

CALIFORNIA PUBLIC UTILITIES COMMISSION
Rulemaking 06-04-009

INTERIM OPINION ON PHASE 1 ISSUES:
GREENHOUSE GAS EMISSIONS PERFORMANCE STANDARD,
dated 1/25/07

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1.4. Unspecified Contracts

SB 1368 also directs us to address long-term purchases of electricity from unspecified sources in a manner consistent with the statute.¹⁵ We considered in this proceeding whether it would be consistent with the statute to impute a specific emissions rate to unspecified contracts and, if so, what proxy rate to utilize for this purpose. We use the term "unspecified contracts" to refer to contracts (power purchase agreements) that are not linked to any particular generating source. We also refer to these types of contracts as "system energy" contracts or purchase agreements, and we use these terms interchangeably in this decision.

In order to comply with SB 1368's mandate that we address unspecified sources in a manner consistent with the rest of the statute we must ensure that:

(1) LSEs only enter into long-term financial commitments with baseload generation that comply with the EPS, and

(2) EPS compliance cannot be achieved in a manner that would yield a contrary result, i.e., that results in an increase in long-term commitments with high-emitting sources.

In considering how best to achieve these objectives, we examined various approaches presented during the workshop process and in written comments for imputing an emissions value to unspecified contracts. These include approaches that use 1) Western Energy Coordinating Council (WECC) calculations of average emissions rates for generation activities throughout the western states or by specific geographic region, and 2) the California Net Power Mix information produced by the CEC for power content labeling. Based on the record in this proceeding, we conclude that imputing emissions rates to unspecified contracts would not be consistent with the requirements of SB 1368 for the following reasons.

First, we have difficulty reconciling the concept of imputed emissions rates with the requirements of SB 1368 since, by definition, such proxies do not reflect the actual emissions from the underlying resources. As a result, using imputed emissions rates does not permit us to determine whether a commitment with an unspecified resource is consistent with SB 1368 or simply exacerbates the problems this Commission and the Legislature are trying to address.

Moreover, any method to impute a GHG emissions rate to unspecified resources results in a binary outcome in the context of an EPS - that is, all financial commitments with unspecified resources will either "pass" or "fail" based on the selected level of imputed emissions. As a result, there is enormous pressure to game the methodology and input assumptions used for this purpose, thereby making it very difficult and contentious to implement this particular approach to addressing unspecified contracts. Finally, as discussed in Section 4.12, none of the specific proxy approaches recommended by Commission staff or in parties' comments are reasonable or workable for our purposes, at least not at this time.

Therefore, instead of imputing an emissions rate to unspecified contracts, we require in today's decision that all covered procurements be with specified resources that can demonstrate compliance with the interim EPS, except when substitute system energy is purchased to firm deliveries from specified powerplants under the limited conditions we describe below. For the reasons discussed in this decision, we conclude that addressing unspecified contracts in this manner is consistent with the rest of the statute, as SB 1368 requires.¹⁶ Moreover, this treatment of unspecified contracts does not permit gaming that could result in the opposite outcome than the statute intended, i.e., an *increasing* number of long-term commitments to high GHG-emitting resources.

Based on the record in this proceeding, we also conclude that it is highly unlikely that LSEs will need to enter into any new or renewal power purchase contracts of five years or greater that are unspecified during the transition to a statewide GHG emissions limit. As discussed in this decision, in the event that an LSE must enter into a long-term unspecified contract to address system reliability concerns, it may request Commission consideration of a reliability exemption from this requirement, on a case-by-case basis. Further, today's decision allows for the purchase of substitute system energy to firm deliveries from EPS-compliant, specified powerplants, within certain boundaries, in order to address the need expressed by LSEs and other parties for this type of contracting flexibility.

In view of the above, a requirement that all long-term contracts with baseload generation be with "specified" resources that can demonstrate EPS compliance should not have a significant, if any, impact on an LSE's resource procurement flexibility. By "specified" we mean that the contract identifies the powerplant(s) that will be delivering power under the contract. However, the following circumstances would also comply with our EPS rules: First, if the long-term contract specifies that power will be delivered exclusively from pre-approved renewable technologies or resources (see Section 1.6 below) and there are assurances in the contract to that effect, then the contract would comply with the EPS even if none of the generating sources are specified. Second, if a group of powerplants from which power will be delivered under a contract is specified, and there are assurances in the contract that deliveries will only be from one or more of the powerplants in that group *and* each of those that are baseload powerplants would individually pass the EPS, then the contract would comply with the EPS. The burden is on the LSE to provide sufficient documentation to demonstrate compliance with the EPS under these circumstances.

As discussed in this decision, today's adopted EPS rules with respect to unspecified contracts are also consistent with our discussion of emissions registration in Decision (D.) 06-02-032 and a logical interim step towards the implementation of Assembly Bill (AB) 32 (Stats. 2006, ch. 488).¹⁷ As we note in today's decision, other jurisdictions have developed specific resource tagging mechanisms to track generation attributes, including GHG emissions, of resources within their control areas. In our view, it is entirely feasible to implement a program that tracks the GHG emissions of all generating units, and that would enable marketers and other sellers of unspecified resource contracts to assign a reasonable and accurate GHG emissions profile to their contracts. This should be the strategy pursued by California to deal with emissions from any

unspecified resource contracts that LSEs may wish to pursue; however, as the record shows, this is not a likely pursuit for the types of LSE long-term procurements subject to the interim EPS.

