

Evaluation
Of
Credit & Collateral Requirements
For the
California Public Utilities Commission

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**California Public Utility Commission
Study of Credit and Collateral Requirements**

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I. BACKGROUND AND OVERALL CONCLUSION

A. BACKGROUND

On May 18, 2006, the California Public Utilities Commission (CPUC or Commission) issued its Revised Request for Proposals (RFP) 05-PS-5572. The RFP sought a Consultant to Assist the Energy Division to Evaluate the Reasonableness of Current/Proposed Electric Utility RFO Evaluation Procedures; and Credit and Collateral Requirements in Generation Procurement. On June 16, 2006, Vantage Consulting, Inc. (Vantage) submitted its winning proposal to perform the requested analysis. After an initial round of interviews with the utilities, the Work Plan was modified to recognize and avoid duplication with recent research performed for the California Energy Commission on credit and collateral requirements.

The CPUC's concern regarding credit and collateral requirements was expressed in Decision D.04-12-048 which adopted long-term procurement plans for the three investor-owned utilities of Pacific Gas & Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE). In the Decision, the Commission noted the comments of one energy supplier which cautioned that if credit requirements are too onerous then "over collateralized, project sponsors will be placed at a competitive disadvantage ... [and that these] excessive credit requirements will be passed on to ratepayers through higher prices." (Pages 173-174). More generally, the CPUC in 2001 witnessed a collapse of the energy market in California. That collapse resulted in many of the market participants not being able to fulfill their commitments, thus increasing the financial risk associated with dealing in the California energy market. Accordingly, the CPUC's concern regarding credit and collateral requirements was raised in the aftermath of the events that occurred in 2001.

After California's unsuccessful initial foray into competitive energy markets, the utilities and Commission have been forced back into the electricity procurement business. Assembly Bill (AB) 57 provided the impetus for this re-entry. In order to implement AB 57 the CPUC required the submittal of energy procurement plans from the utilities for its review and approval. The CPUC also established policies and cost recovery mechanisms for the implementation of the energy procurement plans. The CPUC implemented a long-term resource planning process to ensure that the utilities planned to maintain adequate reserves and procured energy to meet its needs in a cost-effective manner. In accordance with SB 1078 the CPUC implemented a Renewable Portfolio Standard (RPS) program. The RPS program requires that a utility procure renewable energy and capacity so that 20 percent of its retail sales are supplied by renewable resources by the year 2017. The legislature, through the passage of SB 107, has accelerated this deadline to 2010. Failure to meet the target could result in significant penalties which would be levied by the CPUC. The combination of the urgency of meeting the 2010 deadline, the scarcity of available renewable resource projects, the attenuated financial condition of many of the suppliers of the renewables, and the potential for the imposition of significant penalties has contributed to the heightened interest in credit and collateral issues by the CPUC.

To appreciate the CPUC's concern for credit and collateral requirements, it is important to understand the need for the requirements and the associated risks from the perspectives of each of the major stakeholders – utility, supplier, and ratepayer.

UTILITY PERSPECTIVE

For the utility, credit and collateral requirements are needed to provide assurance that the supplier will meet its obligations to provide energy as specified in the contract. The utility needs to know that it is dealing with a credit worthy entity that can meet its financial obligations, either on its own or through a third party. In addition, a utility needs to protect itself and its ratepayers in the event of non-performance on the part of the supplier. In this event, the utility, which still has an obligation to serve its customers, will be required to replace the energy that the supplier was going to provide. Depending on the price of energy at the time of non-performance, this exposure can be significant. Obviously, the higher the price in the market relative to the contract price the greater the exposure for the utility. The utility attempts to protect itself from these risks in several ways. The utility solicits typical financial information from the supplier prior to entering a contract to better understand the financial condition of the supplier. In the case of contracts that require the construction of facilities, the utility typically requires deposits or other contractual commitments during the developmental phase of the project to discourage the potential abandonment of the project or to enable the replacement of energy that would have been provided by the project. During the operation of the facility the utility imposes collateral requirements or performance assurance to mitigate the risk of non-performance by the supplier and thereby forcing the utility to meet its energy requirements at then current market prices. Finally, the utility's contracts to purchase energy are viewed as a liability in the financial community and can jeopardize the utility's credit and ability to finance its own capital requirements.

SUPPLIER PERSPECTIVE

From the perspective of the supplier, the credit and collateral requirements become a cost of doing business. The supplier will attempt to recover this cost by increasing the cost of the energy it sells the utility. Thus, the more stringent the credit and collateral requirements, the higher the prices for energy are likely to be. Through the ratemaking process, the higher energy prices are passed on to the ratepayers. In addition, the supplier may need to protect itself in the event of non-performance on the part of the utility. In this instance, the utility is required to post collateral. However, since the utilities are regulated entities with a reasonably assured return and generally have relatively high financial ratings, there are limited instances when the utility must meet posting requirements.

RATEPAYERS PERSPECTIVE

For ratepayers there are two primary concerns with regard to credit and collateral requirements. First, requirements that are too onerous can needlessly add to the price of energy which eventually is paid by ratepayers. Second, if the credit and collateral requirements are too lax and the supplier does not perform, then the ratepayer will ultimately be responsible for paying the price for the replacement energy which, during certain times, could be excessive.

Clearly, a delicate balancing act is required. The credit and collateral requirements cannot be overly onerous or stringent, as this will lead to higher prices than necessary. On the other hand, the requirements cannot be so relaxed that there is inadequate ratepayer protection from potentially high market prices in the event of non-performance on the part of the supplier.

VANTAGE STUDY APPROACH

Vantage's approach was to examine the credit and collateral issue from several perspectives.

- Vantage consultants compared the credit and collateral policies of the California Investor Owned Utilities (IOUs).
- Vantage consultants reviewed the credit policies of the utilities and their respective Request For Offers (RFOs) to make certain the two were consistent.
- Vantage consultants accomplished this through interviews with representatives of each California IOU.
- Vantage consultants requested and reviewed extensive credit and collateral information, RFOs, and bidding results.
- Vantage consultants interviewed bidders and suppliers of energy to the procurement process. (See Chapters II and III).
- Vantage consultants also compared the credit and collateral requirements of the California IOUs with those of utilities in other states that have pursued industry restructuring. (See Chapter IV).
- Vantage consultants considered other risk mitigation techniques that could conceivably reduce credit and collateral requirements. (See Chapter V).
- Finally, Vantage consultants considered the standardization of RFOs and contracts. (See Chapter VI).

OVERALL CONCLUSION

Based on our review and analysis, Vantage provides the following conclusions regarding the credit and collateral requirements in California.

Based on our review and analysis the credit and collateral requirements used by the IOUs in California are, in general, reasonable.

The credit and collateral requirements utilized in several other states were reviewed and it was found that the requirements in California are consistent with the requirements used in other states. Further, the responses to the various RFOs of the IOUs have been robust. There have been numerous bidders responding to the RFOs and the megawatts bid have significantly exceeded the megawatts requested. Clearly, the requirements are not so onerous as to dampen the competitive bidding process.

