

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

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Order Instituting Rulemaking to Implement the )  
Commission's Procurement Incentive Framework )  
and to Examine the Integration of Greenhouse )  
Gas Emission Standards Into Procurement )  
Policies. )

Rulemaking 06-04-009  
(Filed April 13, 2006)

**BEFORE THE CALIFORNIA ENERGY COMMISSION**

In the Matter Of, )  
 )  
AB 32 Implementation – Greenhouse Gas )  
Emissions. )

Docket 07-OIIP-01

**COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON**  
**QUESTIONS PRESENTED IN ADMINISTRATIVE LAW JUDGE'S RULING**  
**REGARDING COMMENTS AND NOTICE OF WORKSHOPS ON ALLOWANCE**  
**ALLOCATION ISSUES**

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On October 15, 2007, the California Public Utilities Commission (CPUC) issued the Administrative Law Judge's Ruling Requesting Comments and Noticing Workshop on Allowance Allocation Issues (Ruling). The Ruling requests comments on issues related to the distribution of greenhouse gas (GHG) emissions allowances, which were first discussed at a workshop held jointly by the staffs of the California Energy Commission (CEC) and CPUC (Joint Staff) on June 22, 2007 (Workshop). While the Workshop focused on emissions allowance issues related to a load-based cap for the electricity sector, the Ruling also addresses allowance allocation issues related to the deliverer/first seller (First Seller) approach and the natural gas sector.

In these Comments, SCE presents its proposal to allocate allowances by looking at the economic harm resulting from the imposition of GHG regulations (SCE's Proposal). SCE also responds to the Ruling's questions based on its proposal. Additionally, SCE includes detailed material regarding SCE's Proposal in the attached Appendix. This material will be discussed at greater length at the November 5, 2007, workshop.<sup>1</sup>

## **I.**

### **SUMMARY OF SCE'S PROPOSAL**

SCE proposes that the value of emissions allowances be distributed to all entities in proportion to the "economic harm" that results from the imposition of GHG regulations on such entities. SCE refines its proposal in the following sections.

#### **A. What is "Economic Harm?"**

Under SCE's Proposal, "economic harm" is defined as the financial impact of imposing GHG regulations. For consumers of electric power, the imposition of GHG regulations will result in higher electricity prices to those consumers. For independent generators, depending on the emissions rate of the generator relative to the market, the imposition of GHG regulations may result in a decrease in a generator's net income. For generators committed to a particular LSE's load, the economic harm will come from the cost of allowances for emissions from that generation.

Consumers of electric power will be harmed by increased power prices. Because of the relatively inelastic demand for electric power and a lack of market substitutes for such power, much of the cost of complying with GHG regulations will be passed on to consumers in the form of higher electricity prices. This will be true regardless of the point of compliance. If the point of compliance is applied to generators, then the generators will transfer a portion of the cost of

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<sup>1</sup> Ruling, p. 12.

emissions compliance to the load serving entities (LSEs), who in turn will pass the additional costs on to its customers. If the point of compliance is applied to LSEs, then the LSEs will pass the cost of emissions compliance on to its customers.

Independent generators that have emissions rates higher than the marginal generating unit will face economic harm. Assuming that generators become the point of regulation, then each generator will have to tender emission allowances for any GHG emissions that result from its generation of electricity. This will increase the operating costs for that generator. The increased costs will be partially offset by a higher market-clearing price for power. As occurs today, the market-clearing price will be set by the operating costs of the marginal unit. In a carbon-constrained market, however, the operating costs of the marginal generating unit will include its cost of emissions. The higher market-clearing price will increase revenues for all generators, but it will not fully mitigate the increased operating costs for “high-GHG-emitting” generators — *i.e.*, generators with emissions greater than the marginal unit. This will result in reduced income for high-GHG-emitting generators in a market with GHG regulations.

Independent generators that have emissions rates lower than the marginal generating unit will not face economic harm and would not receive allowances under SCE’s Proposal. In fact, such generators will benefit from a carbon-constrained market. To reiterate, the market-clearing price will increase revenues for all generators. Because “low-GHG-emitting” generators are cleaner than their marginal unit, the increased revenues will more than offset their increased costs, resulting in higher income for low-GHG-emitting generators.

Generators that are owned by an LSE or otherwise committed to serving the customer load of a particular LSE will incur an increased cost to acquire allowances associated with all of the generator’s GHG emissions. This cost will be passed on to the LSE’s customers in the form of increased rates. Whether the point of regulation is the generator or the LSE, the cost of the generator’s emissions will cause economic harm to the customers of the LSE.

**B. Why Does SCE Advocate Allocating Allowances Based on “Economic Harm?”**

SCE advocates freely allocating allowances to entities that suffer economic harm, because this method minimizes economic hardship in an equitable way. Assembly Bill (AB) No. 32 mandates that GHG regulations, including distribution of emissions allowances, should be designed “in a manner that is equitable, seeks to minimize costs and maximize total benefits to California.”<sup>2</sup> This method will allow the State of California to meet its emission targets while minimizing the financial hardship to those entities that will be required to comply with GHG regulations. SCE’s Proposal will:

- Allocate a significant portion of allowances to retail customers;
- Distribute the economic burden of GHG compliance in a fair and equitable manner;
- Recognize that investments in high-GHG-emitting facilities were made before GHG legislation was in place; and
- Avoid awarding windfall profits to entities that do not suffer any economic harm.

SCE’s Proposal avoids the “windfall profit” dilemma that plagued the European Union (EU) Greenhouse Gas Emission Trading Scheme (ETS).<sup>3</sup> Under the EU ETS, generators were

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<sup>2</sup> Health and Safety Code section 38562(b) provides, in part:

In adopting regulations pursuant to this section and Part 5 (commencing with Section 38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

(1) Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions

...

Emphasis added.

<sup>3</sup> In January 2005, the EU ETS commenced operation as the largest multi-country, multi-sector Greenhouse Gas emission-trading scheme worldwide. The scheme, in which all 25 member states of the EU participated, was the first international trading system for CO<sub>2</sub> emissions in the world, and covered over 11,500 energy-intensive installations across the EU, which represented close to half of Europe’s emissions of CO<sub>2</sub>. The aim of the EU ETS is to help EU member states comply with their individual commitments under the Kyoto Protocol. The National Allocation Plans of the member states determine the total quantity of CO<sub>2</sub> emissions that member states can grant to their companies. These can then be sold or bought by the companies themselves. Each member state allocates allowances for a trading period to each plant covered by the ETS. The first trading period runs from 2005 through 2007, the second period will run from 2008 through 2012, and the third period will start in 2013.

<http://ec.europa.eu/environment/climat/emission.htm>

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allocated allowances based on historic emissions levels. In most instances, however, entities had portfolios of both low- and high-GHG-emitting generation. The allocation of free allowances to companies owning generation that emitted less GHG than the market resulted in windfall profits when those generators were selling power into the market. SCE's Proposal avoids the awarding of such windfall profits by allocating allowances only to entities that face economic harm. Under SCE's Proposal, an entity with a portfolio of complementary low- and high-GHG-emitting generation would not receive any allowances.

**C. How Can Economic Harm be Calculated?**

SCE's Proposal would use historical emissions and portfolio data to determine economic harm on an entity-by-entity basis. Most of the data is readily available in the public domain. Data from one to three years could be used to create a snapshot in time to serve as the basis for all future allocations. Using historical data will discourage entities from taking actions to increase their share of allowances while increasing emissions. The Appendix presents details regarding the implementation of SCE's Proposal, including the specific formulae used for calculating economic harm.

Once economic harm is calculated, the relative share of freely allocated allowances is determined by the relative share of harm for each of the entities found to have suffered harm. Free allowances can then be allocated based on these shares. The number of allowances that will be allocated will be based on the target level of emissions for a particular year (or any other period that might be chosen), so that only those allowances that would result in meeting or exceeding the target emissions level would be available for entities requiring allowances.

**D. How Does the Point of Regulation Impact SCE's Proposal?**

SCE's Proposal is not affected by the point of regulation. The point of regulation should not materially impact economic harm and should not alter the allocation of allowances.

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<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/05/84&format=HTML&aged=1&language=EN&guiLanguage=en>

Some may argue that, under a load-based cap, economic harm is reduced relative to a source-based cap and that, when the generator is not responsible for the cost of emissions, the cost to procure power does not increase. This argument is unfounded and violates fundamental economic theory. In reality, a low-GHG-emitting generator will capture the value of its clean power by negotiating with an LSE up to the market price of emissions. Similarly, LSEs will negotiate with high-GHG-emitting generators for a reduced price.

**E. Does SCE's Proposal Require Updating?**

SCE's Proposal would require updating to adjust for load growth and migration. Such updating can be done on an annual basis and would be a function of energy served in GWh. Emissions from generators would not need to be updated.

