BP America, Inc

Ralph J. Moran
1201 K Street, Suite 1990
Sacramento, CA 95814
(916) 554-4504

DATE: August 11, 2011

Via Email
Edie Chang
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812

Subject: Revised Cap and Trade Regulations dated July 25, 2011

Dear Edie:

BP America, Inc. submits these comments on the July 25, 2011 revisions to the Cap and Trade Regulation (the Regulation). BP supports the implementation of cap and trade as a component of California's comprehensive plan to reduce GHG emissions. A properly designed cap and trade system can be the most efficient and cost effective way to meet GHG emission reduction goals. We continue to be concerned, however, with many design elements of the Regulation and believe that the revised regulation has overlooked many important and helpful suggestions by BP and others.

With several relatively minor changes to market rules that would in no way affect the ability of the program to meet the environmental goal, we believe CARB can greatly increase the chances for a smooth and successful roll out of the program. Without these changes, we believe the chances are much greater for negative consequences for the market – and for the ultimate success of the program.

Our concerns and recommendations are summarized below and detailed in the following pages.

- Allowance Allocation – The Regulation contemplates a 250% increase in compliance obligation for the first compliance period through a 10% reduction in allocated allowances. This severe reduction has received little public discussion, is not adequately explained or justified and will defeat the purpose of a carefully planned transitional period. Given the current economic conditions and the strong rationale supporting a soft start to the program, this "haircut" in early allowance allocation is unwarranted and unwise.
- Trade Exposure - The Regulation must contain a commitment and process to evaluate the continuing extent of trade exposure of California industry subject to the

cap and trade regulation. A clear commitment to and process outlining a periodic review of the cap and trade language could serve this purpose.

- Market Rules - Many of the Regulation's market and trading rules combine to create serious issues around allowance availability, liquidity and market confidence. Holding limits should not apply to compliance entities, there should be no annual surrender obligation for most market participants, and the use of allowance vintages from the year in which allowance surrender is made should be permitted. Parties without a compliance obligation should not be allowed to carry allowances across a compliance period.
- Sector Equity – There are serious problems in the Regulation regarding differential treatment of sectors that lead to unacceptable market distortions. The cap and trade program should treat all emissions and energy consumers equally. There can be no justification for carbon price mitigation for certain fuel types and not others – as is the case in the Regulation's treatment of electricity and power sector emissions.
- Transportation Fuel Emissions – The Regulation does not contain sufficient design information on this important issue. More detail is needed. The Regulation should consider and adopt a linked fee for transportation fuel emissions.
- Emissions without a Compliance Obligation – The current Regulation excludes many promising biofuel technologies in its exemption language.
- Replacement Electricity – the Regulation should be made consistent with the treatment of replacement energy in SB 2 (1X).
- Offsets – The severe limits on the use of offsets continues to be problematic, and the rules around offset invalidation will further exacerbate the inability of offsets to provide adequate cost control.
- LPG/NGLs – The Regulation needs clarification around definitions in order to clearly identify obligated parties and to avoid double counting of emissions.
- Auction Bid Guarantee- Compliance entities should be able to use the value of in-state physical assets and/or credit rating as bid guarantees.
- Auction Timing and Source of Allowances – The Regulation should include a single, clear table that assembles and reconciles the information on each auction.
- Periodic Review of the Regulation – The Regulation should include a requirement for periodic review and update.

Detailed comments:

Allowance Allocation

It is important to keep in mind that for companies who have been designated as trade exposed, free allocation of allowances is a way to mitigate this trade exposure and to lessen the impact of a transition to a low carbon economy. With input from the Governor's office, CARB has concluded that free allocation of allowances, especially early in the program, is necessary and warranted to address trade exposure and to provide for a transition period. Therefore, when considering a method to distribute these free allowances, it is important that the method chosen and the design elements of that method do not run counter to the intentions of freely allocating allowances.

Of most concern in this regard is the intention to reduce initial allocation by 10% (either through the benchmarking process or in other ways) – which is suggested by staff to be

necessary in order to fund various accounts or programs. This massive reduction in allocation would increase compliance obligations on affected regulated parties by 250% (from 4% to 14%) in the first compliance period – a period which was originally designed as providing a "soft start" and transition period for regulated entities.

The justification for, and design of, a "soft start" to the cap and trade program was very carefully considered. This need for a soft start was clearly articulated by then Governor Schwarzenegger and affirmed by CARB leadership. The treatment of trade exposure and leakage avoidance was carefully and thoughtfully analyzed by staff – with a primary result being full allocation in the first compliance period to sectors determined to be trade exposed. To the contrary, there seems to be little justification, rationale or analysis to support or explain consideration of a massive reduction in first compliance period allocation that would result in a 250% increase in the compliance obligation at the outset of the program.

We strongly urge CARB to rescind any consideration of a reduced allowance allocation (or "haircut" as it has been referred to). The use of the first compliance period should continue to be viewed as a period that while it will deliver real, tangible emission reductions, allows regulated parties to transition to a low carbon economy.