The California IOUs have eased their credit and collateral requirements, to some degree, for the renewable RFOs in order to ensure meeting the state mandated requirements.

In an effort to meet the state-mandated requirement to serve 20 percent of their retail sales with energy provided by renewable resources, the IOUs have worked with suppliers in a manner such that credit and collateral requirements for renewable suppliers are more flexible. The potential to be penalized and fined for not meeting the state goal has motivated the utilities to more aggressively pursue power generated with renewable resources.

There is no immediate need to require the IOUs to further standardize their renewable RFOs and the credit and collateral requirements.

As will be detailed in the report, the California IOUs' credit and collateral requirements have not only been eased for the renewable RFOs but they have also converged. The credit and collateral requirements of the IOUs have evolved toward very similar requirements. Although one could argue that there would be some advantages for a renewable supplier to be confronted with a standardized set of credit and collateral requirements for each of the IOUs, we believe the costs to achieve these advantages outweigh the potential advantages.

The CPUC should carefully monitor the credit and collateral requirements for renewable RFOs to make certain that the requirements are not eased to the point where the risk balancing between the utility, bidder, and ratepayer shifts from the utility and bidder to the ratepayer.

Because the IOUs have the increased incentive to pursue renewable resources in order to avoid potential fines, the CPUC needs to remain vigilant in its monitoring of the credit and collateral requirements. These requirements are in the early stages of their evolution since the renewable RFOs are only in their third year. The evolution of these requirements to date has resulted in reasonable credit and collateral requirements. However, as the 2010 deadline approaches and the potential for fines increase, the utilities may be tempted to ease the requirements too much thereby exposing the ratepayers to unreasonable risks. The CPUC will need to carefully monitor these requirements to protect the customers from absorbing too much risk.

II. RFOS, BID EVALUATION AND NEGOTIATION

A. REQUEST FOR OFFERS (RFOS)

To start our analysis we focused on recent RFOS of the three California IOUs. The analysis included Renewable and All-Source RFOS. Some of the other RFOS were reviewed for comparison to the Renewable and All-Source. The analysis reviewed several years of RFOS to better understand how the credit and collateral requirements have evolved over the last few years. The following table lists the Renewable and All-Source RFOS that were part of the primary analysis.¹

UTILITY	RFOS
Pacific Gas & Electric	2003 – 2005 All-Source 2004 – 2006 Renewable
San Diego Gas & Electric	2006 All-Source 2004 – 2006 Renewable
Southern California Edison	2004 – 2006 All-Source 2003 and 2005 – 2006 Renewable

Credit and collateral requirements consist of four components – financial information; bid deposit; development security; and performance assurance. The financial information is provided at the time the bid is submitted and typically consists of standard financial information including the structure of the project ownership. In some cases, more detailed budget information for the project is also requested. The second category is the bid deposit. The bid deposit is either a fixed amount or a \$/kW and is typically due when the bid is submitted, although sometimes it is not due until the project makes the short-list. The development security occurs when a contract involves the construction of a facility and the security deposit is intended to provide assurance that the developer will proceed as planned with the construction. The performance assurance or operating collateral is required when the facility goes into operation. The purpose of this requirement is two-fold. First, to assure that the operator will perform as proposed. Second, it provides some security in the event the operator does not perform and that the energy must be replaced at then current market prices. In fact, some of the contracts call for a performance assurance amount or operating collateral amount that varies with market energy prices. This variable amount is determined based on a mark-to-market calculation. The mark-to-market amount is the difference between the current market price and the contract price times the amount of future energy to be purchased under the contract. The resulting value, less the collateral the supplier has already provided, determines the total collateral requirement. Generally, the mark-to-market value of the contract is computed weekly for the purpose of making collateral calls.

^{1/} See responses to DRs 104, 112 and 120. Note that most of the utilities' responses are confidential and not available for public disclosure.

For the All-Source RFOs, the credit and collateral requirements have not changed much over the course of the last three years. Each of the investor-owned utilities has maintained its requirements for financial information; bid deposit, development security, and performance assurance. In addition, the credit and collateral requirements are similar to those in other states. The contracts for All-Source bids are based on the EEI standard contract which is also used in most other states. There continues to be a large number of bidders that respond to the All-Source RFOs. The performance assurance for the All-Source RFOs has typically been accomplished through a mark-to-market calculation. The one variation that we noted in our review was that one of the IOUs has established caps for its mark-to-market calculation. During our review, we conducted a conference call with several of the bidders.² At that time, some of the suppliers expressed concern that the credit and collateral requirements in California may be higher than necessary. It was strongly suggested that the suppliers provide Vantage with any information, reports or studies that supported their claims. No information was supplied.

For the Renewable RFOs, there has been an interesting evolution of the credit and collateral requirements. The following three tables illustrate this progression in credit and collateral requirements for each of the utilities.³

^{2/} On October 31, 2006 the Independent Energy Producers Association arranged a conference call between Vantage Consulting and several association members. Members represented on the call included Reliant, NRG, Calpine, Caithness, Ormat and Sempra. Other members listened in on the call. During and at the conclusion of the call, Vantage consultants requested that the members provide any reports, studies, etc. that supported their concerns or would be of research value to Vantage. No information was received from the suppliers.

^{3/} See responses to DRs 104, 112 and 120.

PG&E RENEWABLE RFOs			
	Bid Deposit	Development Security	Performance Assurance
2004	\$5/kW at bid submission	Upon CPUC approval of contract, \$20/kW in cash or letter of credit	For 10-year contract, 6 months revenue. For 15-year contract, 9 months revenue. For 20-year contract, 12 months revenue. <u>OR</u> an amount of collateral determined by PG&E based on credit of owner and guarantor <u>OR</u> mark-to-market calculation
2005	\$3/kW within 5 days of notice on short-list	Upon CPUC approval of contract, \$20/kW in cash or letter of credit	For 10-year contract, 6 months revenue. For 15-year contract, 9 months revenue. For 20-year contract, 12 months revenue. <u>OR</u> an amount of collateral determined by PG&E based on credit of owner and guarantor <u>OR</u> mark-to-market calculation
2006	\$3/kW within 5 days of notice on short-list	Upon CPUC approval of contract, \$20/kW in cash or letter of credit	For 10-year contract, 6 months revenue. For 15-year contract, 9 months revenue. For 20-year contract, 12 months revenue.