While LSEs have stated that they are not likely to pursue long-term unspecified contracts as a general rule, they do intend to continue to negotiate long-term contracts with specified powerplants that contain "substitute energy provisions," i.e., provisions that permit the seller to substitute system energy on a short-term basis as needed for operational or efficiency reasons. We are persuaded from the comments in this phase of the proceeding that these types of provisions can provide greater performance assurance at more moderate price to ratepayers, and that appropriate restrictions to their usage can be put in place to guard against the intentional sourcing of energy from high carbon intensive baseload resources. Accordingly, based on proposals submitted by Pacific Gas and Electric Company (PG&E) and the Sacramento Municipal Utilities District (SMUD) in this proceeding, we permit LSEs to enter into contracts with a term of five years or longer that include provisions for substitute system energy purchases under the following circumstances:

1. The contract is with one or more specified powerplants, each of which is EPS-compliant under our adopted rules.
2. For specified contracts with non-renewable resources or dispatchable renewable resources (or a combination of each), substitute energy purchases for each specified powerplant are permitted up to 15% of forecast energy production of the specified powerplant over the term of the contract, provided that the contract only permits the seller to purchase system energy under either of the following conditions:
 - a) The contract permits the seller to provide system energy when the powerplant is unavailable due to a forced outage, scheduled maintenance or other temporary unavailability for operational or efficiency reasons; or
 - b) The contract permits the seller to provide system energy to meet operating conditions required under the contract, such as provisions for number of start-ups, ramp rates, minimum number of operating hours, etc.

A "dispatchable" renewable resource for the purpose of this rule is one that is not defined as "intermittent" under section 3 below.

3. For specified contracts with intermittent renewable resources (defined as solar, wind and run-of-river hydroelectricity), the amount of substitute energy purchases from unspecified resources is limited such that total purchases under the contract (whether from the intermittent renewable resource or from substitute unspecified sources) do not exceed the total expected output of the specified renewable powerplant over the term of the contract.

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4.12. Consideration of Unspecified Contracts, including "Substitute Energy" Provisions

The staff workshop report defines "unspecified contracts" as those contracts/power purchases that are not linked to any particular generating source. Parties also refer to these types of contracts as "system energy" or "system power" contracts or purchase agreements, and we use these terms interchangeably in this decision. There was considerable debate during Phase 1 over whether to impute a specific emissions rate to unspecified contracts and, if so, what proxy rate to

utilize for this purpose. The following approaches for imputing emissions rates were considered and discussed during the workshop process and in written comments:

- a) Western Energy Coordinating Council (WECC) system average: Incorporates all generation activities throughout the western region.
- b) WECC geographic average: Computes an emissions factor for all generation activities in various regions of the WECC system such as the Northwest, Southwest, etc.
- c) CEC calculated "California Net System Power Average" or "California Net Power Mix": Represents the sources (e.g., coal, large hydroelectric, natural gas, nuclear, renewables) of electricity generated in California or imported to serve California customers that no retailer has identified through voluntary disclosure of specific purchases.
- d) Coal emissions factor: would be based upon representative emissions from coal generation.

In written comments submitted after the workshop process, parties raise the issue of how to address "substitute energy" provisions under long-term contracts where the generating unit(s) are known ("specified" contracts), particularly in the context of firming deliveries from renewable resources. These contract provisions allow the seller to purchase energy from unspecified sources (also referred to as "system energy") to meet the contracted-for deliveries required under the unit-specified contract.

Below, we summarize staff's recommendations and the positions of the parties, followed by a discussion of our findings and conclusions.

4.12.1. Staff Recommendations

Based upon review of the data and parties comments, staff concludes that the WECC system average is generally not reflective of California activities or markets, and therefore should not be used to impute emissions rates for unspecified contracts. Staff rejects the use of WECC sub-regional geographic averages, since it would appear to penalize and reward LSEs differently based upon the major geographic source of their imported system power. Staff also rejects the use of coal as a proxy emissions factor, concluding that it is not an accurate reflection of the characteristics of all unspecified resources.

Staff recommends utilizing the California Net Power Mix information produced by the CEC as the basis for imputing GHG emissions rates to unspecified contracts. This calculation sums all in-state generation and electricity imports by fuel type and subtracts from this total: 1) electricity procured by retailers (California investor-owned utilities, public power and electric service providers) that they reported as "specified purchases" to the CEC and 2) electricity generated in California for use on-site rather than for retail sales.

The net result is a California Net Power Mix label that presents the percentage of power by fuel type (coal, large hydroelectric, natural gas, nuclear, renewables).¹⁶² While reporting of specific purchases is voluntary, in order to make a claim that its mix of power is different from the California Net Power Mix, the retailer must disclose specific power purchases to their customers and to the CEC. The amount of electricity that retailers have elected *not* to disclose to their customers and to CEC (defined as "net system power") has declined over time as specific-purchase reporting in California has increased: In 1998, net system power represented 98 percent of retail electricity sales, while in 2005 it was less than 30 percent of the total.

In presenting its recommendation, staff acknowledges the concern raised by some parties that LSEs will be inclined to enter into unspecified contracts with high emitting resources in order to circumvent the EPS by having a possible lower emissions rate imputed to that contract. However, staff anticipates that this will not be a substantial issue based on its understanding that long-term contracts with unspecified resources are at most a small fraction of the incremental power supply. Moreover, staff states that it will "monitor contracting patterns and behaviors to ensure that they do not change for this reason."¹⁶³

4.12.2. Positions of the Parties

SDG&E/SoCalGas support the concept of using the California Net System Mix to impute the emissions profile for unspecified contracts, but only if the refined methodology proposed by CEC staff in May 2006 for the calculation of net system power is utilized for this purpose, rather than the current one. They argue that the refined methodology is appropriate because it results in imputed emissions that will enable unspecified contracts to pass the EPS, whereas the current one will not.

In contrast, Calpine, Sempra, PG&E and SCE, NRDC, TURN, UCS, GPI and WRA generally object to the use of the California Net System Mix, albeit for somewhat different reasons. NRDC, TURN, UCS and WRA argue that relying on any averaged emissions rate is problematic because it: 1) provides no information or guidance on the critical distinctions between emissions from different types of generating units, 2) invariably dilutes the emissions rates of the higher emitting sources and 3) could provide a significant loophole if the average rate enables all unspecified contracts to automatically pass the EPS.