If any reduction in allocation is deemed necessary to fund various allowance accounts - these allowances should come from sectors that have not been determined to be trade exposed, or that will benefit from the programs to which these allowances will be allocated (for instance, the electric utility sector should fund the VREC account, as voluntary renewables will reduce their compliance obligation).

With regard to the choice of a benchmarking methodology with which to allocate allowances within a sector, it is vitally important that any methodology rewards GHG efficiency, does not disadvantage complexity, and minimizes leakage. For the refining sector, we believe that the EII methodology proposed by WSPA is a workable approach for use as an interim methodology (i.e. for the first compliance period).

The Regulation contemplates use of a "simple barrel" methodology for the refining sector. If such a methodology is employed by CARB, we ask that CARB incorporate the following three key concepts:

1. Indirect emissions must be accounted for in the benchmark. If the Simple Barrel benchmark is going to be employed on an equal basis, then all emissions related to the output should be included in the benchmark. Indirect emissions from purchased electricity, purchased steam, and purchased hydrogen must be included. Emissions associated with sold electricity and sold steam should be excluded. Failure to properly account for emissions from purchased electricity penalizes refineries with cogeneration units, creates an unfair playing field between refineries, and creates perverse incentives for facilities to simply shift emissions by buying electricity and hydrogen rather than producing it.

2. Baseline years should extend beyond 2008 and 2009. Limiting the baseline years to 2008 and 2009 fails to account for energy efficiency activities in earlier

years. Furthermore, 2008 or 2009 could be years that are not representative of emissions or production for reasons such as having a refinery shut-down for maintenance (typically every five years). We recommend expanding baseline years to 2006 to 2010.

3. Other factors could influence a Simple Barrel benchmark and should be considered (i.e., step-changes) for later compliance periods. This additional review is necessary regardless of whether the later compliance periods use the Simple Barrel methodology or a methodology that is complexity or efficiency based.

Regarding the allowance allocation treatment of calciners, we strongly believe the Regulation should be revised to account for the following considerations:

1. Further work needs to be done by CARB to determine the appropriate level of trade exposure for California calciners. As calcined coke is sold in an international market, this industry is and should be considered highly trade exposed.

2. Change the calciner benchmark to be based on 90% of the California industry average or California best-in-class. The benchmark for calciners in the current Cap and Trade Program Regulation is not consistent with the method of determining benchmarks for other California industries. For other California industries CARB plans to set the benchmark at 90% of the industry average. If the 90% of average is insufficient, these other industries would then use the best-in-class in California. In the current Cap and Trade Program Regulation, the calciner benchmark is based on EU Complexity Weighted Tonne (CWT) benchmark and an EU energy benchmark. EU benchmarks are based on EU calciners which are not directly comparable to US calciners.

3. Set the calciner benchmark based on direct emissions without bottoming cycle power removed. The energy attributed to power sales should be excluded to be consistent with the California Public Utilities Commission's (CPUC) decision 09-06-05 for "bottoming cycle power".

Trade Exposure

The regulation correctly acknowledges the reality that California industry will be subjected to trade exposure as a result of the cap and trade program. California industry will be competing against global and interstate competition that are not similarly regulated – and therefore not subject to the same costs. U.S. Energy Secretary Steven Chu acknowledged the impact of carbon costs on trade exposure during recent testimony before a House science panel, "If other countries don't impose a cost on carbon, then we will be at a disadvantage", he said.[1] Competitive pressure resulting from trade exposure to unregulated parties can be especially acute in state or regional programs in the form of both neighboring states *and* international competition – particularly in coastal states such as California where there is ready access to international trade infrastructure like the California Ports facilities.

[1] Wall Street Journal online, March 18, 2009

If not properly and adequately mitigated, this trade exposure can and will result in leakage of both emissions and jobs from California to unregulated areas.

While acknowledging the need to address trade exposure through free allocation – the regulation includes a very quick path to auction of some 50% of refinery allowance needs by 2018 – a mere five years into the program. CARB staff appear to use a simplistic, static model that assesses market dynamics before the imposition of a carbon price – and assumes little or no change in behavior resulting from the carbon policy. This static model also ignores the cumulative impact of other regulations and other differences in operating cost between California industry and its competitors. CARB's analysis also fails to consider the competitive effects of California produced product that is exported to neighboring states. This is an inadequate and deeply flawed method for informing a critical part of the design of the regulation.

A recent study evaluated the leakage potential for the U.S. refining industry resulting from a carbon policy. The EnSys study[2] models the impact on the refining industry of the allocation scenario contained in the federal Waxman-Markey (WM) proposal – a proportion of free allocation that approximates the 50% in 2018 contained in the CARB cap and trade regulation. Rather than taking a static look at behavior before and after the imposition of a carbon price, the EnSys model projects how industry is likely to operate under a given scenario.