SDG&E RENEWABLE RFOs			
	Bid Deposit	Development Security	Performance Assurance
2004	Submittal of credit application	Not specified in RFO	Not specified in RFO
2005	Submittal of credit application	Not specified in RFO	Not specified in RFO
2006	Within 5 days of notice that made short-list, the lesser of (1) \$3/kW; or (2) \$100,000	Two years of MWh times \$5/MWh	Two years of MWh times \$15/MWh

SCE RENEWABLE RFOs			
	Bid Deposit	Development Security	Performance Assurance
2003	The greater of (1) \$25,000; or (2) \$5/kW	When contract is executed, \$20/kW	Collateral threshold based on credit rating of bidder or guarantor plus the mark-to-market calculation
2005	The greater of (1) \$25,000; or (2) \$5/kW	When contract is executed, \$20/kW	The positive amount of the mark-to-market calculation less the collateral threshold based on credit rating of bidder or guarantor
2006	Within 10 days of notice that made the short-list, the greater of (1) \$25,000; or (2) \$3/kW	Either (1) \$20/kW; or (2) \$10/kW if SCE is granted a first-priority, fully perfected security interest or mortgage in the facility	SCE may select one of the following: (1) \$0; (2) 6 months of contract payments; or (3) 12 months of contract payments. The seller's proposal must contain prices for the calculation of the payments.

A careful review of the credit and collateral requirements for each of the utilities indicates that each utility has eased its requirements over the last few years. Bid deposits have been reduced. The development security has been reduced or more flexibility in its determination has been provided. The performance assurance amounts have moved away from reliance on a mark-to-market calculation. Clearly, when energy prices are rising the utilities have accepted more risk. One reason they have accepted the additional risk may be that based on their brief experience with renewables they have discovered that the risk is not as great as originally thought. One could also speculate that the experience to date has helped the utilities realize that although they evaluate the risk associated with each bid to establish credit and collateral requirements, there is also some diversity derived from filling a need with several bidders. This diversity reduces risk somewhat and may provide some comfort to the utilities for lowering their requirements for renewables. Another reason for the acceptance of more risk is that the utilities are working hard to meet the State's objective of providing 20 percent of its retail energy sales through the use of renewable resources while at the same time avoiding the potential fines for not meeting the mandate. As discussed later in the report, one of the unfortunate consequences of the utilities accepting the increased risk associated with meeting California's social objective is that the risk balancing between the utilities, the suppliers and the ratepayers may be shifting more to the ratepayers.

II-F1 The credit and collateral requirements for the renewable RFOs of the three IOUs have become more similar over the last three years.

The tables above illustrate how the credit and collateral requirements for the renewable RFOs of the three IOUs have evolved over the last three years. It appears that the utilities have learned from each other and have developed similar requirements. The response to the RFOs has been robust. There have been numerous bidders responding to the RFOs and

the megawatts bid have significantly exceeded the megawatts requested. The following tables reflect the responses to the various RFOs.⁴

PACIFIC GAS & ELECTRIC	
Request for Offer	Responses
2004 Intermediate Term RFO	332
Summer 2006 Resource Adequacy	145
RFO for Intermediate Term Shapeable Energy and Resource Adequacy – 2006-10	17
RFO for Summer 2006 Resource Adequacy	34
2004 Long Term RFO	54
2004 Renewables RFO	17
2005 Renewables RFO	On-going
2006 Renewables RFO	On-going
RFO to Purchase and Sell Resource Adequacy for 2007	62

SAN DIEGO GAS & ELECTRIC	
Request for Offer	Responses
2003 Grid Reliability RFO	22
2004 Renewables RFO	64
2005 Renewables RFO	22
2005 Distributed Resources RFO	6
RFB for Resource Adequacy	3
2007-2009 All Source RFO	24
2006 Renewables RFO	24

SOUTHERN CALIFORNIA EDISON	
Request for Offer	Responses
2003 Renewable RFO	53
April 2004 All-Source RFO	115
October 2004 All-Source RFO	230
2005 Renewable RFO	On-going
5 Year RFO July 2005	197
2006 Renewables RFO	On-going
2006 All Source RFO	On-going

The utilities have received a robust response to their various RFOs.⁵ It appears that the credit and collateral requirements are typically not a significant deterrent to the bidders.

^{4/} See responses to DRs 105, 113 and 121.

^{5/} It should be noted that a supplier's bid may consist of several offers. Therefore, the number of bidders will be less than the number of offers.

II-F2 The robust response to the various RFOs issued by the IOUs suggests that credit and collateral requirements have not been a significant deterrent to bidders.

Although one hears occasional complaints and assertions from the suppliers that the credit and collateral requirements are onerous and suppliers are not bidding because of those requirements, the level of the responses received suggests otherwise. Of course, it is impossible to know for certain how many bidders chose to not participate and if they chose to not participate due solely to credit and collateral requirement concerns. But we do know that there have been numerous bidders responding to the RFOs and the megawatts bid have significantly exceeded the megawatts requested.

B. BID EVALUATION

Each IOU uses the credit and collateral requirements differently in its bid evaluation process. PG&E is the most explicit in its RFOs about its evaluation process and how credit and collateral are considered.⁶ Prior to the 2006 Renewable RFO, PG&E's bid evaluation scored 70 percent for market valuation and portfolio fit and 30 percent for non-price factors which included credit, status of project and technical viability. Of the 30 percent for non-price factors, 20 percent applies to credit. Although no weight was mentioned in the RFO, consideration was also given to RPS goals, RFO modifications and transmission adders. In the 2006 Renewable RFO, PG&E continued to use the same criteria but a strict partial ordering method is used instead of the weighted average approach.⁷ This method is preferred by PG&E because it provides a rigorous, unbiased ranking approach which makes minimal *a priori* assumptions about the data. The result of the method is a shortlist that yields the offers that provide the "least cost-best fit" renewable energy for PG&E's customers. In response to our data requests, PG&E indicated that some bidders had been eliminated from the short-list due to credit and collateral requirements.⁸ However, these instances arose when the bidder failed to provide the bid deposit. In our view, PG&E's elimination of these bidders was justified.

SDG&E's RFOs are the least revealing of how credit and collateral are used in the bid evaluation process. SDG&E requires the bidder to complete a credit application form that is submitted with the bid. The RFO states that "SDG&E has the unilateral right to evaluate and determine the credit-worthiness of the Respondent relative to this RFO."⁹ However, SDG&E has indicated, in response to our data requests, that no bidder has been rejected nor has any bidder withdrawn its bid due to credit and collateral requirements.¹⁰ So despite the

^{6/} See response to DR 112.

^{7/} PG&E September 29, 2006 filing in Rulemaking 06-05-027.

^{8/} See response to DRs 114 and 127.

^{9/} See response to DR 112.

^{10/} See confidential responses to DRs 106 and 126.

vague language in the RFO, there continues to be a good response to the SDG&E RFOs. It is our conclusion that a significant group of bidders is comfortable with SDG&E's approach to credit and collateral requirements. However, if SDG&E were more forthcoming with bidders about credit and collateral requirements, it may expand the pool of potential bidders willing to participate in the RFOs. The increased competition could lead to lower bid prices.

According to SCE's RFOs, its bid evaluation process relies on a "least-cost best-fit" analysis that considers both quantitative and qualitative attributes.¹¹ Credit and collateral requirements are listed as a qualitative or non-quantified attribute. In the evaluation process, the qualitative attributes are not considered until the quantitative attributes are considered. As a result, credit and collateral requirements are not part of the evaluation process until right before the short-list is developed. In fact, in response to our data requests, SCE indicated that some bids were eliminated from consideration because of credit and collateral requirements. In these instances the bidder elected to pull their offers because of credit and collateral deficiencies.¹² Thus, SCE chose to not enter into contract negotiations with these companies. Our review of these instances and the supporting documentation suggests that SCE's decision to not negotiate with these bidders was justified.

