BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Implement the Commission's Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emission Standards into Procurement Policies.	)	R.06-04-009 (Filed April 13, 2006)

COMMENTS OF CALPINE CORPORATION ON EMISSION ALLOWANCE ALLOCATION POLICIES AND OTHER ISSUES

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Pursuant to the May 13, 2008 ruling of Administrative Law Judges TerKeurst and Lakritz, as revised by ruling issued May 20, 2008, Calpine Corporation ("Calpine") submits these comments on the allocation of greenhouse gas ("GHG") emissions allowances in the electricity sector, flexible compliance rules, the treatment of combined heat and power ("CHP") resources, and non-market emissions reduction measures. Calpine strongly supports the GHG emissions reduction goals set forth in Assembly Bill 32 ("AB 32") and the efforts of the California Public Utilities Commission (CPUC"), California Energy Commission ("CEC")[1] and the Air Resources Board ("ARB") to design and implement a fair, workable, market-based approach to achieving these goals.

I. SUMMARY

Calpine supports a regularly updated, non-fuel specific, output-based approach for allocation of GHG emissions allowances. Such an approach would encourage the entry of new market participants, allowing for unrestricted displacement of emissions-intensive generation technologies by more efficient low or zero emissions generation resources. A regularly updated, non-fuel specific output-based allocation approach also appropriately recognizes early actors for

[1] The CPUC and CEC are collectively referred to as the "Commissions."

their investments in clean energy technologies and offers administrative simplicity, reducing transaction costs associated with the cap-and-trade program which would otherwise be passed through to ratepayers.

II. GENERAL ISSUES

A. Evaluation Criteria

In evaluating Staff proposals and party positions, it is critical that the Commissions keep in mind the fundamental goal of AB 32 – reducing GHG emissions in the most efficient and cost effective manner.[2] Ensuring emissions reductions are realized in the most efficient and cost effective manner is particularly important given the far-reaching impacts AB 32 will have on California's economy in general, and electricity markets in particular. To achieve this goal, emission allowance methodologies and supporting policies must:

- Recognize the efforts of "early actors" that have already invested in low-GHG technologies and fuel, and encourage continued investment in such technologies;
- Ensure liquidity in the emissions allowance market;
- Avoid interference with the operation of an open, liquid, and competitive wholesale electricity market;
- Not threaten grid reliability;
- Distribute allowances directly to entities that are regulated under the program;
- Treat market participants equally, whether an investor-owned utility ("IOU"), independent power producer ("IPP"), in-state resource or out-of-state resource; and
- Ensure administrative efficiency and simplicity.

Calpine supports the fundamental principals underlying the above criteria and believes the approach that best meets all of these principals is one in which allowances are

[2] Health and Safety Code § 38501(h).

administratively allocated to entities subject to the emissions cap using a non-fuel specific output-based benchmark that is regularly updated.

B. Potential Transition To Regional And/Or National Program

Calpine supports the development of regional, national, and/or international markets for carbon credits and believes that it is likely that one or more such markets will eventually emerge. Given the early stages of regional and federal initiatives, it is imperative that California continue its leadership role by putting forth programmatic ideas which would best meet the objectives of AB 32 – and benefit California under a regional or national program. Indeed, if the Commissions do not take action now to develop an efficient, cost effective market-based approach for meeting emissions reduction goals, it may jeopardize the State's ability to timely meet its emissions goals.

AB 32 contemplates that the polices adopted by California will serve as a model for developing GHG emissions programs on a regional or national level.[3] Thus, it is important for the Commissions to consider how different approaches to allowance allocation and flexible compliance will function at a regional or national level and, if adopted on such a broad scale, how a particular policy might impact California residents, businesses, and the economy as a whole. California has already undertaken many measures that provide for a relatively clean and efficient energy portfolio. The state should look for ways to ensure that it is recognized for its early action in GHG reduction.

For the reasons discussed herein, Calpine believes the adoption of a non-fuel specific output-based approach for allocating emissions allowances will be the most efficient and cost effective means for meeting the emissions reduction goals in AB 32 since, among other reasons, it recognizes early action already taken to reduce GHG emissions and encourages continued

[3] Health and Safety Code § 38501(d).

investment in new technologies that will be needed for California - *and other states* - to achieve emissions reduction goals.