The EnSys study concludes that because this sector operates as part of and interacts within the global refining industry, "the impacts of WM on US refining and US petroleum imports dependency would be substantial" in that it "delevels" the playing field in the global refining sector. The study concludes that "the underlying reason the potential impact on US refining is so severe is that allowance costs substantially raise operating – and also capital costs of US refineries, rendering them less competitive versus non-US refiners in regions that do not bear any carbon costs". The impact on coastal refineries, such as those in California, is especially pronounced.

Projected results of the study include:

- Reduced throughputs at US refineries of 1 million - 2 million barrels per day (mbpd) by 2015 and 1.5 - 4.4 mbpd by 2030. Falling US throughput would be largely offset by increased refining activity in the rest of the world.
- US import of refined product would increase from approximately 14% in the baseline case to 18% - 20% in 2015 and from about 10% in the 2030 baseline case to between 14% -19% (a near doubling).
- An increase in US refining variable operating costs of 20% - 50% in 2015 and 100% to approaching 300% in 2030.
- Consequently, while WM would reduce US refinery CO2 emissions by 12 million - 36 million tonnes CO2e (5 -15%) by 2015, and by 57 million - 118 million tonnes by 2030 (20 - 41%), these reductions would be largely offset by increased emissions from non

[2] EnSys Energy, Waxman-Markey (H.R. 2454) Refining Sector Impact Assessment, October 2009

US refineries, resulting in net global refining emission reductions of just 0.4% in 2015 and 3% in 2030.

The regulation seems to conclude through use of a very simplistic analysis, that industry can be subjected to a significant level of additional cost and trade exposure before leakage will occur. When a sector operates in a global market, against global competition, where the prices are set by global supply and demand – the only way to fully mitigate trade exposure (short of a global GHG policy) is through 100% free allocation. Any less free allocation exposes California industry to incremental costs to which their competitors (both international and other states) are not exposed. So, really it is a matter of how much trade exposure – and how much leakage of jobs and emissions - California policymakers are willing to accept and impose on California industry.

The trade exposure of the refining industry is well documented. Until a critical mass of states and countries adopt carbon policy that results in a similar cost of carbon – California should freely allocate 100% of allowances to trade-exposed industry. Further, the Regulation must contain a commitment and process to evaluate the continuing extent of trade exposure of California industry subject to the cap and trade regulation. A clear commitment to and process outlining a periodic review of the cap and trade language could serve this purpose.

Market Issues

A broad, deep and liquid trading market is vital to the success of the cap and trade program. All entities that participate in the cap and trade program, but especially those with large compliance obligations, must have a reasonable level of assurance and certainty that they will be able to satisfy an allowance obligation in the market. As a party that expects to have a large allowance obligation, and will likely need to utilize the market to satisfy this obligation, BP is deeply concerned by several of the Regulation's market rules that will combine to severely reduce the availability of allowances, reduce market liquidity and affect the ability to obtain the most efficient carbon pricing.

Allowances, and their ability to flow through the market freely, are what will keep the California carbon market operating smoothly and give compliance entities confidence in the market. If allowances are not able to flow through the market freely, there will be a serious crisis of confidence in the market. Unfortunately, several of the Regulation's design elements result in allowances being prematurely and unnecessarily removed from the market in a way that brings a high potential for grave consequences for liquidity, allowance availability and market confidence. These troubling design elements include very restrictive and unnecessary allowance holding limits, corporate associations, compliance accounts, annual surrender of allowances, and overly restrictive rules on use of allowance vintages.

First is the allowance holding limit described in the Regulation. The holding limits described in the Regulation are irrespective of a compliance entity's allowance obligation – meaning that an entity with a very small allowance obligation is subject to the same absolute holding limit as an entity with a multi-million allowance obligation. The result is restrictive holding limits that represent a small fraction of the allowance obligation of compliance entities with large allowance surrender obligations.

Any holding limit must take account of a compliance entity's full compliance period allowance obligation (i.e. not only annual compliance obligation) *plus* the need to bank and hedge allowances. A holding limit that does not consider compliance obligation and banking/hedging removes important compliance flexibility from those who most need it – i.e. those with large allowance surrender obligations.

It is important to understand that the existence of a holding limit does not assure the avoidance of market manipulation – nor does the absence of an arbitrary holding limit allow for market manipulation. The largest carbon market in the world (the EU ETS) operates without an allowance holding limit, and we are unaware of any demonstrable manipulation issues in that market. Likewise, other major commodity markets operate with general prohibitions on market manipulation that do not require the imposition of arbitrary or across-the-board holding limits to help detect or enforce.

BP recommends against the use of allowance holding limits. The Regulation attempts to address concerns about holding limits by introducing a very limited exemption. However, the holding limit "exemption" is not really an exemption at all as in order to qualify for the "exemption", allowances have to be deposited in a compliance account from which they can not be removed. If a very limited exemption is as far as the Regulation will go to address these concerns about holding limits - it must be an actual exemption from the holding limit - which means the allowances subject to the exemption can reside in the holding account.

