

BEFORE THE CALIFORNIA ENERGY COMMISSION

In The Matter Of,

AB 32 – Greenhouse Gas Emissions
Joint Meetings of CEC & CPUC.

Docket 07-OIIP-01

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COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E)
REGARDING JOINT CALIFORNIA PUBLIC UTILITIES COMMISSION AND
CALIFORNIA ENERGY COMMISSION STAFF PROPOSAL FOR AN ELECTRICITY
RETAIL PROVIDER GHG REPORTING PROTOCOL

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**COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) REGARDING
JOINT CALIFORNIA PUBLIC UTILITIES COMMISSION AND CALIFORNIA ENERGY
COMMISSION STAFF PROPOSAL FOR AN ELECTRICITY RETAIL PROVIDER GHG
REPORTING PROTOCOL**

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In accordance with the June 12, 2007 Administrative Law Judges’ Ruling Regarding Comments on Staff Reporting Proposal (the “Ruling”), Southern California Edison Company (“SCE”) respectfully submits these comments on the Joint California Public Utilities Commission (“Public Utilities Commission”) and California Energy Commission (“CEC”) Staff Proposal for an Electricity Retail Provider GHG Reporting Protocol (“Staff Proposal”).

I.

INTRODUCTION AND EXECUTIVE SUMMARY

The Staff Proposal sets forth a protocol for reporting greenhouse gas (“GHG”) emissions that is premised on the assumption that there will be a load-based cap on electricity sector GHG emissions in California. The Staff Proposal states that the “issue of whether a load-based cap is the appropriate approach will be addressed elsewhere in this proceeding.”¹ Although SCE appreciates that the Public Utilities Commission and the CEC intend to consider the benefits and

¹ Staff Proposal at 1 n1.

weaknesses of load-based, source-based and other approaches in another part of the proceeding, the Staff Proposal's reporting protocol cannot be divorced from the assumptions that underlie its reporting and accounting rules. The inherent weaknesses of a load-based approach translate into weaknesses in the Staff Proposal's reporting protocol.

As explained in Section II herein, there are significant problems with the load-based reporting protocol proposed in the Staff Proposal and with the load-based cap structure that the Staff Proposal assumes will be implemented in California. A load-based cap structure is out-of-step with policies being implemented by the California Independent System Operator ("ISO") in its Market Redesign and Technology Upgrade ("MRTU"). The reporting protocol suggested by the Staff Proposal will also create complicated accounting schemes that are rife with opportunities to "game" the system. There is a better alternative.

In the interest of exploring the benefits of a more accountable approach, SCE suggests that the Public Utilities Commission and the CEC consider carefully the option of the First Seller approach endorsed by the Market Advisory Committee ("MAC") to the California Air Resources Board ("CARB").² As explained herein and in the MAC Recommendations, the First Seller approach provides the basis for a reporting protocol that is more accurate for in-state generation, wholesale sales and imports, more able to expand to and link with GHG emissions regimes in other jurisdictions, more consistent with the optimal functioning of the electricity markets, and in particular, the ISO's MRTU, better able to deal with the problem of contract shuffling and no more susceptible to the problem of leakage than the Staff Proposal's load-based approach.

The First Seller approach places the legal obligation for compliance with GHG emissions regulations on the first seller of power into California electricity markets or to directly serve their own loads. "[T]he responsible entity or point of regulation is either the owner or operator of the California power plant, or the importing contractual party, depending whether the electricity

² See Recommendations for Designing a Greenhouse Gas Cap-and-Trade System for California, Recommendations of the Market Advisory Committee to the California Air Resources Board ("MAC Recommendations") at 40-54 (June 30, 2007).

involves in-state or out-of-state generation.”³ A First Seller based reporting protocol would be a means of assigning responsibility for GHG emissions more accurately based on the source of those emissions, consistent with Assembly Bill 32 (“AB 32”).

Reporting GHG emissions under the First Seller approach is superior to the load-based approach set forth in the Staff Proposal in a number of ways. First and foremost, the First Seller approach produces more accurate reporting of GHG emissions than the Staff Proposal’s load-based methodology – a paramount criterion for the success of any emissions reporting protocol. This is true for in-state generation, wholesale sales and out-of-state generation. For in-state generation, the First Seller approach puts the responsibility for reporting emissions on the entity responsible for establishing the electrical energy output level of the generator for commercial purposes – the entity that knows the generator’s electrical output levels and fuel consumption and can report actual GHG emissions to CARB.

In contrast, the Staff Proposal’s load-based reporting protocol relies heavily on default emissions factors for the ISO markets and unspecified sources. As discussed herein, these default emissions factors provide many opportunities to disguise the true emissions of a California generator. Moreover, they are particularly problematic given that the portfolios of California load-serving entities (“LSEs”) will have more, not less, unspecified source power in future years as MRTU is implemented and source-specific LSE contracts expire. In other words, the arbitrary default emissions factors used in the Staff Proposal’s load-based approach are subject to “gaming” and fail to give an accurate picture of the actual GHG emissions associated with any given level of consumption of electricity in California. As the MAC concluded, “[r]esponsibility for in-state emissions can be tracked precisely under a first-seller system, but is only approximately accounted for under the alternative load-based approach.”⁴

The First Seller approach also produces much more accurate reporting of GHG emissions associated with imports than the Staff Proposal’s load-based reporting protocol. Although both

³ *Id.*

⁴ *Id.* at 52.

approaches require some estimating of GHG emissions for imports, the First Seller approach has a significant advantage in that an importer to California would be responsible for reporting the emissions associated with the import. Under the Staff Proposal, the importer would have no such responsibility and the LSE might be unable to accurately identify the source of the import.

As discussed herein, the increased accuracy of the First Seller approach over the Staff Proposal's approach would increase if GHG regulation is expanded to other states. In that case, there would no longer be a need for default emissions factors for non-source specific imports because those sources would be covered by the other state's regulations. In contrast, problems with the Staff Proposal's reporting protocol would remain even if all of the states surrounding California adopt GHG regulation. Indeed, the expandability of California's system to other jurisdictions and its ability to link to other state's regulations would be much more problematic under a load-based approach than the First Seller approach. This is especially true if, like the other jurisdictions that have adopted GHG legislation, the other states adopted a source-based cap. The ability to link with either national or regional GHG cap-and-trade programs is a key objective of AB 32 and the benefits of a First Seller approach to support this critical objective should be considered carefully. As the MAC stated, "if the state seeks to develop a program that has strong potential to serve as a regional/national model and to link easily with an international system, a first-seller approach is preferred."⁵

Second, the Staff Proposal's load-based methodology will likely distort the electricity market causing negative financial and reliability consequences in the market that would not otherwise occur under the First Seller Approach. The load-based approach of the Staff Proposal will also most likely interfere with the intended operation of MRTU. The MRTU has been a substantial undertaking requiring a substantial commitment of time and money by the ISO and many other parties. The Public Utilities Commission and the CEC should not recommend a reporting protocol that will undermine that effort. The First Seller approach can more easily be

⁵ *Id.*

constructively coordinated with the operations of electricity markets in California, including MRTU.

Third, although preventing leakage is one of the purported justifications for a load-based cap, this alleged “advantage” of a load-based approach is completely illusory. The First Seller approach is no more subject to the problem of leakage than the load-based approach set forth in the Staff Proposal. Leakage refers to a situation where a reduction in GHG emissions in California is offset by an increase in emissions in another state. Leakage is a potential problem under both a First Seller and a load-based approach, but a load-based approach does no more to reduce the problem than a First Seller approach. A related concern, contract shuffling – the relabeling of contractual obligations so that higher emission sources of power are sent out of California and lower emissions sources are sent in – is better dealt with by the First Seller approach than a load-based approach. Under the First Seller approach, a California generator cannot evade responsibility for its emissions by disguising the nature of its output as an unspecified source product or by exporting its output outside of California and simultaneously importing power from a “clean” source outside of California.