III. ALLOWANCE ALLOCATION

A. Calpine Supports a Regularly Updated, Non-Fuel Specific Output-Based Approach For Allocating GHG Emissions Allowances

A regularly updated, non-fuel specific output-based allocation approach for allocating GHG emissions allowances is the most efficient and cost-effective means for achieving the emissions reduction goals mandated in AB 32. This allocation approach would set, and regularly update, a benchmark (in lbs/MWh) based on sector-specific emissions goals. In practice, allowances would be allocated based on an entity's specific production or sales (*e.g.*, MWh generated or supplied) multiplied by the benchmark. Both the benchmark and the amount of allowances allocated would be regularly updated to achieve GHG emissions reduction goals, reflect current market conditions, and provide incentives for investments in low-GHG technologies and fuels.

A regularly updated non-fuel specific output-based approach has the following benefits:

- Recognizes early actors who have already invested in low or zero emissions technologies and practices since the quantity of allowances an entity receives is predicated on the entity's output, rather than historical emissions;
- Does not create perverse incentives to extend the life of dirty, inefficient generators or contracts with these generators;
- Does not competitively disadvantage new entrants and/or small retail providers, as the regularly updated, output-based methodology would provide equal access to allowances for these entities; and
- Provides the opportunity to include non-fossil fuel generators in the allocation process, thereby further promoting non-emitting technologies.

To encourage investment and market participation, there must be certainty with respect to how allowances are allocated. Toward that end, the basic method for allocating allowances (*i.e.*, a regularly updated non-fuel specific output-based approach) should remain the same from year to year, notwithstanding that the actual amount of allowances allocated may decline over time. As the amount of allowances declines, and along with changing market conditions, allocations for both individual entities and entire sectors should be updated. Updating allocations in this way would better capture and reward increased use of low-GHG emitting technologies, thereby efficiently integrating new sources into the existing source allocation pool. To maximize this benefit, the schedule for updating allowance allocations should be known well in advance to allow entities to properly plan for compliance.

The Resources for the Future ("RFF") analysis referred to in the Staff Paper[4] suggests that opportunity costs of allowances will not be passed through under an output-based allocation to the extent they would under an emission-based (*i.e.*, "grandfathered") allocation approach.[5] This is due to the fact that generators only receive allowances for actual generation – if generators reduce generation in order to free up and sell allowances (*e.g.*, to capture the opportunity costs), then they will lose allowances in future allocations. Calpine disagrees.

The E3 Calculator allows for the user to model this effect by allowing the user to change assumptions regarding the percentage of carbon value that is passed through to consumers under an output-based approach. Case 2aMCP (*see* table below) uses an output-based method of allocation, excluding non-fossil fuel generators, but assumes that zero carbon cost is passed through to consumers. Under this scenario, total state-wide costs and consumer electricity rates increase by only .1% relative to the 2020 reference case. In comparison, under a pure emission-based allocation, state-wide costs and rates increase by 5.9%.

[4] Joint California Public Utilities Commission and California Energy Commission Staff Paper on Options for Allocation of GHG Allowances in the Electricity Sector (April 16, 2008).

[5] *See* Staff Paper at 27 citing Burtraw et al. (2001 and 2005) and Fischer and Fox (2004).

Scenario Summary of Changes in Electricity Sector Average Rates & Costs

	Case1: Pure historical allocation, $30CO2, ref. EE, 20%RPS	Case2a:Pure Output Allocation excluding non-fossil generators, $30CO2, ref. EE, 20%RPS	Case4: Pure Auction w/ ARR on 50/50 LSE sales & historical emissions, $30CO2, ref. EE, 20%RPS	Case5: Staff preferred 100% allocation w/ transition to 100% output-based, $30CO2, ref. EE, 20%RPS	Historical allocation + 25% auction stepping up 10%/yr	Case2aMCP: Pure Output Allocation excluding non-fossil generators, $30CO2, ref. EE, 20%RPS
Change in 2020 rates relative to reference case ($/kWh)	$ 0.009	$ 0.009	$ 0.002	$ 0.009	$ 0.002	$ 0.000
% change in 2020 rates relative to reference case	5.9%	6.0%	1.5%	6.0%	1.5%	0.1%
% change in 2020 rates relative to 2008	19.8%	19.9%	14.8%	19.9%	14.8%	13.2%
Change in 2020 utility cost relative to reference case ($M)	$ 2,806	$ 2,845	$ 716	$ 2,845	$ 716	$ 39
Change in 2020 utility cost relative to 2008 ($M)	$ 13,983	$ 14,022	$ 11,894	$ 14,022	$ 11,894	$ 11,216
Cumulative Utility Cost ($M)	$ 451,596	$ 452,076	$ 434,310	$ 452,001	$ 440,240	$ 429,991
Cumulative Producer Surplus ($M)	$ 22,086	$ 22,566	4,799.8	$ 22,491	$ 10,730	$ 669