II-F3 The utilities have used the credit and collateral requirements judiciously when evaluating bids.

The utilities have developed reasonable credit and collateral requirements and have applied them equitably during their bid evaluation process. The requirements have not been a barrier to bidding. In the rare instances when a bid was rejected due to credit and collateral concerns, the rejection appeared to be merited.

C. CONTRACT NEGOTIATION

Each of the IOUs will negotiate contract terms and conditions with bidders that have made the short-list. Credit and collateral requirements are part of the contract negotiation. As a result, the credit and collateral requirements in the contract usually do not mirror the requirements in the RFOs. In interviews with both the utilities and the bidders,^{13,14} we were informed that the resulting credit and collateral requirements were almost always less

^{11/} See response to DR 120.

^{12/} See responses to DRs 122, 128 and 129.

^{13/} Interviews with PG&E were conducted on August 21, 2006 and November 16, 2006; with SCE on August 23, 2006 and November 15, 2006; with SDG&E on August 22, 2006 and November 21, 2006. The suppliers were interviewed via conference call.

^{14/} During the October 31, 2006 conference call with the suppliers, it was determined that it would be inappropriate to discuss any specific negotiations due to confidentiality concerns. However, the suppliers all agreed that each of the utilities was receptive to negotiated credit and collateral provisions.

stringent than the requirements stated in the RFOs. However, the resulting credit and collateral requirements were consistent with the established credit policies of the utility. It should be noted though that because of the increased demand for viable renewable projects due to the RPS program, it appears that the utilities have increased incentive to loosen the credit and collateral requirements in the negotiations for renewable resources.

III. COMPARISON TO OTHER STATE CREDIT AND COLLATERAL REQUIREMENTS

A. HISTORIC PERSPECTIVE OF CREDIT AND COLLATERAL

As the electric industry has come to learn that competitive forces, while an effective stimulant for efficient allocation of resources, also exposes market participants to a range of uncertainties and risks. This is especially true in those wholesale markets that have been restructured. Conceptually, and by design, stakeholders within restructured markets have attempted to shift risk exposure from the end user, namely the consumer, to those best capable of managing and/or assuming the cost of these risks. Such risks come in several forms and include:

- Market risk, (e.g. price uncertainty and lack of discovery);
- Commodity risk, (e.g., transmission congestion and resource adequacy);
- Model risk, (e.g., inaccurate or poorly designed analytical models); and
- Human error, (e.g., poor judgment or mismanaged projects).

Market risk has generally dominated the risk manager's attention as its focus is on price uncertainty, price discovery and market liquidity. These are institutional issues addressed by traders and risk managers as they establish their risk management policies and risk tolerance guidelines. While counterparty risk will influence market prices and liquidity if a default were to occur, the ability to discover prices and clear an open position, especially if the counterparty is large and can influence the dynamics of the marketplace, is a potential driver to market risk. However, typical market risk mitigation strategies are directed at the design of the procurement portfolio that includes a mix of physical and financial (hedging) instruments.

Commodity risk, especially for the electric industry which has few, if any, means of storing electricity, addresses more physical limitations most notably transmission congestion and unplanned outages. Again, while a counterparty default could influence commodity risk, e.g., failure to deliver supplies from a local source could impact transmission congestion, the focus of the risk manager in addressing commodity risk tends to be on transmission congestion management/hedging against swings in location derived clearing prices. Such risk management instruments might include contracts for differences and transmission congestion contracts.

Model risk is a risk category endemic to this relatively immature commodity market. In summary, the quantitative models that have been developed to derive and compute the value of financially based hedging strategies are rudimentary and fraught with inaccuracies simply because the industry's experience base has been limited. As to counterparty risk, model risk does play a role given the limited tools available to measure and monitor a counterparty's probability of default. For example, a key counterparty risk metric is the rating score provided by one or more of the three leading rating agencies (Moody's, Standard & Poor, and Fitch). However, additional risk metrics are limited to the review and

assessment of historic and pro forma financial statements. While there is no single set of quantitative risk metrics used to accurately measure a counterparty's probability of default especially for mid-market private firms, such subscriber services as the Moody's KMV RISKCALC™ Model does offer utility risk managers a means to estimate, i.e., predict, a private firm's credit risk and probability of default. For example, Moody's RISKCALC™ Model has broadened a lending institution's ability to evaluate and offer private firms outside of its geographic reach and sphere of direct business intelligence with loans and lines of credit. As a result, counterparty risk mitigation tends to be evolving and based on a growing base of historical experience. As demonstrated by the three utilities in California over the last three years, the rigidity of credit and collateral requirements, especially for smaller scale renewable resource suppliers, has been relaxed as the base of experience has emerged.

Within the definition of human error, Dragana Pilipovic, author of the seminal text used by many energy traders since 1998 found that:

*"Another uncertainty is "counterparty" or "credit" risk. Credit risk is a relatively new area of quantitative analysis, even in the more mature derivative markets. Energy markets appear to have their hands full with the more elementary issues and probably begin to incorporate this problem into the risk/return framework over the next two or three years."*¹⁵ (1998).

Surprisingly, the above extracted section, written in 1998, is the full context in its entirety of Pilipovic's discussion of credit and counterparty risk. However, to illustrate how important this issue has emerged in today's context, in 2006 PRMIA¹⁶ commissioned a 450 page text entitled "The Professional Risk Managers' Guide to Energy & Environmental Markets"¹⁷ (2006) that states in Chapter 7, *Best Practices in Credit Risk Management for Energy and Commodity Derivative*, that:

"One of the keys to success in energy and commodity trading is the management of counterparty risk." (Section 7-1).

"Credit risk is generally (and rightfully) considered more difficult to manage than market risk. The design and effective implementation of the right policies, methodologies, and infrastructure are prerequisites for good credit risk management." (Emphasis added).

^{15/} "Valuing and Managing Energy Derivatives: Energy Risk" by Dragana Pilipovic, McGraw-Hill, 1998

^{16/} PRMIA - Professional Risk Managers' International Association. PRMIA offers an internationally recognized risk manager certification

^{17/} "The Professional Risk Managers' Guide to Energy & Environmental Markets" Edited by Peter C. Fuscaro, for PRMIA, The Professional Risk Managers' International Association, 2006

Counterparty risk for the electric industry has been more difficult to manage than market risk primarily because the knowledge base has been somewhat limited and the emergence of more sophisticated measurement and quantification tools to define a counterparty's default probability distribution has yet to evolve. As discussed in the following section, other industries, such as banking, have had a long enough history to be able to develop extensive data bases and real observational information to be able to mitigate, for example, mortgage defaults, by employing credit default swaps. These financial instruments, whether structured or tailored (over-the-counter), are offered by those institutions willing to assume, i.e., "swap" risk for stability. It is likely that similar financial instruments will emerge as the electricity commodities markets evolve.

