COMMENTS
OF THE
BALANCING AUTHORITY OF NORTHERN CALIFORNIA

I. INTRODUCTION AND SUMMARY

The Balancing Authority of Northern California ("BANC") respectfully submits these Comments to the Department of Energy ("DOE") in conjunction with the DOE/Western Area Power Administration ("Western") Defining the Future Workshop, held in Rancho Cordova, California ("Rancho Cordova Workshop").

BANC is a registered and certified Balancing Authority with the North American Electric Reliability Corporation. BANC is a joint powers authority under California law that was formed to, among other things, perform Balancing Authority ("BA") obligations within its electrical footprint. As such, BANC is responsible for balancing resources and loads within its Balancing Authority Area, and compliance with Reliability Standards applicable to Balancing Authority functions. These services are performed for its constituent members, which include the Cities of Redding and Roseville, California, the Modesto Irrigation District, and the Sacramento Municipal Utility District. Each BANC member receives power from Western under existing contracts developed pursuant to a formal Western marketing plan, and takes transmission service from Western. In addition to its load serving entity members, BANC's BA includes the federal hydroelectric generation facilities of the Central Valley Project ("CVP"), operated by the United States Department of the Interior, Bureau of Reclamation ("Reclamation"), and the transmission facilities of the Western-Sierra Nevada Region ("SNR"). As such, the initiatives of the DOE with respect to reforms of Western are critical to BANC and its member agencies.

It is important to state at the outset that the goals of grid reliability and security, infrastructure modernization, renewable resource development and integration, and demand-side

program development are goals that BANC and its members have actively supported for some time. However, it does a disservice to the public process and to Western customers not to delve into the details of how changes to Power Marketing Administrations ("PMA") would help accomplish these goals. The specific ramifications of using Western to spearhead achievement of those goals must be examined in great detail. At this juncture, it is troubling that DOE has not deigned to provide any real detail on what changes it may propose that would enable constructive input from customers, or even provide a concrete procedural roadmap on how possible changes will be proposed and customer input considered after specific PMA reforms are outlined by DOE. That said, it is difficult to ascertain how Western can alter its management of existing federal assets without doing significant damage its the ability to honor existing obligations to its customers.

While BANC's written comments will touch upon several legal and policy issues, BANC's primary focus, as an entity directly responsible for reliable and economic grid operation, will be on certain grid operation and market issues that are implicated in the March 16, 2012 Memorandum from DOE Secretary Chu ("Chu Memo"). There are considerable questions that must be thought through before changes to Western operations, rates, and services are contemplated. These issues include:

- *Impact on Statutory Obligations*. As DOE heard in the workshops, CVP generation facilities are operated by Reclamation and the power marketed by Western pursuant to statue, which include flood protection, water delivery, environmental obligations, and power delivery. Hence, the ability of Western to contribute to solutions outlined in the Memorandum, may be severely constricted by statutory obligations and other requirements that limit generation flexibility.

- *Reliance of Customers on Long Term Plans Adopted by Western*. As customers made clear in the Rancho Cordova Workshop, Western customers actively participated in a Power Marketing Plan developed by Western through Administrative Procedure Act processes. Further, customers helped Western develop its current rate structure in a rate case concluded just last year. Western customers rely on the resulting contracts for power and transmission as the foundation of their overall integrated resource plans, including renewable energy. The current SNR Marketing Plan already optimizes the peaking and reserve capability of the CVP hydro generation. Tapping that resource for other uses such as an Energy Imbalance Market ("EIM") is unacceptable.
- *Integration of Renewables*. The industry continues to examine tools to better integrate increasing amounts of renewable resources. California's 33% Renewable Portfolio Standard ("RPS") mandate makes this is a top-tier issue for BANC and its Members. BANC is actively participating in West-wide forums including the Northwest Power Pool ("NWPP"). NWPP includes over 20 members and has a footprint that spans about half of the Western Interconnection. The bottom line is that using federal facilities to accomplish renewable integration means incurring additional costs for firming and shaping, potentially in conflict with statutory or contractual obligations of Western or in a manner that may reduce their overall value for consumers. BANC Members have already incurred those added costs and do not want to pay twice to subsidize somebody else's costs.
- *West-wide EIM*. A West-wide EIM was touted in the Rancho Cordova Workshop as a solution to renewable integration, with reference to recent National Renewable Energy Laboratory ("NREL") studies claiming significant and widespread benefits of an EIM.