As explained below, implementation of the First Seller approach would mitigate or eliminate many of the problems with the load-based reporting protocol proposed in the Staff Proposal and provide a better alternative for reporting GHG emissions. As the MAC stated:

We recommend a first-seller approach in light of its relative simplicity and ease of emissions accounting. Responsibility for in-state emissions can be tracked precisely under a first-seller system, but is only approximately accounted for under the alternative load-based approach. A lesson from previous programs is that their success has been associated with public acceptance—that, in turn, has been fundamentally linked to transparent and precise monitoring and accounting.

Furthermore, if the state seeks to develop a program that has strong potential to serve as a regional/national model and to link easily with an international system, a first-seller approach is preferred. This option would allow California to transition naturally to a regional or national generator-based system. Although our recommended approach differs somewhat from the one the

California PUC has been most actively exploring, we share the PUC's general objectives regarding the effective regulation of emissions associated with electricity use and believe that our recommended approach meets those objectives.⁶

Finally, Sections III and IV of SCE's comments address the questions in the Ruling and identify certain technical issues with the Staff Proposal, respectively.

II.

THERE ARE SIGNIFICANT PROBLEMS WITH THE STAFF PROPOSAL'S LOAD-BASED APPROACH THAT ARE ADDRESSED BY THE FIRST SELLER APPROACH

As explained below, the load-based reporting protocol set forth in the Staff Proposal has important disadvantages that would seriously undermine the accuracy and workability of any system of GHG emissions regulation based on the protocol. The First Seller approach eliminates or substantially mitigates most of these problems and provides a better overall approach for GHG emissions regulation that is more consistent with the markets and policies in place today and likely to be in place in the future.

A. The Staff Proposal's Load-Based Reporting Protocol Will Not Produce Accurate Reporting Of GHG Emissions

Section 2.3 of the Staff Proposal identifies seven criteria that should be considered in developing a GHG reporting protocol. The first criterion is accuracy. SCE agrees that accuracy is a paramount criterion. Accuracy is essential if GHG reduction goals and environmental objectives are to actually be met. Accuracy is also critical if penalties will be assessed for non-compliance. The assessment of penalties would be fundamentally unfair and could be legitimately challenged if the basis of the penalty is an inaccurate measurement or attribution of GHG emissions. Furthermore, accuracy is important if the State desires accurate market price signals for the value of GHG allowances or projects that reduce GHG emissions.

⁶ *Id.*

There are several dimensions to accuracy that should be considered. One element relates to whether the GHG emissions reported by an entity pursuant to the adopted reporting protocol are reasonably and properly attributed to that entity. A second element of accuracy relates to whether the sum of reported emissions by all the reporting entities is approximately equal to the emissions that are reasonably and properly attributed to the consumption of electricity by consumers in California. SCE believes these accuracy assessments are appropriately made for the time period after 2012. In particular, accuracy should not be assessed by looking at historical data, but by taking into account the impact on the accuracy of GHG emissions reporting caused by the evolution in markets (such as the implementation of MRTU and a capacity market), the evolution of products (such as the development of a standard capacity product that allows a specific generating unit to sell its capacity without selling any of its energy and associated GHG emissions),⁷ and the changes in behaviors that will result because of the reporting protocol and the cost consequences of having reported GHG emissions. Unfortunately, in SCE's view, the Staff Proposal falls far short on accuracy. SCE discusses the reasons below.

As an alternative to the Staff Proposal, the Public Utilities Commission and the CEC should support reporting based on the First Seller methodology. As explained below, reporting based on the First Seller approach will be much more accurate than reporting under the Staff Proposal, which assumes a load-based GHG cap will be adopted.⁸

1. For In-State Generation, The Staff Proposal Is Inaccurate And Inferior To First Seller Reporting

Under the First Seller approach, obtaining complete accuracy of reporting GHG emissions for in-state generation is straightforward. The entity responsible for establishing the electrical energy output level of a California generator for commercial purposes is deemed to be

⁷ The development of financial products to replace physical energy products as hedges is also an important and growing trend.

⁸ As discussed in Section III.6 below, the Staff Proposal is not compatible with a First Seller approach.

the first seller.⁹ That entity knows exact generator electrical output levels and fuel consumption at each point in time, and is able to accurately report this information and the associated GHG emissions to CARB. Importantly, the first seller is able to reduce the output of the generator if doing so is part of the least-cost solution for meeting the GHG reduction goals of AB 32.

In contrast, under the Staff Proposal there are many options (and large economic incentives) to disguise the true GHG emissions of the California generator. Two obvious ways are to sell the energy to a marketer or sell the energy to an LSE as non source-specific energy. These transactions are common today and may easily proliferate further if the adopted reporting protocol provides an incentive. According to the Staff Proposal, energy from “other in-state unspecified sources” is given a default carbon emissions factor of 1,000 lbs/MWh. Based upon this default value, any in-state resource whose actual emissions are greater than 1,000 lbs/MWh will have a strong incentive to sell its output via a marketer or as a unspecified resource.

Another alternative way to disguise the true GHG emissions of a California generator is to sell the energy in the ISO’s Integrated Forward Market (“IFM”) or real-time market. If the Staff Proposal is adopted, LSE purchases of energy in these markets are attributed carbon emissions of 1,000 lbs/MWh and 900 lbs/MWh, respectively. Again, any in-state resource with actual emissions above these levels will have incentives to sell in these markets.

A fourth alternative is to export the energy produced by the California generator out of California to a region which has a low default emissions factor and then import energy from that region. For example, energy produced by a California generator with a carbon emissions factor of 1,500 lbs/MWh might be exported to the Pacific Northwest, while simultaneously what is assumed to be hydro-based energy from the Pacific Northwest is imported to California. The result from an energy flow perspective is no energy flow. The result from a GHG accounting

⁹ This may be the owner or owners of the generating unit if the electrical energy output of the unit has not been sold. If an owner has sold its share of the electrical energy output of the generating unit through a long-term contract, the entity that purchased that output would be considered the first seller. Since the System Operator (ISO in SCE’s case) can order a generator to achieve a specific electrical energy output level for system reliability purposes, SCE has added “for commercial purposes” to the first seller definition. SCE believes it would be beneficial to convene a workshop to establish the precise language for the first seller definition.

perspective, however, is that the emissions reported are based on the default carbon emissions factor from the Pacific Northwest of 419 lbs/MWh, instead of the actual carbon emissions factor of the California generator of 1,500 lbs/MWh. Economically motivated market participants will surely figure out other “creative” ways to circumvent California’s GHG rules as well.

The First Seller approach avoids all of these aforementioned accuracy problems.

2. The Staff Proposal’s Accuracy Is Linked To Assumptions About The Nature Of LSE Sources That Are Not True Today And Will Be Increasingly Less True In The Future

The Staff Proposal is predicated on a belief that LSE energy portfolios will consist virtually entirely of owned generation or source-specific contracts, and that non source-specific transactions will be the exception instead of the rule. This is not the case. As explained below, considering the operation of the electricity market today and in the future under MRTU, linking GHG emissions from LSE-owned or contracted generation to the LSE will not be easy.

