Standard (RPS) solicitations.

CERTIFICATE OF SERVICE

I certify that I have by e-mail this day served a true copy of the CalWEA / CCC comments on Draft Resolution E-4049 on all parties on the service lists for R.06-02-012 and R.06-05-027.

Dated December 1, 2006 at Berkeley, California.

Christa Goldblatt

EXHIBIT B

Summary of GHG Adders (\$/MWh) -- Assume Start of GHG Mitigation Costs in 2012

	<u>Start Date</u>	<u>10 year</u>	<u>15 year</u>	<u>20 year</u>
CO2 Adder	2007	2.14	3.12	3.80
	2008	2.74	3.67	4.32
	2009	3.41	4.28	4.90
	2010	4.17	4.95	5.54
	2011	5.01	5.69	6.23
	2012	5.94	6.51	7.00
2006 MPR	2007	80.80	82.12	84.60
	2008	80.14	82.31	85.19
	2009	79.60	82.60	85.86
	2010	79.65	83.33	86.91
	2011	78.91	83.08	86.89
	2012	79.62	84.21	88.21
MPR w/GHG Adder	2007	82.93	85.24	88.40
	2008	82.88	85.98	89.51
	2009	83.02	86.88	90.76
	2010	83.82	88.28	92.44
	2011	83.92	88.77	93.12
	2012	85.56	90.72	95.21
Percent Increase	2007	2.6%	3.8%	4.5%
	2008	3.4%	4.5%	5.1%
	2009	4.3%	5.2%	5.7%
	2010	5.2%	5.9%	6.4%
	2011	6.3%	6.8%	7.2%
	2012	7.5%	7.7%	7.9%

Summary of GHG Adders (\$/MWh) -- Start GHG Mitigation Now

	<u>Start Date</u>	<u>10 year</u>	<u>15 year</u>	<u>20 year</u>
CO2 Adder	2007	4.66	5.11	5.54
	2008	4.89	5.37	5.81
	2009	5.13	5.64	6.09
	2010	5.39	5.91	6.38
	2011	5.66	6.21	6.69
	2012	5.94	6.51	7.00
2006 MPR	2007	80.80	82.12	84.60
	2008	80.14	82.31	85.19
	2009	79.60	82.60	85.86
	2010	79.65	83.33	86.91
	2011	78.91	83.08	86.89
	2012	79.62	84.21	88.21
MPR w/GHG Adder	2007	85.45	87.23	90.15
	2008	85.03	87.67	91.00
	2009	84.74	88.24	91.95
	2010	85.04	89.24	93.29
	2011	84.57	89.29	93.57
	2012	85.56	90.72	95.21
Percent Increase	2007	5.8%	6.2%	6.6%
	2008	6.1%	6.5%	6.8%
	2009	6.4%	6.8%	7.1%
	2010	6.8%	7.1%	7.3%
	2011	7.2%	7.5%	7.7%
	2012	7.5%	7.7%	7.9%

2006 MPRs

2006 Baseload MPR Matrix

<u>Operation Date</u>	<u>Baseload MPR</u>	<u>10 year</u>	<u>15 year</u>	<u>20 year</u>
2007	MPR All-in	0.08080	0.08212	0.08460
	MPR fixed component	0.02269	0.02339	0.02401
	MPR variable component	0.05811	0.05873	0.06060
2008	MPR All-in	0.08014	0.08231	0.08519
	MPR fixed component	0.02311	0.02388	0.02454
	MPR variable component	0.05702	0.05843	0.06065
2009	MPR All-in	0.07960	0.08260	0.08586
	MPR fixed component	0.02356	0.02440	0.02509
	MPR variable component	0.05604	0.05820	0.06077
2010	MPR All-in	0.07965	0.08333	0.08691
	MPR fixed component	0.02403	0.02493	0.02565
	MPR variable component	0.05562	0.05840	0.06126
2011	MPR All-in	0.07891	0.08308	0.08689
	MPR fixed component	0.02316	0.02405	0.02476
	MPR variable component	0.05575	0.05903	0.06213
2012	MPR All-in	0.07962	0.08421	0.08821
	MPR fixed component	0.02322	0.02413	0.02484
	MPR variable component	0.05640	0.06008	0.06337
2013	MPR All-in	0.08073	0.08567	0.08982
	MPR fixed component	0.02328	0.02421	0.02492
	MPR variable component	0.05746	0.06146	0.06490
2014	MPR All-in	0.08230	0.08747	0.09169
	MPR fixed component	0.02335	0.02429	0.02499
	MPR variable component	0.05895	0.06319	0.06669
2015	MPR All-in	0.08436	0.08965	0.09393
	MPR fixed component	0.02344	0.02437	0.02507
	MPR variable component	0.06092	0.06529	0.06886