Further, earlier RFF analysis[6] shows that coal displacement occurs 2.5 times faster under output-based allocation than under an auction-based allocation approach, and nearly twice as fast as under an emission-based allocation approach. While natural gas prices would increase under an output-based allocation approach more than under other methods, the RFF analysis finds that this increased cost is more than compensated by the fact that an output-based allocation results in much lower increases in electricity rates than the other methods. An output-based approach would also encourage a faster transition away from coal, thereby reducing the emission intensity of southern California municipal utilities. In contrast, an emission-based allocation would allow emission intensive LSEs to maintain coal assets and contracts.

In addition, as the Staff Paper notes,[7] a regularly updated, output-based allocation approach would better ensure that potential market entrants are not foreclosed from entry due to prohibitively expensive emissions allowances. Under a regularly updated, output-based approach, emissions allowances could be administratively allocated to new market entrants from

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[6] Bharvirkar, Ranjit; Butraw, Dallas; Palmer, Karen and Paul, Anthony, The Effect of Allowance Allocation on the Cost of Carbon Emission Trading, RFF Discussion Paper 01-30 (Aug. 2001).

[7] *See* Staff Paper at 27.

a set-aside pool. A new entrant would be eligible to receive allowances from the set-aside pool for a period of time until the new entrant establishes an operating history that will allow it to become part of the existing entity pool. This approach has been successfully implemented by states in the eastern United States which operate a nitrogen oxides cap-and-trade program (*e.g.*, Massachusetts, New York, and New Jersey). To the extent allowances from the new entrants pool are not used, the allowances should be redistributed to the existing entrant pool.

With respect to closure of emissions sources or termination of contracts (essentially the opposite of new entry), revocation of allowances *in the current allocation period* would create disincentives for the retirement of dirty, inefficient generating facilities. For this reason, Calpine recommends that entities be allowed to retain allowances upon facility closure or contract termination until the next update of the allowance allocation.

B. Response to Staff Paper On Allowance Allocation Options And Other Allocation Recommendations

The Staff Paper includes "preferred approaches" which attempt to craft a compromise between different electricity sector participants' interests. However, while broad participation by electricity sector participants in the cap-and-trade market is important, the urgency with which California must respond to the climate crisis requires the objective selection of an allocation methodology best designed to meet the criteria set forth in the Staff Paper and included in these comments. Toward that end, Calpine believes that a regularly updated, output-based allocation methodology is best aligned with the program criteria.

1. An Emission-Based Allocation Approach Should Not Be Adopted

In contrast to an output-based approach, a "grandfathering" approach would penalize efficient fossil fuel generation, as well as entities that have already invested in low-GHG technologies and fuels since these entities would be allocated fewer allowances than those that have not undertaken such investments. Moreover, and perhaps most troubling, a grandfathering approach would encourage entities to prolong the life of high polluting resources or contracts with such resources to maintain their allowance allocation. The Commissions should not countenance an allocation approach that results in such perverse incentives.

Under a grandfathering approach, entities would receive the same allowance allocation regardless of future reductions in emissions or amount of fuel consumed. Thus, a grandfathering approach would not provide any real incentive for efficiency improvements nor investments in cleaner, more efficient, generating technologies. As a result, a grandfathering approach would, in effect, penalize new, likely more efficient market entrants by requiring them to purchase allowances from the market despite historical emitters operating less efficient, technologically outdated generation facilities. Furthermore, as Calpine understands the grandfathering approach, entities that receive allowances at the start of the program but then subsequently retire or mothball a plant would nevertheless continue to receive allowances for that plant even though the plant is no longer operating.

An allowance allocation approach aimed solely at compensating higher emitting resources ignores the contribution of entities that have already invested in lower emitting generating fleets prior to the imposition of the cap, and could discourage future investment in low-emitting technologies. It also fails to recognize that, in the absence of these investments, California would be facing a far greater hurdle in reducing current emissions. To achieve substantial CO_2 reductions, an allowance allocation approach should be designed to recognize and reward existing, clean, efficient, low and non-emitting generation technologies, as well as drive innovation and the deployment of new, highly efficient generation.

