2016 State of Western’s Assets

inside

State of the regions 3
Hydrology report 10
Safety and Security 12
Asset Management 12
Looking ahead 14
We are living in an exciting era of the energy business. The changes in technology, the innovation in markets and the shifting sands of electricity production present us with opportunities and challenges not seen in the past 50 years.

The evolution of our energy frontier brings with it a series of technical and policy considerations. Western is not as it was five years ago – external factors carve our path and drive changes to our business model. Whether it is operating challenges, an unpredictable environment of drought and flood, new physical and cybersecurity needs, or increasing asset investments for an aging system, Western must adapt so we can continue to be one of the lowest-cost providers of electricity and transmission in the nation. This requires creativity in our thinking and operating and agility in our planning.

As we look across the expanse of 2016, I see promise as the energy landscape continues to evolve. I look forward to maturing our business processes as part of our critical pathway to organizational excellence. By working closely in mutually beneficial partnerships, we are moving forward with our cooperative investment of nearly $160 million in capital improvements, work that will further strengthen and maintain the infrastructure we all share. I also look forward to expanding our engagement with customers as our services are forced to evolve, becoming ever-more agile in our planning.

I want Western to be ready for the future so our customers and 40 million Americans can continue receiving the benefits of our federal mission. I recognize, as does my staff, that the changes being brought about as we move into the future of the energy frontier will not always be comfortable. Costs may rise in the short term to provide longer-term benefits. We are committed to transparency and to that end will be greatly expanding the amount of information available on wapa.gov. Whether it is reinvestment in our 17-year-old financial system, or the need to invest more than 40,000 person hours to meet critical infrastructure requirements, we at Western remain dedicated to fulfilling our promise to our customers: to continue delivering reliable, low-cost federal hydro-electric power and related services.

Mark A. Gabriel
Administrator and CEO
Operations: State of the regions

At Western, understanding our assets is critical because the future is bringing change. To make good on our promise to our customers and to continue fulfilling our mission, we must position ourselves to respond to the growing demands of a rapidly changing industry. Our regions are well positioned, bringing together myriad aspects of our work to accomplish these shared goals.

COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER

The main resources of the Colorado River Storage Project Management Center are the 11 powerplants consolidated into a single power rate known as the Salt Lake City Area/Integrated Projects, which includes Glen Canyon Dam near Page, Arizona. That single powerplant provides 76 percent of the generated energy provided to the CRSP MC’s 150 preference customers, one-third of which are Native American tribes. Wholesale preference customers distribute clean, reliable hydropower to about five million retail consumers across a seven-state area, including Nevada, Wyoming, Utah, Arizona, New Mexico, Colorado and Texas. The CRSP MC owns 2,325 miles of transmission lines, 235 breakers and 42 transformers.

In the area of power marketing, the CRSP MC has maintained the same rate since the beginning of Fiscal Year 2010. On Oct. 1, 2015, the rate was renewed for the next five years. The CRSP MC also rolled out the proposed Post-2024 SLCA/IP Marketing Plan for review and comment, with public meetings scheduled in early 2016. The proposed market plan will provide customers long-term assurance and stability for their hydropower allocations.
In 2016, CRSP MC will continue to grow and strengthen its relationships in the Colorado River Basin as the Bureau of Reclamation, Western and other stakeholders critically examine drought conditions along the Colorado River and evaluate mutually beneficial operations of Glen Canyon Dam in the Long-Term Experimental and Management Plan Environmental Impact Statement. The Upper Colorado River Commission, Upper Basin States, Reclamation and the CRSP MC are working together to finalize a plan for implementation, if required, to minimize the risk of Lake Powell falling below minimum power pool elevation under severe drought conditions. This plan entails a combination of water conservation activities and the timely transfer of water from upper basin reservoirs into Lake Powell to preserve elevation levels when possible.

Over the next year, CRSP MC will also consolidate Power Billing services so that all CRSP customers are billed from a single office. This effort will create efficiencies and reduce expenses. Continuous improvement efforts allow us to better plan for asset replacements, manage budget requirements and increase system reliability. The CRSP MC has completed Critical Infrastructure Protection-014 Version 5 substation reviews and mitigation plans have been submitted. In 2016, our efforts will significantly increase substation security and safety postures.

The CRSP MC is also working this year to address impacts to operations from North American Electric Reliability Corporation Standards implementation and associated methodologies. If successful, up to $1 million per year could be saved due to gained operational efficiencies.

DESERT SOUTHWEST

Desert Southwest markets hydroelectric power to nearly 70 municipalities, cooperatives, federal and state agencies and irrigation districts in California, Arizona and Nevada from powerplants operated at Hoover, Parker and Davis dams. Power is also marketed from hydroelectric projects in Reclamation’s Upper Colorado Region and the federal portion of power generated at Navajo Generating Station near Page, Arizona. DSW maintains more than 75 substations, 43 transformers, 315 breakers and 2,548 miles of transmission lines to keep the system running reliably.

Boulder Canyon Project Post-2017 Remarketing will continue to be a major activity for the Desert Southwest Region and its customers in 2016. DSW, Reclamation, contractors and tribes have been working collaboratively since allocations were finalized in December 2014 to develop the Electric Service Contracts, Implementation Agreement and a multitude of associated exhibits and attachments. Several meetings are scheduled for the first quarter of 2016 to finalize and distribute contracts for execution in April and completion by October, 2016. DSW is also conducting information sessions with the BCP contractors in Arizona to apprise them of their transmission options for delivering their BCP resource. It is expected this will result in several new transmission service agreements with BCP contractors who elect to unbundle their services with the Arizona Power Authority.

