

COMMENTS OF SALT RIVER PROJECT
DOE/WESTERN AREA POWER ADMINISTRATION'S
"DEFINING THE FUTURE" WORKSHOPS
JULY-AUGUST 2012

Salt River Project Agricultural Improvement and Power District ("SRP") appreciates the opportunity to provide comments to the Department of Energy ("DOE") / Western Area Power Administration ("WAPA") Joint Outreach Team on the Power Marketing Agency reforms advocated by Secretary Steven Chu in his March 16, 2012 Memorandum "Power Marketing Administrations' Role".

SRP is one of the nation's largest public power utilities, serving nearly one million electric customers in central Arizona using a diverse resource mix that includes nuclear, coal, gas, large hydro, small hydro, wind, solar, geothermal, biomass and landfill gas generation, and demand response and energy efficiency programs . SRP owns and operates thousands of miles of transmission and distribution lines and related facilities that deliver the electricity produced by these resources to our customers.

SRP's retail load requirements, resource portfolio and transmission assets make SRP one of WAPA's largest customers. In FY10, SRP was WAPA's largest provider of total revenue. SRP has long-term contracts for hydropower allocations from WAPA's Hoover, Parker-Davis and Colorado River Storage Projects.

SRP has worked collaboratively with WAPA since WAPA was established in 1977. SRP's relationship with WAPA's predecessor agency in marketing and delivery of federal Colorado River hydropower, the U.S. Bureau of Reclamation, goes back much farther to the early decades of the 1900s. This collaboration has allowed SRP to deliver renewable federal hydropower to the people of central Arizona for many decades. In this span of time, through planning, sound investment, collaboration and mutual assistance, Reclamation, WAPA, and SRP have successfully met substantial challenges in producing and delivering reliable and economically-priced electricity to meet vastly expanded power needs in the southwest United States. We look forward to a continued strong relationship with WAPA and Reclamation.

However, Secretary Chu's memorandum outlines a number of reforms for the federal Power Marketing Administrations (PMAs), including making capital improvements to facilitate integration of variable resources, serving as test beds for innovative cyber-security technologies, designing transmission rates to incentivize energy efficiency and demand response programs and preparation for electric vehicle deployment, and encouraging WAPA's participation in an Energy Imbalance Market (EIM), that have left SRP greatly concerned. The reality is that WAPA's statutory obligations are to market and deliver hydropower from federal reclamation projects established pursuant to federal statutes at the lowest possible rates to consumers consistent with sound business practices. WAPA is not responsible for serving end-use electric loads. Therefore, it has no rational means to, nor should it, provide incentives to load-based programs, such as energy efficiency, demand response, and electric vehicle programs.

The premises upon which the Secretary's proposed reforms are based are so fundamentally flawed that DOE, WAPA, WAPA's customers and stakeholders would be best served by stopping this process and restarting with a robust open dialog about relevant issues for each PMA and its customers, both preference customers and transmission customers, about how issues and challenges are best addressed. The listening sessions in each of the WAPA-DOE "Defining the Future" workshops held in July and August allowed for some discussion, but unfortunately the workshops were focused on a proposed set of reforms that have little relationship to the real issues faced by WAPA's customers.

The key to addressing public policy issues is to start with a common understanding of the issues that need to be resolved. Unfortunately, this process started with DOE announcing a set reforms based on problems defined in Washington, D.C., not in Rapid City or Phoenix or Folsom or Loveland. As a result, DOE, WAPA and its customers have lost an opportunity to work on constructive and realistic reforms that would bring true benefits, such as:

- Reversing repeated years of funding cuts for WAPA in the annual federal budget process. Ensuring funding stability will in turn ensure that WAPA can more effectively meet its existing scope of responsibilities and can confidently rely on continued funding of its facility testing and replacement programs.
- Supporting WAPA in identifying opportunities for cost-effective upgrades of certain existing 230 kV and 345 kV transmission facilities to 500 kV to increase transfer capabilities in key locations in the Western grid with lower impacts to the environment, which would likely attract non-federal investment.

