

DRAFT

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

I.D. #7126
RESOLUTION E-4135
December 6, 2007

R E S O L U T I O N

Resolution E-4135. This Resolution approves, with criteria for implementation, the request by Pacific Gas and Electric Company (PG&E) to amend their AB 57 Procurement Plan and pending 2006 Procurement Plan to establish upfront and achievable standards and applicable criteria for the procurement of Congestion Revenue Rights.

By Advice Letter 3106-E filed on August 20, 2007.

SUMMARY

The Commission approves, with criteria for implementation PG&E's requests to amend its AB 57 Procurement Plan and pending 2006 Procurement Plan to enable PG&E to establish upfront and achievable standards and applicable criteria for the procurement of Congestion Revenue Rights.

The California Public Utilities Commission (Commission) approves, with criteria for implementation, PG&E's request to amend its Assembly Bill (AB) 57 Procurement Plan and pending 2006 Procurement Plan to establish upfront and achievable standards and applicable criteria for the procurement of Congestion Revenue Rights. Congestion Revenue Rights are designed to be hedges against congestion costs under the California Independent System Operator's (CAISO's) Market Redesign Technology Upgrade (MRTU) market.

BACKGROUND

The CAISO will allocate CRRs to Load Serving Entities (LSEs) based on load-share.

Currently, LSEs may obtain Firm Transmission Rights (FTRs) with which they assure transmission of energy to load. Under MRTU, the CAISO will institute Locational Marginal Pricing (LMP) using a full network model, which will

replace the current zonal model. The CAISO has suggested that LMP will help alleviate intra-zonal congestion.

Under MRTU, LSEs will no longer be able to obtain new FTRs. Rather, deliverability needs will be managed using financial tools called Congestion Revenue Rights (CRRs) rather than physical transmission rights. LMP is anticipated to expose each LSE to less stable charges for transmission congestion than under the FTR/physical transmission rights paradigm.

A CRR will entitle its owner to be paid an amount equal to the difference between the price of energy at the source (generation) and sink (load) nodes. Thus, CRRs are designed to give the owner a hedge against congestion costs caused by price differences between generation resources and load. In the first rounds of the first year's¹ CRR distribution process, the CAISO will allocate CRRs to LSEs in quantities based on load-share² and in source/sink combinations based on the LSE's actual grid use during the 2006 reference period. If an LSE obtains a CRR that matches its sources of power and its load, the CRR is expected to closely offset the congestion costs charged for delivering that power to load.

The CAISO's CRR allocation process consists of four tiers of allocation followed by an auction.

CAISO will distribute CRR in four tiers. Distribution of CRRs has different rules in different tiers. All CRRs distributed in the allocation tiers must, by CAISO rule, use the LSE's load aggregation point (LAP, a weighted average of LMPs for the LSE's Transmission Access Charge area³) as the sink. Tiers One and Two will, in year one of MRTU, be limited to nominations of CRRs with a source that can be verified as a source used by the LSE to procure power in 2006. These

¹ In annual CRR allocations after the first year of MRTU, CAISO will not verify LSEs' actual use of resources.

² The amount of CRRs an LSE may be allocated is limited by its adjusted load metric. The adjusted load metric is a measure established by the CAISO to represent the LSEs' load at peak hours.

³ In Tier 3, an LSE may nominate a CRR with a sink at a Sub-LAP, which is a weighted average for a limited area's LMP, as the source for a CRR. These nominations may not be renewed in the Priority Nomination Process (PNP) the following year.

CRRs have a one-year term.⁴ After the first two tiers, the CAISO will hold Tier LT,⁵ in which LSEs may nominate the CRRs they received in the first two tiers for conversion into LTCRRs, preserving them for a period of up to 10 years.⁶ Following Tier LT, the CAISO will conduct Tier Three, in which LSEs may nominate CRRs from any source. Following Tier Three, the CAISO will auction remaining CRRs. CRRs that are auctioned need not use a LAP as a sink.

PG&E has authorization to obtain FTRs pursuant to its existing AB 57 Procurement Plan, which permits PG&E to obtain “transmission products” with a term less than five years without Commission approval of specific transactions. Because CRRs are the transmission product that will replace FTRs, PG&E claims that its Procurement Plan allows it to obtain CRRs of duration of less than five years without Commission approval.⁷

In Resolution E-4122, the Commission granted PG&E authorization to procure LTCRRs.

