

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market and Infrastructure Development

Date: May 9, 2012

Re: **Decision on Resource Adequacy Deliverability for Distributed Generation**

This memorandum requires Board action.

EXECUTIVE SUMMARY

Management proposes an annual process for distributed generation resources to obtain resource adequacy deliverability status, so that load-serving entities can count these resources towards their annual resource adequacy requirements. Management developed this proposal to align ISO policy with the state's emphasis on distributed generation resources – relatively small-scale resources connected to utility distribution systems and located close to load – as a key element of California's strategy for increasing the share of renewable resource production in annual electricity consumption. The proposal enables distributed generation resources to obtain deliverability status in about half the time it takes to go through the normal interconnection processes, and without requiring additional delivery upgrades to the ISO grid.

Under the current process to obtain deliverability status, distribution-connected resources must enter the wholesale distribution access tariff process of one of the distribution companies and be studied for deliverability upgrades in the ISO's generator interconnection procedures. The process takes about two years, which then allows the resource to provide resource adequacy capacity in conjunction with its renewable energy contract. Both renewable project developers and load-serving entities assert that the current process is too lengthy and too cumbersome for the sheer number of small-scale projects that will be needed to meet the state's goals.

In addition, load-serving entities are expected to meet some portion of their distributed generation needs from behind-the-meter resources that interconnect under the California Public Utilities Commission's Rule 21.¹ Currently, however, there is no way

¹ California Public Utilities Commission's Rule 21 is a tariff that describes the interconnection, operating and metering requirements for generation facilities to be connected to a utility's distribution system, over which the California Public Utilities Commission has jurisdiction.

for Rule 21 resources to obtain deliverability status. Thus, there is a need for a process that will provide deliverability for Rule 21 resources as well as for wholesale distribution access tariff resources.

Management's proposal addresses these challenges by:

- (1) Annually determining amounts of distributed generation at specific locations that will be fully deliverable without any additional delivery network upgrades, without needing any further deliverability assessment studies, and without degrading the deliverability of existing resources or generation projects in the ISO's interconnection queue, and then providing this information to project developers, load-serving entities, and the regulatory authorities that oversee procurement;
- (2) Allocating shares of the available deliverability to regulatory authorities² for use by their jurisdictional load-serving entities to assign deliverability status to those projects with which they choose to execute energy and resource adequacy contracts;
- (3) Enabling both wholesale distribution access tariff and Rule 21 interconnecting resources to use the deliverability made available through the proposed process; and
- (4) Drawing upon and maintaining consistency with the representation of distributed generation in the annual resource portfolios developed for the ISO's transmission planning process.

Management's proposal provides a process for distribution-connected resources to obtain deliverability status that is faster and less complicated than the currently available procedures, while remaining effectively integrated with the existing generator interconnection and transmission planning processes.

For the reasons summarized above and described in greater detail in the body of this memorandum, Management recommends that the Board approve the following motion:

Moved, that the ISO Board of Governors approves the proposal regarding resource adequacy deliverability for distributed generation, as described in the memorandum dated May 9, 2012; and

Moved that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.

² The relevant regulatory authorities for purposes of this proposal are the California Public Utilities Commission for the investor-owned utilities and the direct access energy service providers, and each of the local regulatory authorities that oversee the municipal utilities or other entities not under the jurisdiction of the CPUC.

DISCUSSION AND ANALYSIS

In the last few years, the issue of resource adequacy deliverability has been raised in virtually all ISO initiatives related to infrastructure development policy. As load-serving entities contract with project developers to meet the state's mandate to procure 33 percent of their retail customers' annual electricity needs from renewable resources, they want most of this procurement to count towards their resource adequacy requirements as well. As a result, when the ISO considers reforms to its generator interconnection procedures and its transmission planning process, it is imperative to include consideration of the rules and procedures whereby generation projects obtain deliverability status, so that these resources are able to offer resource adequacy capacity.

Although the ISO has been addressing deliverability issues effectively through recent infrastructure policy initiatives, most notably the transmission planning process-generator interconnection procedures integration initiative approved by the Board in March, distributed generation raises some unique issues that require targeted treatment.