In Section 7-3: *How Bad Can It Get? Potential Future Exposure*, PRMIA further states:

"Best practice firms typically base their credit risk limits for derivative transactions on the sum of the current plus the potential future exposure."

"The current risk exposure is typically assessed using the current mark-to-market (MtM) value of the relevant position, net of accounts receivable, collateral guarantees, and legal netting arrangements. The MtM exposure is the loss we would experience, if the counterparty were to default today."

"Our future exposure is the amount that would be lost at a given point in the future if the counterparty were to default on an in-the-money position."

To be followed in Section 7-4: *Counterparty Credit Risk Charges*,

"It is good practice - **but still not common in many energy and commodity trading firms - to charge for counterparty credit risk.** After all, counterparty credit risk exposure is not free and can result in considerable potential losses for the firm. Charging for such exposures helps create the right alignment of incentives within the firm." (Emphasis added)

"It is self evident that if the energy firm is not aware of this hidden credit cost, then it could acquire large hidden credit exposure to poor-quality counterparties."

During 2003, the Edison Electric Institute (EEI) commissioned The Brattle Group to prepare a white paper entitled "New Directions for Safety Net Service - Pricing and Service Options." Safety Net Service (SNS) which is also referred to as Provider of Last Resorts (POLR) or Basic Generation Service (BGS), is described in Section 6 of this report as having:

"(a) variety of significant risks to the SNS providers, for both the wholesale suppliers and the utility middlemen, which are inherent in the

nature of SNS. Third-party suppliers, no matter how solicited and selected, will incorporate the required risk premiums in the competitive bids to be compensated for risk taking. Regulatory policies can reduce these risks somewhat through better SNS design, but shifting the remaining, asymmetric risks to utilities without adequate compensation can undermine their credit worthiness or credibility.” (Page 41).

“Partly to address this, several states have moved forward with profit margins in retail adders. For example, the Duquesne Light Company (DQE) reached a POLR settlement, which was approved by the Pennsylvania Public Utility Commission on November 29, 2000. It permits DQE to retain the margin on its “POLRII” generation rates as requested in the POLR II petition, which is 5 mils/kWh. DQE takes on the credit risk that the supplier does not fulfill its supply contract.

NYSEG also receives a margin on its Price Protection Plan (PPP) equal to 35% of the kWh price of PPP service. Out of that margin, NYSEG must pay all gross receipts taxes, cover the cost of administering the program and take on certain generation supply risks.

The (*Figure 4*) above shows that in Maryland, the new SNS policy makes explicit allowance for risk bearing compensation, as part of the retail administrative charge. This was an important part of the Maryland SNS Settlement.” (pages 44 - 45).

Given this background, it is apparent that stakeholders in wholesale competitive markets, including the financial community, have only recently begun to focus on credit and collateral as one of the more critical risk related issues. Prior to restructuring, most long term bilateral supply contracts were made between or among investor owned and public power utilities which had either solid credit ratings or the backing of the government itself. As supply bidding practices emerged for POLR (BGS, etc.) service and, more specifically, the entry of smaller scale renewable resource developers, credit has become of greater concern.

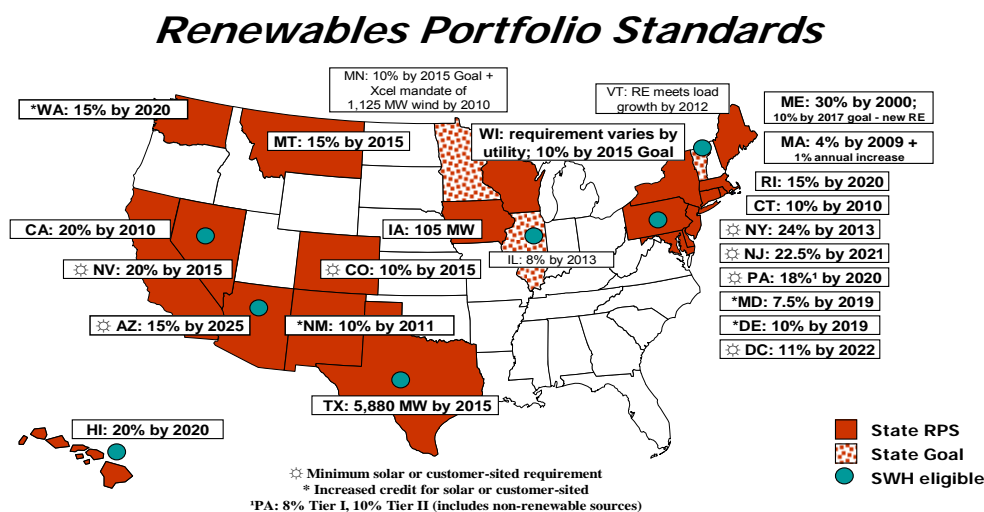
With regards to California’s experience, it appears that the three major electric utilities have followed a predictable path relative to the incremental changes that have been introduced as they gained experience with the renewable resource RFOs. Namely, while initial credit and collateral requirements may have been too rigid, experience gained over the last three years has fostered an easing of each of the utility’s risk management policies. (See Chapter I: Overall Conclusions).

IV. VANTAGE RESEARCH OF SELECTED STATE CREDIT AND COLLATERAL REQUIREMENTS

Twenty-four states, including the District of Columbia, now require or support a Renewable Portfolio Standard (RPS). The following map of the United States highlights each of those states and its RPS objective. As Vantage addressed California's credit and collateral requirements as enumerated in each of the electric utilities RFOs, we also performed a parallel review and assessment of several other states to establish a "first cut" benchmark to begin to identify credit and collateral best practices.

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The CPUC requested that we investigate at a minimum New York, Maryland, and Texas. We also contacted both commission staff and other participants in New Jersey and Pennsylvania markets as well. The purpose of this survey was to gain a better appreciation of how other states were addressing credit and collateral and whether it was identified as an impediment to the competitive resource bidding process. Our research focused on two basic areas of questioning.

1. Had the state regulatory commission investigated credit and collateral requirements and established specific rules or procedures for electric utility competitive resource bidding practices? If not what were the standard practices used by the regulated electric utilities?
2. Did the state have a mandated RPS program that required electric utilities to acquire some portion of its generation portfolio from renewable resources? Did the credit

and collateral policies impose an impediment to smaller scale developers, and if so, what steps were taken to mitigate this issue?

While this was not a comprehensive assessment of all RPS programs, it did provide some insights as to how other commissions have addressed credit and collateral issues. Our focus was on whether it provided a fair balance between protecting consumers against higher prices should a default occur while at the same time not becoming an overly restrictive barrier to small scale renewable resource suppliers. A summary of our findings follow.