**F. What is the Impact of the Emissions Rate of the Marginal Unit?**

Although the emissions rate of the marginal unit is constantly changing, because the unit that is on the margin is constantly changing, a reasonable proxy can be used to maintain an equitable allowance allocation. Just as a default emissions factor can be assumed for emissions reporting, a marginal emissions rate can also be assumed.

The impact of the emissions rate of the marginal unit will be to shift economic harm between generators and customers. As the emissions rate of the marginal unit increases, economic harm is transferred from generators to customers. A higher emissions rate on the margin increases the market-clearing price for power. Accordingly, consumers must pay higher prices for power, and therefore will suffer increased economic harm relative to a generator.

**G. Does Allocating Allowances to "High-GHG-Emitting" Generation Create the Wrong Incentive?**

Under SCE's Proposal, no "wrong incentive" is created by allocating allowances to generators with emissions rates above the marginal unit. Because emissions will be gradually reduced to reach 1990 levels by 2020, insufficient allowances will exist to mitigate all of the

economic harm caused by the imposition of GHG regulations. Despite receiving allowances, high-GHG-emitting generators will have increased operating costs that are not offset by increased revenue. This disparity will increase over time as the number of allowances decrease. This effect is not the “wrong incentive.” Instead, it will require such generators to make GHG-emission-reducing changes to their operations in a manner consistent with the State’s goal of reducing GHG emissions.

The degree of incentive that an entity has to reduce its emissions will be a function of the price of emissions. To the extent a free allowance is granted based on historical data, the incentive to act, in the present, based on the ongoing price of emissions should be completely unaffected by the allowance allocation. For example, if a government program were enacted to send each individual a check based on the gasoline mileage of the car he or she drove in 2005, while imposing a \$2.00 per gallon tax on gasoline, the decisions about which car to buy and how long to keep the existing car would be based on the total cost of driving, which would include the new gas tax, and might not be based on the amount of the check received in the mail. An individual’s ability to buy a new car, however, might be affected by the amount of the check, which might increase the likelihood of purchasing a car with better mileage.

#### **H. Do Out-of-State Generators Receive Allowances Under SCE’s Proposal?**

Under SCE’s Proposal, out-of-state generators will not receive allowances unless they have long-term commitments to sell power to California. Generators that do not have such contracts can sell their power to a non-GHG-regulated region and will not suffer any economic harm. If an out-of-state generator does have a long-term commitment to sell to California, then either the buyer under a load-based cap or the entity that brings the power into California under a First Seller approach would suffer harm and, thus, would be eligible for an allocation of free allowances.



**I. If LSEs Receive the Allowances, Will They be Able to Hoard Allowances to the Detriment of Generators?**

Under SCE's Proposal, under which the value of allowances is allocated based on economic harm, allowances themselves can be auctioned. This should eliminate concerns that generators will not have access to allowances. Once such an auction is completed, the proceeds can be distributed to the entities, as agreed upon prior to the auction.

**II.**

**SCE'S COMMENTS ON QUESTIONS**

This section presents SCE's comments on each question presented in the Ruling, in light of the proposal presented in Section I above.

**3.1 Evaluation Criteria**

Developing evaluation criteria may help the CPUC analyze the issues surrounding emission allowance allocation issues. For example, the final report of the Market Advisory Committee (MAC) includes a discussion of emission allowance distribution and recommends that California should "strive to distribute allowances in a manner consistent with fundamental objectives of cost-effectiveness, fairness, and simplicity," and should "distribute allowances in a manner that advances the following principles," which are copied and numbered below:

- a. Reduces the cost of the program to consumers, especially low-income consumers,
- b. Avoids windfall profits where such profits could occur,
- c. Promotes investment in low-GHG technologies and fuels (including energy efficiency),
- d. Advances the state's broader environmental goals by ensuring that environmental benefits accrue to overburdened communities,
- e. Mitigates economic dislocation caused by competition from firms in uncapped jurisdictions,

- f. Avoids perverse incentives that discourage or penalize investments in low-GHG technologies and fuels (including energy efficiency),
- g. Provides transition assistance to displaced workers, and
- h. Helps to ensure market liquidity.

*Q1. Please comment on each of the criteria listed by the MAC. Are these criteria consistent with AB 32? Should other criteria be added, such as criteria specific to the electricity and/or natural gas sectors? In making trade-offs among the criteria, which criteria should receive the most weight and which the least weight?*

A1. The MAC provided a list of principles, which it believes can lead to a cost-effective, fair, and simple allocation of emission allowances. Because the problem of allowance allocation involves the equitable distribution of a limited quantity of allowances, the fairness and simplicity criteria set forth by the MAC are relevant. On the other hand, cost-effectiveness is not likely to be affected by the choice of allocation approaches.

A fixed amount of allowances should be issued annually under a cap-and-trade program, in order to limit the total amount of emissions that can be produced by those subject to the regulation. In addition, the system should include the potential for exceptions if excessive costs or other unanticipated situations arise (*e.g.*, a safety valve). Assuming adoption of this paradigm, the price of allowances for emissions will be determined by the supply of allowances, the demand for allowances, and the cost of alternatives to producing emissions. This price will establish the basis for cost-effective, emission-reducing actions. Nevertheless, as long as a reasonable means exists for entities needing allowances to compete to acquire such allowances, and one's eligibility to receive such allowances is not determined by one's current or future actions, then the cost-effectiveness of emission-reducing actions should not be affected by the

parties to whom the allowances are distributed. Instead, it will be affected by the number of allowances that are distributed.

This paradigm of allocating allowances based on harm, as measured using historical information, is consistent with SCE's recommended approach to the distribution of allowances. Therefore, the question of cost-effectiveness does not arise when evaluating allocation approaches. As such, unless otherwise specified, SCE's responses will focus on the objectives of fairness and simplicity.

*Q1a. Reduces the cost of the program to consumers, especially low-income consumers.*

A1a. To the extent that LSEs receive a portion of their emissions allowances free, then consumers should obtain the benefit of this allocation, because it will mitigate some of the impacts of higher retail rates that will occur under GHG regulation. Rate design or other regulatory mechanisms can be implemented to protect low-income customers further from adverse rate impacts, although rate designs are currently handled differently for different types of LSEs.<sup>4</sup>

*Q1b. Avoids windfall profits where such profits could occur.*

A1b. Windfall profits, in the context of the debate regarding the EU cap-and-trade ETS, are defined as those profits achieved by allocating allowances to generators (or other market participants) at a level that is beyond that which is necessary to cover increased costs of operating under a cap-and-trade system, given the increases that occur in market prices for power. In other words, if a generator's costs increased from the imposition of GHG rules, but the generator can pass on those costs through higher market prices, then the free allocation of

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<sup>4</sup> The CPUC approves rate designs for investor-owned utilities (IOUs). Local regulatory authorities determine rate designs for publicly-owned utilities (POUs). On the other hand, energy service providers (ESPs) establish their own rates.

allowances could create a profit for that generator that is greater than the profit it would have earned without such GHG rules. An allocation approach can and should avoid creating windfall profits by avoiding the free allocation of allowances to entities that do not suffer economic harm because of GHG regulations.

*Q1c. Promotes investment in low-GHG technologies and fuels (including energy efficiency).*

A1c. The incentive for investment in low-GHG technologies and fuels is created by establishing a price for emissions through the imposition of the cap-and-trade program. Promoting such investment will occur when the incentive to make these investments is coupled with the financial capability to make such investments. To the extent that harm is caused by the imposition of GHG regulations and those harmed entities are the ones in the best position to reduce GHG through investment in low-GHG technologies, then allocation of free allowances to such harmed entities can promote the desired investments.

*Q1d. Advances the state's broader environmental goals by ensuring that environmental benefits accrue to overburdened communities.*

A1d. GHG reduction regulations are designed to reduce the emissions of GHG. A cap-and-trade program for GHG reduction efficiently allows markets to produce the lowest cost GHG emissions reductions by providing incentives for all market participants to pursue low-cost reduction opportunities. Allowance allocation should not directly affect incentives for achieving GHG reductions or other environmental benefits in any specific community. SCE cannot determine at this time whether specific benefits will or will not accrue to overburdened communities.

*Q1e. Mitigates economic dislocation caused by competition from firms in uncapped jurisdictions.*

A1e. Any firm whose costs of producing electricity under AB 32 exceed the increased revenue that the firm can recover by selling power into the market at higher wholesale rates will likely suffer economic dislocation. Economic dislocation will also be felt by firms whose costs of electricity consumption increase as a result of GHG regulation (when such costs cannot be passed through to the firms' customers through higher prices for the firms' products because of competition from other firms, fixed price contracts, etc.).