The NREL study is the latest in a series of studies that show widely divergent net benefits, or net costs, depending upon scenario assumptions. BANC believes all of these studies are deeply flawed, and has submitted technical questions and corrections to the EIM process. Moreover, the study results in a sharply increased dispatch of coal resources in substitution for natural gas, which is contrary to the policy of California and Greenhouse Gas ("GHG") emission reduction requirements that are binding on BANC members.

II. POLICY COMMENTS

There is no doubt that grid improvements can and must be pursued to meet many of the reliability, policy, and economic challenges facing the West. However, it is important to "not confuse motion and progress."

It is incorrect to assume that the goals of the Chu Memo are not being pursued. Although more detail will be provided in individual BANC member comments, BANC members and other Western customers have state-driven mandates on a host of issues related to achievement of the Chu Memo goals, including:

- Reduction of GHG emissions to 1990 levels by 2020, pursuant to California law, subject to sanctions for non-compliance;
- Achieve 33% renewable resources by 2020, subject to sanctions for non-compliance;
- Implement aggressive solar rooftop programs;
- Implement Feed-in-Tariffs for eligible resources, and
- Favor energy efficiency over resource investment, with commensurate billions of dollars in energy efficiency and smart grid expenditures.

These are not goals or targets, but mandates under state law. As such, BANC members have a real stake to work with Western and DOE to see how best Western can help its customers achieve these requirements. DOE must allow Western to continue working with customers as partners to achieve these mutual goals, rather than provide directives distant from the real world challenges that BANC members face on these issues.

However, when juxtaposing these policy objectives with changes to how federal generation and transmission facilities are managed, the complexities cannot be minimized. High-level statements of policy objectives simply will not substitute for careful empirical analysis. Changing transmission utilization, for example, means displacing existing users of the grid, or building more transmission that will necessarily mean cost increases. Demanding that federal hydro facilities follow intermittent resource ramps means existing customers get less power, or less valuable power because of the shift of emphasis from optimizing power deliver value to following variable energy resource ramps. Changing rate structures to provide incentives for renewable deliveries shifts responsibility for recovery of the embedded costs of the Western system to existing grid users, most likely Western customers.

Thus, while certain of the goals of the Chu Memo may be laudable, the impacts on Western customers cannot be ignored. DOE must start from the principle of "Do No Harm." As reforms are contemplated, the guiding principle must be that the products and services delivered to Western customers must not be compromised in any way. Moreover, the ability of the Bureau of Reclamation to meet its water deliveries and environmental responsibilities must not be jeopardized. Within this framework, BANC and its members can work as partners with DOE to assess options that may facilitate achievement of the shared goals of grid reliability, security, infrastructure development, and renewable resource integration.

III. SPECIFIC LEGAL AND TECHNICAL COMMENTS

A. Statutory Limitations.

The statutory framework of the PMAs and Western in particular must be considered. A number of statutes applicable to the PMAs generally call for power to be provided to "preference customers" and for such power to be provided at the "lowest possible rates." The Flood Control Act, for example, states that power and energy must be made available at the lowest possible rates to consumers consistent with sound business principles, and requires that preference in the sale of such power and energy shall be given to public bodies and cooperatives.

Given these statutory limitations, there are substantial legal questions whether the Secretary has the legal authority to issue the directives outlined in the Chu Memo.

The PMAs' enabling statutes and existing contractual arrangements may well prohibit the PMAs from carrying out the Secretary's directives. BANC believes the Secretary is overstepping the bounds of his authority to direct such changes, since the changes stand in opposition to his statutory charge to offer power at the lowest possible rates to preference customers. Specific to the CVP, the operation of the hydroelectric facilities by the Department of Interior clearly place a primacy on "improving navigation, regulating [river flow], controlling floods, providing for storage and for the delivery of the stored waters thereof, for construction [of distribution systems], mitigation protection, and restoration of fish and wildlife and other beneficial uses, and for the generation and sale of electric energy as a means of financially aiding and assisting such undertakings and in order to permit the full utilization of the works constructed to accomplish the aforesaid purposes." The CVP is to be used "first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic

uses and fish and wildlife mitigation, protection and restoration purposes; *and third, for power* and fish and wildlife enhancement." Indeed, the Department of the Interior and DOE/Western entered into an Agreement that governs the relationship between the agencies with respect to operation of the Interior facilities such as the CVP and marketing of power.[1]