- IV-F1* Credit and collateral requirements have emerged as a far more critical factor in an electric utility generation bidding process and have gained greater recognition within the financial community relative to prudent risk management. This finding is particularly true in restructured competitive markets especially in those states that mandate competitive solicitations for basic generation supply.
- IV-F2* For the major generation suppliers, the credit and collateral requirements, for example, as stipulated in the EEI Standard Procurement Agreement, appear to provide a reasonable balance between protecting consumers against default and introducing overly restrictive barriers to market entry.
- IV-F3* No states surveyed have developed special rules or regulations as to credit and collateral requirements, especially for smaller renewable resource developers. Although, some states have compensated the regulated distribution company for administrative expenses including the costs associated with supplier default.
- IV-F4* It appears as if the New Jersey BGS structure does ameliorate the RPS credit and collateral issue by mandating that bidders commit that a percentage of each tranche be a qualified renewable resource. As a result, the credit exposure of smaller renewable resource providers is embedded in the portfolio-based offering. Even by 2010, the percentage of renewable resources for each tranche is approximately 8%.

NEW YORK STATE

The New York Public Service Commission, in collaboration with the New York State Energy Research and Development Authority (NYSERDA) established a Renewable Portfolio Standard (RPS) program for which all consumers connected to the regulated investor owned electric distribution companies¹⁸ are required to pay a non-bypassable service charge that is used to fund the RPS program administered by NYSERDA. Qualified renewable resource suppliers can bid for a long term RPS contract which is used as an incentive and supplement to any revenues the RPS supplier can obtain from either the New York Independent System Operator (NYISO) day ahead and real time markets or via negotiated bilateral contracts.

^{18/} Retail customers of municipal electric systems including the New York Power Authority and the Long Island Power Authority are exempt from the RPS program.

NYSERDA has recently issued Request for Proposal No. 1037 which sets out the credit and collateral required for “Renewable Portfolio Standard Purchase of Renewable Energy Attributes.”

The NYSERDA RPS program includes two forms of collateral: 1) Bid Deposit (See Page 5 of RFP 1037) and 2) Contract Security (See RFP 1037 – Attachment H: RPS Standard Form Contract, pages 22 – 23).

Bid Deposit

Each Applicant Package must include a Bid Deposit, in the form of cash or certified funds, in an amount determined by the Nameplate capacity of the Bid Facility.

The amounts are as follows.

Nameplate capacity:	Bid Deposit Required:
Up to 4.99 MW:	\$5,000
5.00 – 19.99 MW:	\$15,000
20.00 – 49.99 MW:	\$25,000
50.00 MW or more:	\$50,000

Bid Deposits will be refunded to Bidders whose Bid Proposals have been selected by NYSERDA for contract upon NYSERDA’s receipt of the Contract Security as described in Section XIII (Contract Security). Bid Deposits will be refunded to Bidders whose Bid Proposals have not been selected by NYSERDA, if not before, immediately upon the expiration of the time during which the Bid Proposal remains an open offer. No interest will be paid on any Bid Deposit.

Contract Security

Upon selection and contracting, Bidders must provide to NYSERDA, within 10 business days of notification of selection, Contract Security in an amount equal to \$6.00 per MWh times the Bid Quantity, in the form of (a) cash, (b) certified funds, or (c) an irrevocable stand-by letter of credit, payable to NYSERDA, and drawn on an institution acceptable to NYSERDA, in substantially the form provided as Exhibit C to the RPS Standard Form Contract.

Refund/Retention of Contract Security: As provided by Article XV of the RPS Standard Form Contract (Attachment H), amounts provided by the Bidder as Contract Security will be returned or refunded to the Bidder by NYSERDA.

- In the amount of fifty percent (50%) of the amount provided if the Bidder elects to terminate the contract on or before July 15, 2007.

- In its entirety if the Bid Capacity of the Bid Facility that enters Commercial Operation on or before the Commercial Operation Milestone Date is equal to or greater than the Bid Capacity of the Bid Facility described in the Bid Proposal.
- At a prorated amount if the Bid Capacity of the Bid Facility that enters Commercial Operation on or before the Commercial Operation Milestone Date is less than the Bid Capacity of the Bid Facility described in the Bid Proposal. Such amount that will be returned, expressed as a percentage of the total Contract Security, will be equal to Bid Capacity of the Bid Facility that enters Commercial Operation on or before the Commercial Operation Milestone Date divided by the Bid Capacity of the Bid Facility described in the Bid Proposal.

As provided by Article XV of the RPS Standard Form Contract, amounts provided by Bidder as Contract Security will be retained by NYSERDA.

- Fifty percent of the amount provided if the Bidder elects to terminate the contract on or before July 15, 2007. At a prorated amount if the Bid Capacity of the Bid Facility that enters Commercial Operation on or before the Commercial Operation Milestone Date is less than the Bid Capacity of the Bid Facility described in the Bid Proposal. Such amount that will be retained, expressed as a percentage of the total Contract Security, will be equal to the Bid Capacity of the Bid Facility described in the Bid Proposal minus the Bid Capacity of the Bid Facility that enters Commercial Operation on or before the Commercial Operation Milestone Date; divided by the Bid Capacity of the Bid Facility described in the Bid Proposal.
- In its entirety if the Bidder [as Seller] elects to terminate the contract under Section 14.01(e) of the RPS Standard Form Contract, which election shall only be available where (i) less than 60 percent of the Bid Capacity of the Bid Facility has commenced Commercial Operation by January 1, 2008 **and** (ii) the “placed in service” eligibility deadline under the Federal Production Tax Credit (see 26 U.S.C. § 45, et seq.) has **NOT** been extended beyond December 31, 2007 by at least ten (10) months.

STATE OF MARYLAND

The Maryland Public Service Commission (MPSC) on June 30, 2003, approved its credit and collateral requirements as enumerated in the Phase II Settlement Agreement (Case No. 8908): In the Competitive Selection of Electricity Suppliers/Standard Offer Service. While its Commission Order makes no specific reference to this matter, its approval of the Full Requirements Service Agreement (FSA) established Performance Assurance/Accelerated Payments (Article 14).

In Order No. 79489 (dated 9/24/2004), the MPSC approved a staff report which had proposed improvements to the Request for Proposals and the attached FSA. Again, in 2005, Staff held a series of meetings as part of the Commission’s Procurement Improvement Process (PIP). As a result of both, modifications were made to the credit and collateral requirements. However, it should be recognized that credit and collateral is less of a concern as Maryland’s competitive bidding process had solicited contracts no longer than

three years. In Order No. 81102, issued on November 8, 2006, pursuant to Case No. 9064, the MPSC reduced the maximum contract duration from three to two years for the next standard offer solicitation. As a result, a supplier's exposure to mark-to-market based collateral requirements is significantly less than for longer term contracts. The following is a brief summary of Maryland's credit and collateral requirements.