Under CAISO rules, only CRRs obtained in Tier One or Tier Two may be converted into LTCRRs. PG&E stated that it would be unable to identify to the Commission which CRRs it intends to nominate for conversion into LTCRRs and obtain formal Commission approval through the application process because there is very limited time between the date when the CAISO will release the results of the Tier Two CRR allocation and the date that LTCRR nominations must be submitted to the CAISO. Accordingly, PG&E requested that the Commission modify its AB 57 Procurement Plan and pending 2006 Procurement

⁴ In later years, Tier 1 and Tier 2 will not be limited to verified sources. However, prior to Tier 1 and Tier 2, LSEs will be able to re-nominate a limited share of the CRRs they were allocated in previous years. This supplemental re-nomination opportunity is known as the Priority Nomination Process (PNP).

⁵CAISO MRTU Tariff § 36.8.3.1.3.1.

⁶ While LTCRRs are a 10 year entitlement, a LTCRR may have a shorter term because it is expected to become partially or completely infeasible during the life of the LTCRR.

⁷ Commission Decision (D.) 04-12-048 *Opinion Adopting Pacific Gas And Electric Company, Southern California Edison Company And San Diego Gas & Electric Company's Long-Term Procurement Plans*, (LTPP Decision) issued December 16, 2004 in Rulemaking (R.) 04-04-003 at Ordering Paragraph 14.

Plan to grant it the authority to procure LTCRRs outside of the formal application process.

The Commission determined that PG&E was correct in its assessment that there will not be enough time for a formal approval of PG&E's LTCRR nominations following the release of Tier One and Tier Two CRR awards by the CAISO.⁸

Therefore, in this instance, the Commission approved PG&E's request for authorization to procure LTCRRs before the CAISO's nomination deadline (see Resolution E-4122 for specific authorization).

PG&E requests approval of an amendment to its AB 57 Procurement Plan to establish upfront and achievable standards for procurement of CRRs.

In AL 3106-E, PG&E requests approval of an update to its Commission-approved AB 57 Procurement Plan⁹ and its pending 2006 Long-Term Procurement Plan (LTPP) in order to establish upfront and achievable standards and criteria applicable in procuring CRRs, including LTCRRs. These standards and criteria include the requirement that CRRs only be obtained to hedge expected grid use, as was required for LTCRR procurement in Resolution E-4122.

NOTICE

In accordance with Section Four of General Order (GO) Number 96-B, PG&E stated that it has served copies of the advice letter filing to interested parties on the service list of GO 96-B and R.06-02-013. Notice of PG&E AL 3106-E was also made by publication in the Commission's Daily Calendar.

⁸ Under normal circumstances, PG&E would be required to file a formal application seeking authority to procure products with duration of 5 years or greater. (LTPP Decision at p. 108.)

⁹ PG&E filed its 2004 Short-Term Procurement Plan (2004 STPP) on May 15, 2003, and it was approved by the Commission in D.03-12-062. . In D.04-12-048, the Commission approved PG&E's 2004 Long-Term Procurement Plan. The collective set of PG&E's 2004 STPP, including subsequent modifications and updates, and PG&E's 2004 LTPP constitute PG&E's current AB 57 Procurement Plan. PG&E's 2006 LTPP is currently pending in Rulemaking (R.) 06-02-013.

PROTESTS

There was one protest of AL 3106-E. The Western Power Trading Forum (WPTF) protested AL 3106-E on the grounds that PG&E may be able to exercise market power in the MRTU market due to the ways in which the CRR auction functions, and suggested that limits on PG&E's participation in the CRR auction would resolve this issue. WPTF initially filed a protest of AL 3095-E on this subject. However, AL 3095-E did not address the CRR auction, and WPTF later withdrew its protest of AL 3095-E and re-filed it as a protest of AL 3106-E.

WPTF claimed that PG&E will be an "unconstrained bidder" in the CRR auction for two reasons. First, WPTF claims that the auction revenue will return to LSEs, so PG&E will not absorb costs for procuring CRRs. Second, WPTF claims that PG&E's ability to pass costs to ratepayers insulates PG&E and its shareholders from the prices of CRRs.

WPTF proposes two remedies: reasonableness reviews and position limits. WPTF argues that reasonableness reviews are necessary to establish checks on PG&E's decisions related to CRR procurement. WPTF also argues that while there are sufficient limits on CRR procurement through the allocation process, the lack of position limits in the CRR auctions allow PG&E too much power in the CRR auction market. WPTF suggests that PG&E's CRR procurement (auction plus allocation) be limited to 90% of load after annual auctions, and 115% of load after monthly auctions. WPTF derives these numbers from the Resource Adequacy (RA) requirements for PG&E.