Again, using the PMAs to achieve the goals in the Chu Memo must be viewed in light of the limitations on CVP operation. Changes in dam operation to, for example, follow generation ramps of variable energy resources, contravenes the operational primacy of the above-enumerated purposes. Indeed, these statutory purposes on their face leave little room for the operational changes that would necessary to achieve the goals set out in the Chu Memo.

B. Western-SNR Has Legal Commitments to its Customers that Must be Honored.

Western has undertaken several public processes that establish and govern its obligations to customers. By Rate Order No. WAPA-156, issued just last year and placed into effect on October 1, 2011, Western culminated a lengthy public process to establish rates for 13 different Rate Schedules. Western held 14 informal meetings over almost three years, before commencing a formal rate process, and adopting rates in 2011. Among the rate schedules adopted were rates for Imbalance Energy and Generator Imbalance Services.

Western has also adopted through formal processes a Marketing Plan for marketing CVP and Washoe Project power output for a 20-year period through December 31, 2024. This Marketing Plan allocates CVP Base Resource to its customers, and also is the mechanism by which the peaking and reserve capability of the CVP hydro generation is optimized.

[1] Agreement Between Water and Power Resources Service, Department of the Interior and Western Area Power Administration, Department of Energy (March, 1980).

Customers use the allocations pursuant to the Marketing Plan and also the rate assumptions established by Western as a foundation for the operation of the consumer-owned utilities. Disruption of this reliance on the durable plans of Western, adopted through APA processes, not only would do economic harm, but erode the foundation that Western customers rely upon to meet the renewable and climate change mandates under California law.

C. The Reality of Integrating Renewables.

Discussion in the Chu Memo focuses on reform to transmission practices to better integrate renewable resources. However, the reality is that it takes flexible generation capacity to follow the variability of intermittent resources such as wind and solar. The concern that DOE may attempt to direct reoperation of federal hydroelectric facilities is at the heart of concerns over reforms mentioned in the Chu Memo.

There is considerable empirical analysis that shows extraordinary and sudden fluctuations of resources such as wind and solar. While new products and operational practices, such 15-minute intertie scheduling recently ordered by the Federal Energy Regulatory Commission, may be necessary to accommodate increasing intermittent resource penetration, there is no magic wand that can be waived to get around the fact that it will take significant ramping capability in the form of new physical assets to integrate renewables.

A West-wide EIM is no such magic wand, and must be studied and considered with all diligence and care. BANC is participating in EIM study efforts through the NWPP, and is one of the funding partners for the NWPP efforts. BANC members have also provided input into the Public Utilities Commission EIM ("PUC EIM") effort, including the associated NREL studies. Thus, BANC does not oppose an EIM *per se*. However, the operational and jurisdictional consequences must be considered carefully, and the costs and benefits fully explored.

BANC has structural market concerns with respect to a West-wide EIM, and also has raised considerable issues with the EIM studies to date. BANC's structural concern with the EIM is borne from its members experience in the California energy crisis of 2000-2001. During that time, the California Independent System Operator Corporation ("CAISO") ran a market design that included non-binding forward schedules that were balanced within the individual portfolios of market participants. The design theory was that the real-time imbalance market administered by the CAISO after these forward commitments were made would be "on the margin" and only incremental to the forward unit commitment process, and based on voluntary bids that the CAISO would use the balance and optimize the system. The result was far different.

First, the forward unit commitment was not done using the same network model that the real-time imbalance market utilized. Also, the forward unit commitment did not take into account the full network of transmission constraints, but simply required that the individual generation and load schedules be balanced. This created a mismatch between the forward commitment process, and what the CAISO needed to do in real time to balance the grid and solve for congestion. Also, since bids into the CAISO's imbalance market were voluntary, the CAISO was unsure at any given time whether it would have the tools needed to maintain system reliability.