- The mark-to-market (MtM) procedure starts at whatever level the initial MtM is, not the bid price. So there are no collateral requirements initially for a credit worthy buyer.
- In calculating the amounts due, any amounts owed to the seller are deducted from the requirement - this suggests that up to a full 30 days revenue can be used to off-set the amount due.
- No funds are required until the buyer's exposure rises above \$500,000.
- The seller has the option to assign the contract to another party, which presumably they might try to do in anticipation of financial problems.
- The buyer can suggest special remedies for a default caused by other than supply; e.g., failure to meet collateral requirements. Presumably, that special remedy could include a relaxation of collateral requirements.
- There is also a self balancing aspect to the equation. The MtM starts at zero and may change over time. However, the MtM is always calculated for the balance of the contract. As time goes by the number of months on the contract, and remaining potential exposure, decreases.
- Also, a bidder that owns generation has locked in prices and is not greatly affected by market movements. A bidder that is going to buy on the market is somewhat insulated if it buys forward contracts at the time of award that cover its position. The risky bidder is one that owns no generation and then bets that future prices will be lower, covering with spot or short-term purchases.

STATE OF TEXAS

Our investigation of credit and collateral regulations in Texas found few insights as to how the Texas PUC was addressing this issue. Texas has initiated a Renewable Energy Credit (REC) program for generators and offset certification with a target of 2,000 MW of new renewable energy capacity built in Texas by 2009. The regulations associated with the Texas REC program are enumerated in Substantive Rule 25.173. Our review of Rule 25.173 found no provisions for counterparty default.

We also reviewed the ERCOT Protocol (updated as of November 2006) which outlines ERCOT's rules and regulations including sample power contracts. Our review of this document also found few insights or details on credit and collateral requirements. However ERCOT does have a Credit Working Group which outlined in an April 2005 presentation alternative collateral requirements based on contract duration. Interestingly, in a November 14, 2006 presentation to the ERCOT Board of Directors, ERCOT Staff proposed:

- To seek an independent review of ERCOT's Protocols related to credit risk with other ISOs as well as against best practices;

- To continue to pursue catastrophic coverage via credit insurance.

While we will continue to research the Texas market, our preliminary finding is that Texas has only begun to address the credit and collateral issue and offers no additional insights for California.

COMMONWEALTH OF PENNSYLVANIA

Pennsylvania has recently initiated an RPS program however the Pennsylvania PUC has yet to address credit and collateral. The parties contacted were not aware that this was a critical issue being addressed elsewhere.

NEW JERSEY

New Jersey adopted formal RPS rules in April 2006 (N.J.A.C. 14:8-2), although the State has promoted the development of renewable energy technology projects since 2001 when the state solicited renewable electric supplies for the PJM Power Pool (Docket No. EX01100646). For comparison to California, New Jersey's RPS regulations requires resource supply bidders to each electric utility's BGS procurement meet the same annual RPS targets as all wholesale suppliers. However, in New Jersey, Basic Generation Service (BGS) suppliers bid for a percentage of the load; i.e., a portfolio of generation that is optimal to the utility's load shape. As an example, assuming each 34-month tranche is awarded in 50 MW blocks, from June 1, 2006 through May 31, 2007 approximately 4.6 percent (N.J.A.C 14:8-2.2, Table A) of each tranche must be renewable. In this example, of the 50 megawatt load served, only 2.3 MW would need to be from a qualified renewable source.

As a result, credit and collateral has not emerged as a major issue for several possible reasons.

1. The BGS bidders have been substantially larger, more credit worthy entities for which such a small percentage of renewables resources pose little added risk exposure to the electric utility or its consumers.
2. New Jersey's Renewable Energy Credit (REC) is a "pay as you go" program which means that the renewable resource provider is only awarded RECs based on actual output. This is a significant performance incentive.

The New Jersey Public Utility Board has not issued any special provisions for credit and collateral. PSEG, the largest of the electric utilities in New Jersey, indicated that they use the standard EEI procurement contract.

V. CREDIT RISK MITIGATION ALTERNATIVES

The CPUC also requested that Vantage explore other credit risk mitigation alternatives. As noted in Section III, counterparty or credit risk has only recently emerged as one of the more prominent issues facing energy risk managers. It was hoped that other, more mature capital markets may have developed different mechanisms other than collateral requirements to protect utilities and their consumers from counterparty default.

V-F1 The assignment of collateral remains the primary mechanism used by California electric utilities to protect against counterparty default.

Vantage explored credit risk mitigation alternatives, as a largely academic exercise to see whether there are alternatives that can be considered in the long term. Currently however, all three IOU's in California require collateral to secure their responses.

V-F2 As the long-term renewables market matures, we found that there are several innovative structures that the CPUC could further explore that would serve to minimize the collateral requirements of renewable resource developers while protecting the utilities and their customers from the cost of default including:

- Credit default swaps;
- Securitization and credit support programs;
- Use of a centralized structured clearing house.

In order to better understand credit risk on a broader basis, we reached out to a number of experts in the financial community. We interviewed two senior staff from NYMEX, energy trading experts and several legal specialists in the area of contracts and counterparty risk management. Our general findings include the following.

While each of these risk management alternatives apply a different approach, they are common in the sense that each recognizes the intrinsic advantages of portfolio theory, that is, the total risk of a portfolio is less than the sum of the risks of each component of that portfolio. Based on the presentations at the California Energy Commission Workshop¹⁹, there is a recognition that such financial instruments are needed and should evolve as the market matures. It is unclear at this time if there is any further action the CPUC can take to either foster or expedite the introduction of these alternative risk mitigation structures.

We found that the closest parallel to the current electric utility situation is within the banking industry specifically relating to mortgage lending institutions. Mortgage lenders benefit when they retain loans even during periods when credit default reaches high levels. By selling off such mortgages, which might reduce its losses, the bank is also required to

¹⁹/ Committee Workshop before the California Energy Resources Conservation and Development Commission Electricity Committee: Docket No. 03-RPS-1078 RPS proceeding and Docket No. 06-IEP-1 2007 Integrated Energy Policy Report, held on June 27, 2006 in Sacramento, CA.

reduce its balance sheet which in turn limits its ability to meet other obligations. Instead, a mortgage lender might procure a financial instrument called a credit default swap.

The credit default swaps market is growing at a rapid pace. Credit default swaps are derivative instruments based on underlying fixed income securities such as corporate and government bonds. Swaps are privately negotiated contracts traded on over-the-counter markets, (source: Reuters).

The buyer of a credit default swap pays a premium to the seller to assume the risk of the issuer of the underlying security defaulting on the coupon or interest payment. Credit default swaps are used for hedging as they enable investors to insure their bond holdings against the risk of default.

We were informed by a number of financial experts that credit default swaps have been applied to the energy industry to protect a buyer of energy from counterparty default. However, these swaps are traded over the counter and are typically assigned to or traded against a very specific energy supplier. To our specialist's knowledge there is no market for a broad grouping of renewable resource suppliers. For example, NYMEX, (New York Mercantile Exchange) which only offers structured deals (as opposed to over-the-counter transactions), does not market such an instrument.

Vantage also reviewed the presentations made before the California Energy Commission's California Credit Policies Workshop held on June 27, 2006. We found two interesting suggestions that the CPUC might explore.

Mr. Partho Ghosh of MMC Securities, a subsidiary of Marsh and McLennan, proposed two strategies, a securitization program and credit support program which in our interpretation are two forms of an aggregate insurance type policy where the risk of outages, replacements costs, etc. are traded to those institutions willing to swap risk for price stability. (See pages 156 - 166 of conference transcript).