PG&E replied to WPTF's protest, arguing that WPTF's proposed limitations were unnecessary for the protection of generators, and overly burdensome for PG&E. PG&E provided a variety of reasons why WPTF's suggestions should not be implemented. Among these, PG&E noted that WPTF did not accurately describe the CRR auction, noting that there is not a guarantee that auction revenues will flow to LSEs. PG&E also noted that while shareholders are not exposed to CRR costs, they also cannot benefit from CRRs. Lastly, PG&E explained that Reasonableness Reviews, as requested by WPTF, are not permitted under AB 57,

SUSPENSIONS

Advice Letter 3106-E was suspended on September 28, 2007.

DISCUSSION

While CRRs are allocated without cost to LSEs, over the course of time CRRs may cause the CAISO to impose costs on the LSE and ultimately its ratepayers when the source has a higher price than the sink.

CRRs are obligations, meaning that if they have a positive value, PG&E will receive a payment; but if they become negatively valued due to changes in grid dynamics, PG&E will be required to make a payment. The CRRs result in payments to the owner when the source has a lower price than the sink, and charges to the owner when the source has a higher price than the sink. In this way, while CRRs may be obtained without a payment through the CRR allocation, they are not without potential costs to PG&E and its ratepayers.

PG&E will use CRRs as hedges against congestion costs and not for speculation.

If PG&E uses CRRs to hedge against congestion costs from its sources of power to its load, the CRR payments will tend to counteract the congestion charges. This will be true even if the price of energy at the source exceeds the price of energy at the sink, because while the CRR will be a requirement for PG&E to pay, the congestion charge will be a payment to PG&E.

As the Commission has stated in numerous filings related to the development of the MRTU program, the Commission's support of the CAISO's MRTU market was conditioned upon the CAISO's allocation of CRRs to LSEs so that those LSEs could obtain an adequate hedge against unpredictable transmission costs in the MRTU LMP paradigm.¹⁰ The Commission believes that allowing LSEs to hedge their procurement portfolio with CRRs representing their actual expected use of the grid will help minimize congestion charges that would otherwise be passed on to ratepayers.

¹⁰See e.g., *Motion For Leave To File Comments Out Of Time And Comments of the California Public Utilities Commission Regarding the California Independent System Operator's January 29th Compliance Filing*, filed on February 21, 2006 in FERC Docket No. RM06-08-000 at pp. 2-3; *Notice of Intervention, Limited Protest, and Comments of the California Public Utilities Commission on the California ISO's MRTU Tariff*, filed on April 6, 2006 in FERC Docket No. ER06-615-000 at p. 3.

The Commission is concerned, however, with the potential for LSEs' acquisition of CRRs that do not reflect their actual expected grid use or a reasonably physically correlated CRR.¹¹ While valuable CRRs that do not reflect the LSE's actual grid use may supply a stream of income to the LSE that would ultimately accrue to the benefit of ratepayers, such CRRs may also become negatively valued over time, leaving ratepayers at a loss. Thus, CRRs that are not reasonably related to actual grid use will not result in a reduction of risk to ratepayers, and would in fact create risk to ratepayers. Further, an LSE that obtains CRRs that do not represent its actual grid use may deprive another LSE of an accurate hedge. For these reasons, the Commission here approves only the acquisition of CRRs that closely resemble the LSE's expected grid usage both in the choice of source/sink combinations and in the duration of the CRR with respect to the length of the LSE's energy supply contracts.

The Commission approves PG&E's acquisition of CRRs for the purpose of managing congestion cost risk, and opposes the use of CRRs as tools for financial speculation in the congestion market. PG&E shall use CRRs in accordance with Commission expectation that CRRs be used for hedging purposes only. In AL 3106-E, PG&E claims that it will use CRRs as hedges for its actual expected energy transmission costs and not as a tool for speculation. Therefore, the Commission directs that PG&E obtain CRRs that are valuable as hedges against congestion costs PG&E may face, subject to risk assessment regarding the specific source/sink combinations.¹² PG&E should not obtain CRRs that are unrelated to PG&E's sources of power.

In comments on Resolution 4134-E, Southern California Edison (SCE) raised the issue of whether limits on CRR acquisition limited CRR nominations to the levels

¹¹ The Commission has argued and continues to believe that CRRs should be used for hedging, not for financial speculation. E.g. *Reply Comments of the California Public Utilities Commission on the California ISO's MRTU Tariff*, filed on May 16, 2006 in FERC Docket No, ER06-615-000 at pp. 18-20.