In recent workshops on allowance allocation policies, some participants expressed concern that an output-based approach might encourage generators to increase production, a result counter to emissions reduction goals. In fact, an output-based approach only provides incentive for *cleaner* technologies to increase production. Under an output-based approach, the amount of production is a function of the carbon cap, *not the allocation type*. Assuming the cap is sufficiently low and consistently placing downward pressure on emissions levels, then an output-based approach sends the correct signal to the market (*i.e.*, cleaner resources will be incentivized to increase production to displace emissions-intensive generation sources).

Simply put, by providing a financial incentive to increase output while *decreasing* emissions, a regularly updated output-based allocation approach would push entities to become more efficient – that is, produce a greater amount of electricity per unit of fuel. A grandfathering approach would not.

2. A 100% Auction Approach Should Not Be Adopted

Although auctions may appear to be an efficient and non-discriminatory way to distribute emissions allowances based on a power plant's actual environmental performance, an allowance auction may result in much greater uncertainty and market volatility. For instance, it is unlikely that generators will be able to recover 100% of their auction-related costs in the wholesale energy market. The price of GHG allowances will only be one of many factors that determines wholesale electricity prices once a GHG cap-and-trade program is implemented. Factors such as transmission constraints, contractual obligations, and other regulatory requirements (*e.g.*, "must-run" obligations) prevent the wholesale electricity market from being perfectively competitive, which results in generators not being able to fully recover allowance costs. Indeed, a study of the impact of the European emission trading system on the power sector found that, in some wholesale markets, as little as 60% of allowance costs are recovered in the wholesale market.

In addition, variations in cost-recovery mechanisms may cause inequities to arise in the ability of different type of entities (*e.g.*, IOUs, IPPs) to pass on (or not pass on) the cost of allowance purchases to customers. An auction-based approach may also increase costs and raise reliability concerns in the event that unregulated third parties attempt to purchase significant quantities of allowances and withhold them from the market, speculating that prices will go up. Such actions would, at a minimum, increase the cost to generators of securing allowances which would, in turn, drive up the cost of electricity to consumers and could threaten reliability if insufficient allowances are available for generation to meet the load. Finally, an auction-based allocation approach would impose additional costs that are difficult to quantify or predict, such as broker fees, internal G&A costs and the cost of capital. These potentially significant costs will necessarily be borne by consumers.

Given these concerns, Calpine does not support distributing 100% of allowances through an auction in the initial stages of a GHG emissions reduction program. As discussed below, however, should the Commissions determine that an auction approach to the allocation of emissions allowances should be adopted, the auction mechanism should be phased in over time to allow entities to adopt and implement emissions reduction measures with the least disruption to the market.

3. If An Auction Approach Is Adopted, It Should Be Phased-In Gradually Over A Conservative Time Period

As discussed above, an immediate 100% auction of allowances could create unacceptable market volatility due to uncertainty regarding allowance prices, and such uncertainty would likely be exacerbated by the lack of experience with auctioning allowances under a GHG cap-and-trade system. To mitigate price volatility at the outset of the cap-and-trade program, the majority of allowances should be allocated using a non-fuel specific output based approach in the early years of the program, with a gradual transition toward a 100% auction as the primary method for distributing allowances in later years. Gradually phasing-in auctioning would give all affected parties a period of time to adjust to the cost implications of emissions reduction measures and the cap-and-trade program.

For instance, a gradual transition to 100% auctioning would encourage investment in low-GHG technologies and allow entities subject to the cap to adopt, implement, and pay for emissions reduction measures without eliminating or reducing incentives to shift dispatch to more low-emitting resources. This is because the allowance price in the secondary market (which is a function of the level of the cap and the cost of GHG emission reductions) – not the method of allocating allowances - creates these incentives by changing the relative price of high and low emitting generation.

The Staff Paper's analysis finds that overall utility costs and rate impacts are substantially lower under a "pure auction" approach with revenue recycling than under either an emissions-based allocation or output-based allocation. However, a more gradual transition to an allowance auction system would also substantially reduce consumer costs. For instance, a scenario that begins with 25% auction and increases by 10% a year decreases overall costs by over 50% relative to a pure emission-based allocation.[8] Similar results would be achieved for an output-based allocation approach.