- First, because distributed generation resources connect to utility distribution systems and not directly to the ISO grid, many parties have the mistaken belief that such resources should automatically be deemed deliverable as long as the resources do not produce energy in excess of the load at their location and create an energy "backflow" from the distribution system onto the ISO grid. One focus for ISO staff in the present initiative has been to educate parties as to why this belief is not correct. The basic explanation is that even without backflow, distributed generation can substantially reduce the net load at any location and thereby degrade the deliverability of ISO-grid connected generators.

More specifically, within each electrically-defined sub-area of the grid, the ISO establishes deliverability status for generators through a study in which all such generators are dispatched simultaneously to meet peak load conditions. This test rests on a fundamental objective of the resource adequacy program, namely, the ability to fully use all resource adequacy capacity when needed under peak conditions. If additional generation is subsequently connected to the system, even at the distribution level, and deemed deliverable without going through an ISO deliverability study, it would likely lead to conditions where some portion of the resource adequacy capacity in the area would need to be curtailed at peak load, thus rendering that capacity ineffective for resource adequacy purposes. Thus the "no backflow" criterion is not a sufficient basis to establish deliverability for distributed generation.

- Second, distributed generation projects tend to be smaller and much more numerous than generation projects that connect directly to the ISO grid, and

typically want to establish deliverability and negotiate contracts with load-serving entities on a faster timetable. The current process requires each distributed generation project that seeks deliverability status to apply for interconnection to the wholesale distribution access tariff of one of the utility distribution customers, and to be studied for deliverability through the ISO's interconnection cluster study process. The whole process takes roughly two years, and stakeholders agree that a more streamlined process is needed and appropriate.

- Third, because each distributed generation resource will connect to a distribution line that typically has only one point of interconnection with the ISO grid, i.e., one "network node" on the ISO grid, the ISO can simplify its deliverability study by considering only the total amount of distributed generation connected to each node and can ignore the specific locations of individual resources on the distribution system. Moreover, this electrical fact, combined with the fact that the distribution lines are not under ISO operational control, enables the ISO to grant substantial latitude to the regulatory authorities of the load-serving entities to determine which distributed generation projects should use the deliverability the ISO makes available at each grid node.

Building on the above considerations, the ISO in working with stakeholders has developed an annual process consisting of two sequential steps to provide resource adequacy deliverability status to distributed generation resources. First, the ISO will use the distributed generation component of the most recent base case resource portfolio adopted for the transmission planning process to specify a target megawatt amount of deliverability at each grid node that could be made available to regulatory authorities in the current annual cycle. The ISO's deliverability study will then assess the extent to which each of these nodal amounts can be deliverable without requiring additional delivery network upgrades. Based on the results of this study, the ISO will calculate shares of the available deliverability for each regulatory authority's load-serving entities.

Second, each regulatory authority will submit nominations or requests to the ISO to assign portions of its share of distributed generation deliverability to specific network nodes. Although the regulatory authorities must eventually assign deliverability to specific distributed generation projects, the process does not require the regulatory authority to fully assign its allocated share within the current allocation cycle. Each regulatory authority may make such assignments in a manner that best aligns with the procurement activities of its jurisdictional load-serving entities, and may retain unassigned portions of its allocated share from one cycle to the next. An additional responsibility of the regulatory authority is to ensure that each distributed generation project that was assigned deliverability is making satisfactory progress toward commercial operation. Before the start of each subsequent cycle, the regulatory authorities will report to the ISO the assignments they have made to specific resources, any amounts not yet assigned, and assignments revoked from projects not making progress toward completion. Once deliverability is assigned to a project and that project enters commercial operation, deliverability status becomes an attribute of the project

and is not revocable or transferable by the regulatory authority or a load-serving entity as long as the project remains in commercial operation.