¹² Public Utilities Code, section 454.5 requires that each LSE define in its AB 57 Procurement Plan the "electricity-related products" it intends to procure (§ 454.5, subd. (b)(1)); describe the duration, timing and range of quantities of each product to be procured (§ 454.5, subd. (b)(4); analyze price risk arising from its particular portfolio of electricity-related products (§ 454.5, subd. (b)(1)); and describe its "risk management policy, strategy, and practices" (§ 454.5, subd. (b)(9)(C)(10)). The Commission directs PG&E to prepare this same type of information for Energy Division and the Procurement Review Group for the less formal review established here.

of expected grid use, or if SCE would be permitted to nominate above their expected grid use if it believe the CAISO will curtail its nomination along a constrained path. PG&E filed reply comments to Resolution 4134-E requesting that the Commission make the same changes for Resolution 4135-E for PG&E. In response, we would like to reiterate that the goal of the utilities should be to acquire CRRs sufficient for their expected grid use. Therefore the Commission is not setting any specific guidelines as to how the utilities should come up with their CRR nominations. We leave it up to the utilities to devise their own methodologies to be able to acquire what they expect to need. CRRs are not to be used as tools for financial speculation in the congestion market

SCE's comments also recognized the potential that a utility may find itself in a situation where it has more CRRs than it needs. In this case, SCE suggests that it attempt to sell the CRR by taking reasonable actions. In reply comments, PG&E agrees with this statement.

The Commission agrees that in such a situation PG&E should promptly take reasonable actions to attempt to sell those CRRs so the ratepayers are not saddled with unnecessary costs and other market participants can make use of available CRRs. These reasonable actions may include bidding into the CRR auction to be paid to make this CRR available to other bidders or to offer the CRR for trades in the secondary market.

The volume of CRRs procured by PG&E will be limited by CAISO rules and PG&E's expected grid use.

Currently, PG&E has no maximum (or minimum) volume limits for procurement of transmission service or FTRs. PG&E argues that overall or total CRR volume limits are unnecessary for the CAISO's allocation process. The CAISO tariff establishes volume limits for PG&E as an LSE based on PG&E's Adjusted Load Metric (ALM, the measurement the CAISO will use to compare LSE loads). Specifically, PG&E cannot obtain CRRs exceeding 75% of its ALM in the annual CRR allocation process, and more than 100% cumulatively of its adjusted load metric through the monthly CRR allocation process.

The CAISO will permit PG&E to exceed these limits through CRR auctions. The Commission does not believe it is necessary to establish specific volume limits at an exact percentage of PG&E's load. Rather, the Commission believes that the

directive to hedge expected grid use is a sufficient limit on PG&E's procurement of CRRs. When specific CRR selection is limited to hedging expected grid use for energy, PG&E will consequently be limited to hedging no more than its total expected grid use.

The Commission rejects the limitations proposed by WPTF. The Commission believes that the Commission's directive for the utilities to hedge actual use will remedy the concerns raised by WPTF.

WPTF argues that PG&E is an unconstrained bidder because the auction revenues will flow back to PG&E. The Commission rejects this argument because WPTF makes incorrect assumptions about the CRR auction. Revenue raised in the auction of a particular CRR does not flow back to any particular bidder. Rather, revenue raised from auction bids flows to the CRR Balancing Account, which is used to pay CRR holders if congestion charges are insufficient to fund CRRs. If there is excess revenue remaining in the balancing account, it is distributed to LSEs by load-share, which would result in PG&E receiving some, though not all, of any such revenue. In addition, WPTF's analysis fails to consider PG&E's opportunity cost. If PG&E did not purchase a CRR, PG&E may ultimately receive a share of revenue raised by the auction of that CRR. As a result, the only difference between PG&E and any other bidder is that, if PG&E impacts the clearing price, then PG&E will receive a share of the difference between the clearing price and what the clearing price would have been if PG&E had not bid. The Commission believes this potential entitlement to auction revenue is insufficient to incent PG&E to act as an unconstrained bidder. WPTF also argues that PG&E can act as an unconstrained bidder because shareholders do not face any potential loss arising from CRR costs. The Commission also considers this argument insufficient to warrant WPTF's proposed suggestions. WPTF's claim that ratepayers, not shareholders, will pay for CRRs ignores the fact that ratepayers, not shareholders, will also see the benefits of CRRs. While it is possible that some actions with CRRs might allow PG&E to gain an advantage in an area that benefits shareholders, WPTF has failed to show that this is a relatively likely risk given the overall cash flow structure of the CAISO's CRR Balancing Account and the flow of CRR gains and losses to ratepayers.