With respect to the phase-in period, the Staff Paper contemplates transitioning to a full auction-based program in no more than six years. Such a time frame is likely insufficient to mitigate the potential financial hardship for regulated entities and ratepayers. A reasonable schedule for increasing the proportion of allowances auctioned over time would begin with a majority of administratively allocated allowances in 2012 and culminate in the auction of 100% of emissions allowances around the year 2031. To the extent an auction approach is adopted, Calpine supports a conservative phase-in period.

If an auction approach is ultimately adopted, it is critical to the integrity and success of the process that it be administered by the State or an independent third-party with no stake in the

[8] *See* Table "Scenario Summary of Changes in Electricity Sector Average Rates and Costs" at 7, *supra.*

allowance market. Furthermore, steps should be taken to ensure that any auction revenues returned to the IOUs are not used in any way that could create competitive inequities in the generation market.

4. The Preferred Approaches Identified In The Staff Paper Should Not Be Adopted

The Staff Paper includes "preferred approaches" which attempt to craft hybrid alternatives to the pure output, emission, and auction based allocation proposals. None of these preferred approaches, however, offer the same level of benefits and advantages as a regularly updated, non-fuel specific output based approach or an output-based approach that gradually transitions to an auction approach.

Preferred Option 1 (50% grandfathering) and Option 3 (75% auction) would, at best, only marginally address the deficiencies in the "pure" versions of these allocation approaches. Preferred Option 2 (90% output-based) would seem to be consistent with the gradually phased-in auction approach discussed above. However, because this option is "fuel specific," it essentially functions as a grandfathering approach.

5. Allocating Allowances Directly to Retail Providers

Calpine opposes allocating allowances directly to load serving entities ("LSEs") for several reasons. As an initial matter, allocating the value of allowances to LSEs could completely shield consumers from bearing any of the costs associated with GHG emissions reductions. Shielding consumers from all emissions reduction costs means that consumers will not be getting accurate price signals that might otherwise incentivize them to implement energy efficiency measures or participate in demand response programs. This is particularly true for consumers of LSEs that rely on lower cost, higher-emitting resources.

In addition, allocating allowances directly to LSEs would be anti-competitive and patently unfair as it would give control of the auction process to a certain segment of market participants. By concentrating a disproportionate share of allowances in the hands of LSEs – which represent a small portion of market participants - liquidity in the allowance market would be reduced, making it more difficult for the market to find the most cost effective means for reducing emissions. Furthermore, and perhaps most importantly, allocating allowances only to LSEs raises market power concerns. Because some LSEs – in particular, the IOUs – own generation assets, LSE-owned assets would likely have preferential access to allowances to the detriment of IPPs and power marketers. IPPs and power marketers compete on a head-to-head basis with LSE-owned resources in the wholesale energy market. Thus, allocating allowances only to LSEs harms competition.

IV. FLEXIBLE COMPLIANCE

A. The Use Of Flexible Compliance Mechanisms Must Be Limited

Calpine believes that flexible compliance mechanisms could be useful tools in mitigating short-term price volatility and other potential market issues that could hinder emissions reduction efforts. However, to ensure that real emissions reductions will be achieved, flexible compliance mechanisms must be limited, as such mechanisms have the potential to erode the integrity of the emissions cap and threaten the liquidity of the emissions allowance market. Specifically, flexible compliance mechanisms act as cost containment and protection against market failure. While Calpine supports the inclusion of limited flexible compliance mechanisms, Calpine believes that they should be used only to protect against drastic market fluctuations. Carbon costs must be reflected in industry and consumer consumption prices in order for economic signals to be sent to developers and energy users. The liberal use of flexible compliance mechanisms will diminish incentives to invest in low or zero GHG emitting technologies or curb carbon-intensive activities and merely serve to stall and exacerbate future costs. Moreover, by limiting the use of complex borrowing systems and/or administratively managed safety valves, administrative simplicity is also preserved.

B. Scope of Market and Related Issues of Environmental Integrity

By limiting the use of offsets and borrowing, and by using safety valves only in the case of real emergencies, the integrity of each carbon allowance will be maintained. In turn, allowances from California's market will represent real emissions reductions, increasing the likelihood that they would be tradable in cap-and-trade systems in other jurisdictions.