To address these shortcomings, NRDC, TURN, UCS and WRA recommended in post-workshop comments and comments on the draft report that the Commission assign unspecified resource contracts the emissions level of a conventional pulverized coal generator. In their comments on the final report, these parties indicate that they are willing to support the use of the CEC Net Power Mix to calculate the emissions associated with unspecified contracts if the highest emissions rate for each fuel type is used in that calculation. Using the current 2005 California Net Power Mix, NRDC calculates that the result would be a weighted average emissions rate of 1,668 lbs CO₂/MWh. Sempra and Calpine argue that using any proxy for imputing emissions rates to unspecified contracts would not be consistent with the Commission's goals or SB 1368. Although long-term commitments may currently make-up only a small fraction of the incremental power supply, Calpine and Sempra submit that the use of a proxy that would assign a lower emissions level to a resource could encourage long-term commitments with resources that would otherwise not meet the interim EPS limit. To address unspecified contracts in a manner that is consistent with SB 1368, these parties recommend that the Commission require that all long-term commitments for baseload generation be made with "specified resources" that can demonstrate compliance with the interim EPS.

GPI supports the position of Sempra and Calpine. In GPI's view, their recommended approach avoids the potential precedent-setting effect any alternative treatment of unspecified power may have for the design of the state's long-term AB 32 greenhouse gas program.

SCE opposes both the use of the California Net Power Mix as well as the recommendation of Sempra and Calpine. In SCE's view, the former represents an arbitrary method to determine whether such contracts should pass the EPS, and the latter fails to recognize that energy contracts without an upfront specified source are common transactions in the energy market today.

Instead, SCE recommends that LSEs be permitted to enter into a contract with a supplier with unspecified resources or facilities, and to provide documentation that shows the average emissions factor of that group of resources or facilities is lower than the rate used to impute emissions for unspecified contracts. If a system purchase is made, SCE recommends that this rate be based on the emissions of the system from which the purchase is being made, not the California Net System Mix. In the alternative, SCE recommends that the rate be based on the "default factor" used by the California Climate Action Registry (Registry) for calculating GHG emissions from the use of electricity. According to SCE, this factor is the average carbon intensity factor for the WECC California region, which is currently reflects "the average for Year 2000 egrid generators located in California, including imported energy."¹⁶⁴

PG&E objects to using the California Net Power Mix, arguing that doing so has the potential to penalize or remove from California's resource mix system purchases that are otherwise clean, such as system imports from the Northwest. PG&E recommends that the Commission defer adopting a specific methodology for imputing GHG emissions from unspecified contracts until it can consider a more precise methodology, perhaps through a follow-up implementation workshop.

However, should the Commission adopt the position of Calpine, Sempra and GRI on the issue of unspecified contracts, PG&E requests that the EPS rules clarify that this would not preclude the use of substitute energy, which PG&E asserts is commonly permitted in unit-specific contracts with both non-renewables and renewables contracts.¹⁶⁵ PG&E asserts that such contracts often contain substitute energy provisions whereby some portion of the energy delivered would not necessarily come from the specific unit, but instead from unspecified sources. PG&E proposes that the EPS rules maintain contracting flexibility over a contractually specified time period for the use of substitute energy to support contracts covered by the EPS, but to impose contract restrictions as outlined in the table below (Table A):

Table A - Proposed Restrictions for Substitute Energy in Energy Transactions Covered by the EPS

<u>Transaction Type</u>	<u>In-Area</u>	<u>Imports</u>
Renewable and Non-Renewable (Unit Specific, RPS eligible if renewable)	Substitute energy limited to 15% of forecast energy production if either Condition A or Condition B is met	Substitute energy limited to 15% of forecast energy production if either Condition A or Condition B is met
Non-Unit Specific or System Energy	Cannot do these transactions	Cannot do these transactions

Condition A: A contract that permits the seller to provide system energy under a unit specific contract when the unit is unavailable due to a forced outage, scheduled maintenance, or other temporary unavailability for operational or efficiency reasons.

Condition B: A contract that permits the seller to provide system energy under a unit specific contract to meet operating conditions required under the contract, such as provisions for number of start-ups, ramp rates, minimum number of operating hours, etc.

In reply comments, GPI support PG&E's proposed clarification with respect to firming renewables. In GPI's view, this approach represents a "properly structured" firmed renewable contract, in that firming is used to accommodate short-term unpredictable variations in renewable

output that is sufficiently limited and, by its nature, will be purchased in the form of as-available, short-term system power.¹⁶⁶ Several additional parties, including NRDC, TURN, SDG&E and Sacramental Municipal Utility District (SMUD) also find the PG&E proposal to be reasonable in principle for unit-specific contracts, but express some reservations or suggest modifications. In particular, NRDC, TURN, UCS and WRA caution that any provision for the use of substitute energy should ensure that the 15 percent cap is truly a ceiling, and not a targeted level, and that the use of substitute system power be limited to event-driven, temporary circumstances. SDG&E and SoCalGas suggest that a higher percentage limit (25%) would be more consistent with the RPS eligibility criteria for hybrid systems.