The reasonableness reviews suggested by WPTF are not permitted under AB 57 rules. AB 57 enables the IOUs to establish upfront and achievable energy procurement standards. If an IOU follows its procurement plan then it is

permitted to pass all resulting procurement costs to ratepayers. Under this rule, the Commission may disallow costs if and only if PG&E deviates from its approved procurement plan. WPTF does not explain how the Commission could legally deviate from this method. As a result, the Commission does not grant WPTF's request for after the fact reasonableness review. Rather, in accordance with established procedures, the Commission will review PG&E's procurement activities for compliance with its procurement plan.

The Commission does not find WPTF's protest to be sufficient to justify any overall position limit. The Commission does not wish to establish an overall position limit that may at some date prevent PG&E from obtaining hedges for its use of the grid. Rather, the Commission believes the requirement that PG&E procure only CRRs that hedge expected grid use will provide a sufficient limitation on PG&E's CRR acquisition activities. As a result of this requirement, PG&E will have a de-facto volume limit for CRRs based on its expected grid use.

PG&E will record the revenues and costs related to congestion charges and CRRs into its Energy Resource Recovery Account (ERRA) balancing account.

PG&E claims CRR charges and payments will be debited from or credited to its corresponding ERRA balancing account. PG&E is currently authorized to record the congestion costs associated with the purchasing of FTRs in its corresponding ERRA balancing account. PG&E claims that in dealing with the allocated CRRs, the allocation of costs and revenues does not differ from the accounting for costs and revenues from the previous Firm Transmission Right system. However, the attributes of CRRs and the process for making congestion rights available to the market differs from the FTR process. CRRs are financial instruments and do not convey any right to scheduling priority. Therefore, the Commission determines that it is necessary to track the revenues and costs related to congestion charges in a separate ERRA balancing account, in a line-item distinct from FTRs. The Commission directs PG&E, if it has not done so already, to modify its ERRA Preliminary Statement, Part ZZ, to include the recording of congestion revenues and costs related to CRRs separately from FTRs.

PG&E is directed to record a credit or debit entry equal to any expense associated with its CRR procurement transactions. PG&E is directed to file updated tariff sheets by advice letter within 30 days of the date of this Resolution. The updated tariff sheets shall modify PG&E's Preliminary Statement, Part ZZ, of ERRA and

incorporate a new tracking account to record revenues and costs associated with CRR transactions only.

CRR entries that are recorded into the ERRA balancing account are subject to review at the Commission.

All entries recorded into PG&E's ERRA balancing account, including CRR entries, are examined by the Commission in its review of PG&E's Quarterly Compliance Reports and annually in a review of the ERRA balancing account. Using the Quarterly Compliance Report and the ERRA review process, the Commission will determine whether PG&E has complied with the upfront and achievable standards contained in its Commission-approved AB 57 Procurement Plan.

PG&E's AB 57 Procurement Plan and pending 2006 Procurement Plan shall be amended to reflect the additional procurement authority granted by this Resolution.

The Commission authorizes amendments to PG&E's AB 57 Procurement Plan and pending 2006 Procurement Plan to allow PG&E to procure CRRs from the CAISO.

We note that PG&E's AB 57 Procurement Plan is filed with the Commission bi-annually. As part of the current Long Term Procurement Plan (LTPP) proceeding (R.06-02-013), the potential impacts of MRTU upon Investor Owned Utility procurement are being examined. It is anticipated that subsequent LTPP proceedings will examine in more detail potential impacts of MRTU, including CRRs, on Investor Owned Utility procurement activities.

PG&E shall consult with Energy Division and the PRG regarding its CRR nominations prior to submitting those nominations, and report the transactions in its Quarterly Compliance Report (QCR).

The Commission directs that PG&E shall consult with the PRG regarding its proposed CRR nominations, of which the Commission's Energy Division is an *ex officio* member. PG&E shall also report all CRR transactions in its Quarterly Compliance Report (QCR). The Commission expects that the QCRs will contain, at a minimum, for each CRR, source, sink, MW quantity, term, expected value, past performance (if applicable), bid price (for CRR auctions or secondary market

transactions), and a description the underlying energy supply arrangement that the CRR will hedge.