With respect to investor-owned utility (“IOU”) LSEs, the largely source-specific nature of their portfolios today is the result of the Public Utilities Commission’s regulation of IOU procurement and generation over the years. These regulatory decisions, for example, have resulted in requirements on IOUs to purchase energy from Qualifying Facilities (“QFs”) and to meet the Renewable Portfolio Standard (“RPS”). They have resulted in the allocation of energy purchased by the California Department of Water Resources (“CDWR”) to the IOUs. They have also approved, in most cases decades ago, the construction of utility-owned generation. As IOU contracts expire and resources retire, the assumption of mostly source-specific resources will be increasingly less true over time. For example, all CDWR contracts allocated to SCE expire by the year 2012. Indeed, other than Mountainview,¹⁰ the five new peakers currently under construction, SCE’s ownership interests in Four Corners and Pebbly Beach, and the new

¹⁰ Mountainview is owned by an affiliate of SCE, which sells power to SCE under a contract.

generation contracts that SCE recently signed for all load in its service territory (regardless of that load's LSE),¹¹ all of SCE's source-specific contracts with fossil generation expire by 2012.

Moreover, this assumption of mostly source-specific resources is not necessarily true for any Electric Service Provider ("ESP") or any Community Choice Aggregator ("CCA"). ESPs, in particular, are believed to contract mostly on a short-term basis. As it is possible that direct access may be re-opened by the Commission between 2012 and 2020, a significant portion of California's load may be served by non source-specific purchases made by ESPs during the time period that the State is trying to reduce GHG emissions to 1990 levels.

SCE believes it is important for the Commissions to adopt a First Seller reporting protocol to avoid the problems of dealing with non source-specific transactions. For electric energy, as with other commodities such as natural gas and oil, the identity of the energy supplier is typically not important and is generally lost in the trail of commercial transactions that lead from the producer to the ultimate consumer of the commodity.

In addition, the Public Utilities Commission and the CEC should not think of non source-specific transactions solely as a means to avoid reporting GHG emissions that need to be reduced or eliminated. These transactions have many commercial advantages over source-specific transactions that are of real value to electricity consumers. For example, source-specific transactions are usually unit contingent and are much more difficult and time consuming to negotiate. Transmission congestion is also a problem that must be dealt with for source-specific contracts. Non source-specific transactions are usually firm and can be very quickly put in place. They are much more liquid (many buyers and sellers, including buyers and sellers that are not LSEs and do not own generation assets in the relevant market, thus increasing the potential for lower cost purchases). They allow the seller to choose the least-cost energy source for the sale, as opposed to the source-specific contract which identifies the specific source for the sale. Non source-specific transactions are an important part of the market that will likely only increase in

¹¹ Since the Public Utilities Commission requires SCE to auction energy from these new generation contracts, the energy production and associated GHG emissions from this generation cannot be attributed to SCE.

the future. The First Seller approach does a better job of accurately reporting the GHG emissions from such transactions than the Staff Proposal's load-based approach.

3. The Accuracy Of The First Seller Approach Is Superior To The Staff Proposal For Reporting Of GHG Emissions Associated With Imports

For non source-specific imports, the First Seller approach and the Staff Proposal's approach both require some means to estimate the associated GHG emissions. This is unavoidable because California's regulation of non source-specific imports can only start at the California border. Indeed, the only remedy for this defect is to expand the GHG regulatory regime to the western states from which California imports power. The Staff Proposal uses constant, non time-differentiated emissions factors for these imports which creates the potential for inaccurate calculation of GHG emissions.

The First Seller structure, however, has a significant advantage over the Staff Proposal in accurately attributing GHG emissions associated with imports. Under the First Seller approach, the importer is responsible for the imputed GHG emissions which can be tracked not only to a particular geographic region but also to specific Western Electricity Coordinating Council ("WECC") control areas. SCE believes that in the future, by using NERC E-tags as the fundamental starting point for reporting of imports under a First Seller approach, the imports can be tracked and verified to specific WECC control areas from where the energy was imported.¹² By contrast, under the Staff Proposal if the importer is a marketer, the importer has no responsibility for reporting the imputed GHG emissions. Instead, the importer can bring the energy into California and sell the energy inside California as non source-specific. In that case,

¹² SCE proposes that the Public Utilities Commission and the CEC recommend that CARB require the authors of all NERC E-tags originated within California to report these E-tags to CARB. It should be noted that the WECC, in its role as the Reliability Coordinator for the region, currently gets a copy of all NERC E-tags created within the entire WECC footprint. Thus, if desired, the NERC E-tag information reported to CARB can be verified for accuracy and completeness by comparison with data collected by the WECC for all E-tags originated in California. CARB should work with the WECC and its member entities within California in order to get access to this data. However, this step of verification of import information does not have to be implemented by January 1, 2008.

the GHG emissions reported would be based on the in-state default value of 1,000 lbs/MWh, even though the imported energy may have come, for example from the Southwest (which has a default carbon emissions factor of 1,075 lbs/MWh under the Staff Proposal).

The First Seller approach has a clear advantage over the Staff Proposal's load-based approach in dealing with imports just as it did in dealing with in-state generation.

4. Under The Staff Proposal, GHG Emissions Attributed To Wholesale Sales Are Inaccurate; The First Seller Approach Avoids These Problems

The Staff Proposal starts with the assumption that the output of certain resources, such as RPS-eligible renewables and "deep baseload" resources, are not sold.¹³ However, the Staff Proposal amounts to an arbitrary accounting scheme because energy sold is generally sold as non source-specific. Moreover, as load varies during the day and tends to be much lower at night, it may well be the case that the amount of energy sold in particular off-peak hours exceeds the amount of energy produced by all non-RPS, non-baseload sources in an LSE's portfolio. By not accounting for the energy production actually occurring when sales are taking place, the Staff Proposal introduces large inaccuracies.

It also appears that the Staff Proposal allows for netting of sales and purchases that are in reality not physically possible. It is physically impossible for a purchase occurring in one hour to be a source for a sale in another hour. However, this sort of impossible netting appears to be allowed under the Staff Proposal. The First Seller approach avoids the need to determine or impute sources for LSE wholesale sales and avoids these inaccuracies altogether.

5. The Staff Proposal's Extensive Reliance On Default, Marginal GHG Emissions Rates Introduces Inaccuracies

Where it is necessary to adopt default GHG emissions factors, SCE agrees with the Staff Proposal that it is better to use marginal emissions factors. However, the Staff Proposal uses

¹³ Staff Proposal at 28.

several more default, marginal emissions factors than would be necessary under a First Seller approach. Under the First Seller approach, it would not be necessary to adopt marginal emissions factors for the ISO's IFM or its real-time market, or for in-state sales from unspecified sources. The Staff Proposal uses default, marginal emissions factors for each of these sources. The First Seller approach only uses default GHG emissions factors for imports to California and only until such time as the surrounding states adopt their own GHG regulations.

The problem with using default, marginal emissions factors for in-state resources is illustrated with a simple example. Suppose there are only two in-state sources selling to LSEs through the ISO market as unspecified sources – one with a carbon emissions rate of 1,500 lbs/MWh and the other with a carbon emissions rate of 1,000 lbs/MWh. Suppose the first source (1,500 emissions rate) is first in merit-order dispatch and the second source (1,000 emissions rate) is marginal.¹⁴ LSEs buying from the ISO market will report emissions based on the marginal emissions rate of 1,000 lbs/MWh under the Staff Proposal. Cumulative reporting from such LSEs will under-report actual GHG emissions because the source with a carbon emissions rate of 1,500 lbs/MWh is never marginal, even though it operates all the time.

6. The Accuracy Of The First Seller Approach Is Improved If GHG Regulation Is Expanded To Adjoining States; However, Problems With The Staff Proposal Would Remain

One criterion identified by the Staff Proposal for evaluating a reporting protocol is expandability: “One aim of this system should be that it can be readily expanded to other states.”¹⁵ The First Seller structure is easily expanded to include other states, and accuracy is improved since there is no longer any need to use default emissions factors for non source-specific imports because the GHG emissions of the unknown sources supporting the non source-specific import are captured by the other states. If other states adopt source-based or First Seller

¹⁴ This may be a likely scenario since a higher emitting source may likely be more expensive.