The reforms proposed in the Secretary's March memorandum appear to be based on several flawed fundamental premises: that the U.S electric grid is not modern, secure or reliable; and that DOE and the Power Marketing Administrations are the appropriate entities to lead the industry to address these purported failings. The Secretary reiterates these premises in his May 30th blog posting:

- "Blackouts and brownouts already cost our economy tens of billions of dollars a year, and we risk ever more serious consequences if we continue to rely on outdated and inflexible infrastructure. For example, across the country, most of the transmission lines and power transformers we depend upon are decades old and in many cases nearing or exceeding their expected lifespan."
- "The PMAs provide the federal government the ability to lead by example in modernizing and securing our nation's power grid, or risk putting the entire system – and America's economy – at risk. The benefits of action, as well as the risks of inaction, could directly or indirectly affect nearly every electricity consumer and every business in the United States."

Reliability data suggest that the Secretary's concerns regarding grid reliability and lack of industry investment are overstated. The May 2012 North American Electric Reliability Corporation report's executive summary states: (1) Bulk power system reliability remains adequate; (2) Transmission availability performance is high and (3) Generating unit availability supports adequate reserve margin. Additionally, utilities are making significant investments in our nation's grid. According to a study performed by the Brattle Group, utilities

are expected to invest between \$12 to \$16 billion a year through 2030 on transmission infrastructure.

In addition to transmission investments, utilities in the West have been working together to implement reforms within our bilateral wholesale electricity markets. The following low-cost tools are being implemented by transmission owners and operators in Arizona and neighboring states, including WAPA, to effectively integrate variable renewable generation and increase coordination and cooperation among electric service providers across the Western Interconnection.

- Intra-hour Transmission Scheduling - Generation has historically been scheduled in hourly increments. However, variable energy resources do not have level production throughout an entire hour. Intra-hour scheduling, beginning with thirty-minute schedules, is now being made available by many western utilities, including WAPA and SRP, as a tool to accommodate variable load and generation. Moreover, FERC's Order 764 on Integration of Variable Energy Resources, issued in June 2012, requires that transmission providers offer fifteen minute scheduling by July 2013. Transmission providers in the West will be implementing this requirement over the coming year.
- Dynamic Scheduling System (DSS) – The output of variable energy resources varies throughout the hour. Energy produced must be tracked in real time to determine what has actually been purchased and to dynamically balance the generation with load. Utilities in the West, including WAPA and SRP, have invested in development and implementation of the DSS tool, which utilizes advanced communications to facilitate intra-hour schedules and dynamic schedules, reducing the cost of integrating variable resources. In fact, much of the variable energy resource generation in WAPA's Lower Colorado Balancing Authority Area (BAA) is dynamically scheduled to the load (sink) BAA.
- Area Control Error (ACE) Diversity Interchange and Reliability Based Controls (RBC) – Variable generation can increase frequency variations within an electrical system. ACE Diversity Interchange (ADI) and RBC allow operators to balance frequency variations from multiple generating units over a broader electrical area to maintain reliable system frequency more effectively and at lower cost. Both SRP and WAPA are participating in RBC. SRP is also participating in ADI and WAPA will commence participation upon the conclusion of its current control center consolidation project, thereby facilitating participation of even more Western BAAs connected to WAPA's system.

In support of his proposed reforms, the Secretary points to two recent outages. The first outage impacted southern California and parts of western Arizona in September 2011 and the second was due to storm damage that occurred in the mid-Atlantic states earlier this year. Based on the FERC and NERC analysis reported in "Arizona-Southern California Outages on September 8, 2011—Causes and Recommendations," published in April 2012, the reforms proposed by the Secretary would have prevented neither of these outages. Furthermore, two outages unrelated by time, geography or cause hardly support the claim that the current U.S. grid is unreliable.

In contrast, the NERC report, the level of utility investment in new infrastructure and the ongoing market initiatives in the West to support the integration of renewables all point to an industry that is actively engaged in ensuring that the electric grid remains resilient and robust. While outages can still occur, the Secretary has not demonstrated a systemic grid problem that requires the reforms he proposes.

Additionally, the Secretary's call for leadership by DOE and WAPA is misplaced. WAPA has been an active industry partner in working to address relevant challenges. But WAPA has limits on its economic and human resources and on its statutory responsibilities, which are to market and deliver power produced from statutorily-established federal reclamation projects. Using those finite resources to reposition WAPA as a test bed for new industry initiatives will distract from its core mission, providing no commensurate value for WAPA's customers.

WAPA is best at supporting and collaborating with the industry to bring about reforms. As described above, WAPA has participated in a range of bilateral market reforms. WAPA's participation has expanded the reach of some of these initiatives and has brought value to its customers.