SMUD expresses concern that the PG&E proposal would not adequately address the inherent difficulties associated with limiting firming power for "intermittent" renewable resources (e.g., wind)¹⁶⁷ and presents two alternative options for Commission consideration in its comments on the Proposed Decision. Under the first option, the EPS rules would allow contracts for renewable power to be firming with substitute system purchases but limit the total power purchased to the expected output of the renewable resource. Under the second option, the EPS rules would permit contracting for a fixed delivery amount equal to 80% of the maximum rated capacity of the renewable facility, allowing the purchasing entity to procure substitute energy as needed to meet the contracted level.¹⁶⁸

More generally, in their comments on the Proposed Decision, SMUD, CMUA and Barclay et al.¹⁶⁹ argue that restrictions on long-term contracts with unspecified contracts create adverse impacts that the Commission must consider. In particular, Barclay et al. argue that such restrictions arbitrarily eliminate power marketers from competition, thereby depriving California consumers of the benefits of their lower cost options. These parties also contend that relying on unit-specific long-term contracts will have an adverse impact on market liquidity and contract reliability. Finally, SMUD also argues that requiring all long-term contracts to be only with specified, unit-contingent resources would adversely impact the resource procurement programs of publicly-owned utilities and their ability to reliably serve load at stable prices.

4.12.3. Discussion

SB 1368 provides the following general guidance on the issue of how to address unspecified contracts:

"In developing and implementing the greenhouse gases emission performance standard, the commission shall address long-term purchases of electricity from unspecified sources in a manner consistent with this chapter."¹⁷⁰

In order to comply with SB 1368's mandate that we address unspecified sources in a manner consistent with the rest of the statute, we believe that our EPS rules should ensure that:

(1) LSEs only enter into long-term financial commitments with baseload generation that comply with the EPS, and

(2) EPS compliance cannot be achieved in a manner that would yield a contrary result, i.e., that results in an increase in long-term commitments with high-emitting sources.

Based on the record in this proceeding, we conclude that imputing emissions rates to unspecified contracts, would not be consistent with SB 1368 for several reasons. First, we have difficulty reconciling the concept of imputed emissions rates with the requirements of SB 1368 since, by definition, such proxies do not reflect the actual emissions from the underlying resources. As a result, using imputed rates does not permit us to determine whether a commitment with an unspecified resource is consistent with the Commission's goals or SB 1368 or simply exacerbates the problems the Commission and the Legislature are trying to address.

Moreover, any method to impute a GHG emissions rate to unspecified resources results in a binary outcome in the context of an EPS—that is, all financial commitments with unspecified resources will either "pass" or "fail" based on the selected level of imputed emissions. As a result, there is enormous pressure to game the methodology and input assumptions used for this purpose, thereby making it very difficult and contentious to implement this particular approach to addressing unspecified contracts.¹⁷¹

Not surprisingly, parties have generally lined up behind this issue based on whether they want "all" unspecified contracts to pass the EPS screen or "none" of them to pass. For example, NRDC originally proposed that the emissions of pulverized coal plants be used to impute emissions for unspecified contracts, an approach that would clearly result in none of them passing the EPS screen. NRDC now indicates qualified support for using the California Net Power Mix, but only if the very highest emissions rates for each technology is utilized. By NRDC's own calculation, this would have the same result: None of the unspecified contracts would pass the EPS screen.

On the other hand, SoCalGas and SDG&E support the use of the California Net Power Mix, but only if the revised version under consideration by the CEC staff is used. When coupled with mid-range emissions rates for each technology, this approach would permit all unspecified contracts to pass the EPS screen.

As DRA illustrates at some length in its comments, there are also various input assumptions associated with calculating an imputed emissions value using any proxy resource mix (California Net Power Mix, WECC system purchases, or others) that could be manipulated to "push" an unspecified contract through the EPS gateway, such as the use of full load heat rates versus heat rate ranges under less than full-load conditions.¹⁷²

SCE's recommendation also has the potential to push an unspecified contract through the EPS gateway, since the proposed default rates are based on broad geographic averages that would permit high emitting resources to pass the standard. Moreover, under SCE's proposal, the case-by-case review would be one-sided: The Commission would be asked to grant an exception to the imputed emissions value only in those instances where the power is being purchased from a group of very low emitting resources (e.g., a group of all hydroelectric powerplants), but not when the opposite may be true.

Finally, none of the specific proxy approaches recommended by staff or in parties' comments are reasonable or workable for our purposes, at least not at this time. As staff points out, the WECC system average is generally not reflective of California activities or markets, and the use of WECC sub-regional geographic averages would also dilute the impact of high-emitting resources, allowing them to automatically pass through the GHG screen. Similarly, the WECC California

region average metric suggested by SCE in its October 18, 2006 comments represents a broad statewide average that does not distinguish among different types of generating resources on the basis of their relative GHG emissions. It is also too broad a metric for the purpose of establishing whether an unspecified contract is EPS-compliant or not.

As discussed above, staff and some parties propose that we utilize the California Net Power Mix as a proxy for the resource mix associated with unspecified contracts for the purpose of evaluating EPS compliance. We note that this mix was developed by the CEC for a very different purpose (power content labeling), and has not been revised, updated or endorsed by the CEC for use in imputing GHG emissions under SB 1368 or in any other GHG emissions policy context.

Moreover, there is no clear conceptual link between this metric and the mix of resources that might underlie unspecified contracts now or in the future, even on a system-wide average basis. The calculation is based on what is left over after the amounts that retailers voluntarily report as the resources underlying their short- and long-term power purchases (and accounting for on-site generation). It was developed to encourage retailers to disclose their actual power mix to customers. For that purpose, the CEC reports that power content labeling has been successful since the amount of net system (unreported) power has decreased significantly since its inception. Nonetheless, we do not find a reasonable conceptual correlation between this metric and the resource mix that might underlie unspecified long-term contracts.

For the reasons discussed above, we find that adopting an approach to unspecified contracts that involves the use of proxy estimates for emissions rates would not further the goals of SB 1368 and would be problematic from an implementation standpoint.