¹⁵ Staff Proposal at 8.

approaches,¹⁶ California may simply remove reporting of GHG emissions associated with imports to California, as the sources of these imports would be captured by the other states' GHG reporting regulations.

Under the Staff Proposal, however, significant and unavoidable reporting problems remain. For example, the GHG emissions associated with the output of an in-state generator that is exported is not sold to a California LSE, and is accordingly not captured in California. These GHG emissions also may not be captured in the receiving state or may not be accurately captured if the energy is sold in a non source-specific transaction.

Moreover, imported generation that is purchased by a California LSE would still be captured under the Staff Proposal and a load-based cap. This creates a double-counting problem: the source in the exporting state reports its GHG emissions to that state and the California LSE receiving the import also reports these GHG emissions to California. As the MAC concluded, “if the state seeks to develop a program that has strong potential to serve as a regional/national model and to link easily with an international system, a first-seller approach is preferred. This option would allow California to transition naturally to a regional or national generator-based system.”¹⁷

7. There Are Other Areas In Which The Accuracy Of The First Seller Approach Is Superior To The Staff Proposal

Another area in which the First Seller approach is superior to the Staff Proposal relates to dispatches by the ISO (or other system operator) to address system conditions, such as transmission line over-loading or potential transmission system instabilities that might occur in the event of certain contingencies (such as transmission or generation outages). ISO dispatch for system reliability reasons is fairly common. GHG emissions associated with such dispatches are

¹⁶ It is significant that all other emissions legislation that has been implemented or proposed to date (e.g., European Union, Regional Greenhouse Gas Initiative (“RGGI”) and SOx) uses a source-based approach.

¹⁷ MAC Recommendations at 52.

not directly attributable to the action of any LSE. The Staff Proposal attributes these emissions proportionally based on an LSE's purchases (if any) in the ISO's market in that hour. This allocation is not connected to the cause of the dispatch. By contrast, the First Seller approach attributes these emissions to the entity establishing the electrical energy output level of the generator for commercial purposes. That entity is easily able to build the cost of the associated GHG emissions into its bid to the ISO in order to receive full and fair compensation for the dispatch order.

Furthermore, under MRTU the ISO procures additional generation for transmission losses. This additional procurement is not directly attributable to any LSE. Under the Staff Proposal, GHG emissions associated with this ISO procurement do not appear to be captured at all. Under the First Seller approach, however, these emissions are captured by the first seller's report of its emissions for its actual generation (which includes its generation to compensate for transmission losses).

B. The Staff Proposal's Load-Based Approach Will Likely Distort The Market

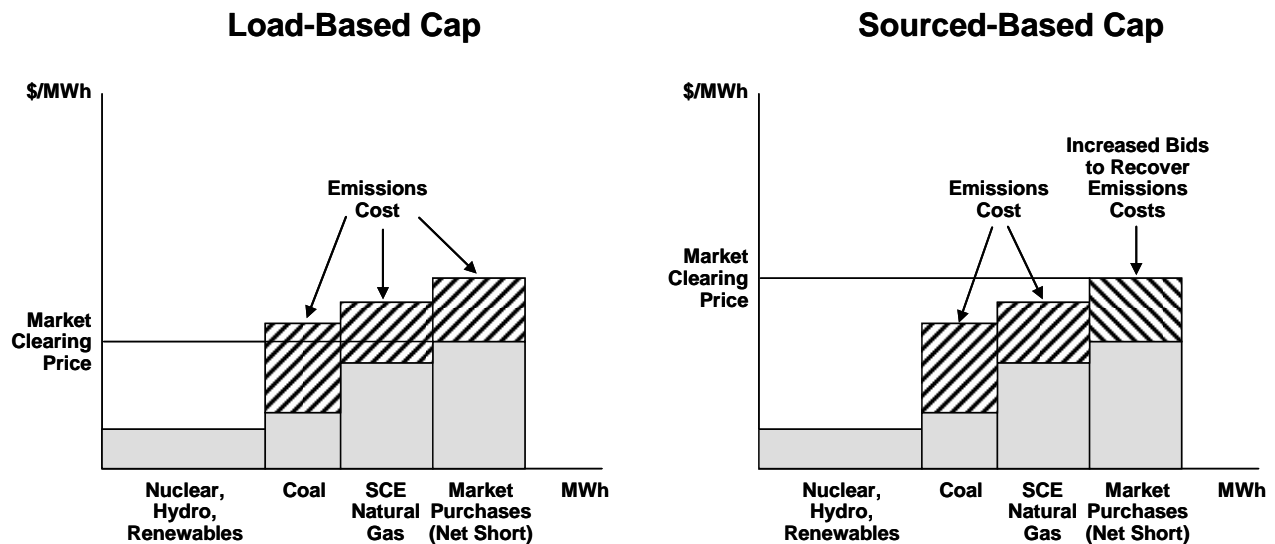
The minimization of unintended consequences is another criterion identified by the Staff Proposal for choosing among various reporting protocols. "The reporting method should not distort the electricity markets by causing retail providers to make non-optimal resource choices."¹⁸ The Staff Proposal's load-based approach does not satisfy this criterion.

As discussed below, a load-based system like the one set forth in the Staff Proposal will likely result in negative financial and reliability consequences in market transactions that would not otherwise occur under a source-based or First Seller approach. These market distortions created by a load-based system will cause clean resources to favor bilateral contracts over selling to the market (*e.g.*, a broker or the ISO). Bifurcating supply between bilateral arrangements with

¹⁸ Staff Proposal at 7.

LSEs and the ISO market will lead to reduced liquidity in the ISO market and could possibly affect system reliability.

It is important to note that under either a load-based or source-based or First Seller approach, the emissions costs to an LSE will be the same. As shown in the figure below, the total cost to the LSE is the same under either scenario.¹⁹ The difference between the two approaches is how the market responds to GHG emissions regulations in terms of bidding behavior. To better understand the market distortions caused by a load-based approach, a closer examination of the economic features between load-based and source-based or First Seller approaches is required.



First, consider transactions by a non-LSE generator under a load-based approach. The generator sees no change in market prices, as seen in the figure above, because prices will still be set at the marginal cost of generation. Nor does the generator incur increased costs because the LSE is responsible for the cost of emissions. However, a “clean” generator can provide value to an LSE subject to a load-based approach because the LSE will not incur any additional emissions

¹⁹ The resource costs in the figure represent only the LSE’s variable costs for the resource types in the illustrative example depicted.

costs for the clean power.²⁰ The LSE will be willing to pay a premium over the market clearing price to the clean generator. The opposite is true for a “dirty” generator, who will have to sell at a discount relative to the market clearing price. Therefore, clean generators are financially incentivized to enter into bilateral contracts with an LSE as opposed to selling to the market.

Under a source-based or First Seller approach the emission costs are internalized for generators (see the figure above), and the market clearing price reflects this economic adjustment. Regardless of how clean or dirty a generator is, they will receive the market clearing price. In this scenario, there is no incentive (or disincentive) for the generator to enter into a bilateral agreement with an LSE and there are no resulting market distortions. It is important to note that the total costs an LSE incurs in either case is represented by the shaded sections in the figure above, with the gray areas illustrating the operating costs, and the hatched areas representing the emissions costs that either increase the direct cost to the LSE (under a load-based approach) or increase the market purchase cost to the LSE (under a source-based or First Seller approach). The total cost the LSE would incur and pass on to retail customers in either a load or source-based approach is the same.