DOE has also provided valued operational improvements to the grid through grants to support the industry's efforts to deploy synchrophasors. The Western Electricity Coordinating Council (WECC) Western Interconnection Synchrophasor Program with its electric utility partners is installing more than 300 new or upgraded Phasor Measurement Units that can identify and analyze system vulnerabilities in real time, as well as detect evolving disturbances on the Western bulk electric system. This project demonstrates how DOE and the industry can work together to bring about benefits to both the grid and consumers.

Another basis for the proposed reforms is the often repeated claim, primarily from wind generators, that construction of more long-haul transmission is necessary to meet renewable portfolio standards because these resources are located long distances from load centers and require significant assistance with system integration. While some utilities have chosen to invest in renewable resources that are far from load, many other utilities are meeting renewable portfolio standards by investing in energy efficiency and in renewable resources closer to load, thus reducing the need for long-haul transmission. For example, California utilities are planning to meet substantially more of the state's renewable portfolio requirements through in-state resource development, thus lessening the need for development of more in-state and out-of-state-to-California transmission capability. (See CAISO 2011/2012 Transmission Plan presentation given at a June 19, 2102 SPSC/CREPC Webinar, link at <http://www.westgov.org/wieb/webinars/2012/06-19-12CREPC-SPSC.pdf>)

The resource portfolio or mix across the Western Interconnection varies by region. Some regions in the West currently must integrate large amounts of variable generation and are working actively to determine and put in place the most effective and economical tools to facilitate integration. But not all regions have or intend to install the same penetrations and types of renewable and variable generation. SRP's assessment is that for the great majority of load areas served by WAPA's transmission, a renewable integration problem does not exist today. Moreover, SRP believes a problem is unlikely to emerge in future years in part

because of robust least-cost planning activities by retail electric providers who have an obligation to serve.

SRP's Sustainable Portfolio Program is used to meet 9% of annual retail customer energy requirements today, and is targeted to meet 20% of annual retail customer energy requirements by fiscal year 2020. SRP promotes numerous residential and commercial energy efficiency programs, demand side resource programs, customer-owned solar programs, community partnership solar programs and innovative time of use and pre-pay pricing programs. Relative to other types of generating facilities, an advantage of deploying resources that are distributed within SRP's existing retail electric service area is that additional transmission and distribution investments are often not required.

Even as the percentage of renewable resources within SRP's BAA grows, SRP anticipates being able to economically integrate variable generation with an array of tools and flexible resources during the foreseeable future (20 years). At present, SRP utilizes hydro generating capability to manage load, resource levels and reserve requirements in real time, and dynamic scheduling capability to manage renewable resource output. To prepare for the future, SRP has recently provided investment in and entered into a long-term contract to purchase the output of a 575 MW local gas-fired generating project, consisting of highly flexible fast start combustion turbines, installed at a cost of \$500 million. Furthermore, in the Desert Southwest, the accepted approach for managing the integration of variable resources has been for the load's BAA to accept that responsibility with appropriate cost recovery. We would caution against making Western Interconnection-wide operating and policy decisions which require costly tools when some operational challenges may be better addressed on a subregional basis.

Finally, SRP has significant concerns about the statement in the Secretary's memorandum that "WAPA has made a decision that an EIM will go forward [in the Western Interconnection] and that it will be a market participant." Any such decision would be premature, since the analyses of benefits associated with an EIM are still very uncertain, show wide variations between BAAs that benefit and those that do not, and estimate that much of the benefit is derived from increased generation and export of energy from coal resources. While conceding that WAPA will incur costs during an initial transition to an EIM, Secretary Chu's Memo states that overall costs to customers should be reduced. The results of EIM cost-benefit studies to date do not support DOE's claim.

The American Public Power Association (APPA) has outlined extensive concerns with analyses performed to date on costs and benefits of implementing an EIM in the Western Interconnection. SRP strongly supports and shares APPA's statements of concern on EIM analysis to date. We urge DOE and WAPA to promote a more balanced and rigorous evaluation of regional problem definition and analysis of a range of tools, including the EIM and the bilateral market tools described above, to solve the problem. This is the approach currently underway in the Northwest Power Pool's Market Assessment.

Again, SRP appreciates the opportunity to file these comments.