An allocation approach that broadly attempts to mitigate the economic dislocation to all entities caused by the imposition of GHG regulation comes closest to meeting a reasonable definition of "fair" allocation rules. Although "fair" is not a well-defined term and has no specific definition in economic literature, attempting to undo the adverse economic impacts resulting from the imposition of new GHG rules seems a reasonable approach to achieving fairness. Accordingly, SCE supports an allocation program design that attempts to mitigate the economic dislocation caused by the imposition of GHG regulations. By mitigating the economic dislocation to these firms, this approach will mitigate the economic dislocation caused by the competition these firms face from companies not subject to GHG limitations.

*Q1f. Avoids perverse incentives that discourage or penalize investments in low-GHG technologies and fuels (including energy efficiency).*

A1f. Any approach to allowance allocation that undermines incentives to take actions to achieve AB 32's goals would be counter-productive and should be avoided.

*Q1g. Profiles transition assistance to displaced workers,*

A1g. SCE does not know how to determine the link between the imposition of GHG regulations and displaced workers. However, to the extent that workers are displaced due to the economic harm that is caused by the imposition of GHG regulations, then an allocation mechanism that endeavors to mitigate the economic harm caused by the GHG regulations should mitigate the degree to which some workers might be displaced.

*Q1h. Helps to ensure market liquidity.*

A1h. Any allowance allocation mechanism considered by the CPUC, CEC or California Air Resources Board should be designed to promote non-discriminatory competition for allowances among those entities responsible to using such allowances.

### **3.2. Basic Options**

These questions should be answered for both the electricity and natural gas sectors. If your recommendations differ for a load-based or deliverer/first seller point of regulation in the electricity sector, or for the natural gas sector, explain why.

*Q2. Broadly speaking, should emission allowances be auctioned or allocated administratively, or some combination?*

A2. Under SCE's Proposal, emissions allowances would be allocated based on harm caused by the GHG regulatory system.

*Q3. If you recommend partial auctioning, what proportion should be auctioned? Should the percentage of auctioning change over time? If so, what factors should be used to design the transition toward more auctioning?*

A3. SCE is not advocating the auctioning of allowances in the first instance. Instead, SCE advocates the use of an auction subsequent to the allocation of allowances as the means to

provide non-discriminatory access to allowances and establish a transparent market price for these allowances.

*Q4. How should new market entrants, such as energy service providers, community choice aggregators, or (deliverer/first seller system only) new importers, obtain emission allowances, i.e., through auctioning, administrative allocation, or some combination?*

A4. Under SCE's Proposal, allowances are allocated to entities suffering economic dislocation (i.e., harm) because of the imposition of GHG regulations. A portion of the allowances allocated under SCE's Proposal would go to LSEs, based on the harm that is calculated for them. Allocation to LSEs under such a program is not done because the LSE itself suffers harm, but because the LSE's customers suffer harm in the form of increased rates due to new GHG regulations. SCE's Proposal assumes that the value of an allocation provided to the LSE will be used to mitigate rate increases that are necessary to offset the increased costs from the GHG regulation.<sup>5</sup>

In an open retail access environment, as customers change providers, they continue to suffer the harm caused by higher rates. Free allowances should therefore follow the customer and not remain with the LSE after that customer moves to another provider. The best way to effectuate this is to reassess the harm caused to customers from higher wholesale prices (assuming a source-based approach — the same harm is caused by responsibility for emissions from wholesale purchases as is caused under a load-based approach for emissions from retail purchases) each time the allocation occurs.

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<sup>5</sup> For IOUs, it is anticipated that regulators will mandate that the value of free allowance allocations be used to mitigate rate increases. Similarly, it is assumed that POUs will be required by their local regulatory authorities to pass on the value of free allowances in their rates. For competitive retail providers, it is assumed that retail competition will provide the incentive for ESPs to pass along the value of freely allocated allowances to remain competitive.

Access to allowances that are needed by new market entrants or any other party should be available on a non-discriminatory basis as described below.

### **3.3. Auctioning of Emission Allowances—General Questions**

These questions assume that some or all emission allowances are auctioned, and should be answered for both the electricity and natural gas sectors. If your recommendations differ for a load-based or deliverer/first seller point of regulation in the electricity sector, or for the natural gas sector, explain why.

*Q5. What are the important policy considerations in the design of an auction?*

A5. The auction should provide all entities that need to acquire allowances associated with their emissions non-discriminatory access to such allowances. Such an auction should be conducted in a manner that establishes a transparent price for emissions allowances, assures that buyers can effectively participate, and assures that revenues are distributed to the original allowance holders.

To reiterate, emissions allowances should be allocated based on economic dislocation (harm) caused by the imposition of new GHG rules. SCE has analyzed the degree to which parties will suffer economic harm from the imposition of a cap-and-trade program and has determined that harm does not directly depend on whether the point of regulation is the source (*i.e.*, a First Seller approach) or the load (*i.e.*, a load-based approach). As such, SCE does not distinguish in this response between the First Seller approach and the load-based approach, unless specifically noted. Furthermore, while SCE advocates the allocation of allowances to harmed entities, SCE also supports the subsequent auction of these allowances to ensure non-discriminatory access to allowances by all parties required to produce them. As such, SCE's views on how an auction should work can be considered within that context.



*Q6. How often should emission allowances be auctioned? How does the timing and frequency of auctions relate to the determination of a mandatory compliance period, if at all?*

A6. A primary auction for emission allowances should be conducted as often as allowances are created. SCE assumes that this process will take place annually. SCE anticipates that a secondary market for allowances will be formed as parties' actual emissions differ over time from their anticipated emissions. Those parties who need to acquire additional allowances will seek opportunities to buy them from those parties who have acquired more than they need.

*Q7. How should market power concerns be addressed in auction design? If emission allowances are auctioned, how would the administrators of such a program ensure that all market participants are participating in the program and acting in good faith?*

A7. If an independent party conducts the initial auction in a non-discriminatory fashion, subject to reasonable oversight, then no market concerns associated with this initial auction should arise. To the extent that some parties attempt to acquire allowances in the initial auction for resale purposes, then some monitoring may be needed to avoid the exercise of market power in secondary markets.

*Q8. What criteria should be used to designate the types of expenditures that could be made with auction revenues (including use to reduce end user rates), and the distribution of money within those categories?*

A8. The decision to allocate revenues from an auction of allowances should be made before any such auction. SCE proposes that allowances be allocated and that an auction then be held. The receipts from such an auction can then be distributed to those who will receive an allocation. Such an *ex ante* allocation process avoids the myriad problems associated with

allocating money after the auction through mechanisms that can be changed for any number of inappropriate purposes.

*Q9. What type of administrative structure should be used for the auction? Should the auction be run by the State or some other independent entity, such as the nonprofit organization being established by the Regional Greenhouse Gas Initiative?*

A9. An independent third party, with appropriate governmental oversight, should conduct the auction in a manner that ensures transparency of results, non-discriminatory access, and proper distribution of funds to initial allocation holders.

### **3.4. Electricity Sector**

#### **3.4.1. Administrative Allocation of Emission Allowances**

Various methods have been proposed and discussed for the administrative allocation of emission allowances. The following potential methods could be used:

- a. Grandfathering: “A method by which emission allowances are freely distributed to entities covered under an emissions trading program based on historic emissions.” (MAC report, p. 93.)
- b. Benchmarking: “An allowance allocation method in which allowances are distributed by setting a level of permitted emissions per unit of input or output” (e.g., fuel used or sales to customers (pounds (lbs)/megawatt-hour or lbs/million British thermal units (MMBtu)). (MAC report, p. 90.)
- c. Updating: “A form of allowance allocation in which allocations are reviewed and changed over time and/or awarded on the basis of changing circumstances (such as output) rather than historical data (such as emissions, input or output). For

example, allowances might be distributed based on megawatt-hours generated or tons of a product manufactured.” (MAC report, p. 96.)

- d. Other: Such as population (lbs of carbon dioxide (CO<sub>2</sub>)/customer or lbs CO<sub>2</sub>/capita), or cost of compliance (based on retail provider supply curves of emission reduction measures, or a comparable metric).

Answer each of the questions in this section, first, for a load-based system in the electricity sector and, second, for a deliverer/first seller system in the electricity sector. If your recommendations differ for a load-based or deliverer/first seller point of regulation, explain why.