In summary, a source-based or First Seller approach results in direct internalization of emissions costs in a manner that should not substantially alter how parties transact bilaterally or in markets. A load-based approach will distort the market by fundamentally altering the economics of trades between bilateral transactions and markets. In doing so, potential threats to the reliability and efficiency goals of MRTU will need to be carefully considered as discussed in more detail below. If some parties such as clean resources that cannot receive their full value from the ISO markets are no longer willing to provide power through such markets, this may deprive the ISO from access to dispatching these resources to meet reliability needs (except in emergency conditions). Furthermore, as explained below, it will reduce the ability of MRTU’s optimal dispatch from reaching an efficient outcome, as a substantial set of resource alternatives

²⁰ For the purposes of this discussion, “clean” can be considered as a resource with no emissions. In fact, the same incentives hold true for any resource with lower emissions than those associated with a market purchase.

(through bids from clean resources) are likely to be replaced with self-schedules by these resources to ensure their operation is consistent with bilateral contract terms.

C. The Staff Proposal’s Load-Based Approach May Interfere With The Intended Operation Of MRTU

The load-based approach assumed in the Staff Proposal has the potential to interfere with the intended operation of MRTU under the ISO, as well as to require more tracking and reporting by the ISO than SCE’s recommended First Seller approach.

In order to effectively describe the impact of the Staff Proposal on behavior and operations under MRTU, it is useful to discuss how MRTU is intended to work. Under MRTU, all resources being used by LSEs to meet their resource adequacy requirements will be under an obligation to offer their power for sale into the ISO markets. As each LSE within the ISO must satisfy a reserve margin requirement with qualifying capacity of 115% to 117% of its peak load (or an equivalent approach by municipal entities), there should always be more than enough generation offered to the ISO market to satisfy all of the load within the ISO’s grid control. At such time as the State may replace its resource adequacy requirement with a centralized capacity market, a similar must offer requirement will apply to capacity to meet all of the ISO’s load plus reserves. Therefore, the Staff Proposal errs when it states that “it is estimated that the IFM may handle 10-20% of total energy once it is operational,” an estimate attributed to the MAC report.²¹ In fact, close to 100% of total energy requirements are likely to be transacted (or scheduled) in the ISO IFM (the day-ahead market) with only a small degree of load served through the ISO real-time market (anticipated to be less than 5%).

Thus, under MRTU, virtually all generation owned or controlled by LSEs will be bid into the ISO’s markets, predominantly in the IFM (as noted above, “clean” generation may be “scheduled” in the IFM as opposed to being “bid” in the IFM so that an LSE buyer may take

²¹ Staff Proposal at 2.

credit for zero or low GHG emissions associated with that generation). The Staff Proposal does not take this into account. Under a load-based approach, an accounting protocol needs to be established that associates an LSE's portfolio of generation resources with that LSE's load. One such protocol is that as long as an LSE is in a net short position, all of the generation from the LSE's portfolio is assigned to that LSE in terms of GHG emissions responsibility. If an LSE has more generation in its portfolio than its load obligation requires, then the excess generation is sold into the market.

The Staff Proposal discusses three methods for establishing which resources and accompanying GHG emissions should be associated with these wholesale sales and recommends an adjusted all-in method.²² Exceptions to this protocol may be necessary under some circumstances to be described later. Such a protocol is necessary, however, because without one there would be no effective means of determining which resources should be assigned to which LSEs for GHG accounting purposes since all of the LSEs' loads will be served from the pool of ISO resources under MRTU. The process of tracking which resources are provided by which LSEs becomes necessary under a load-based structure because LSEs need to know what level of generation has been dispatched from which resources in their portfolio in order to determine their obligation to produce emission allowances under a load-based cap and trade system. Furthermore, it will be necessary to track which resources are not part of an LSE's portfolio in order to update the GHG emission rates for in-state unspecified purchases from the ISO markets. It may also be necessary to have this information in order to determine the degree to which California is meeting its GHG targets established under AB 32.

The process by which an LSE bids its generation portfolio under a load-based system compared to a source-based or First Seller system needs to be understood in order to see how market behavior is anticipated to change under these structures, and what the implications of those changes are on the markets. In order to understand bidding behavior under the assumption

²² *Id.* at 26-28,

of a competitive market, it is important to first look at the trade-offs participants make in order to minimize their costs.

First, let us consider the market today for an LSE (no GHG emissions cap-and-trade system). When an LSE with a generation portfolio and a load to serve (assume larger than the portfolio for explanatory simplicity) is deciding how to generate and purchase so as to minimize its cost, it will first bid in at low cost all of its low cost generation. When its low cost generation is exhausted, at some point the LSE will need to decide whether the next kWh should be served with another kWh from its portfolio, or through a purchase from the market. It does so by bidding its generation at the marginal operating cost of producing that unit. As such, if it is cheaper to run the unit than it is to purchase, the bid will be accepted, and if it is cheaper to purchase from the market than generate that kWh from its portfolio, then the bid will not clear the market. The market will clear at the marginal operating cost of the most expensive unit required to serve the load, and more expensive generation will not clear the market.

Now, consider the introduction of a source-based cap. The LSE becomes responsible for both the operating cost of its generation and the GHG emissions cost of its generation. The LSE's bids to minimize its total cost to serve its load now must reflect the fact that if it generates the next kWh, it will incur both an operating cost and an emissions cost. Thus, its bid must be equal to the sum of both of these costs in order to ensure that it will generate when it is cheaper to generate than to purchase, and it will not generate when it is cheaper to purchase than to generate. The price in the market will now be established by the most expensive bid necessary to meet the load obligations of the market, which will then reflect not only the marginal operating cost, but also the marginal GHG emissions cost. The market price will be higher than it would have been without the cap-and-trade system because now it will reflect emissions cost.

Under a load-based cap, the LSE becomes responsible for its generation cost, including the emissions cost associated with all of the generation in its portfolio, as well as the cost of purchasing power in the market and the emissions costs associated with those market purchases. Under this paradigm, the trade-off that the LSE makes is whether it will be more costly to

generate another kWh, including the marginal operating cost as well as the marginal emissions cost from generating, compared to purchasing from the market and paying the market clearing price as well as paying the cost of emissions associated with that market purchase. Assuming the LSE knows the emissions cost of purchasing from the market, it will bid so that its cost of generating (the marginal operating cost plus emissions cost of generation) does not exceed what it expects to pay if it purchases from the market (the market clearing price plus the emissions cost associated with market purchases). The LSE's bid should therefore be its marginal operating cost plus the difference between its cost of emissions from generating and the emissions cost associated with purchasing from the market. The market price will not reflect the cost of emissions from the marginal unit as it did in the last case, because the generators need only adjust their bids to reflect the *difference* in emissions compared to market purchases. At the margin, for the last unit dispatched to satisfy system load requirements, there is no difference, so that bid should be just the marginal operating cost of the unit as in the case with no cap-and-trade program.

What does all this mean in terms of behavior in the markets? Consider how an independent generator may participate. Recognizing that under a load-based cap, the generator has no obligation to pay for its emissions, it can bid into the ISO markets just as it did before, and it would earn a profit if its costs were lower than the market clearing price – approximately the same as without a cap-and-trade program. The generator may also consider selling bilaterally to an LSE. The LSE will become responsible for the emissions from the generator if it makes the purchase. Therefore, the LSE will compare the cost of making the bilateral purchase to what it expects it would pay if it purchased from the market (note that under MRTU, if the LSE makes the bilateral purchase, it will in turn offer this contracted power for sale into the ISO market and become responsible for its GHG emissions as described previously). If the independent generator is a clean unit, then the LSE would incur reduced emissions cost from purchasing from this unit, and it should be willing to pay a premium compared to the price it would pay in the market. The clean independent generator can earn a premium by selling

bilaterally to an LSE. Conversely, a dirty independent generator can sell into the ISO much as it did prior to the cap-and-trade market. However, if the dirty independent generator wants to sell to an LSE, the LSE would be saddled with the high emissions cost from the dirty generation. The LSE would demand a discount in order to make such a purchase otherwise it would be better off purchasing from the market and incurring fewer emissions costs than if it made the bilateral purchase.