The market soon caught on that because the forward market and the imbalance market were not run on the same platform, forward and real time prices did not converge, and as such arbitrage opportunities were created. While this synopsis is not an exhaustive overview of market design flaws that led to the California energy crisis, it is recognized that these flaws were a contributing factor.

Similarly, the EIM proposal is said to be voluntary. It starts with each BA responsible for forward unit commitment and balancing of loads and resources in their own systems. Then, in real time, the EIM will centrally optimize generation across multiple BAs. The forward unit commitment and the EIM will not operate on the same transmission network models. As such, forward and real time prices will be derived using different assumptions with respect to transmission constraints and availability. This is a fundamental market design flaw, based on California's history.

DOE is likely aware that one of the objections raised to the EIM is that it will necessarily lead to a West-wide Regional Transmission Organization ("RTO"), which has widespread opposition in the West. This concern is not simply borne out of a philosophical divide, but that it is difficult to fashion a "half-way house" that does not allow the gaming opportunities and create the potential for the operational chaos that were rampant during the California Energy Crisis. BANC members have no desire to repeat that experience.

BANC also is highly skeptical of the benefits touted by EIM proponents. BANC members have raised several concerns as part of the EIM evaluation led by the PUC EIM initiative. These concerns regarding the ongoing studies include:

- The PUC EIM recently announced that the NREL/Plexos model had over-stated the lines included in its analysis, which means that significant presumed transmission capacity (foundational projects from Western Electricity Coordinating Council's Transmission Expansion Planning Policy Committee 2020 PC0 case) is not really available for the EIM.
- The NREL/Plexos analysis finds savings by increasing coal dispatch, and backing down natural gas generation. This result is antithetical to GHG emission reduction mandates in

California, contrary to adopted Administration policy, and is likely unachievable from an operational standpoint.

- It is unclear how federal hydro, including the CVP, is modeled in the NREL study. If generation output in the model is treated as dispatchable, that is highly unrealistic and would run counter to the ability of the federal government to meet its water, environmental, and power delivery obligations under statute and contract.
- If increased coal dispatch is to be considered, there is no countervailing carbon cost that is calculated. This cost would have to be borne by entities participating in California's cap-and-trade auctions, and which will have a West-wide impact on market prices.
- The natural gas price sensitivities are counterintuitive, suggesting study methodology flaws. The Reduced Gas Price Sensitivity increases coal generation by 27 Terawatt hours, when common sense would indicate that lower gas prices should result in less coal dispatch than higher gas price sensitivities.
- No consultation occurred with BANC (or other BAs, to our knowledge), as part of the BA-specific study. Specific to BANC, BANC's purported benefits based on hourly dispatch are lower than 10-minute dispatch, which appears to be inverse to the other BAs. This counter-intuitive result again raises concerns about the assumptions used in the study methodology
- It is unclear how existing Reserve Sharing Group benefits are reflected, and how transmission reserved for reserve sharing among, for example, NWPP members across the West, are modeled and how therefore EIM costs and benefits would be affected.
- While BANC does not have first-hand knowledge of detailed system operations in other sub-regions, we are aware that significant percentages of the thermal fleet in California

"must run" for reliability reasons, often because they are needed to maintain compliance with reliability standards in load pockets such as the Greater San Francisco Bay Area, or the Los Angeles Basin. Treating these as units that can be turned on or off in the model is unrealistic, and leads to overestimated benefits.

With the stakes so high, market initiatives like EIM must be carefully considered and studies crafted and scrutinized from the bottom up, and not directed by political fiat.

IV. CONCLUSION

It is abundantly clear from the record developed in this initiative that changing generation dispatch and transmission utilization of federal assets is in contravention to statutory and contractual obligations. Given that BANC and its members are already working in partnership with Western in ways that make sense for the local region to develop a secure and robust grid and achieve renewable resource goals, BANC calls for the DOE to abandon the top-down approach and "directive" driven reforms of PMAs. Western and DOE must continue working with customers, and Congress, within the statutory and contractual constraints that govern federal generation and transmission asset operation, to achieve energy policy objectives. BANC urges the Secretary to withdraw the Memorandum and start from a clean slate with Western's customers.

Respectfully submitted,

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