*Q10. If some or all allowances are allocated administratively, which of the above method or methods should be used for the initial allocations? If you prefer an option other than one of those listed above, describe your preferred method in detail. In addition to your recommendation, comment on the pros and cons of each method listed above, especially regarding the impact on market performance, prices, costs to customers, distributional consequences, and effect on new entrants.*

A10. SCE does not advocate any of the above-identified options. Instead, allowances should be allocated freely, based on economic harm, as described in SCE’s Proposal. Allowance allocation is, in reality, a distribution of wealth. It does not have any impact on market performance, prices, or costs to customers. The objective of allowance allocation is to mitigate the economic harm created by GHG regulations in an equitable manner. The options identified by the Ruling do not meet this objective. If allowances are distributed solely based on emissions (whether historical or future), then low-GHG-emitting, independent generators will benefit from windfall profits while consumers bear the full brunt of the costs of GHG regulation. If

allowances are distributed solely on the basis of load served, then some generators will be harmed on the basis of decisions they made prior to the implementation of AB 32.

*Q11. Should the method for allocating emission allowances remain consistent from one year to the next, or should it change as the program is implemented?*

A11. The method for allocating emission allowances should remain consistent from one year to the next. The calculation of allowance shares, however, may vary from year to year as load migration changes, based on the degrees to which LSEs will experience harm from purchasing power at higher prices.

*Q12. If new market entrants receive emission allowance allocations, how would the proper level of allocations be determined for them?*

A12. New LSE market entrants should receive allowances based on the harm they will face from higher wholesale market prices due to implementation of GHG regulations. These new LSEs will likely acquire their load through load migration from other LSEs, as described in SCE's answer to Question 11. The customer ultimately faces economic harm in the form of higher rates. If the customer migrates from one LSE to a new entrant, that customer should still have their harm mitigated, so the new entrant should get an allocation.

*Q13. If emission allowances are allocated, based on load/sales, population, or other factors that change over time, how often should the allowance allocations be updated?*

A13. Allowance allocation shares should be updated with the same frequency that allowance allocations are made, which SCE expects to be annually.

*Q14. If emission allowances are allocated based on historical emissions (grandfathering) or benchmarking, what base year(s) should be used as the basis for those allocations?*

A14. Some of the harm that forms the basis of SCE's Proposal will be due to emissions from generation sources owned by LSEs and some will be due to emissions from generation sources sold into the market. For these allocation determinations, a recent assessment of historical emissions should be used. For example, average emission rates and levels for the 2004 to 2006 period should be used as measures for determining such allowance allocations. A multi-year average mitigates the risk that any particular year is not representative of the generation unit's normal production. Using recent history provides the best basis upon which to evaluate the harm that will be experienced when the GHG reduction program is implemented. Using historical data from these years, when rules are being defined for emissions reduction programs and actions are beginning to be taken to comply with anticipated AB 32 implementation rules, avoids the risk that early actions to reduce emissions will be "penalized" through a reduction in the calculation of free allowances due to harm from new GHG regulation.

*Q15. If emission allowances are allocated, based initially on historical emissions (grandfathering), should the importance of historical emissions in the calculation of allowances be reduced in subsequent years as providers respond to the need to reduce GHGs? If so, how should this be accomplished? By 2020, should all allocations be independent of pre-2012 historical emissions?*

A15. SCE anticipates that the number of allowances in the market will decrease each year between 2012 and 2020, as limits are established to move from current levels of GHG to 1990 levels by 2020

*Q16. Should a two-track system be created, with different emission allowances for deliverers/first sellers or retail providers with legacy coal-fueled power plants or legacy coal contracts? What are the factors and trade-offs in making this decision? How would the two tracks be determined, e.g., using an historical system emissions factor as the cut-off? How should the allocations differ between the tracks, both initially and over time? What would be the market impact and cost consequences to consumers if a two-track method were used?*

A16. As SCE's Proposal shows, three categories should contribute to the allocation of allowances, because three primary sources of economic dislocation can result from the imposition of new GHG regulations. These can be summarized as follows:<sup>6</sup>

1. Harm will be caused to generators that sell their output into the market to the degree to which the generation emission rate is higher than the marginal unit in the market that is setting the clearing price, since the cost to produce allowances for the generator with emissions higher than the marginal unit should be greater than the increased revenue from the higher market price set by the marginal unit in the market (*i.e.*, the difference between the generators' emission rate and that of the marginal unit will determine the degree of harm). If the generator produces fewer emissions per kWh produced than the marginal unit, it should suffer no harm and will not be eligible for free allowances.

2. LSEs that serve a portion of their load through wholesale purchases of power in the market (rather than through their own generation as described in the first category) will suffer harm due to the higher wholesale prices they should have to pay from the emissions cost being incurred by the marginal unit setting wholesale prices (or alternatively the emissions costs built into the prices required by bilateral sellers).

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<sup>6</sup> These are described under the First Seller approach. The actual level of harm would not be different under a load-based approach though the description of the measurement of that harm would be different.

3. Harm will be caused to LSEs that own generation by the amount of GHG emitted from that generation, as allowances will need to be produced for all of these emissions, and no additional revenue will accrue for generation dedicated to serving the LSE's load.

These three categories capture the majority of the harm in the electricity sector that results from the imposition of new GHG regulations. Another example of harm would be a generator who had signed a long-term contract to supply power to an LSE, which did not include a clause allowing for the recovery of new emissions costs necessary to comply with the new GHG regulations. Under AB 32 regulations, this generator may suffer harm associated with its GHG emissions and such harm should be considered in the allocation of free allowances, just as the categories described above. Other examples of harm that could be caused by the new GHG regulations may exist in which costs to others cannot be passed on (*e.g.*, through higher wholesale market revenues).

SCE's Proposal provides free allowances to those entities that suffer harm. The amount of the allowances will be in proportion to the degree of harm expected. As this approach will never provide any one participant enough free allowances fully to mitigate their harm, no windfall profits are possible from such an allocation.

*Q17. If emission allowances are allocated administratively to retail providers, should other adjustments be made to reflect a retail provider's unique circumstances? Comment on the following examples, and add others as appropriate:*

*Q17a. Climate zone weighting to account for higher energy use by customers in inclement climates.*

A17a. As described in SCE's response to Question 16 and included in SCE's Proposal, some retail providers' harm is based on wholesale purchases at higher market prices resulting

from the imposition of GHG regulations (or, under a load-based approach, the emissions cost associated with these wholesale purchases, which should yield the same level of harm as the higher purchase price). Therefore, if a retail provider operates in a climate zone that results in higher sales, requiring a higher level of purchases from the wholesale market, then this increased cost and increased harm will be captured by SCE's Proposal. No additional adjustments are necessary.

*Q17b. Increased emission allowances if there is a greater-than-average proportion of economically disadvantaged customers in a retail provider's area.*

A17b. If a policy is adopted to set aside some allowances for the specific purpose of mitigating the impacts on economically disadvantaged customers, then that approach should attempt to provide a greater allocation to the LSEs that serve such customers and to develop a mechanism to pass through the value associated with those allowances in rates to those disadvantaged customers. This can be done for IOUs through CPUC ratemaking, and for the POUs through their regulatory agencies. A mechanism would have to be implemented to ensure that ESPs that receive free allowances to protect their disadvantaged customers pass through the value of those allowances to such customers.

*Q18. Should differing levels of regulatory mandates among retail providers (e.g., for renewable portfolio standards, energy efficiency investment, etc.) be taken into account in determining entity-specific emission allowance allocations going forward? For example, should emission allowance allocations be adjusted for retail providers with high historical investments in energy efficiency or renewables due to regulatory mandates? If those differential mandates persist in the future, should they continue to affect emission allowance allocations?*



A18. Historical levels of regulatory mandates should only impact allowance allocations to the extent that they impact the level of harm experienced through the implementation of new GHG regulations. Thus, historical mandates that have resulted in increased emissions during the historical period could lead to increased allowances because of the increased harm from new GHG regulations that resulted from such mandates. To the extent historical mandates have resulted in less harm to the affected entities, then those entities will receive fewer allocations. Since allocations will always be insufficient to fully mitigate harm resulting from the imposition of GHG regulations, then those that incurred mandates that reduced GHG will bear lower costs for GHG, after adjusting for the harm-based allocation of allowances, than those that were not subject to such mandates or whose mandates increased GHG emissions. Thus, no modification to the harm-based emissions allowance allocation is necessary.

*Q19. How often should the allowance allocation process occur? How far in advance of the compliance period?*

A19. SCE supports an allowance allocation sometime prior to the period of compliance. Based on other such programs, such as the EU trading program for GHG, the Federal sulfur dioxide emissions reduction program, and the South Coast Air Quality Management District's REgional CLean Air Incentives Market program, SCE anticipates that the compliance period will occur annually. Accordingly, the allowance process should occur annually, prior to the year of compliance.

Furthermore, SCE supports flexible compliance, such as banking and borrowing, in order to mitigate the uncertainty of the timing of new GHG-reducing technologies making it to market during time frames that are consistent with the targeted GHG reduction path.