As discussed in the previous section, the best way for these independent generators to act is for clean generation to sell bilaterally, and eschew the ISO market, whereas dirty generation should sell to the ISO and avoid taking the discounted payment it would receive from selling bilaterally. Under a source-based cap, the independent generator is responsible for its own emissions cost and would be willing to sell to the ISO or to the market as long as it could receive more than its marginal operating cost plus emissions cost. The generator's behavior would look no different than under a system with no cap-and-trade except that it would demand a higher price to generate and sell.

From the perspective of the ISO and MRTU, the load-based cap would diminish the set of resources willing to bid into its markets, forcing the clean resources to sell bilaterally. In order to ensure that the LSE purchasing this clean power would get the benefit of that generation as part of its portfolio for GHG emissions purposes, the LSE would either self-schedule its clean contracted power, or discount its bid price to reflect its lower emissions cost (as previously described). Such behavior will diminish the ability of the ISO to optimize the system dispatch across all of its resources, and fully capture the benefits of MRTU.

If the independent generator described above were contemplating GHG emissions reduction investment in light of GHG emissions prices emerging from a cap-and-trade program, the load-based cap can lead to inefficient investment decisions. Consider for example the case of the dirty generator. As described above, that generator would choose to sell into the ISO market so as to avoid being paid a discounted price for its dirty power. If an investment could make the power cleaner, but not clean enough to be lower emitting than a market purchase from the ISO,

then there would be no gain in payment possible to justify such an investment. Under a source-based cap, that same generator would be responsible for its high emissions and the cost of allowances associated with them. If that generator could make an investment lowering its emissions cost, it would benefit by incurring reduced costs, while the revenue it would receive from sales into the ISO market would be unchanged. Lower costs with the same revenue means higher profits.

The value of generation resources may be reduced under a load-based cap-and-trade system. As discussed previously, clean power can only capture the value of being clean by selling bilaterally to an LSE under a load-based system. Conversely, a dirty unit can only avoid accepting a discounted price for its power by limiting its sales to a marketer or to the ISO. Thus, in either case, under the load-based cap the options available for the generator to sell are limited compared to a source-based system (or compared to no GHG regulation – the status quo). This reduced optionality reduces the value of the generator.

Another complication associated with a cap-and-trade program under MRTU is establishing and billing appropriately for power needed for system requirements. When an LSE submits a bid to the ISO from its portfolio, then under the aforementioned GHG accounting protocol, the generation that results from that bid would generally be attributed to the LSE in whose portfolio the generation resides. The LSE will establish its willingness to operate the unit depending on what market prices result based on its bid. In the case of a dirty unit, that bid will be higher reflecting the difference in emissions cost between the dirty unit and a purchase from the market. In some circumstances, such as if the unit is in a constrained area, the ISO may intervene in the market and dispatch the generating unit even though the unit does not clear the market if the ISO needs the generation from that unit to satisfy a reliability need. Under MRTU, the unit's bid would be mitigated to a default value reflecting its operating costs. But if this dirty unit is operated and paid at a default bid rate to satisfy a reliability need, the LSE in whose portfolio the unit resides would be assigned the high emissions and incur the associated costs. Despite bidding so as to avoid operating the dirty unit unless market prices are high enough to

justify its operation, the unit would be operated and the LSE could be held responsible for its emissions even though it had no discretion regarding the operation of the unit.

Either the ISO should develop a rule that reallocates the cost of this redispatch to those responsible for the reliability need (not necessarily the LSE in whose portfolio the resource resides) or the default bid used to dispatch this unit would need to be modified to ensure that the LSE was fully compensated for the increased emissions resulting from running its unit out of merit order.

Finally, the Staff Proposal's reporting protocol may also interfere with the intended operation of MRTU by creating an incentive for market participants to transact in the ISO's IFM (day-ahead market) instead of the ISO's real-time market. The Staff Proposal assigns an assumed emission rate of 1,000 lbs/MWh to purchases from the ISO's IFM and a 900 lbs/MWh assumed rate for purchases from the ISO's real-time market. If day-ahead prices are equal to real-time prices (as is the desire of the Federal Energy Regulatory Commission and the ISO after they introduce Virtual or Convergence Bidding as scheduled in February 2009), purchasers following least-cost dispatch principles would purchase as much as is permitted in the ISO's real-time market in lieu of the IFM. This is directly contradictory to the objectives of the ISO in encouraging the use of forward markets like the IFM instead of the real-time market.

These complexities and market distortions can be avoided if a source-based or First Seller approach is used instead of the load-based approach assumed in the Staff Proposal.

D. The Staff Proposal's Load-Based Approach Does Not Adequately Address Leakage And Contract Shuffling

In AB 32, leakage is defined as "a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state."²³ AB 32 further provides that in adopting GHG emissions regulation, CARB shall "[m]inimize

²³ AB 32, Health and Safety Code § 38505(j).

leakage.”²⁴ The Staff Proposal defines contract shuffling as “the practice of claiming that one resource is sent to California, while leaving the high carbon intensive power to be sold in states which do not have a tracking system or a cap that requires allowances.”²⁵

In a load-based cap-and-trade program emissions leakage can occur in a variety of ways. The Staff Proposal provides examples such as when California purchases of Pacific Northwest hydro result in no overall change in hydro generation. Leakage can also occur under a load-based system when California generation is redirected out-of-state while an equivalent amount of lower emission energy is imported in its place and when existing out-of-state generation is reshuffled so that higher emission generation is shown to serve native load while imports to California are shown to be served by lower emission generation.

The Staff Proposal suggests that a comprehensive multi-state generation information system coupled with a WECC wide regional cap would reduce the incidence of emission leakage. The Staff Proposal also suggests a series of measures to help reduce the incidence of contract shuffling and carbon washing, including reviewing off-peak imports, identifying which out-of-state generation is used to serve native load and responding quickly to incidents of leakage or contract shuffling.

SCE fully supports the goal of AB 32 to reduce GHG emissions from California energy consumption. An important goal of the legislation is to put California in a leadership role prompting a larger regional or national program. With these goals in mind, SCE suggests the following broad concepts to guide the development of processes to mitigate emissions leakage.

1. Contract Shuffling Is A Load-Based Phenomenon

In an effort identify and cap the GHG emissions from power imported into California, a load-based cap has been suggested and is assumed under the Staff Proposal. A significant challenge to reducing leakage under a load-based cap involves California native generation. The

²⁴ *Id.* § 38562(b)(8).

²⁵ Staff Proposal at 34.

ricochet of energy (*i.e.*, contract shuffling) is a means to avoid compliance under a load-based cap. One suggested method to address this is to implement a source-based cap on California generation in addition to a load-based cap. This solution, however, creates an additional problem; addressing how to split the energy generated in California from that which remains in California. Once the GHG emissions are capped at the source, an additional load-based cap could result in double counting emissions from in-state generation. The majority of trades in the ISO market involve in-state power. Unraveling that chain of trades would be an overwhelmingly difficult task. However, under a First Seller approach, no such unraveling would be required. In-state generation would be capped at the source, and the final point of delivery of that energy would be irrelevant.

2. A Load-Based Approach Does Not Reduce Leakage When Compared To A First Seller Approach

Under the First Seller approach, emissions of in-state generation are assessed at the source and emissions from imported power are assessed to the first seller in California. While tracking imported energy from source to sink is a significant challenge, the challenge is no different from that faced in a load-based system. As a result, the incidence of leakage would be no more likely under a First Seller approach than under a load-based one.