California's cap-and-trade market should include multiple sectors and be as broad as possible. Greater participation in the emissions market, both in terms of number of market participants and sectors, will increase the liquidity of emissions allowances and naturally encourage emissions reductions in the least cost-intensive sectors. Limiting sector participation may result in less cost-intensive emissions reductions opportunities being passed over for more costly reductions measures.

The State should also be cautious of allocating an excessive level of expected emission reductions to the energy sector. California already has an efficient energy sector, and the cost of additional reductions will increase sharply if the industry is expected to reduce beyond its proportionate share of emissions reductions. The potential for attributing an excessive share of expected emissions reductions to the energy sector highlights the need for a *multi-sector* cap-and-trade program.

C. Price Triggers and Other Safety Valves

Calpine does not support the use of price triggers and safety valves in a cap-and-trade system, except in limited circumstances and only when absolutely necessary to prevent market failure. A well functioning GHG emissions reduction program should provide a clear and strong carbon price signal. The price of carbon should result in behavioral change and encourage the development and deployment of cleaner technologies. Thus, while a price-based safety valve provides for cost certainty and ensures that the economic burden of a GHG emissions reduction program is limited, such a method presents several concerns.

First, a price-based safety valve undermines the fundamental purpose of an emissions cap and trade system, and severely limits the certainty in meeting emissions reduction goals. A price-based safety valve may also increase the future cost of meeting emissions reduction goals if long-term goals are not adjusted to reflect the activation of a price-based safety valve. Furthermore, the availability of a price-based safety valve can reduce the incentive for generators to change carbon-intensive practices and fail to encourage new technology development since emitters can simply "buy" their way out of instituting concrete emissions reforms. While revenues garnered from the use of a price-based safety valve may be invested in carbon-focused technologies, technology financing is not an adequate substitute for concrete emissions reductions.

D. Linkage

Climate change is a global issue and thus requires movement towards national and global policies and action. California should eventually accept all allowances from other programs so long as it can verify the integrity of those allowances. By the same token, allowances from California should also be tradable in other markets. Depending on the individual corollary market's design, enforcement and verification measures will be necessary to ensure the integrity of allowances. Offsets could be allowed so long as they are verifiable, enforceable and strictly additional to other GHG reduction mechanisms. Lastly, California should monitor other emissions markets to prevent the potential abuse of offsets in other programs from undermining the value of allowances in California's cap-and-trade program.

E. Compliance Periods

Initially, an abbreviated compliance period may be useful to serve as a "test" period on a temporary basis. However, permanent compliance periods should be three to five years in length. Compliance periods should also be the same for all entities and sectors.

F. Banking and Borrowing

1. Banking

Calpine supports the use of banking. Banking allows entities to hold extra emission allowances from one compliance period to the next. If an entity makes more reductions than are required in a given compliance period, it can keep the extra allowances and use them during a future compliance period when reductions may be harder and more costly to achieve. Such a measure encourages cost-effective reductions early on in the program, thereby controlling price volatility in the market.

2. Borrowing

Calpine does not support borrowing unless the use is limited and certain conditions are in place. Borrowing allows entities to access their emissions allowances from future compliance periods to meet their present reduction target. For example, entities would be able to use future allowances in periods of high costs and pay them back at a later time. As with banking, borrowing would be a means to mitigate short-term price volatility.

Borrowing, however, presents potential for abuse and market failure. For instance, borrowing can diminish the incentive to undertake actions to achieve early reductions. Moreover, unlimited borrowing could render future reductions unachievable or entities may not be able to make up the borrowed credits in the future. To address these concerns, if used, a borrowing mechanism should be defined by certain conditions that discourage potential adverse impacts on the allowance market. These conditions could include limiting borrowing to a short-time period or requiring “interest payments.”

G. Penalties and Alternative Compliance Payments

Calpine supports penalties for noncompliance that are sufficient to create strong incentives for entities to comply with the carbon cap. In evaluating appropriate penalties for noncompliance, the Commissions and ARB should consider the potential for entities to view penalties simply as a means to “buy out” of complying with emissions reduction requirements. Moreover, while revenues from penalties could be invested in GHG-reducing technologies, financing emissions reduction technologies is not an appropriate substitute for actual GHG reductions. Accordingly, in addition to paying a penalty for noncompliance, enforcement mechanisms should require a noncompliant entity to bring itself into compliance with assigned emissions reduction levels.