*Q20. What are the distributional consequences of your recommended emission allowance allocation approach? For example, how would your method affect customers of retail providers with widely differing average emission rates? Or differing rates of population growth?*

A20. SCE's Proposal would allocate a greater number of allowances to retail providers whose generation sources have higher emission rates, as these providers will likely experience the greatest economic harm from the imposition of GHG regulations. This proposal will also provide more allowances to independent generators with emissions rates higher than the marginal unit in the wholesale market as these generators would suffer greater harm. As load migrates, which cannot be effectively differentiated from population growth changes in the impact on changing load responsibility, the harm from wholesale purchases by retail entities will change. Under SCE's Proposal, the harm incurred by these LSEs as their loads change over time will commensurately change over time, as will their allocation of free allowances.

**3.4.2. Emission Allowances with a Deliverer/First Seller Point of Regulation**

*Q21. Would a deliverer/first seller point of regulation necessitate auctioning of emission allowances to the deliverers/first sellers?*

A21. An independently administered auction is the appropriate method for redistribution of allowances after their initial assignment. Such an auction will provide regulated entities with non-discriminatory access to allowances, while ensuring that the value of the allowances is returned to the entities according to the administrative allocation.

*Q22. Are there interstate commerce concerns if auction proceeds are obtained from all deliverers/first sellers and spent solely for the benefit of California ratepayers? If there are legal considerations, include a detailed analysis and appropriate legal citations.*

A22. A proposal to use the revenues from the sale or auction of allowances for the benefit of California's ratepayers seems unlikely to violate the Commerce Clause. A Commerce Clause violation would only occur if the sale or auction program were designed in a manner substantially to protect in-state generators from the impact of the cost of an allowance.<sup>7</sup>

*Q23. If you believe 100% auctioning to deliverers/first sellers is not required, explain how emission allowances would be allocated to deliverers/first sellers. In doing so, answer the following:*

*Q23a. How would the amount of emission allowances given to deliverers/first sellers be determined during any particular compliance period?*

A23a. Under SCE's Proposal, LSEs, generators, and all other entities that suffer economic dislocation because of the imposition of new GHG rules would have their estimated harm calculated. Each entity would then receive a proportional share of the total amount of allowances to be allocated, based on its share of the total projected harm. If deliverers/first sellers are among those that are entitled to such an allocation, then they would receive an allocation through this process. To the extent that these first seller/deliverers require additional allowances, SCE's Proposal recommends that allocated allowances be auctioned by an independent third party so that all entities that need such allowances can compete for them in a non-discriminatory auction, with the value received from the auction flowing back to the original allowance holders.

*Q23b. How would importers that are marketers be treated, e.g., would they receive emission allowance allocations or be required to purchase all their needed emission allowances through auctions? If allocated, using what method?*

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<sup>7</sup> See *Maryland et al. v. Louisiana*, 451 U.S. 725, 756 (1981).

A23b. Under SCE's Proposal, any party that needs allowances would have an opportunity to acquire them through the third-party non-discriminatory auction described in SCE's response to Question 23a, as well as through anticipated secondary markets for allowances.

*Q23c. How would service providers be treated?*

A23c. ESPs that incur economic dislocation, either from ownership of GHG emitting generation or through increased wholesale power purchase costs due to new GHG regulations, are eligible for an allocation of allowances based on their share of harm expected to be incurred.

*Q23d. How would new deliverers/first sellers obtain emission allowances?*

A23d. See SCE's answer to Question 23b.

*Q23e. Would zero-carbon generators receive emission allowance allocations?*

A23e. No. Zero-carbon emitting generators would suffer no harm, therefore, under SCE's Proposal, they would not be eligible to receive an allowance.

*Q23f. What would be the impact on market performance, prices, and costs to customers of allocating emission allowances to deliverers/first sellers?*

A23f. Electricity market performance, GHG allowance market performance, and prices should not be affected by the allocation of emissions under SCE's proposal or any other proposal that does not determine allowances based on current or future market actions. The allocation of allowances should be a wealth redistribution mechanism used to mitigate the economic dislocation from the new GHG regulation. Actions taken in response to GHG price signals should impact the price of electricity, GHG emissions markets, and incentives. On the other hand, they should not be affected by this wealth redistribution.

The costs to customers will be impacted by any allocation approach, because customers will need to pay a higher price for power due to the imposition of new GHG regulations, but this price impact can be mitigated by the allocation of free allowances to the LSEs serving these customers. The method for allocating allowances will determine the degree to which migration of this cost increase occurs. SCE's Proposal allocates emissions to those entities that experience economic dislocation, which SCE expects will be predominantly the LSEs in California, but it could include some generators (first sellers/deliverers) that cannot pass on all of their increased costs through higher wholesale prices.

*Q23g. What would be the likelihood of windfall profits if some or all emission allowances are allocated to deliverers/first sellers?*

A23g. Under SCE's Proposal, no windfall profits will be created from the allocation of emission allowances, since the allocation is proportional to the degree of harm that is imposed and that cannot effectively be passed on (e.g. by a seller in the form of higher wholesale prices). If an entity is not harmed by the imposition of the GHG reduction regulation, then that entity will not receive allowances. If an entity is harmed, then the proportional share of allowances will always be less than the amount that would fully mitigate the harm (i.e., an insufficient number of allowances will always exist to fully mitigate harm), because emissions must be reduced over time. However, some generators selling into the market may benefit from higher wholesale prices to a greater degree than they suffer from their cost increase from the GHG reduction program. Since only harmed entities will receive an allocation and the allocation will never fully mitigate the harm these entities bear, no windfall profits can occur from allocation under SCE's Proposal.

*Q23h. How could such a system prevent windfall profits?*

A23h. See SCE's answer to Question 23g.

*Q24. With a deliverer/first seller point of regulation, should administrative allocations of emission allowances be made to retail providers for subsequent auctioning to deliverers/first sellers? If so, using what allocation method? Refer to your answers in Section 3.4.1., as appropriate.*

A24. SCE supports an allocation of allowances that mitigates the economic harm from compliance with AB 32. Following this initial administrative allocation, allowances can be auctioned by an independent party according to the process outlined previously.

*Q25. If you recommend allocation of emission allowances to retail providers followed by an auction to deliverers/first sellers, how would such an auction be administered? What kinds of issues would such a system raise? What would be the impact on market performance, prices, and costs to customers?*

A25. The auction should be administered in a non-discriminatory manner by an independent party. The proceeds of such an auction should be returned to the entities according to the initial administrative allocation to mitigate the cost of compliance.

### **3.5. Natural Gas Sector**

*Q26. Answer each of the questions in Section 3.4.1., except Q16, but for the natural gas sector and with reference to natural gas distribution companies (investor- or publicly-owned), interstate pipeline companies, or natural gas storage companies as appropriate. Explain if your answer differs among these types of natural gas entities. Explain any differences between your answers for the electricity sector and the natural gas sector.*

A26. SCE does not have a specific proposal for the natural gas sector. Nevertheless, the principle of allowance distribution based on economic harm can be applied to the natural gas

sector and any other sector impacted by GHG regulations. Allocating allowances based on the principles of economic harm will have the same benefits to the natural gas sector as the electric sector — *i.e.*, reduced impact on consumers and eliminating windfall profits.

*Q27. Are there any other factors unique to the natural gas sector that have not been captured in the questions above? If so, describe the issues and your recommendations.*

A27. See SCE's Answer to Question 26.

### **3.6. Overall Recommendation**

*Q28. Considering your responses above, summarize your primary recommendation for how the State should design a system whereby electricity and natural gas entities obtain emission allowances if a cap-and-trade system is adopted.*

A28. Please see the detailed presentation material in the Appendix, which more fully explains SCE's Proposal summarized in Section I. SCE looks forward to presenting this proposal and responding to any questions regarding it at the workshop to be held on November 5, 2007.

Respectfully submitted,

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October 31, 2007



## Appendix

# **SCE Allowance Allocation Discussion**

**CPUC/CEC Workshop on Greenhouse  
Gas Emission Allocation for the  
Electricity Sector**

**11/05/07**



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## Today's Discussion

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- ◆ SCE's Allowance Allocation Proposal:
  - Allocates allowances such that those entities that are expected to suffer economic dislocation have the impacts of the imposition of the GHG rules proportionally mitigated
- ◆ The benefits of SCE's proposal:
  - Minimizes financial impact to consumers
  - Minimizes adverse impact of investment/business decisions made prior to implementation of new rules
  - Minimizes financial harm to entities responsible for GHG mitigation
  - Retains the price incentive to reduce the emissions
  - Minimizes windfalls for non-impacted participants

# Allocation Fundamentals

## 1. Point of Regulation is Independent of Allocation Mechanism

- The economic harm is not isolated to the regulated entities
  - Under a source based cap, ratepayers will pay the emissions cost of the marginal generator. As a result, generators with emission rates equal to or less than that of the marginal unit will not realize any economic harm from AB 32.
  - Under a load based cap, the cost of emissions allowances will be passed to ratepayers.
    - ♦ Relatively clean generators will “self-select” into bilateral contracts to extract economic rents according to their emission levels.