3. Efforts To Control Leakage Should Be Coordinated With Current California Law

In an effort to reduce the GHG emissions from new electricity supplied to serve California load, the California legislature recently passed Senate Bill 1368 (“SB 1368”). This law restricts the ability of California LSEs to sign long-term contracts for generation with an emission factor greater than a Combined Cycle Gas Turbine (“CCGT”) facility. SB 1368 will substantially reduce the degree to which California LSEs can rely on energy from high emission generation going forward. SCE suggests that the staff consider the complementary impact of this

law on the potential for emission leakage via imports when designing a procedure to reduce leakage.

4. Efforts To Control Leakage Must Be Simple, Clear And Transparent

The Staff Proposal offers a series of potential actions designed to reduce leakage and contract shuffling. These actions are vague and poorly defined. For example, the Staff Proposal provides that the “State will monitor purchasing patterns to check for changes in the daily pattern of imports.”²⁶ It is not clear what the State should be looking for or what precise actions will be taken if the State finds potential evidence of leakage or contract shuffling. Efforts to reduce leakage will be most effective if they are clearly defined and the method of accounting is well understood and transparent. Complicated or vague policies will result in more complicated measures to avoid compliance.

5. The Rules Implemented Must Be Responsive To Policy Changes

The current discussion is focused on the Staff Proposal written under the presumption of a load-based approach. A First Seller approach may make many of the leakage concerns moot, particularly insofar as in-state generation is concerned. Any rules developed to control leakage must be designed to apply to the actual point of regulation adopted by CARB. As stated above, emission leakage from in-state generation is less likely to occur under a First Seller approach than a load-based cap. Additionally, a First Seller approach offers a means to incorporate imported energy emissions under the California cap.

²⁶ *Id.* at 36.

III.

RESPONSES TO QUESTIONS REGARDING STAFF PROPOSAL

Question 1: Whether the criteria for assessing reporting protocols identified in Section 2.3 of the report are appropriate, and whether the Staff Proposal adequately complies with what you view as appropriate criteria.

SCE agrees with the Staff Proposal that the criteria identified in Section 2.3 are appropriate for assessing a reporting protocol. However, as discussed above, the Staff Proposal's load-based reporting protocol falls short of meeting several of the criteria. As explained in Section II.A above, the Staff Proposal falls far short of meeting the criterion of accuracy. The First Seller approach is a better option. The Staff Proposal also fails to satisfy the criterion of simplicity. As detailed in Section II.A, the Staff Proposal relies on many default emissions factors and introduces many complexities that are not required using the First Seller approach.

The Staff Proposal also does not meet the criterion of minimization of unintended consequences. As discussed in Sections II.B and II.C above, the load-based approach of the Staff Proposal will likely distort the market and interfere with the implementation of MRTU. The First Seller approach will not cause these unintended consequences.

Finally, the Staff Proposal does not achieve the criterion of expandability. As explained in Section II.A.6 above, the Staff Proposal's approach is not easily expandable to other states. The First Seller approach, in contrast, would be more easily expandable and is more consistent with the GHG emissions regimes likely to be implemented in other jurisdictions.

Question 2: Whether the intent should be to design a reporting protocol that could be adopted directly by other states in the region and, if so, whether modifications to the Staff Proposal would be needed for this purpose.

SCE agrees that the intent of the proposal should be to design a reporting protocol that can be adopted directly by other states in the region. As discussed in Section II.A.6 above, modifications to the Staff Proposal are required to make it expandable.

Global warming is clearly a problem that will ultimately require the cooperation of other states (and other nations) to be resolved adequately. California, by itself, will not be able to

solve or significantly affect the global warming problem given the dramatic increase in emissions from the developing countries as detailed by both the Intergovernmental Panel on Climate Change and the International Energy Agency. As evidenced by the recent Memorandum of Understanding signed by the Governors of the Western States,²⁷ there are indications that a regional, if not national, policy is not far off in the future. To that end, it is imperative that California adopt a compliance system that can be readily integrated with other markets. Otherwise, California will be forced to abandon a load-based cap system as England did when the European Union Emissions Trading Scheme adopted a source-based cap system. The First Seller approach is an alternative that could be adopted directly by other states in the region.

Question 3: How the proposed reporting requirements including, in particular, the use of estimates, could affect the integrity of greenhouse gas (GHG) emission allowances and whether the requirements may have implications on the ability to trade GHG emission allowances with other regimes.

There are serious consequences to the integrity of GHG markets if the California reporting protocol is inaccurate due to estimates and assumptions. The accuracy of the reporting protocol advanced in the Staff Proposal is poor, as has been discussed above in Section II.A. One of the consequences of this inaccuracy is that other states may not allow participants in their markets to trade with California entities if it is perceived that that California's emissions allowances will offset more than the face value of the allowances sold due to inaccurate under-reporting of GHG emissions in California.

Another consequence would be poor market price signals. If inaccurate reporting leads, for example, to the need to use fewer GHG allowances to offset GHG emissions than should be required, the market price for GHG allowances will be less than it should be. This would render GHG reduction projects or initiatives uneconomic that should be economic. As a result, projects or initiatives that should go forward will not.

²⁷ Western Regional Climate Initiative, http://www.governor.wa.gov/news/2007-02-26_WesternClimateAgreementFinal.pdf.

Question 4: Whether adoption of any part of the Staff Proposal would require changes to any existing Public Utilities Commission and/or Energy Commission policies or the adoption of new policies by either agency.

The adoption of the Staff Proposal will impact other existing Public Utilities Commission and CEC policies and likely require changes to such policies. For example, under the Public Utility Regulatory Policies Act of 1978 (“PURPA”) and current Public Utilities Commission policy, SCE and other IOU LSEs are required to purchase power from QFs. Under the Staff Proposal, SCE would be responsible for the GHG emissions from the QFs it was required to enter into contracts with, regardless of the QFs’ emissions. Either the Public Utilities Commission’s GHG or QF policy may require changes to account for the IOU LSEs’ mandatory obligation to purchase from QFs. The general principle guiding such policy should be that LSEs should be responsible for what they can control. LSEs should not be penalized if they are required to purchase power from high emitting QFs.

Furthermore, the Staff Proposal’s reporting protocol may have an impact on the Public Utilities Commission’s least-cost dispatch standard. For example, the Staff Proposal assigns an assumed emissions rate of 1,000 lbs/MWh to purchases from the ISO’s IFM (day-ahead market) and a 900 lbs/MWh assumed rate for purchases from the ISO’s real-time market. Thus, as discussed in Section II.C above, if SCE anticipates that day-ahead prices will be equal to real-time prices (as is the desire of the Federal Energy Regulatory Commission and the ISO after they introduce Virtual or Convergence Bidding as scheduled by February, 2009), then least-cost dispatch principles would imply purchasing as much as permitted from the ISO’s real-time market in lieu of the day-ahead market. Such an approach directly contradicts the objectives of the ISO in encouraging the use of forward markets such as the IFM to serve load instead of its real-time market.

Finally, the Staff Proposal could impact the RPS program, and in particular, renewable energy credits (“RECs”) and the Western Renewable Energy Generation Information System (“WREGIS”). As discussed in Section IV below, the Staff Proposal omits any discussion of how its proposed reporting protocol would interact with the use of RECs or WREGIS. For example,

it is not clear in the Staff Proposal how “null power” is treated. That is, if a renewable generator sells a REC to one party, but sells its energy output to a California LSE, what GHG emissions are assigned to the California LSE?²⁸

Question 5: In addition to any technical, policy, or other concerns, whether the Staff Proposal raises any legal issues.

SCE preliminarily agrees with the MAC that the load-based approach assumed by the Staff Proposal and the First Seller approach have similar legal issues.²⁹ SCE is continuing to research these issues and believes that they deserve consideration as the Public Utilities Commission and the CEC further consider the merits of load-based, source-based and First Seller approaches in this proceeding.