Prior to executing transactions longer than one calendar quarter in delivery duration, PG&E is required by its Procurement Plan to consult with its PRG. As a result of this requirement, PG&E has reviewed with its PRG its proposed bidding strategy for each annual FTR auction in advance of the auction, including discussing the maximum total volume of FTRs that PG&E might acquire.

The Commission directs PG&E to continue to consult with its PRG prior to transacting for any CRR having a term greater than one calendar quarter, which in practice applies to LTCRRs. In addition, the Commission directs PG&E to consult with the PRG prior to making CRR nominations for any of the tiers in the annual allocation process, even though CRRs awarded in the annual CAISO allocation/auction process only have a term of one calendar quarter. The Commission also directs PG&E to consult with its PRG prior to participating in the annual CRR auction.

The Commission directs PG&E to provide the PRG participants, prior to the PRG meeting, a list of proposed annual and long term CRR nominations for allocation and auction, showing source, sink, MW quantity, term, expected value, past performance (if applicable), bid price, and a description the underlying arrangement that the CRR will hedge.

The Commission does not direct PG&E to consult with the PRG prior to each monthly CRR allocation/auction process. Rather, the Commission directs PG&E to review its CRR position with the PRG in its periodic position update discussions, including the review of quarterly compliance reports. In addition, the Commission directs PG&E to provide the PRG participants, within three business days of each monthly CRR allocation or auction tier, a listing of proposed monthly CRR nominations for allocation and auction, showing source, sink, MW quantity, term, expected value, past performance (if applicable), bid price and a description the underlying arrangement that the CRR will hedge.

The Commission directs PG&E provide the PRG with the following information regarding secondary market transactions involving quarterly and monthly CRRs: source, sink, MW quantity, term, expected value, past performance (if

applicable), bid price, and a description the underlying arrangement that the CRR will hedge. This information may be submitted in one of two ways:

1. PG&E may report secondary trades in a weekly report, submitted within two business days of the end of the reporting period (for example, a report from Thursday through Wednesday would need to be submitted by the following Friday), or
2. PG&E may report secondary trades within two business days of the trade date, reporting each trade separately.

In addition, if a PRG participant requests a discussion of a secondary transaction regarding a CRR, PG&E should discuss that transaction at the next appropriate PRG meeting.

Presently, the CAISO does not permit LSEs to sell LTCRRs for the duration of the CRR. Rather, they may only sell the current annual segment of the LTCRR. As a result, the Commission directs PG&E to report any secondary market transactions for a one year segment of a LTCRR in the same manner as they would report a secondary market transaction for an annual CRR. If CAISO establishes new procedures that enable the selling of segments of LTCRRs greater than one year in length, the Commission directs PG&E to file a new advice letter to resolve the requirements for such transactions.

Supplying information to the PRG is a requirement for PG&E to procure CRRs, but is not sufficient to establish that PG&E has complied with the directive to hedge and not speculate in the CRR market. The reporting requirements are a method of oversight, and compliance with oversight does not necessarily indicate compliance with upfront and achievable standards.

PG&E should establish valuation estimates for use in CRR selection.

Prior to participating in the annual and monthly CRR allocation/auction process, PG&E should identify candidate CRRs for consideration based on the location and magnitude of its resources and loads (existing and potential), and may also identify additional candidate CRRs that are potentially positively correlated in value with other CRRs of interest, so long as the correlation is a reflection of the

physical realities of the grid. PG&E will limit candidate CRRs to those CRRs with a source at which PG&E reasonably expects to procure power.

For the overall portfolio and for each of the candidate CRRs, PG&E should estimate the expected value for the relevant time period by using various methods, such as:

- 1) Running a model of the transmission network simulating the dispatch of generation to serve load and forecasting Marginal Congestion Costs (“MCCs”) or Locational Marginal Prices (“LMPs”) at CAISO nodes and hubs;
- 2) Obtaining a forecast of MCCs or LMPs from one or more expert consulting firms;
- 3) Obtaining market price quotations (where available) at trading hubs;
- 4) Analyzing historical MCC and LMP data for trends, relationships, and correlations and using this data and observed trends and relationships to forecast future MCCs or LMPs; or,
- 5) Averaging (or weight-averaging) forecasts of MCCs and LMPs that were developed using two or more of the methodologies described above.

These methods for calculating expected value should not be considered exhaustive, nor will all of these methods necessarily be used, and PG&E should make further enhancements over time to its ability to estimate value. The methodologies used for valuation will be reviewed with the PRG.