Section 95920 (d) (2) (A) should read:

The limited exemption is the number of allowances which are exempt from the holding limit calculation after they are transferred by a covered entity or opt-in covered entity to its holding ~~compliance~~ account.

An element of the Regulation that exacerbates the already troubling holding limits is the language on corporate associations. The language here is very broad and results in associated entities with no practical means to jointly hold or manage allowances, subjected to a joint, unworkably low holding limit. Again, the solution here is to avoid the use of holding limits on compliance entities – or to impose a limit that accounts for full compliance obligation and needed flexibility to bank and hedge.

The Regulation introduces the concept of compliance accounts as an apparent means to mitigate the effect of the very low holding limits. It appears that once an allowance is deposited in this account, it can not be removed for trading or future use. These allowances would thus be removed from the market, unable to flow freely to provide market liquidity and confidence. For entities with large allowance surrender obligations, this essentially removes any flexibility from a multi-year compliance period and results in a real-time allowance surrender obligation.

Annual surrender obligations also greatly reduce the flexibility of a three-year compliance period. CARB staff have asserted that this design element is necessary in the event that certain compliance entities declare bankruptcy during a compliance period. We have never

seen a case made that demonstrates that this assertion by staff warrants such a drastic solution that is so potentially harmful to the operation of the market and to other compliance entities – or that other means, such as bonding or credit rating tests cannot be used to satisfy staff's concern. Mitigation of this risk, to the extent it exists, should be targeted at those who actually present a risk. The annual surrender obligation, for all but those with a demonstrated risk of insolvency, should be removed in order to allow the full flexibility provided by a multi-year compliance period.

Finally, the treatment and use of vintage allowances, combined with the aforementioned market rules greatly increase concerns around liquidity and market confidence – especially at the end of a compliance period. As written, a significant percentage of allowances will be unavailable for trading in closing months of a compliance period due to the compliance accounts, holding limits and annual surrender. In the months preceding final true-up, compliance entities will be aware of the fact that they must hold enough of the proper vintage allowances in order to meet their final true-up (for this first compliance period, this will mean vintages 2013 and 2014). This will cause many compliance entities to conservatively bank the proper vintages, leading to little allowance availability, greatly reduced liquidity and a potential crisis in market confidence during the 2015 true-up period. These problems could be exacerbated by parties without a compliance obligation that bank and carry over allowances.

During this time, compliance entities will have in hand 2015 vintage allowances, allocated early in 2015. Unfortunately, the Regulation as written prohibits use of these allowances for use in 2015 true-up for the 2012-2014 compliance period. In order to increase allowance availability, liquidity and market confidence, the Regulation should prohibit non- compliance entities from carrying allowances across compliance periods and should allow use of vintages that correspond to the year in which the surrender must be made – as well as earlier vintages. A simple change here could greatly increase flexibility, allowance availability and market confidence.

Section 95856 (b) (2) should read:

To fulfill any compliance obligation, a compliance instrument must be issued from an allowance budget year within or before the year during which the compliance obligation is to be surrendered ~~calculated~~, unless:

Sector Equity
A primary objective of a market-based, GHG-reduction program, such as a cap and trade program should be to establish a broad, consistent price for carbon across the widest segment of the economy as is practicable. A broad, consistent carbon price will result in the fairest, most effective and most efficient reduction of GHGs and will best distribute the economic burden and increasing opportunities for low-cost abatement measures.

A cap and trade system that distinguishes emissions from different sectors for differential treatment does not result in market consistency, does not equitably distribute economic burden and opportunity, and is a serious violation of the intent of a cap and trade program. This is the case when it comes to the Regulation's treatment of the electricity sector – with

the most egregious example being the use of auction revenue to mitigate the price impact of carbon costs in this sector – and in this sector only.

A clear example of the market distortion created by this inequity is a consumer faced with the choice of running a device, appliance or vehicle on either electricity or another fuel (i.e. diesel, gasoline, natural gas). All other factors being equal (including the carbon intensity of the chosen fuel), the choice to operate the device, appliance or vehicle on electricity will be influenced by the fact that the use of electricity comes with a monthly rebate check (or other mechanism to mitigate the cost of electricity), while the use of other fuels will not. This is a clear and unacceptable market distortion and a divergence from the intent of a cap and trade system. This picking of winners and losers distorts the effect of decisions that actually should influence energy choices and consumption. This market distortion could cause a consumer to choose to purchase an electric device, appliance or vehicle rather than a lower carbon alternative – and in doing so maintain energy demand and carbon emissions at existing levels. Emissions and consumers must be treated equally in order to provide the proper incentive for reductions and for energy consumption choices.

In order for the cap and trade program to be successful and equitable, the criteria for allocation must be consistent amongst sectors – and the use of auction revenue should not result in arbitrary, differential price signals amongst energy types.

Transportation Fuels Emissions

For such an important element of the program, the Regulation contains very little detail as to how emissions from transportation fuels will be treated and included in the cap and trade program, including the expected contribution to the state emission reductions goals. There is also, as stated previously in the discussion about Sector Equity, the potential for significant market distortions in the different treatment of allowance allocation and use of allowance revenue amongst the various sectors. This treatment must be made consistent.