Question 6: Whether modifications to the Staff Proposal would be needed to support implementation of the recommendations in the Market Advisory Committee’s draft report, in particular, the “first seller” structure.

The Staff Proposal is not conducive to reporting under a First Seller approach. First, the first seller (the entity controlling the energy output level for commercial purposes) is not required to submit any reports under the Staff Proposal, unless that entity happens to be an LSE. As discussed above, the First Seller may not be an LSE. Second, the Staff Proposal requires a lot of extra analysis and reporting, *i.e.*, in an attempt to accurately track GHG emissions from all the first sellers to all the LSEs, that is not required under the First Seller approach.

Reporting under the First Seller approach is fairly straightforward. Reporting is required for each in-state generator by the entity controlling the energy output level of that generator for commercial purposes. Actual GHG emissions are reported based on annual output. For imports, the importing entity submits a report that identifies all the import transactions and the specific source (if there is one) or the control area exporting to California for non-source specific imports, as well as the associated GHG emissions. As explained in Section II.A.3 above, this reporting

²⁸ RECs cannot currently be used for RPS compliance under the California RPS program. However, the Public Utilities Commission is considering the use of RECs for compliance with the California RPS and RECs may also be used in other states.

²⁹ MAC Recommendations at 45.

can be improved in the future with the use of NERC E-tag information. In addition, the Staff Proposal's methodology for defining emissions factors based on regional defaults can be modified to impute a default factor for each of the WECC control areas outside of California in order to further improve accuracy of source information. Imports from other in-state control areas need not be reported, as the sources in these other control areas would already be covered under the First Seller approach.

IV.

TECHNICAL ISSUES WITH THE STAFF PROPOSAL

In this Section, SCE identifies a few additional technical issues with the Staff Proposal.

A. The Staff Proposal Incorrectly States That The ISO's IFM Will Only Handle 10 to 20% Of Total Energy Once It Is Operational

The Staff Proposal states that "it is estimated that the IFM may handle 10-20% of total energy once it is operational."³⁰ This is not likely to be true. In fact, as discussed above, close to 100% of total energy requirements are likely to be transacted (or scheduled) in the IFM with only a small degree of load served through the ISO real-time market (anticipated to be less than 5%).

B. The Staff Proposal Does Not Address RECs Or WREGIS

The intent of the Staff Proposal is to present a comprehensive approach to the various challenges of measuring and reporting emissions for the purpose of compliance with AB 32. To that end, a discussion of the potential interaction between emission allowances and the RPS, in particular, RECs and WREGIS, would be appropriate. The California RPS program does not yet allow the use of RECs for RPS compliance, but the use of RECs is under consideration by the

³⁰ Staff Proposal at 2.

Public Utilities Commission. SCE believes that a GHG emissions reporting protocol should account for the possible use of RECs in California.

A REC represents one MWh of generation and can include a reference to various characteristics of the source generation, be it the fuel source, vintage of the generating unit, time of generation, contract length under which the generating unit is committed, as well as various other characteristics including a measurement of emissions associated with the generation. WREGIS is a WECC board level committee which will facilitate the measurement of generation within WECC, generate RECs and track the trading and retirement of RECs.

SCE supports a detailed examination of the interaction between California RPS and AB 32 compliance. Without prejudging such an effort, SCE suggests the following concepts for consideration in the current discussion.

1. RECs and Allowances Are Not Equivalent Trading Commodities

WREGIS is not currently capable of tracking emissions. The WREGIS Committee has restricted registration and measurement to those generating technologies which qualify for compliance under RPS programs in any local, state, federal or provincial government within WECC. Thus, in order for WREGIS to track generation emissions, WREGIS would need to register and measure the generation and emissions from all generation, not just that which is considered renewable.

Additionally, while WREGIS could be equipped to track the allocation and trading of emission allowances, this is different from assigning an emissions characteristic to a REC. A REC is different from an emissions allowance in its denomination. A REC is denominated in energy. Under certain circumstances, a REC can be unbundled from its source energy and used to represent compliance with a mandatory or voluntary RPS program and can be traded among parties who have such obligations. As such, a REC provides a means to count and track the trading of characteristics from one MWh of generation. An allowance can be described as a permission or right to emit a ton of CO₂e via any means and as such is not necessarily linked to

electricity generation. An allowance can similarly be traded among parties with emissions compliance obligations. However, RECs or Tradable Emissions Attribute Credits (“TEACs”) provide no compliance options for the non-electricity sectors. Therefore, any market for RECs or TEACs will be smaller and likely increase the cost of AB 32 compliance. The electricity sector would have a mechanism to achieve AB 32 compliance that would not be applicable to the non- electricity sectors. Any consideration of a REC or TEAC based compliance system must be fully investigated and understood before becoming an approved avenue for AB 32 compliance.

2. RECs and Emissions Allowances Must Not Restrict the Compliance Options Available to Regulated Entities

RECs provide the technical means to represent the characteristics of renewable generation without necessarily receiving the energy generated. As such an RPS compliance protocol that includes tradable RECs may facilitate cost effective renewable energy generation.³¹ However, a REC-based RPS compliance is no more than an alternative to a contract-path method of demonstrating compliance. Similarly, in a cap-and-trade system, emissions allowances present a cost effective means of reducing emissions by presenting a fungible representative commodity. The trading market for allowances provides an incentive for entities subject to AB 32 compliance to reduce emissions in the most cost effective way.

However, a REC-based RPS accounting structure must not reduce the compliance options available to AB 32 regulated entities. For example, an LSE with an RPS obligation may choose to buy 500 MWh of wind energy. In a jurisdiction that permitted the use of RECs, this transaction would result in the creation of 500 RECs which could be retired to demonstrate RPS compliance. This 500 MWh of energy was generated with no GHG emissions, and as such does not increase the emissions footprint of the LSE. If the RPS compliance accounting system did not include RECs, the 500 MWh of wind energy would be reported and there would be no

³¹ As discussed above, the California RPS program does not yet allow the use of RECs for RPS compliance, but the use of RECs in California is under consideration by the Public Utilities Commission.

emissions attached to this generation. In addition, the LSE would then list as its fuel mix 500 MWh of zero GHG wind generation. In a REC based compliance system, the energy must retain its original emissions characteristics even after the RECs are retired for RPS compliance. The RPS accounting system selected by the CEC must not handicap a cap-and-trade system for purpose of AB 32 compliance.

3. Energy Must Retain Its Emissions Footprint Regardless of REC Status

The GHG emissions characteristics must remain with the energy, even if a REC is retired for RPS compliance. The environmental integrity of a GHG compliance protocol mandates that in every possible circumstance, accurate emissions data be attached to every unit of electricity generation. Assigning some sort of null energy emissions factor would be arbitrary and on its face inaccurate. Tradable emissions allowances provide an efficient means of exchanging emissions characteristics without assigning an arbitrary emissions factor to energy generation.

C. The Staff Proposal Does Not Address Exchanges, Transmission Losses Or Self-Generation

The Staff Proposal should be modified to address the accounting and reporting of GHG emissions related to exchanges, transmission losses and self-generation.

An exchange is a transaction in which entities agree to trade energy and/or capacity without financial payment. Typically, an exchange will involve receiving on-peak energy in exchange for providing a multiple of that energy during off-peak hours. SCE believes that exchanges should be treated like any other purchases and sales.

SCE does not have a specific proposal regarding the treatment of transmission losses and self-generation at this time. However, the Staff Proposal's reporting protocol should address these areas.

V.

CONCLUSION

For the reason stated above, the Public Utilities Commission and the CEC should adopt SCE's recommendations regarding the Staff Proposal, as set forth herein.

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