Similarly, prior to participating in the annual and monthly CRR allocation/auction process, or prior to converting awarded CRRs to LT-CRRs, PG&E should evaluate the risks of obtaining CRRs or not obtaining CRRs for the candidate CRR paths. Risk can be created by a number of factors, including: a large congestion cost differential between a PG&E source and sink;¹³ variability in the dollar amounts paid or received by holding a CRR; potential generation or transmission outages; higher or lower loads than normal; and future changes to the transmission grid, including the interconnection of new generation. One of the risks of not having a CRR is that PG&E may pay a high congestion cost to

¹³ Such congestion can vary in magnitude considerably over time, can occur in both directions at different times, and is unbounded in MRTU. Congestion is created when the energy delivered to a node exceeds the capacity of the transmission network to flow energy from that point.

flow energy from its source to its sink. In contrast, one of the risks of having a CRR is that PG&E may have to pay a high congestion cost if congestion counter-flows to the direction of that CRR.¹⁴ For a particular path, PG&E's risk is also impacted by the character of its resource(s) using that path. That is, risk is potentially much higher if the resource is must-take and non-dispatchable, meaning that PG&E must take delivery of energy regardless of the congestion cost from the source to the sink. Another risk PG&E may face is the impact of having to post high amounts of collateral to CAISO to secure its CRR holdings in a stress case scenario.

PG&E may employ several different metrics to quantify its risk assessment, including, but not limited, to:

- 1) Simulating random variables, such as load, hydro, gas prices, and outages, creating a distribution of congestion costs or CRR values for a period of time, and calculating metrics based on that distribution;
- 2) Creating a marginal cost of congestion duration curve indicating the number of hours (or percent of the time) that congestion exceeds a particular value and calculating metrics based on that duration curve;
- 3) Creating a distribution of the hourly dollar amounts received or paid for holding a CRR and calculating metrics based on that distribution;
- 4) Running various scenarios (or stress cases), such as for high or low loads, high or low gas prices, high or low generation/transmission outages, determining the expected congestion cost or CRR value for these scenarios over a period of time, and calculating the change in cost/value compared to the base case scenario;
- 5) Forecasting how congestion costs paid might vary depending on whether the resource at the CRR source location is must-take or dispatchable;
- 6) Estimating the risk mitigation achieved by the addition of candidate CRRs to the overall portfolio; or,
- 7) Forecasting the potential amounts paid for holding a CRR during periods of counter-flow.

¹⁴ This payment may be offset by PG&E receiving a payment for flowing energy from its source to its sink counter-flow to the direction of congestion. However, if PG&E's source is not available (for example, due to an outage), PG&E would not receive a payment for counter-flowing energy.

PG&E will review its CRR valuation and risk analysis with its PRG (prospectively for the annual CRR auction/allocation process). Because MRTU is new to California and there is no history on CRRs, MCCs, or LMPs, and because models, assumptions, methodologies, and technologies continue to improve over time, the Commission does not mandate that PG&E use any particular method or model to value or assess the risk of congestion.

PG&E is authorized to participate in the CRR Auction.

Because the CRR auction is competitive and likely will involve a number of market participants, the Commission anticipates that the resulting auction prices may resemble an accurate assessment of the value of CRRs obtained. Bids in the CRR auction may include negative bids, which require the CAISO to pay the LSE for holding the CRR. The Commission permits PG&E to submit such bids, if and only if those bids are made in accordance with aforementioned standards. Accordingly, the Commission approves PG&E's participation in the CRR auction process and establishes that all PG&E auction awards that are in compliance with upfront standards therefore are *per se* reasonable. The Commission has previously approved PG&E's participation in existing CAISO markets, including the FTR market, and has established that PG&E's transactions in these markets affected in compliance with upfront standards are *per se* reasonable.

PG&E is authorized to transact for CRRs in the secondary market.

The CRR product is similar to a locational spread, which PG&E is currently authorized to transact under its Procurement Plan. In a locational spread, PG&E sells energy at one point of the grid and buys energy at another point of the grid. The financial result is the same as if PG&E were to pay to flow energy from the point of the energy sale to the point of the energy purchase.

Because of the similarity between CRRs and energy transactions, such as locational spreads, PG&E may use the same transaction processes that its Procurement Plan authorizes PG&E to use for energy transactions – *e.g.*, transact using brokers or exchanges, bilaterally subject to providing a “strong showing” in the Quarterly Procurement Plan Compliance filing, through an RFO (if feasible), etc. Among valid, competing offers for the same CRR, PG&E will select based on the better price (all else being equal). Particular locational spreads may also be purchased if related CRRs are not available.