Our concerns with respect to the treatment of transportation fuel emissions center around the ability to acquire sufficient allowances to cover fuel emissions and the ability to recover costs for these allowances with any degree of certainty. Given the size of the compliance obligation for fuel providers – and the billions of dollars of allowances that will need to be purchased in order to allow these facilities to continue to operate – it is difficult to envision how the current system design will allow for cost pass through and recovery in a way that does not result in significant disruptions to the fuels market.

As the rules around the treatment of transportation fuels in the cap and trade program are developed, BP strongly urges CARB staff to consider use of a fee on transportation fuels linked to the price of carbon in the cap and trade system. We believe the updated FED was very insightful in its inclusion of this concept in its evaluation of alternatives and believe the merits of this approach warrants serious consideration. This design for the inclusion of transportation fuels was contained in the federal Kerry-Graham-Lieberman draft bill from early 2010. This approach brings many benefits in its simplicity, carbon price transparency, economic efficiency, energy security and environmental certainty. A linked fee approach to transportation fuel emissions would: 1) maintain a market-based price signal to consumers, 2) improve the transparency of that price signal for consumers, 3) eliminate the need to compensate refiners for unrecovered costs

associated with consumer emissions, and 4) provide a mechanism for transitional relief to fuel consumers and funding of transportation-related technology and infrastructure investment.

Emissions without a Compliance Obligation
When assessing which biofuels do not incur a compliance obligation, the Regulation includes unnecessary specificity limiting the types of biofuel molecules considered. As currently written, these specifics will exclude many promising new technologies such as sugar-to-diesel, biobutanol and other "drop-in" fuels. The determination of what biofuels incur a compliance obligation should be based solely on the feedstock from which the fuel is manufactured. For example, if FAME biodiesel derived from vegetable oil is exempted, all biofuels made from vegetable oil should also be exempted. More inclusive language would avoid unintended barriers for new low-carbon biofuel molecules.

Section 95852..2 (a) (1), (2) and (3) should read:

(1) Solid waste materials, including the biogenic content of solid waste materials that are not 100 percent biomass, as determined by methodology specified in ASTM D6866, based on exhaust sampling or fuel sampling (and fuel usage recordkeeping) at the specified frequency and tires which may use alternative tests, or any biofuel made from the biogenic content of these solid waste materials;

(2) Waste pallets, crates, dunnage, manufacturing and construction wood wastes, tree trimmings, mill residues, and range land maintenance residues; or any biofuel made from these specified types of wood materials or;

(3) All agricultural crops or waste; or any biofuel made from agricultural crops or waste or;

Replacement Electricity
BP's wind energy business has projects under development that could help California achieve its RPS goals, and is considering the development of additional projects. These projects are located within the Western Electricity Coordinating Council ("WECC") service territory but are not in a California balancing authority area. One of the options available to BP to import its power to California is to use a "firming and shaping arrangement" to deliver firm blocks of power to California. This type of transaction has been used in the energy industry numerous times in the past, and provides distinct benefits over other types of delivery to California.

It is important to note that Senate Bill (SB) 2 (1x), which raises California's Renewable Portfolio Standard (RPS) to 33% and extends the application of that RPS to Publicly-Owned Utilities, contains specific provisions regarding counting firmed and shaped transactions toward a utility's RPS compliance obligation. The legislation divides RPS transactions into three "portfolio content categories." The second category is defined as "firmed and shaped" transactions that provide "incremental" energy to California. Though a utility may use transactions in that category for RPS compliance, there is an overall cap on the amount of energy from that category that can count toward a utility's RPS compliance obligation (generally, up to 50% of a utility's compliance obligation until 2013,

35% from 2013 to 1016, and then 25% thereafter, with certain grandfathered transactions not included). As Renewable Energy Credit (REC)-only transactions will also count toward those percentage caps, the actual number of firmed and shaped transactions will likely be lower than the amounts reflected by those caps. Unfortunately, the definition of "Replacement Electricity" and "Variable Renewable Resource" in the Regulation, and the treatment of energy from Variable Renewable Resources, as defined, is inconsistent with the treatment of these types of transactions in SB 2 (1x), and would impose different and additional requirements on firming and shaping transactions than those currently imposed by the California Public Utilities Commission (CPUC) and California Energy Commission (CEC). Below are proposed changes to the proposed regulations that would make the Regulation consistent with SB 2 (1x) and thus avoid requiring renewable generators to comply with different or additional requirements than those contemplated in SB 2 (1x).