That brings us to the approach recommended by Sempra and Calpine, namely, to require under our rules that all long-term commitments for baseload generation be made with "specified resources" that can demonstrate compliance with the interim EPS. This approach is fully consistent with SB 1368 since it ensures that "any" and "all" long-term financial commitments with baseload generation will meet the EPS, as the statute so directs.¹⁷³ Moreover, it cannot be gamed in a manner that could result in the opposite outcome than the statute intended, i.e., an increasing number of long-term commitments to high emitting resources. Although SCE argues that this approach would deprive LSEs of needed flexibility in resource procurement, thereby increasing costs to ratepayers, this assertion is simply not supported by the record.

Throughout the workshop process, attendees indicated that the LSEs would be entering into very few, if any, new contracts or contract renewals with unspecified contracts with a term of five years or greater. At the assigned ALJ's direction, SCE, SDG&E and PG&E submitted data on how many contracts of five years or more for unspecified power they (1) actually entered into during 2004 and 2005 and (2) planned to enter into over the 2006-2008 period. These utilities also provided data on the amount of unspecified power they have purchased and plan to purchase under short-term contracts (less than five years).

All three utilities responded that they did not enter into any contracts of five years or more for unspecified resources in 2004 and 2005, and do not anticipate entering into any contracts with unspecified resources with a term of five years or more in the 2006-2008 period. In contrast, all three utilities entered into numerous contracts with *short-term* unspecified contracts during 2004-2005, which is to be expected given the type of energy products offered under them.¹⁷⁴

In sum, the record shows that it is highly unlikely that the LSEs will be entering into any new or renewal power purchase contracts of five years or greater that are unspecified during the transition to a statewide GHG emissions limit. Therefore, requiring that long-term contracts with baseload generation be "specified" so that EPS compliance can be demonstrated should not

have a significant, if any, impact on an LSE's resource procurement flexibility.¹⁷⁵ Moreover, it is our understanding from consultations with the ISO staff that for the ISO's system reliability determinations, the ISO relies on specific information about the plant facility and its location within the ISO control area. Therefore, the requirement to specify the resources underlying long-term contracts for the purpose of demonstrating EPS compliance is consistent with the type of information that the ISO also requires for these reliability determinations.

A requirement that long-term power purchase contracts specify the underlying generation facilities is also consistent with our discussion of emissions registration in D.06-02-032 and represents a logical interim step towards the implementation of AB 32.¹⁷⁶ Under that new law, CARB is required to establish the state's mandatory GHG reporting and verification program by January 1, 2008. At that point, all power contracts will need to provide verifiable GHG emissions documentation. To permit LSEs to enter into new or renewed long-term unspecified contracts with high GHG-emitting facilities through the use of an imputed emissions value for system power in the meantime could put them, and their customers, in a vulnerable position when these reporting requirements take effect in 2008 for the implementation of the statewide, load-based GHG emissions limits.

As Sempra points out, other jurisdictions have developed specific resource tagging mechanisms to track generation attributes, including GHG emissions, of resources within their control areas.¹⁷⁷ In particular, PJM Interconnection utilizes the Generation Attribute Tracking System and ISO New England utilizes the Generation Information System for this purpose.¹⁷⁸ In our view, it is entirely feasible to implement a program that tracks the GHG emissions of all generating units, and that would enable marketers and other sellers of unspecified resource contracts to assign a reasonable and accurate GHG emissions profile to their contracts. Over time, this should be the strategy pursued by California to deal with emissions from any unspecified resource contracts that LSEs may wish to pursue; however, as the record shows, this is not a likely pursuit for the types of LSE long-term procurements subject to the EPS.

For the reasons discussed above, we will require that all long-term commitments be with specified sources that can demonstrate EPS compliance (or demonstrate that compliance is not required), except when substitute system energy is purchased to firm deliveries from specified powerplants under the limited conditions we describe below. In response to comments on the Proposed Decision,¹⁷⁹ we also clarify that the following circumstances would comply with our EPS rules: First, if the long-term contract specifies that power will be delivered exclusively from pre-approved renewable technologies or resources, and there are assurances in the contract to that effect, then the contract would comply with the EPS even if none of the generating sources are specified. Second, if a group of powerplants from which power will be delivered under a contract is specified, and there are assurances in the contract that deliveries will only be from one or more of the powerplants in that group *and* each of those that are baseload powerplants would individually pass the EPS, then the contract would comply with the EPS. The burden is on the LSE to provide sufficient documentation to demonstrate compliance with the EPS under these circumstances.

In its comments on the Proposed Decision, SMUD argues that if the Commission bans all long-term contracts without a specified unit, it will have failed to follow the requirement of SB 1368 to "address" unspecified contracts, thereby violating the rules of statutory construction.¹⁸⁰ We disagree. As noted above, § 8341(d)(7) of SB 1368 requires the following with respect to unspecified sources:

"In developing and implementing the greenhouse gases emission performance standard, the commission shall *address* long-term

purchases of electricity from unspecified sources in a manner consistent with this chapter. "

The word "address" is commonly understood to mean to turn one's attention to, deal with, or treat.¹⁸¹ Therefore, we read the phrase "the Commission shall address" in the context of §8341(d)(7) to mean that the Commission shall *direct its attention to, deal with, or treat* the subject of long-term purchases of electricity from unspecified sources. By requiring that the Commission "address" a specific topic the Legislature is not directing the Commission towards any particular determination.

To the contrary, the Legislature here has chosen to leave open the question of *how* to treat unspecified contracts to the Commission. It does not, as SMUD asserts, require that we allow long-term commitments with unspecified resources under the interim EPS. Nor does it prevent us from deciding that imputing an emissions rate for such contracts is unworkable or inconsistent with the objectives of SB 1368. Accordingly, we conclude that prohibiting LSEs from entering into long-term contracts for unspecified power is consistent with the Legislature's requirement that the Commission "address" the subject of unspecified sources with respect to the EPS and, for the reasons discussed at length above, that our treatment of unspecified contracts is consistent with "this chapter."