E3 Data

E3 Model -- GHG Emission Cost Assumptions

See E3 Model, cpucAvoided26-1_update3-20-06.xls, Emissions sheet, line 16.

	Heat Rate (Btu/kWh)	Line Losses %	CO2 (tons/MWh)
2006 MPR CCGT	6,918	98.0%	0.4129

	CO2 Price (\$/Ton)	Levelization Factor	CO2 Cost (\$/MWh)	CO2 Cost (\$/MWh) Start in 2012
2004	8.00	1	3.30	0
2005	8.40	1	3.47	0
2006	8.82	1	3.64	0
2007	9.26	1	3.82	0
2008	9.72	1	4.02	0
2009	10.21	1	4.22	0
2010	10.72	1	4.43	0
2011	11.26	1	4.65	0
2012	11.82	1	4.88	4.88
2013	12.41	1	5.12	5.12
2014	13.03	1	5.38	5.38
2015	13.68	1	5.65	5.65
2016	14.37	1	5.93	5.93
2017	15.09	1	6.23	6.23
2018	15.84	1	6.54	6.54
2019	16.63	1	6.87	6.87
2020	17.46	1	7.21	7.21
2021	18.34	1	7.57	7.57
2022	19.25	1	7.95	7.95
2023	20.22	1	8.35	8.35
2024	21.07	1	8.70	8.70
2025	21.96	1	9.07	9.07
2026	22.86	1	9.44	9.44
2027	23.75	1	9.81	9.81
2028	24.65	1	10.18	10.18
2029	25.55	1	10.55	10.55
2030	26.44	1	10.92	10.92
2031	27.37	1	11.30	11.30

CO2 Adder: Levelized over 10, 15, and 20 years

	Levelization	CO2 Cost	CO2 Cost (\$/MWh)
	Factor	(\$/MWh)	Start in 2012
<u>10-Year Values</u>			
2006	6.56	\$4.43	\$1.60
2007	6.56	\$4.66	\$2.14
2008	6.56	\$4.89	\$2.74
2009	6.56	\$5.13	\$3.41
2010	6.56	\$5.39	\$4.17
2011	6.56	\$5.66	\$5.01
2012	6.56	\$5.94	\$5.94
<u>15-Year Values</u>			
2006	8.30	\$4.87	\$2.63
2007	8.30	\$5.11	\$3.12
2008	8.30	\$5.37	\$3.67
2009	8.30	\$5.64	\$4.28
2010	8.30	\$5.91	\$4.95
2011	8.30	\$6.21	\$5.69
2012	8.30	\$6.51	\$6.51
<u>20-Year Values</u>			
2006	9.46	\$5.28	\$3.32
2007	9.46	\$5.54	\$3.80
2008	9.46	\$5.81	\$4.32
2009	9.46	\$6.09	\$4.90
2010	9.46	\$6.38	\$5.54
2011	9.46	\$6.69	\$6.23
2012	9.46	\$7.00	\$7.00

WACC as Discount Rate 8.50%

Certificate of Service

I hereby certify that I have this day served a copy of the

***Petition of the California Wind Energy Association and the Green Power Institute for
Modification of Decision 05-12-042: Interim Opinion Adopting Methodology for the 2005
Market Price Referent***

on all known parties to R.04-04-026 by sending a copy via electronic mail and by mailing a properly addressed copy by first-class mail with postage prepaid to each party named in the official service list without an electronic mail address.

Executed on June 25, 2007 at San Francisco, California.



Rosalie Marschall