The structure of a firming and shaping transaction depends on a number of factors, including the location of the generator, the purchasing utility, and the firming and shaping party. However, a basic transaction to firm and shape intermittent energy for delivery to the California Independent System Operator (CAISO) can be described as follows: the eligible renewable generator would enter into a firming and shaping agreement with a third party who would agree to purchase all of the electricity delivered by the intermittent facility as and when generated.[3] The generator would retain the RECs associated with the electricity. The intermittent energy would be measured across an agreed-upon measuring period, which might in some agreements distinguish between energy generated off peak and energy generated on peak. During an agreed-upon re-delivery period, the firming and shaping party would sell and schedule the energy to the seller at a California balancing authority area as a firmed and shaped flat block product that eliminates variability (e.g., as firm energy in 25 MW blocks). The seller would cause the shaped and firmed electricity and the RECs generated by the eligible renewable generator to be delivered to the purchasing utility.

For example, assume a wind facility delivers 6,000 MWh intermittently during the course of a measuring period. The shaping and firming party would accept the electricity generated during this period and commit to schedule it into the CAISO during a later re-delivery period, with the 6,000 MWh to be scheduled in flat blocks. In this example, the firming and shaping party could be a party with load (for example, a utility) that would physically absorb the intermittent energy into its system and thereafter re-deliver it during the re-delivery period; Alternatively, and much more likely in the current market, it could be a company with a trading desk willing to buy seller's intermittent energy as delivered to the facility's interconnection point, sell it into the market and then later acquire electricity and schedule it into the CAISO as a flat and firm product. The measurement period, re-delivery period, shape of re-delivered product, point or points of re-delivery and fee to be paid to the firming and shaping party for the service, among other matters, are not standardized and are subject to negotiations among the utility, the seller and the shaping and firming party.

[3] The purchasing utility may choose to enter into the firming and shaping transaction directly with the third party, rather than requiring the seller to do so. In either case, the services provided by the firming and shaping party are substantially the same.

The energy scheduled and delivered to the CAISO in such a transaction is "firm" in the sense that the obligation to deliver it is not unit contingent and can only be excused in very unusual cases of uncontrollable force. It is "shaped" in the sense that it is converted from a variable, intermittent resource with pre-schedule and intra-hour variability into a blocked flat and firm energy product scheduled and delivered to CAISO.

Though firmed and shaped transactions are subject to procurement limits in SB 2 (1x), there are clear benefits provided by firmed and shaped transactions. Firmed and shaped transactions allow for the more efficient use of the transmission system, as the firmed and shaped product requires less transmission capacity to schedule into a California balancing authority. The resulting reduction in transmission costs can mean lower procurement costs for utilities and their ratepayers. California's electric utility customers would therefore be the ultimate beneficiaries of any resulting reduction in transmission costs. Firmed and shaped transactions also provide additional, incremental energy to California. Nor are the environmental benefits of the renewable generation lost as a result of firming and shaping the output. Even if the product delivered to California is generated by a source other than an eligible renewable energy resource, those deliveries must be equal to generation from the eligible renewable energy resource. At the time the eligible renewable energy resource generates the energy that will later be firmed and shaped, it will replace other sources of generation. In the WECC, the generation is most likely offsetting fossil-fuel fired generation, including coal. In fact, depending on the generation mix where the renewable facility is located, it may reduce greenhouse gas and other hazardous emissions by a greater amount than a facility located in California. Given the nature of greenhouse gas emissions, reductions do not have to occur in California to provide benefits to Californians.

The Regulation refers to energy from an intermittent renewable energy facility as "Replacement Electricity," defining it as "electricity delivered to a first point of delivery in California to replace electricity from variable renewable resources in order to meet hourly load requirements." Section 95802(a)(237).[4] The definition further requires that "[t]he physical location of the variable renewable energy facility busbar and the first point of receipt on the NERC E-tag for the replacement electricity must be located in the same balancing authority area." In turn, "Variable Renewable Resources" are defined as "run-of-river hydroelectric, solar, or wind energy that requires firming and shaping to meet load requirements." Section 95802(a)(272).[5]

Pursuant to Section 95852(b)(3), the Replacement Electricity can claim the same specific emission factor as the variable renewable resource, if the following conditions are met:

> 1. First deliverers of replacement electricity have a contact, or ownership relationship, with the supplier of the replacement electricity, in addition to a contract with the variable renewable resource; and
>
> 2. The amount of reported replacement electricity does not exceed the amount for the reported annual variable renewable resource.

[4] The same definition appears in the Mandatory Reporting Regulations at Section 95102(a)(336).
[5] The same definition appears in the Mandatory Reporting Regulations at Section 95102(a)(394).

Section 95852(b)(3) further specifies that Replacement Electricity with an emission factor greater than the default emission factor for unspecified electricity specified pursuant to Mandatory Reporting Regulation section 95111 is not eligible to receive an emission factor of zero metric tons CO2e/MWh. For contracts that use Replacement Electricity for which the emission factor is greater than the default emission factor for unspecified electricity, the difference between the emission factor from the Replacement Electricity and the default emission factor for unspecified electricity will be used to calculate emissions with a compliance obligation.