Nonetheless, we are persuaded by the comments of GPI and others on the Proposed Decision that providing for *limited conditions* under which system energy can be purchased to firm deliveries under long-term contracts is consistent with the overall objectives of SB 1368. As PG&E and other point out, many new renewable resources cannot by themselves meet the energy profile needs of LSEs without having backup access to flexible and firm system purchases. Completely prohibiting unspecified resources that are used for this purpose could therefore undermine the policies of California to increase reliance on renewable energy resources and thereby exacerbate the problems that the interim EPS is intended to address.¹⁸²

PG&E's proposal would limit substitute system energy purchases by both (1) restricting the level of substitute energy purchases to no more than 15% of forecast energy production over the contractually specified time period and (2) specifying that such system purchases can only be made under event-driven conditions that are of limited duration. We agree with PG&E that this restricted use of substitute system energy is very unlikely to result in intentionally sourcing energy from high carbon intensive baseload resources, particularly because substitute energy events are often unpredictable and therefore "no new high-carbon generation will be built solely to provide substitute energy at the 15% level."¹⁸³ Moreover, as PG&E and others points out in their comments on the Proposed Decision, the ability for a seller to substitute energy from the marketplace on a short-term basis is an important feature of a long-term contract because it enables better management of operating and financial risk that can provide greater performance assurance at a more moderate price to ratepayers.¹⁸⁴

However, we take issue with PG&E's proposal in one respect.

As SMUD points out in its reply comments on the Proposed Decision, PG&E's proposal for limiting substitute energy purchases does not adequately recognize the unique characteristics of intermittent renewable resources, in particular wind generators. Unlike dispatchable renewable resources, such as biomass and geothermal, actual deliveries from intermittent renewable resources will fluctuate below the expected average output of the facility based on the natural and unpredictable variability of the energy resource, not just the event-driven conditions described under PG&E's proposal. Moreover, actual deliveries from intermittent resources will also fluctuate above the expected average output of the facility based on the unpredictable variability of the

energy resource. As a result, there are both increments and decrements to the level of system energy associated with firming an intermittent renewable resource, which is not adequately recognized under PG&E's proposal.

This can be illustrated in the following (very simplified) numerical example: A wind generator with a long-term contract to deliver 40 MWh may sometime produce 25 MWh and sometimes produce 70 MWh. In any event, the buyer withdraws 40 MWh from the grid on an hourly basis. In those hours that the wind generator is producing 25 MWh, the wind generator (seller) will need to purchase 15 MWh of substitute system energy to meet the terms of the contract. Emissions during these hours are positive, but unknown, as the source of the 15 MWh is unknown. When the wind generator is producing more than 40 MWh (e.g., 70 MWh in this example) however, it displaces 30 MWh of system power with power generated from the renewable resource. In other words, there are both increments and decrements to unspecified system energy associated with firming an intermittent renewable resource due to the unique characteristics of such resources. Deliveries from dispatchable renewable resources, such as geothermal and biomass, on the other hand, create "increments" to system energy purchases under the types of event-driven conditions described in PG&E's proposal, but do not also produce the offsetting "decrements" to the levels of system energy described above.

Therefore, whereas PG&E's proposal appropriately restricts the use of substitute energy purchases in the context of dispatchable resources, we believe that SMUD's comments suggest a more appropriate approach to limiting substitute system energy purchases under long-term contracts with intermittent renewable resources. In particular, SMUD's first option recognizes that if the amount of substitute energy purchases is limited so that total purchases under the contract do not exceed the expected output of the intermittent renewable resource, we would expect those increments and decrements to average out to zero on balance. This approach provides the type of contracting flexibility and practicality that SMUD and others argue is uniquely required for long-term contracting with intermittent renewable resources, without creating a loophole or exception to the general rule on unspecified contracts that would be contrary to the intent of SB 1368.

In contrast, we find that SMUD's second option could undermine the objectives of SB 1368 by, in effect, permitting system purchases to equal far more than the expected output of intermittent renewable resources. As discussed above, under this option the LSE could contract for a fixed delivery amount equal to 80% of the maximum rated capacity of the renewable facility, allowing the purchasing entity to procure substitute energy as needed to meet the contracted level. By linking the levels of substitute energy purchases to a percentage of rated capacity that is high relative to the expected output of such intermittent resources, this approach results in "increments" to unspecified system power purchases that can be expected to significantly and regularly exceed the "decrements" to system power over the life of the contract.¹⁸⁵ As a result, this approach has the potential to create a significant loophole to our general rule for unspecified contracts that would permit LSEs to enter into long-term contracts with high-emitting resources, yielding a result that is contrary to the intent of SB 1368.

In sum, we modify the Proposed Decision to permit LSEs to enter into contracts with a term of five years or longer that include provisions for substitute energy purchases from unspecified resources ("system energy") under the following circumstances:

1. The contract is with one or more specified powerplants, each of which is EPS-compliant under our adopted rules.
2. For specified contracts with non-renewable resources or dispatchable renewable resources (or a combination of each), substitute energy purchases for each specified powerplant are permitted up to 15% of forecast energy production of the specified powerplant over the term of the contract,

provided that the contract only permits the seller to purchase system energy under either of the following conditions:

a) The contract permits the seller to provide system energy when the specified powerplant is unavailable due to a forced outage, scheduled maintenance or other temporary unavailability for operational or efficiency reasons; or

b) The contract permits the seller to provide system energy to meet operating conditions required under the contract, such as provisions for number of start-ups, ramp rates, minimum number of operating hours, etc.

A "dispatchable" renewable resource for the purpose of this rule is one that is not defined as "intermittent" under section 3 below.