Mr. John Flory of the North American Energy Credit and Clearing Corporation (NECC Consortium) proposed the use of a clearinghouse approach which can reduce the cost of collateral by 80 percent. One of the key advantages of exchanges such as NYMEX and ICE (Intercontinental Exchange) is that they both offer structured financial contracts supported by centralized credit and clearing services. Those entities buying or selling on the NYMEX or ICE are assured timely clearing of transactions and payment because each of these institutions manages the credit and collateral requirements. Mr. Flory references an analysis performed by CCRO, the Coalition of Chief Risk Officers, that "showed some potential 80 percent reductions through netting down to what people's really net positions are in terms of the amount of collateral to be posted." He further notes that the North American Energy Credit and Clearing Corporation in conjunction with ICE has "put together a clearing house that combines the traditional advantage of the clearing house in terms of a single central counterparty with all positions secured and additional layers of protection, and insurance and, using credit derivatives markets and things like that. But we've bound this together in a physical transaction so that this capital and credit risk can be managed all the way from a forward transaction through delivery and settlement." (See pages 240 - 246 of conference transcript).

V-F3 When evaluating risk, especially of renewable resources where there are numerous suppliers, it is important to also consider the risk of the diversified portfolio and not just the risk of the individual supplier otherwise the credit and collateral requirements may be overstated.

This is particularly true for renewable resource suppliers. For smaller less credit worthy entities, especially renewable resource developers, credit requirements mandated under this approach can be costly because each entity's risk is measured independent from the risks associated with all other resource suppliers. However, portfolio theory recognizes that as long as the risk profile for each "contract" or provider is not perfectly correlated with those of the other providers, then any mix of resources will produce a total risk which is less than the sum of the individual risks.

The concept of calculating portfolio risk is beyond the scope of this study, but warrants investigation by the CPUC and the utilities.

VI. STANDARDIZATION OF RFO/CONTRACT

As noted earlier in this report, the credit and collateral requirements in the RFOs of the utilities, in particular for the renewable RFOs, have moved closer together. Of note is the movement of the SCE Renewable RFO to more closely mirror the credit and collateral requirements of PG&E's Renewable RFO. In addition, there is a concerted effort by the State and the CPUC to significantly increase energy supply from renewable resources. These observations coupled with the fact that there is an increased demand for renewable resources and that many of the renewable resource providers may not be in the strongest financial position, raises the specter of whether more careful consideration should be given to more standardization of renewable RFOs/contract terms. Accordingly, we raised this issue with each of the three IOUs as well as the suppliers that we talked with. The feedback we received was mixed.²⁰ There was a modicum of support for the idea but there was also a general concern that the effort to develop a more standardized approach would be greater than the benefit received.

VI-F1 Standardization of credit and collateral requirements, while creating some benefits, may not be the best approach.

There are several advantages to a standardized approach. Those advantages include:

- It would make it easier for suppliers of renewable resources to participate in more of the RFOs;
- The increased participation of the suppliers of renewable resources in the RFO process would lead to more robust bidding and lower prices;
- Credit and collateral requirements more applicable to the financial position of the suppliers of renewable resources could be provided;
- It would help to meet the social objective of increased energy supply from renewable resources.

Of course, a more standardized approach raises several concerns also. Those concerns include the following.

- Each of the utilities has a different risk profile and a “one size fits all” approach would not give adequate recognition to these differences.
- Both the utility and the bidder are better off if the utility has sufficient flexibility to establish reasonable credit and collateral requirements that can be fairly negotiated with the bidder.
- The promotion of renewable resources could make a utility's resource portfolio mix more risky and could lead to increased costs for the ratepayers.
- It would take considerable effort on the part of the stakeholders to develop an agreeable standardized approach.

^{20/} See footnote 13 and 14.

- Both the utilities and the suppliers indicated that there would be certain terms and requirements that they simply could not agree on.
- At this time, there is limited experience with the procurement of renewable resources and that more experience is needed to assess the current approach.

After significant consideration on our part, we have concluded that the cost and effort that would be needed to develop a standardized RFO for renewables or standard contract terms or standard credit and collateral requirements would be greater than the benefit to be derived. We therefore do not encourage the CPUC to pursue a course of action to develop a more standardized approach.

VI-R1 The CPUC should not pursue further standardization of renewable RFOs, contracts or credit and collateral requirements. (Refer to Finding VI-F1.)

The discussion above lists the pros and cons of pursuing further standardization of renewable RFOs, contracts and credit and collateral requirements. It is our view that the effort and costs to develop a more standardized approach to the procurement of renewable resources outweigh the benefits to be derived and recommend that the CPUC not pursue further standardization.

VII. CONCLUSION

Based on our review and analysis, Vantage provides the following conclusions regarding the credit and collateral requirements for the Investor Owned Utilities in California.

The credit and collateral requirements used by the IOUs in California, are in general, reasonable.

The credit and collateral requirements utilized in several other states were reviewed and it was found that the requirements in California are consistent with the requirements used in other states. Further, the responses to the various RFOs of the IOUs have been robust. The response to the RFOs has been robust in the sense that there have been numerous bidders responding to the RFOs and the megawatts bid have significantly exceeded the megawatts requested. The requirements do not appear to be so onerous as to dampen the competitive bidding process.

The California IOUs have eased their credit and collateral requirements to some degree for the renewable RFOs in order to ensure meeting the state mandated requirements.

In an effort to meet the state-mandated requirement to serve 20 percent of their retail sales with energy provided by renewable resources, the IOUs have eased their credit and collateral requirements for renewable suppliers. The potential to be penalized and fined for not meeting the state goal has motivated the utilities to more aggressively pursue power generated with renewable resources.

There is no immediate need to require the IOUs to further standardize their renewable RFOs and the credit and collateral requirements.

As noted earlier in the report, the IOUs credit and collateral requirements have not only eased for the renewable RFOs but they have also converged. The credit and collateral requirements of the IOUs have evolved toward very similar requirements. Although one could argue that there would be some advantages for a renewable supplier to be confronted with a standardized set of credit and collateral requirements for each of the IOUs, we believe the costs to achieve these advantages outweigh the potential disadvantages.

The CPUC should carefully monitor the credit and collateral requirements for renewable RFOs to make certain that the requirements are not eased to the point where the risk balancing between the utility, bidder, and ratepayer shifts from the utility and bidder to the ratepayer.

Because the IOUs have the increased incentive to pursue renewable resources in order to avoid potential fines, the CPUC needs to remain vigilant in its monitoring of the credit and collateral requirements. These requirements are in the early stages of their evolution since the renewable RFOs are only in their third year. The evolution of these requirements to date has resulted in reasonable credit and collateral requirements. However, as the 2010 deadline approaches and the potential for fines increases, the utilities may be tempted to

ease the requirements too much and thus exposing the ratepayers to unreasonable risks. The CPUC will need to carefully monitor these requirements to protect the customers from absorbing too much risk.