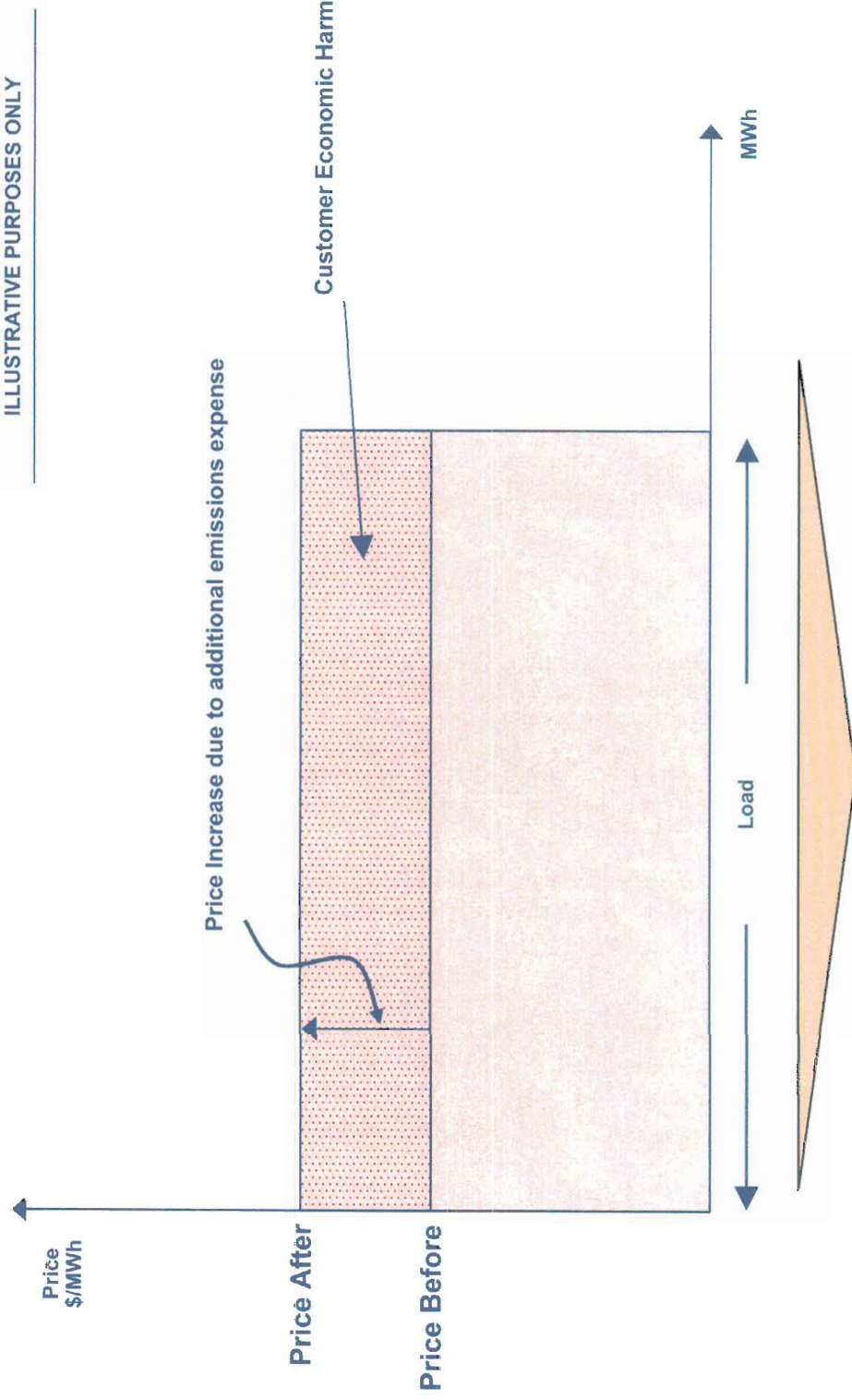
## 2. Incentive to Reduce Emissions is Independent of Allocation Mechanism

- The allowance price signal will be incorporated into the market price for generation
  - Embedded allowance expense incents energy generators to reduce emissions and incents energy purchasers to use lower emission sources regardless of the allocation mechanism



# Customer Economic Harm

ILLUSTRATIVE PURPOSES ONLY

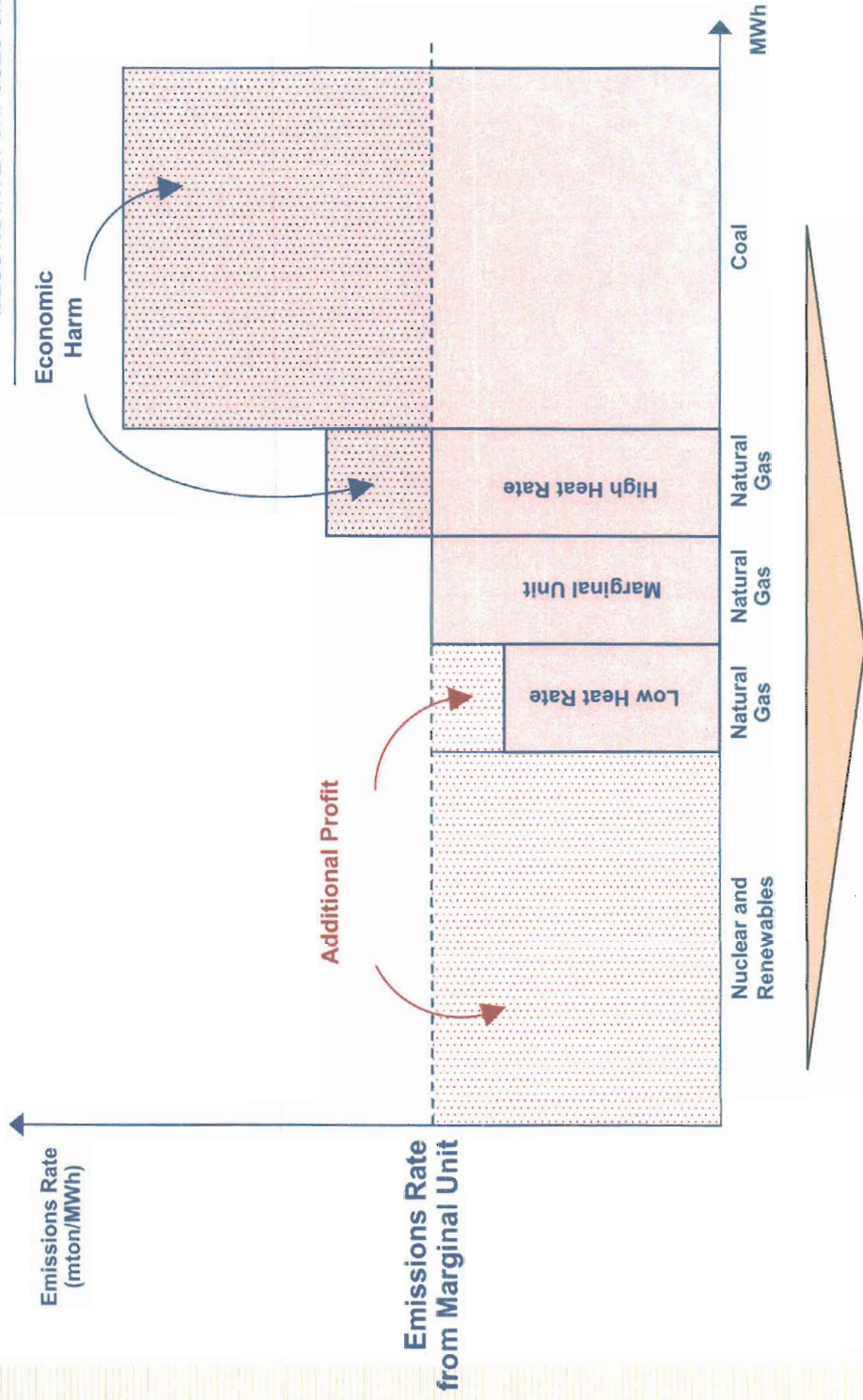


The increase in the market price that results from the emissions expense of the marginal generator imposes an economic harm on LSE ratepayers. Ratepayers should receive an allocation sufficient to mitigate this harm.