3. For specified contracts with intermittent renewable resources (defined as solar, wind and run-of-river hydroelectricity), the amount of substitute energy purchases from unspecified resources is limited such that total purchases under the contract (whether from the intermittent renewable resource or from substitute unspecified sources) do not exceed the total expected output of the specified renewable powerplant over the term of the contract.¹⁸⁶

The burden is on the LSE to provide sufficient documentation in compliance submittals to demonstrate that the above requirements are met. In particular, the LSE is required to make available to Commission staff the source data and methodology it uses in developing the level of expected output from renewable resources under contracts with a term of five years or longer that permit substitute energy purchases from unspecified resources, in order to demonstrate that the limits for substitute energy purchases for both intermittent and dispatchable renewable resources were properly established under the substitute energy provisions.

As discussed above, several parties urge us to permit long-term contracts with unspecified contracts under a broader range of circumstances than those permitted under the Proposed Decision. We have carefully considered their concerns in today's decision, and made modifications to the Proposed Decision that we believe can address those concerns and still be consistent with the legal and policy directives of SB 1368. In particular, as SMUD and DRA point out, the EPS rules should recognize that a long-term contract with a group of resources that may not specifically identify the units that will be delivering power should, under certain circumstances, be permitted--and we have clarified those circumstances in today's decision. Further, as SMUD, PG&E, GPI and others point out, the Proposed Decision's restrictions on purchases from unspecified resources does not adequately address the issue of substitute energy purchases under long-term contracts with specified powerplants, particularly for renewable resources.

As discussed above, we have carefully considered the suggestions for addressing this issue and have modified the Proposed Decision to provide additional contracting flexibility to the extent that we believe is consistent with the intent of SB 1368. In addition, in recognition of the reliability concerns raised by several parties in this proceeding, including Barclay et al., our EPS rules permit LSEs to request Commission consideration of a reliability exemption, on a case-by-case basis, in the event that an LSE must enter into a long-term unspecified contract to address system reliability concerns. (See Section 4.8.5.) Moreover, LSEs will continue to be able to enter into short- and intermediate term contracts with all types of resources, including unspecified resources if needed for reliability or economic purposes.

In its comments on the Proposed Decision, SMUD requests that we also make findings that would recognize differences in the procurement practices between publicly-owned utilities and

LSEs, and specifically reflect those differences in today's adopted rules regarding purchases from unspecified resources.¹⁸⁷ However, the CEC-not this Commission--is responsible for adopted EPS rules that will be applicable to SMUD and other publicly-owned utilities. We reiterate that nothing in today's decision is intended to suggest that the CEC may not consider unique circumstances facing these entities with respect to how an EPS that will apply to them should address purchases from unspecified resources. Nonetheless, we do believe that the policy, legal and implementation issues associated with imputing emission rates to unspecified contracts and with permitting substitute energy purchases under long-term contracts discussed above are relevant to the CEC's rulemaking. We therefore expect that these issues will be considered in consultation with this Commission as the CEC develops an interim EPS for publicly-owned utilities that is consistent with today's adopted EPS, as directed under § 8431(e)(1) of SB 1368.

Footnotes for Section 1.4:

¹⁵ § 8341(d)(7).

¹⁶ § 8341 (a), (b)(1), (b)(3) and (d)(1).

¹⁷ See D.06-02-032, p. 38. Among other things, AB 32 requires CARB to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, to be achieved by 2020, in consultation with this Commission.

Footnotes for Section 4.12:

¹⁶² For 2005, the California Net Power Mix calculated by the CEC was as follows: Coal-38.5%, Large Hydroelectric-23.5%, Natural Gas-33.3%, Nuclear-0% and Eligible Renewables-4.7%. Keep in mind that this is different from CEC's calculation of the "gross system power," i.e., the fuel mix serving California load. The percentages above only reflect the fuel type break-downs for power that was not specified by retailers in their voluntary reporting to the CEC.

¹⁶³ *Final Staff Report*, p. 38.

¹⁶⁴ *Opening Comments of SCE on Final Staff Workshop Report and Proposal*, October 18, 2006, p. 11. See also *Reply Comments of SCE on the Final Staff Workshop Report*, October 27, 2006, pp. 10-11.

¹⁶⁵ *Opening Comments of PG&E on Proposed Decision*, January 2, 2007, pp. 3-7.

¹⁶⁶ *Reply Comments of the GPI on the Proposed Decision*, January 8, 2007, p. 2.

¹⁶⁷ Wind and solar are considered "intermittent" generating sources because the output is controlled by the natural variability of the energy resource. Intermittent output usually results from the "direct, non-stored conversion of naturally occurring energy fluxes such as solar energy, wind energy, or the energy of free-flowing rivers" (that is, run-of-river hydroelectricity). [See www.eia.doe.gov/glossary/glossary_i.htm] In contrast, the output from a "dispatchable" renewable generator (e.g., those fueled by geothermal or biomass) can be controlled by the operator to meet system requirements, usually by regulating the flow of the fuel.

¹⁶⁸ See *Comments of SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007 pp. 9-10 and *Reply Comments of SMUD on the December 13, 2006 Proposed Decision*, January 8, 2007, pp. 2-4.

¹⁶⁹ Barley et al. refers to the following organizations that jointly filed opening comments on the Proposed Decision: Barclay's Capital, J. Aron & Company, Morgan Stanley Capital Group.

¹⁷⁰ § 8341(d)(7). We find no further discussion of unspecified contracts in the statute or legislative history.

¹⁷¹ In its comments on the Proposed Decision, SMUD argues that the resource mix for each system where unspecified power originates should be analyzed and a determination made of whether the mix of resources meets the EPS, thereby avoiding the binary outcome described above. *Comments of the SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007, pp. 8-9. We fail to see how a binary outcome can be avoided under the approach SMUD suggests, since any contract procuring unspecified power from a particular originating system would still face either a "no go" or "go" outcome depending on the relative level of high- and low-emitting resources in that system's resource mix. Moreover, SMUD's proposed approach does not address the fundamental difficulty we have with permitting unspecified contracts as a general rule under the interim EPS, since we still would not know whether the deliveries will actually come from the high-emitting facilities in the system's resource mix, or not. Nor does it recognize that the statutory deadline for our adoption of an "enforceable" EPS is February 1, 2007, which does not provide sufficient time to conduct the analysis and reach the determinations SMUD suggests should be undertaken for each potential originating system of unspecified power that LSEs procure from.