SB 2 (1x) *does* specify which party must enter into the firming and shaping arrangement, and *does not* require the firming and shaping energy to come from the same balancing authority area as the renewable energy being firmed and shaped. Furthermore, the Regulation would in some cases assign an emission factor greater than the variable energy resource to the Replacement Electricity, even though that electricity would count as RPS-eligible under SB 2(1x). Doing so would inhibit the development of renewable resources located out-of-state, leading to an increase in the costs of complying with the new 33% RPS mandate, and potentially even putting achievement of that goal at risk.

It appears that Replacement Electricity is intended by the CARB to refer to energy that is used to firm and shape a Variable Renewable Resource. However, firmed and shaped energy is not provided in order to "meet hourly load requirements." BP therefore proposes that the first line of the definition be revised to state: "Replacement electricity means electricity delivered to a first point of delivery in California to firm and shape electricity from variable renewable resources." The definition of Variable Energy Resource is as also flawed in that it states that such energy "requires firming and shaping to meet load requirements." Run-of-river hydroelectric, solar or wind energy may be firmed and shaped, but do not have to be—these eligible renewable resources can be dynamically scheduled into a California balancing authority area, or they can be scheduled in real time using firm transmission. SB 2(1x) recognizes this by assigning energy so delivered to the first portfolio content category. In any case, firming and shaping are not necessary to meet load requirements. BP suggests that the definition of Variable Energy Resource be revised to state: "Variable energy resources means run-of-river hydroelectric, solar, or wind energy that may be firmed and shaped."

We also request that the definition of Replacement Electricity be amended to remove the requirement that the replacement electricity come from a source in the same balancing authority area as the renewable energy being firmed and shaped. That requirement does not advance the goal of reducing greenhouse gas emissions—it would have no discernable effect on the amount of greenhouse gas emitted from sources used to firm and shape variable energy resources. However, imposing such a requirement could increase the costs of firming and shaping transactions, and thereby increase California electricity rates without providing any benefit to the California ratepayers.

BP requests that Section 95852(b)(3), defining when Replacement Electricity can be assigned the same emissions factor as the variable energy resource it is firming and shaping, be amended to remove extraneous requirements. First, that section now requires that the "first deliverer" either enter into the firming and shaping contract, or have an ownership arrangement with the source providing the Replacement Electricity. As

explained above, in many cases the generator will be the party to enter into the firming and shaping contract, although it may not be the first deliverer. However, parties to firming and shaping transactions should be given the flexibility to have a party other than the "first deliverer" enter into the firming and shaping contract.

Second, Replacement Electricity should always be assigned the emissions factor of the Variable Energy Resource if that Replacement Electricity would qualify as RPS-eligible energy under SB 2 (1x). We suggest that CARB, rather than attempting to impose its own requirements regarding firming and shaping transactions, which run the risk of being inconsistent with the California Energy Commission's and the California Public Utilities Commission's interpretations of SB 2 (1x), simply defer to the CPUC and CEC to delineate what types of firming and shaping transactions qualify as the delivery of renewable energy. Otherwise, imposing unnecessary additional requirements or inconsistent requirements will increase the costs of achieving California's renewable energy goals, and will ultimately hurt the California ratepayer. Section 95852(b)(3) should read:

Replacement electricity that substitutes for electricity from a variable renewable resource qualifies for the ARB facility specific emission factor specified pursuant to MRR section 95111 of the variable renewable resource if that electricity qualifies as firmed and shaped energy pursuant to Public Utilities Code Section 399.16(b)(2) and the California Public Utilities Commission and California Energy Commission regulations implementing that Section.

Amending Section 95852(b)(3) as suggested would ensure that the three agencies are consistent in their treatment of firmed and shaped energy. Furthermore, we note that although the proposed amendment would eliminate the requirement that the Replacement Electricity not exceed the generation from the variable renewable resource on an annual basis, the CEC already applies the same requirement to firmed and shaped transactions that are RPS-eligible.

Suppliers of LPG/NGLs

The term "consignee" is used in several places in the Regulation including Section 95811(e)(3) with regard to Suppliers of LPG and in Section 95852 (e)(2) with regard to Suppliers of NGLs. The term "consignee", however, is not defined in the Regulation. To avoid confusion and the potential for inadvertent non-compliance, the Regulation must include a clear definition of "consignee" that addresses any and all uses of the term. Moreover, to ensure that a compliance obligation is not imposed multiple times if LGP/NGLs are resold within the state, the Regulation should also clearly state that the compliance obligation is not intended to apply more than once to the GHG emissions associated with any specific volume of LPG/NGLs.

Offset Rules

BP has previously commented on the importance of the role of offsets. Given the unquieting concerns about the potential economic impact of AB32, the state of California's economy, the fact that significant emissions reductions in an already very efficient California energy production system will require long-term transformation, and the likelihood that California will be linking with few or no other cap and trade programs over the near term, we believe it is more important than ever that CARB seriously reconsider the

enforcement of strict quantitative limits on offsets. Instead, because climate change is a global problem that requires a global solution, and because California will continue to be negatively impacted if others don't act, CARB should look to incorporate the maximum use of design elements that control costs while maintaining the environmental integrity of the emission reduction goal. The use of offsets is a clear example of such a design element.