The Commission authorizes PG&E to pursue both sales and purchases in the CRR secondary market. The Commission directs PG&E to provide consult and inform PRG participants, as directed in the previous section regarding PRG consultation.

COMMENTS

Public Utilities Code section 311, subdivision (g) (1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. It will be placed on the Commission's agenda on December 6, 2007, 30 days from the date it was mailed.

This draft resolution was mailed to interested parties for review on November 5, 2007 and comments are due on November 26, 2007. Reply comments will be due 7 days later, on December 3, 2007.

No parties filed comments in response to Resolution 4135-E.

FINDINGS

1. CAISO's MRTU program will establish LMP pricing, which results in the potential that LSEs such as PG&E may face volatile transmission congestion charges.
2. MRTU establishes CRRs as hedges against congestion costs, including LTCRRs with a term of up to ten years.
3. CRR allocations are obtained free of charge, but holding CRRs may result in substantial costs on an LSE and its ratepayers if the price at the source exceeds the price at the sink.
4. PG&E's CRR allocation nominations are limited in amount and location by CAISO rules.
5. Allowing PG&E to hedge a significant portion of its procurement portfolio will help to minimize congestion charges that would otherwise be passed on to ratepayers.
6. PG&E is presently permitted to purchase CRRs in the CRR auction.
7. Unlike FTRs, CRRs from the CRR auction may have a purchase price that may be negative, and like all allocated CRRs, may impose costs on the CRR holder.

8. PG&E is currently authorized by the Commission to record the congestion costs associated with FTRs in its ERRA balancing account, including payments to purchase FTRs in the FTR auction.
9. The attributes of CRRs and the process for making congestion rights available to the market differs from the previous FTR system that CRRs will replace.
10. It is necessary to track the revenues and costs related to CRRs separately from the congestion costs associated with FTRs and to update PG&E's Preliminary Statement, Part ZZ, of ERRA.
11. All entries recorded into PG&E's ERRA balancing account, including CRR entries, must be reviewed by the Commission for Procurement Plan compliance on an annual basis.
12. It is reasonable for PG&E to record revenues and costs related to congestion charges and CRRs into its ERRA balancing account.
13. It is necessary for PG&E to consult with the Procurement Review Group on annual CRR nominations prior to such nominations and to include the transactions in its Quarterly Compliance Report.
14. PG&E is not required to hold PRG meetings to discuss monthly CRR allocations and auctions, but PG&E is required to provide PRG participants with information regarding these CRR transactions.
15. Advice Letter 3106-E was protested and it was suspended on September 28, 2007.
16. It is expected that the formal processes for Commission approval of CRR acquisition will be further addressed in the LTPP proceeding.

THEREFORE IT IS ORDERED THAT:

1. PG&E is granted authority to procure CRRs in accordance with upfront and achievable standards.
2. PG&E's AB 57 Procurement Plan and pending 2006 Procurement Plan shall be amended by AL 3106-E subject to the implementation guidelines established in this resolution.
3. PG&E shall use CRR nominations to hedge costs of transmission of power and it shall not use CRRs as a method of financial speculation in congestion markets.
4. PG&E shall consult with the PRG prior to annual nominations for allocations and auctions, and shall include the transactions in its Quarterly Compliance Report. PG&E need not consult with the PRG prior to monthly CRR allocations and auctions. However, for any CRR transaction, PG&E must

provide the PRG participants with information regarding the CRR, including but not limited to source, sink, megawatt quantity, term, expected value, past performance (if applicable), price and a description the underlying arrangement that the CRR will hedge (or, in the case of a sale of a CRR, no longer hedge).

5. PG&E shall record the revenues and costs related to CRR transactions into its ERRRA balancing account separately from FTRs, modify its Preliminary Statement Part ZZ of ERRRA to include the recording of CRR entries separately, and if PG&E has not yet done do, file updated tariff sheets by advice letter filing within 30 days of the date of this Resolution.
6. All Entries recorded into PG&E's ERRRA balancing account, including entries for CRR transactions, will be reviewed by the Commission. During the ERRRA review, the Commission will determine if PG&E has complied with its approved Procurement Plan.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on December 6, 2007; the following Commissioners voting favorably thereon:

Paul Clanon
Executive Director