# Merchant Generator Economic Harm

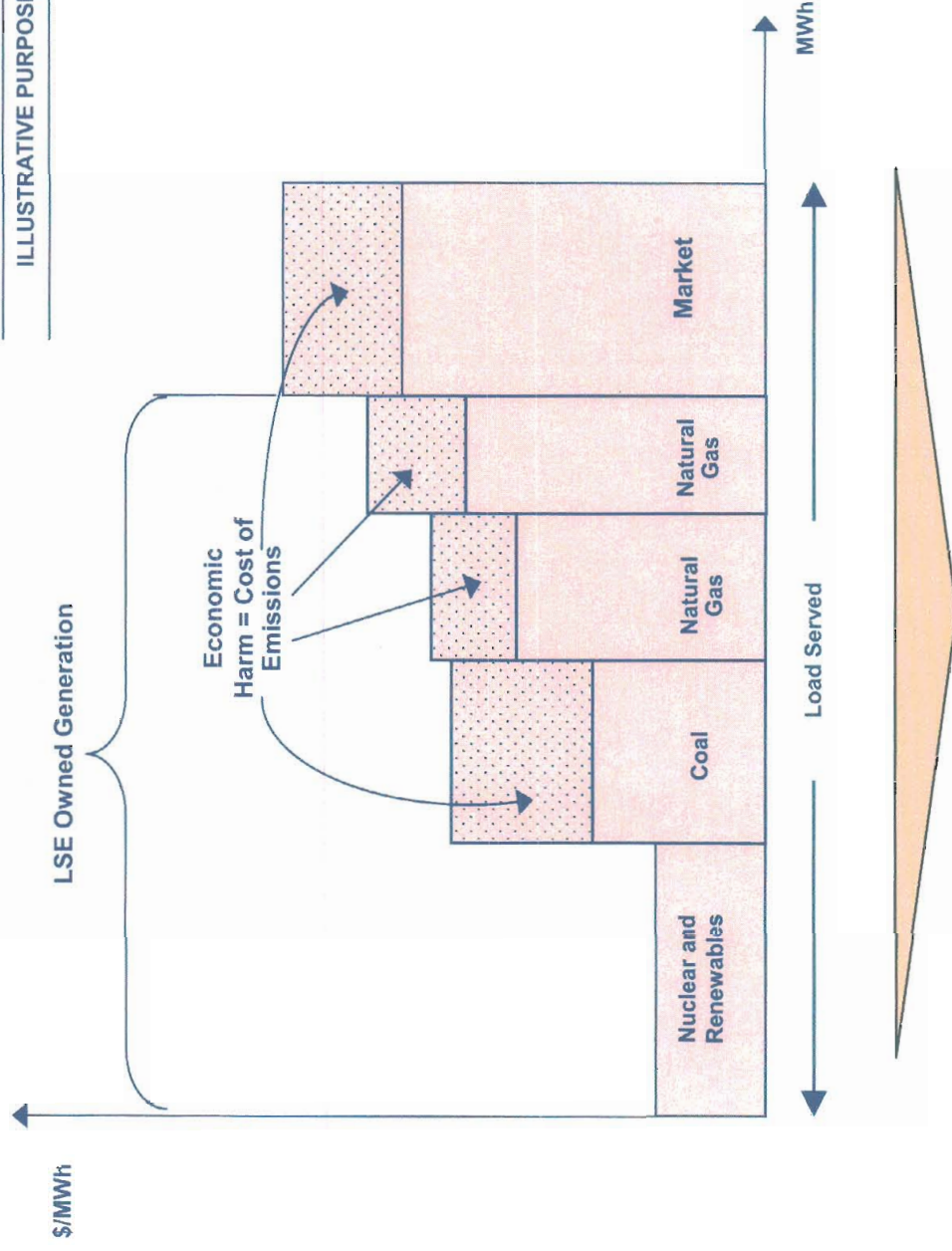
ILLUSTRATIVE PURPOSES ONLY



The market price will rise by the emissions expense of the marginal generator. The higher market price will compensate any units with emissions equal to or lower than those of the marginal unit. Those generators with higher emission rates than the marginal unit will suffer economic harm.

# LSE with Owned Generation Economic Harm

ILLUSTRATIVE PURPOSES ONLY



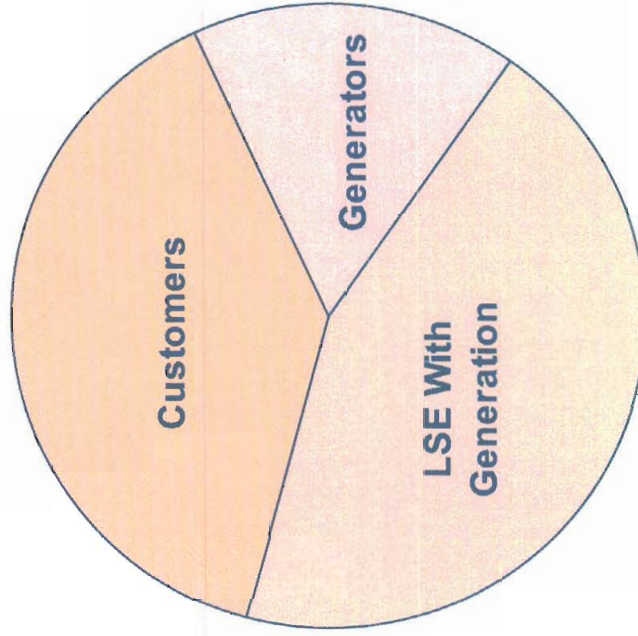
LSEs that own generating resources suffer economic harm based on the emissions expense associated with their generating units. LSEs will need to retire allowances to cover these emissions under the AB 32 cap.



# Allowance Allocation Based on Economic Harm

ILLUSTRATIVE PURPOSES ONLY

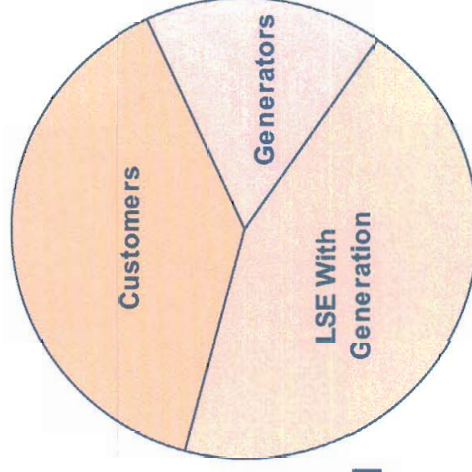
**Economic Harm (\$)**



**SCE Allowance Allocation Proposal**



**Allowance Allocation**



The initial allocation of allowances should be determined based on the economic harm of California entities. However, enough allowances will not be available to completely mitigate the economic harm. Each harmed entity should realize an equal percentage reduction in allowances. For example, if the number of allowances in 2020 equals 75% of the number needed to completely mitigate the economic harm, each entity should receive a 25% reduction in allowances.



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# Summary

- ◆ SCE's proposal proportionately allocates allowances to entities expected to suffer economic harm, mitigating transition hardships to clean environmental future
  - Minimize financial impact to consumers
  - Minimize adverse impact of investment/business decisions made prior to implementation of new rules
  - Minimize financial harm to entities responsible for GHG mitigation
  - Minimize the cost of AB 32 compliance
  - Minimize windfalls from non-impacted participants (avoids EU experience)
- ◆ The allocation of allowances is independent of the point of regulation
- ◆ SCE's proposal retains the price incentive to reduce emissions
- ◆ Allocating allowances according to economic harm avoids the allowance windfalls that generators realized in Europe
- ◆ SCE's proposal can be implemented in a non-discriminatory manner by utilizing an auction
- ◆ SCE's proposal can be applied to other sectors of the California economy
- ◆ SCE's proposal complies with AB 32 objective of equitable allowance distribution
  - Health and Safety Code 38562(b)(1)