The very restrictive quantitative limit on the use of offsets is compounded by what appears to be an incomplete, bureaucratic and potentially very exclusive offset-approval process. CARB staff should move expeditiously toward completion of an offset-approval process that ensures an adequate supply of offsets (especially early in the program), does not impose geographic limits (either explicit or implicit – through limited scope of approval), and that utilizes as much as possible existing offset protocols in use within California, the United States and globally.

In order for offsets to provide cost control, they must be available to the market. In addition to the previously mentioned concerns about quantitative limits and a bureaucratic approval process, there is also the potential that even if offsets are available, some regulated entities may not be inclined or able (for whatever reason) to make use of offsets – a development that can affect all market participants. CARB should monitor the quantity of offsets used as compared to the allowed limit, and create a system to carry over to new compliance periods and distribute amongst all market participants, the ability to use offsets unused in a previous compliance period. For example, if offsets make up only 6% of compliance instruments in the first compliance period (due to a lack of offset supply, use, or for other reasons), the unused 2% should allow for all regulated parties to use 10% (i.e. 8% plus 2%) offsets in the next compliance period.

With respect to rules around offset invalidation, we believe these rules will further reduce the utility of offsets as a critical cost control mechanism. The ability of CARB to take 8 years to invalidate an offset covers the entire time period of the cap and trade program and essentially results in no time limits on reversals. This period should be reduced to 2 years in that regulated parties deserve timely due process and some degree of certainty that these purchased compliance instruments have value. Further, the criteria which determines whether CARB can or will invalidate an offset is too broad. Invalidation should occur only when there is a material misstatement or inaccuracy in the information submitted to CARB or to verifiers. "Material" should be defined as a misstatement or inaccuracy that overstates the amount of GHG reduction by more than 5%.

The Regulation considers that offsets could be verified twice and thereafter reduce the statute of limitations on invalidation to 5 years. We believe a second verification should result in a reduction in the statute of limitations of one year.

Finally, BP supports the comments submitted by IETA and others which clearly articulate the perils of a "Buyer Liability" system. Such a system is likely to stunt the formation of a robust market for offsets as it will reduce the ability of market participants to consider offsets as fungible compliance instruments.

Auction Bid Guarantee
The regulation contains a requirement to provide the auction administrator with assurances in the form of bonding, cash, or a letter of credit. This requirement is really unnecessary and burdensome for compliance entities with large physical assets in the state and/or who may be investment-grade, credit-rated companies. Bid guarantees should allow demonstration of sufficient physical assets or investment-grade credit rating.

Auction Timing and Source of Allowances
The Regulation contains detail in various sections regarding the availability of allowances for auction from various sources and at various times. It would be helpful to regulated parties and to market participants for the Regulation to include a single table that shows very clearly for each year of the program - auction timing, source of allowances that will be auctioned, allowance vintage and number of allowances (even if approximate).

Periodic Review of the Regulation
Attachment B to original Cap and Trade Regulation contains the following language:

> ***New section on periodic regulation review.***
> *Staff proposes to incorporate into the regulation specific requirements for a review of the program at least once every compliance period. The new regulatory text will include specific deadlines for completion of the review, a list of topics that must be addressed in the review, and minimum requirements for public input during the review process.*

Given the importance and complexity of the cap and trade regulation, and the fact that it has never been done to this degree anywhere in the world, we strongly support inclusion, in the regulation, of a required periodic review of the cap and trade regulation – similar to the concept included in the low carbon fuel standard regulation. The scope of each review should include, at a minimum, consideration of the following areas:

- Trade exposure
- Progress toward linkage
- Offset supply and
- Status of allowance reserve
- Leakage
- Carbon price in direct regulations.
- Market liquidity and Allowance
- Status of cap and trade programs in other states
- Auction process
- Carbon price volatility
- Progress toward 2020 goal
- Benchmarking
- Market operations
- Market manipulation
- Treatment of transportation fuels in the cap and trade program
- Treatment of imported electricity and effect on power markets

- Evaluation pass through of carbon costs by generators who must hold allowances but are not allocated allowances
- Evaluation of cross sector inequities in sharing the burden of carbon costs, including equal carbon cost mitigation across sectors were that occurs
- Effect on energy prices – gasoline, diesel, electricity, natural gas
- Effect on employment in the state

Please don't hesitate to contact me should you have questions regarding this correspondence.

Sincerely,

Ralph J. Moran
Director, West Coast Climate Change Issues
BP America, Inc.

cc (via email): Mary Nichols
Dan Sperling
Ken Yeager
Dorene D'Adamo
Barbara Riordan
John Balmes, M.D.
Lydia Kennard
Sandra Berg
Ron Roberts
John Telles, M.D.
Ronald Loveridge
James Goldstene
Virgil Welch
Steve Cliff
Ray Olssen
Sam Wade