H. Offsets

Calpine supports the use of *limited* offsets. Offsets can lower compliance costs, provide compliance flexibility, promote technology development, and encourage reductions outside of the cap *so long as they are real and verifiable reductions*. An effective offset program can be complimentary to a cap-and-trade program, but should be secondary to the primary goal of reducing emissions at the source.

1. Conditions

To ensure the integrity of the cap-and-trade program is maintained, Calpine strongly believes that it is necessary that the offsets program include the following conditions within its program design:

- Results in real emissions reductions;
- Offsets must be additive (*i.e.*, projects undertaken outside of normal “business as usual” activities);

- Strictly regulated (*e.g.*, verifiable by a third party and avoids double-counting by ensuring that only one party can claim the offset credit); and,
- Offsets must be permanent.

While offsets provide significant environmental and economic benefits for generators, as well as flexibility for regulated sources, the Commissions and ARB should give due care in designing an offsets mechanism that does not induce market manipulation.

2. Limitations

Calpine supports limiting the number of offsets to achieve real reductions in GHG emissions from generating units. Because an offset mechanism enables regulated entities to offset their own emissions by purchasing emission reduction credits generated through projects at facilities not covered by the cap, it is important to note that offset policies must consider the long-term impacts on the overall emissions level from within California.

3. Administration

Other successful offset programs should be examined to ensure that certain structural elements are included in the program design to facilitate integration for trading and accurate accounting. At a minimum, California's offsets mechanism should be measurable, real, additive, and have clear ownership standards allowing regulators to verify details of offset-eligible projects. Calpine recommends that California apply standards and protocols consistent with those adopted by other programs, such as the Kyoto Protocol's Clean Development Mechanism, the European Emission Trading System and the Regional Greenhouse Gas Initiative. In addition, Calpine supports the selection or development of a centralized offset registry.

V. TREATMENT OF CHP

A. Detailed Proposal

1. CHP Should be Regulated Using a Regularly Updated, Output-Based Allocation Methodology.

CHP projects offer efficiency, environmental and economic advantages that should be recognized and rewarded under a properly designed multi-sector cap-and-trade program. Calpine supports regulating GHG emissions attributable to CHP at the source, regardless of its technology or size, using a regularly updated, non-fuel specific output-based allocation approach. Consistent with AB 32's requirement to regulate significant sources of GHG emissions, and for administrative simplicity, Calpine recommends that all the emissions associated with both thermal and electric load be regulated in the electricity sector. In practical terms, the Commissions should concurrently consider and adopt a simple formula that converts thermal energy into units of megawatt hours.

Calpine believes that ownership and operation of a CHP facility should be taken into consideration in the development of an appropriate emissions reduction regulatory scheme. For example, the owner and operator of a CHP facility is often also the owner and operator of the industrial facility. In this case, the administration of a deliverer-based compliance scheme is fairly simple. However, in situations where the CHP unit is owned and operated by someone other than the industrial user the situation could become more complex. In such a situation, Calpine still supports regulating the emissions created by either the thermal or electric process at the source (*i.e.*, the CHP facility) since the owner of the CHP facility will have the best and most accurate information regarding the amount of GHG emissions. On its face, this approach is the most administratively practical. However, should the Commissions recommend the auctioning of allowances (in any year), Calpine supports the Commissions adopting specific provisions for those CHP facilities that are not owned by the industrial host and that have long-term contracts ("LTCs").

2. Long-Term Contract Set Asides

Many long-term CHP contracts were executed in the early 1990s, well before the prospect of CO_2 regulation could have been reasonably anticipated. Without an opportunity to adjust the pricing for electric and thermal sales to the plants' customers, the burden of purchasing allowances for electricity sales under these contracts would result in significant financial harm to the plants and have a major impact on the plant's annual O&M budgets. RGGI has dealt with this issue by proposing a set-aside for facilities with LTCs.[9] Under the proposed RGGI regime, Applicants must demonstrate that (1) their contract does not allow for the pass through of the cost of allowances to the purchasing party and (2) that the applicant is unable to renegotiate the terms of the contracts.[10] Calpine supports this mitigation mechanism as it provides a fair and reasonable approach to level the playing field for CHP facilities with LTCs under an auctioning approach.