¹⁷² *Opening Comments and Legal Argument of the Division of Ratepayer Advocates on the Final Workshop Report on Phase 1 Issues*, October 18, 2006, pp. 5-7. As DRA points out, under less than full-load conditions, one can expect the corresponding heat rates to go up, and therefore result in higher emission values.

¹⁷³ Indeed, it could be difficult in the case of an "unspecified contract" even to determine whether any "baseload" powerplant is being used to generate the power.

¹⁷⁴ "Contracts with unspecified resources are for energy products whose offered prices are valid for a very short period of time. This is due to the fact that energy prices fluctuate constantly, in part due to fluctuations in commodity prices of natural gas as well as underlying market conditions. SCE has to decide whether to buy or not to buy such energy products in a very short period of time.... As a result, SCE is currently limited to soliciting contracts of energy products, including such contracts with unspecified resources, to those with durations less than five years consistent with its current procurement authority." See *SCE Greenhouse Gas Emission Standards Data Response*, October 18, 2006, Response to Question 03, posted at <http://www.cpuc.ca.gov/static/energy/electric/climate+change/>.

¹⁷⁵ During our interagency consultations on SB 1368, CEC staff has indicated that the publicly owned electric utilities may not be similarly situated, i.e., they have entered into a significant amount of contracts of five years or greater with unspecified power in recent years and may be planning to do so in the future. Nothing in today's decision is intended to suggest that the CEC may not consider unique circumstances facing these entities with respect to how an EPS that will apply to them should address unspecified contracts. However, we believe that the policy, legal and implementation issues associated with imputing emission rates to unspecified contracts and permitting substitute energy purchases under long-term contracts discussed in today's decision

will need to be carefully considered as the CEC develops an EPS that is consistent with the statute as well as today's adopted EPS, as directed by SB 1368.

¹⁷⁶ D.06-02-032, pp. 47-48.

¹⁷⁷ *Comments of Semptra Global on Draft Workshop Report*, September 8, 2006, p. 6.

¹⁷⁸ PJM Interconnection is the regional organization that monitors and coordinates movement of wholesale electricity over a 56,000-mile section of the power transmission grid that spans across 13 northeastern and midwestern states and the District of Columbia. ISO New England serves similar functions across all of the New England states as the California ISO.

¹⁷⁹ See, in particular, *Reply Comments of DRA on the Phase 1 Proposed Decision*, January 8, 2007, p. 2 in response to *Comments of SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007.

¹⁸⁰ *Comments of SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007, p. 3.

¹⁸¹ Merriam-Webster online dictionary at www.m-w.com/dictionary/address.

¹⁸² See SB 1368, Section 1 (c) and (d).

¹⁸³ *Opening Comments of PG&E on Proposed Decision*, January 2, 2007, pp. 5-6. In their joint reply comments, NRDC, TURN, UCS and WRA argue that the conditions as currently written could create "an avenue to build in system power into a long-term unit-specific contract." *Reply Comments of NRDC/TURN/UCS and WRA*, January 8, 2007, pp. 2-3. We fail to see how PG&E's proposed language for Conditions A and B, in combination with the 15% cap on permitted system purchases could lead to such a result. Moreover, we do see great difficulty in trying to distinguish between the limited use of system power for conditions that are "event driven" versus "due to economic considerations" as these parties suggest. Therefore, we retain PG&E's proposed language for these conditions.

We also do not find merit to SDG&E/SoCalGas' suggestion that PG&E's proposal be modified to allow substitute energy purchases up to 25% of in order to be consistent with CEC's RPS eligibility guidelines for "hybrid systems." SDG&E/SoCalGas' reference to the 25% number in the RPS guidelines is taken out of context. Under certain circumstances, the RPS guidelines allow up to 25% of non-renewable resources in the context of the fuel use for a specific facility (e.g., for solar thermal generators), but not in the context of substitute system purchases. Moreover, the RPS guidelines specifically state that RPS eligibility is not permitted for any fossil-fuel portion of any new or repowered non-QF facility. (See CEC-300-2006-007-F, Renewable Energy Program, "Renewables Portfolio Standard Eligibility Guidebook," April 2006, pp. 16-17.

¹⁸⁴ See, for example, *Opening Comments of PG&E on Proposed Decision*, January 2, 2007, p. 5 and *Comments of SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007, p. 10.

¹⁸⁵ As GPI and others recognize in their reply comments on this issue, the second option put forth by SMUD is likely to permit up to 50% of deliveries under the contract from unspecified system substitute purchases for wind resources. Put another way, with wind facilities generally delivering on average 35-40% of their rated capacity, allowing substitute energy purchases up to 80% of the rated capacity means that, on average, unspecified resources would comprise about the same level of energy delivered under the contract as the energy delivered from the wind generator. As a result, there would be a significant net "increment" to system purchases permitted under these

provisions that would not be offset by the normal fluctuations of the intermittent resource around the average expected output of the facility, as there would be under SMUD's option #1.

¹⁸⁶ SMUD also recommends that the utility be required to purchase the RECs associated with the renewable generating unit. In Section 4.11, we address the issue of null power and RECs in the context of today's adopted interim EPS. In light of that discussion, we find SMUD's suggestion that such a requirement be imposed on LSEs (if and when a regulatory REC market exists in California) to be premature for our Phase 1 determinations, and therefore do not adopt it.

¹⁸⁷ *Comments of SMUD on the December 13, 2006 Proposed Decision*, January 2, 2007, p. 6.