POSITIONS OF THE PARTIES

The ISO conducted a comprehensive stakeholder process that began in December 2011. There were three rounds of ISO proposals followed by stakeholder conference calls and written comments. The ISO also reached out to the regulatory authorities that oversee procurement by load-serving entities in the ISO balancing authority area, particularly to discuss their input into the distributed generation representation in the resource portfolios and their roles in the process for allocating deliverability.

Overall, stakeholders are very supportive of both the objectives of this initiative and the proposal developed to meet these objectives. Stakeholders widely acknowledge that the proposal offers significant benefits to facilitate the development of distributed generation resources. Within this broad general support, some stakeholders have expressed a few concerns. Southern California Edison has expressed its preference that the ISO allocate the use of such deliverability directly to the load-serving entities (such as Southern California Edison) rather than through the regulatory authorities.³ In response, Management believes that allocation to regulatory authorities is appropriate for this initiative because the assignment of deliverability to specific distributed generation resources is completely subject to the results of bilateral contracting between load-serving entities and resources connected to non-ISO-controlled facilities. CPUC staff have been fully engaged in this initiative, support the proposal to allocate deliverability to the regulatory authorities, and have worked closely with the ISO to clarify the alignment between their procurement activities and the allocation process proposed in this initiative.

The Sierra Club and the Interstate Renewable Energy Council contend that the ISO should reconsider the existing deliverability study methodology and the policy of “once deliverable, always deliverable,” because these features inappropriately preserve deliverability for greenhouse gas-intensive generation at the expense of local renewable generation. This is related to the point made earlier in this memorandum that the ISO’s deliverability study is designed to ensure that the addition of distributed generation does not degrade the deliverability of existing grid-connected resources or other resources going through the normal interconnection queue process. Although these stakeholder comments are intuitively reasonable, Management is concerned about a serious unintended consequence that could result from relaxing the principle of preserving deliverability for existing grid-connected generation. Specifically, such a change would tend to increase the amount of resource adequacy capacity provided by non-dispatchable, variable renewable resources while decreasing the amount provided by dispatchable, flexible resources, thus jeopardizing the ISO’s ability to reliably integrate large amounts of renewable generation. Management believes it would not be

³ This is only an issue for the CPUC-jurisdictional load-serving entities, because each of the municipal regulatory authorities oversees only one load-serving entity.

appropriate at this time to reconsider these aspects of deliverability assessment, when there is much concern about how to maintain sufficient operating flexibility in the supply fleet.

One final concern raised by some parties (e.g., Bay Area Municipal Transmission Group⁴, Clean Coalition) is that the ISO should not limit the allocation in any given cycle to the amount of distributed generation represented in the base case resource portfolio for the current transmission planning process, but should be willing to allocate more if the deliverability study indicates that it is available. The ISO considered this suggestion and rejected it for the present initiative because of the central role the base case resource portfolio plays in the planning process. Essentially, that portfolio represents a potential generation build-out that is sufficient to achieve 33 percent renewable energy on an annual basis, but is not excessive. As a result, the transmission planning process identifies the most cost-effective public policy-driven upgrades needed to deliver energy from the base case portfolio to ISO load. If the balance of resource types and their geographic distribution is significantly altered, in this case by expanding the amount of distributed generation, that would create a departure from the planning assumptions used as the basis of the transmission plan. Management believes that if larger amounts of distributed generation are deemed desirable by the state, then those large amounts can and should be reflected in the base case resource portfolio for the next transmission planning cycle.

The attached stakeholder comments matrix provides additional details on the positions expressed by the participants in this initiative, as well as Management responses to the concerns they have raised. Stakeholders widely support the proposal and are eager for the ISO to begin this work.

CONCLUSION

It is important for the Board to act on this proposal expeditiously. Approval would enable Management to file tariff changes with the Federal Energy Regulatory Commission on a schedule that would allow the ISO to apply the proposed approach in the 2012/2013 transmission planning cycle. Specifically, the ISO could perform the first distributed generation deliverability assessment in November, provide the first results in February 2013, and conduct the first allocation process shortly thereafter.

⁴ The Bay Area Transmission Group consists of Alameda Municipal Power, City of Palo Alto Utilities, and the City of Santa Clara's Silicon Valley Power.