3. Calpine Does Not Support Including CHP as a Reduction Measure under AB 32.

Not all CHP is created equally. The relative efficiency of CHP facilities depends on a variety of factors, including their management and operation, age and fuel source. According to the "Joint CPUC and CEC Staff Paper on GHG Regulation for CHP," there are 940 CHP units currently in California that have a capacity of over 9,000 MW.[11] Further, a CEC study states that California has a total technical market potential from all types of CHP approaching 30,000

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[9] *See* Proposed NYCRR 242-5.3(d) CO_2 Budget Trading Program (available at http://www.dec.ny.gov/docs/air_pdf/08242revexpterms.pdf).

[10] Proposed NYCRR 242-5.3(d)(3)(i) CO_2 Budget Trading Program (available athttp://www.dec.ny.gov/docs/air_pdf/08242revexpterms.pdf).

[11] *See* Joint CPUC and CEC Staff Paper on GHG Regulation for CHP at 2 (May 1, 2008).

MW.[12] Calpine cannot support a program that exempts such a significant amount of generation from a regulatory program designed to reduce emissions.

B. Regulation of CHP GHG Emissions

As discussed above, Calpine supports a multi-sector cap-and-trade that includes CHP facilities.

VI. NON-MARKET-BASED EMISSION REDUCTION MEASURES (OTHER THAN CHP) AND EMISSION CAPS

A. Electricity Emission Reduction Measures

A cap-and-trade program will capture the most cost effective emissions reductions since emitters with the least cost-intensive opportunities for reductions will naturally have the greatest incentives to reduce emissions. In contrast, heavy use of command and control mechanisms will limit the efficiencies of the market. In this regard, Calpine believes that the Staff Paper underestimates the value of a cap-and-trade market to naturally encourage the most cost-effective emissions reductions. The Staff Paper assumes that most emissions reductions will be met by command and control regulations, such as the Renewables Portfolio Standard ("RPS"), and does not account for the ability of market mechanisms, including a cap-and-trade program, to realize efficiencies by prioritizing the least cost-intensive reductions over more cost-intensive reductions.

The Staff Paper also assumes that all RPS targets are and will continue to be met. Given the difficulties IOUs have had procuring AB 32-compliant renewable resources, as well as recent public comments by IOU representatives alluding to the possibility that RPS targets may not be met, this assumption is by no means assured.

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[12] *Id.,* at 3 citing *Assessment of California CHP Market and Policy Options for Increased Penetration,* EPRI, Palo Alto, CA, California Energy Commission, Sacramento, CA : 2005.

B. Annual Emission Caps for the Electricity and Natural Gas Sectors

A cap-and-trade program incorporating multiple sectors offers the most cost effective means of reducing emissions in the State since such a program will naturally encourage the least "carbon efficient" emitters in the State to invest in clean technology (or retire). In assigning proportionate shares of responsibility in meeting the goals of AB 32, the Commissions and ARB may consider decreasing the emissions cap on the electricity sector (thereby increasing the amount of required reductions). However, the Commissions and ARB should take into account the relative efficiency of the California energy sector as compared to other potential program sectors. Overestimating the amount of cost-efficient emissions reductions measures available to electricity sector market participants may result in forcing the electric sector to invest in more costly means of emission reductions than may be otherwise found in other industries. This would act to increase energy costs for California's electric ratepayers and, moreover, send perverse market signals to developers and emitters outside the electricity sector.

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VII. MODELING ISSUES

Calpine believes that further modeling may be necessary before the ARB can perform a full and robust analysis of the most appropriate emissions allocation methodology. For instance, Calpine believes the current modeling may contain inaccurate data given that the Western Electricity Coordinate Council's database may require updating. Moreover, in comparison to the magnitude of the effect that the adopted allowance allocation policy will have on California's energy markets, parties have been afforded a relatively short timeframe in which to review the modeling.

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CERTIFICATE OF SERVICE

I, Judy Pau, certify:

I am employed in the City and County of San Francisco, California, am over eighteen years of age and am not a party to the within entitled cause. My business address is 505 Montgomery Street, Suite 800, San Francisco, California 94111.

On June 2, 2008, I caused the following to be served:

COMMENTS OF CALPINE CORPORATION ON ALLOWANCE ALLOCATION ISSUES

via electronic mail to all parties on the service list R.06-04-009 who have provided the Commission with an electronic mail address and by First class mail on the parties listed as "Parties" and "State Service" on the attached service list who have not provided an electronic mail address.

_ _/s/ Judy Pau______________

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