# Appendix



## Electric Sector Entity Evaluation

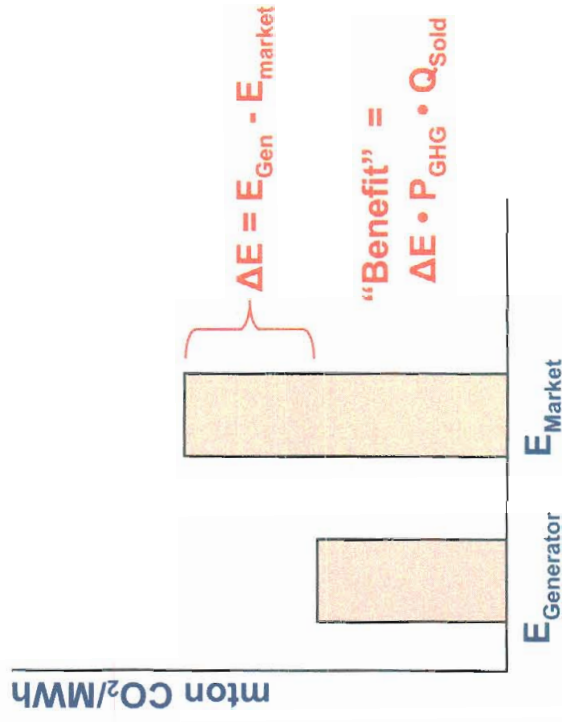
- ◆ Consider three types of entities that would be economically impacted by GHG regulation
  - *IPP*: A merchant generator (all generation)
  - *ESP*: Any LSE without an associated generation portfolio (all load)
  - *UTIL*: Any LSE with an associated generation portfolio (mixed)
- ◆ Analytic Process:
  - Identify the economic impact of the GHG emissions cap
    - A one-time snapshot of impact, not a year-by-year recalculation
    - Some exceptions may be required for load migration
  - Define methodology to completely mitigate economic dislocation
  - Define methodology to distribute the unavoidable economic dislocation as the size of the allowance pie is reduced between 2012 and 2020



# Economic Impacts to IPP

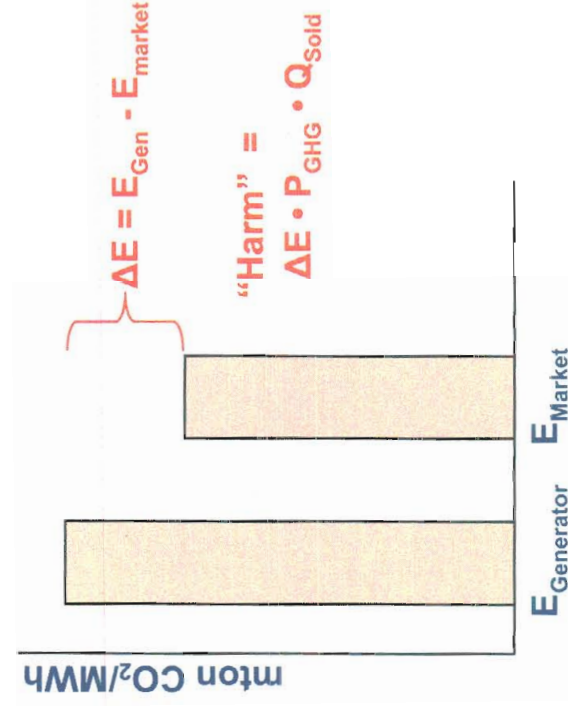
## “Cleaner” IPP

$$E_{\text{Generator}} < E_{\text{Market}}$$



## “Dirtier” IPP

$$E_{\text{Generator}} > E_{\text{Market}}$$



### Key

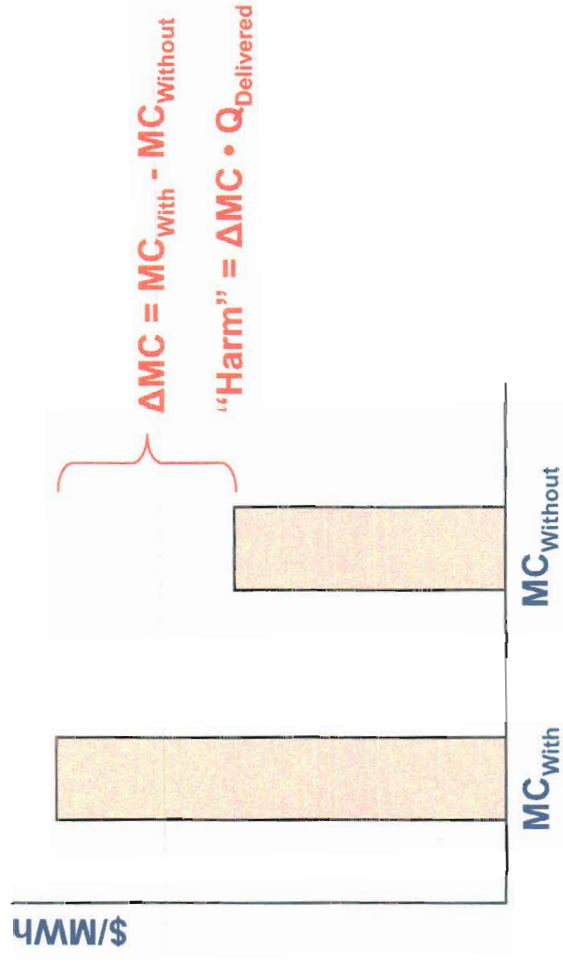
- $E_{\text{Generator}}$  = Average Emissions Rate for Generator [mton CO<sub>2</sub>/MWh]
- $E_{\text{Market}}$  = Emissions Rate for Marginal Unit [mton CO<sub>2</sub>/MWh]
- $P_{\text{GHG}}$  = Price of Allowances [\$/mton CO<sub>2</sub>]
- $Q_{\text{Sold}}$  = Quantity of Power Sold into the Market [MWh]



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# Economic Impact to ESP



## Key

$MC_{\text{with}}$  = Marginal Cost With AB32 Rules Implemented [\$/MWh]

$MC_{\text{without}}$  = Marginal Cost Without AB32 Rules Implemented [\$/MWh]

$Q_{\text{delivered}}$  = Quantity of Power Sold [MWh]



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# Economic Dislocation

- ♦ The anticipated economic impact (\$) for each entity is as follows
  - Assumes the market operates under a source-based cap
  - Assumes entities' emissions rates and quantities sold can be based on historical data at the wholesale level (in compliance to confidentiality requirements)
- **IPP:** The difference in marginal emissions rates (lb/MWh) between the generator and the market, times the price of allowances (\$/ton), times the quantity sold into the market (MWh)

$$\$_{IPP} = (E_{GEN} - E_{MARKET}) \times P_{GHG} \times Q_{SOLD}$$

(where  $\Delta E \geq 0$ , else 0)

- **ESP:** The difference between the marginal cost power (\$/MWh) purchased from the market with the GHG rules implemented<sup>1</sup> and the power price without the rules<sup>2</sup>, times the quantity purchased

$$\$_{ESP} = (MC_{WITH} - MC_{WITHOUT}) \times Q_{DELIVERED}$$

- **UTIL:** The impact to the utility is a mix of sales and purchases

$$\$_{UTIL} = (E_{GEN} - E_{MARKET}) \times P_{GHG} \times Q_{SOLD} + (MC_{WITH} - MC_{WITHOUT}) \times Q_{DELIVERED}$$

(where  $\Delta E$  can be positive or negative)

- 1) The MC of power with the rules should be the marginal operating cost plus the marginal emissions cost (which is the marginal emissions rate times the emission price) of the most costly generator needed to meet demand
- 2) The MC of power without the rule should be the marginal operating cost of the most expensive generator needed to meet demand

## Free Allowances Needed to Fully Mitigate Impact

- ♦ The number of free allowances (A), in tons, needed to fully mitigate the economic impact for each entity is as follows:
  - *IPP*: The difference in marginal emissions rates between the generator and the market, times the quantity sold  

$$A_{IPP} = (E_{GEN} - E_{MARKET}) \times Q_{SOLD}$$
(where  $\Delta E \geq 0$ , else 0)
  - *ESP*: The marginal emissions rate for market purchases, times the quantity purchased  

$$A_{ESP} = E_{MARKET} \times Q_{DELIVERED}$$
(where  $\Delta MC = P_{GHG} \times E_{MARKET}$ )
  - *UTIL*: The emission rate of the utility's generation portfolio, times the quantity sold from the portfolio, plus the marginal emissions rate for market purchases times the net short quantity purchased  

$$A_{UTIL} = (E_{GEN} - E_{MARKET}) \times Q_{SOLD} + (E_{MARKET} \times Q_{DELIVERED})$$

$$A_{UTIL}^* = (E_{GEN} \times Q_{SOLD}) + (E_{MARKET} \times Q_{NET\ SHORT})$$

\* Since  $Q_{DELIVERED} = Q_{SOLD} + Q_{NET\ SHORT}$



**CERTIFICATE OF SERVICE**

I hereby certify that, pursuant to the Commissioner's Rules of Practice and Procedure, I have this day served a true copy of COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON QUESTIONS PRESENTED IN ADMINISTRATIVE LAW JUDGE'S RULING REGARDING COMMENTS AND NOTICE OF WORKSHOPS ON ALLOWANCE ALLOCATION ISSUES on all parties identified in the attached service list(s).

Transmitting the copies via e-mail to all parties who have provided an e-mail address.

First class mail will be used if electronic service cannot be effectuated.

Executed this **31st day of October, 2007**, at Rosemead, California.

**/S/ RAQUEL IPPOLITI**

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**R.06-04-009**

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