DSW continues to strengthen customer partnerships to identify and prioritize capital mission needs and investments that present the best value for its customers. In 2015, DSW adjusted its annual capital planning processes to engage customers in investment decision-making as an integral part of DSW’s annual Ten-Year Capital Planning life cycle. During 2016, DSW is conducting several joint transmission planning studies with customers and will host at least four technical discussions to review strategic capital investment progress and plans. These activities, in concert with Phase 2 of Western’s Asset Management Program, will help prioritize capital investments in the DSW-managed transmission system infrastructure, strengthening the region’s ability to provide safe, secure, reliable and affordable energy and transmission services to meet current and future customer needs.
The replacement of aging transmission system infrastructure continues to put upward pressure on rates charged for transmission service. DSW has successfully worked with customers to moderate the impact to transmission service rates and will continue to collaboratively explore techniques to maintain affordable rates into the future.

Southline Transmission Project is a proposed transmission line designed to collect and transmit electricity across southern New Mexico and southern Arizona. The project will consist of two segments: a new 240-mile, 345-kilovolt double-circuit transmission line between the existing substations at Afton, New Mexico, and Apache, Arizona; and an upgrade of about 120 miles of Western’s existing 115-kV transmission lines between the Apache and Saguaro substations in Arizona to a 230-kV double-circuit line. This upgrade would provide up to 1,000 megawatts of capacity. The Final Environmental Impact Statement was completed in 2015 and a Record of Decision is anticipated in 2016. DSW will continue its public outreach efforts with Southline Transmission LLC, Black Forest Partners L.P. and Western’s Transmission Infrastructure Program to evaluate the potential benefits of the project to its customers.

DSW staff excels in safe practices and environments, a habit the region is committed to continuing in 2016. As of December 2015, DSW exceeded five consecutive years with no lost-time work days. This represents more than 46,000 hours worked by DSW employees without a lost-time work day.

**ROCKY MOUNTAIN**

Rocky Mountain serves about 40 preference customers in Colorado, Wyoming, Nebraska and Kansas. It sells more than 2.3 million megawatt-hours of power generated at 19 hydroelectric plants in the Loveland Area Projects, which combines both the Fryingpan-Arkansas Project and the Pick-Sloan Missouri Basin Program—Western Division.

RM reliably delivers federal and non-federal power through 3,432 miles of transmission lines, 390 breakers and 78 substations. The system includes the
200-megawatt Virginia Smith AC-DC converter station near Sidney, Nebraska, that transfers power between the eastern and western power grids. Because reliability is essential to superior customer service, RM dedicates more than half of its workforce to system maintenance.

In 2015, RM and all of Western joined the Institute of Electrical and Electronics Engineers and Siemens to celebrate the Virginia Smith converter station, which received the prestigious IEEE Milestones Award in Electrical Engineering and Computer Programs. The conversion technology at the station is representative of an achievement in the field.

During 2015, RM substantially completed multiple trust projects including Ault 892 345-kV Breaker Replacement, Kimball KY1A Transformer Replacement, Sterling KY2A Transformer Replacement and Sheridan Hills Tap. These projects allow Western to leverage industry partnerships to support load growth and advance energy infrastructure while also improving the ability to reliably market power and transmission related services. RM also completed many customer supported projects including the Lovell – Basin Reconductor, Archer KV1A Transformer Replacement, Buffalo Pass Communication Building and 200 miles of fiber optic communications. Installing fiber optic cable throughout the communication backbone and energy infrastructure gives Western the inherent benefits of increased bandwidth, reduced maintenance costs, and increases RM’s ability to provide security-related services.

RM used the Asset Management program in 2015 to identify two transformers and 11 breakers that required replacement and added these to RM’s Ten-Year Plan. The program also identified seven other breakers that required extraordinary maintenance and were scheduled for repair.

Looking forward, RM plans to start or complete more than 30 trust or customer supported construction projects in 2016. These include the Goshen County Substation, Granby–Windy Gap 138-kV Transmission Line Rebuild, Ault 345-kV Breaker Replacements, Basin-to-Worland 115-kV Reconductor, the Waterflow Phase Shifter replacements, 50 miles of fiber optic communications, and transformer replacements at Archer, Curecanti, Stegall, Guernsey Rural, Poudre and Sidney. RM will also be working to expand the Asset Management program to evaluate transmission line facilities in support of the capital planning process.
SIERRA NEVADA

Sierra Nevada markets hydroelectric power generated from the Bureau of Reclamation’s Central Valley Project to 83 preference power customers in California including municipal public power utilities, irrigation districts, federal and state entities, Native American tribes and rural electric cooperatives. In addition, power generated on a seasonal basis is marketed from Stampede Dam of the Washoe Project. The CVP federal transmission system is owned, operated and maintained safely and reliably by Western’s SN region and consists of 22 substations, 22 transformers and 956 miles of transmission line. SN is also the operating agent for the 350-mile-long California-Oregon Transmission Project, one of the three lines forming the California-Oregon Intertie.

On Jan. 1, 2015, SN began providing service to eight new Power Resource Pool allottees under its Post-2004 Power Marketing Plan. The eight new customers are federal end-use customers, served through Pacific Gas and Electric Company’s transmission facilities under a wholesale distribution tariff. With an eye to the future, in 2015 SN initiated development of the 2025 Power Marketing Plan. This plan identifies basic terms, conditions and processes to be used to allocate, assign and deliver federal hydropower resources from the CVP to existing and potentially new preference power allottees. In recognition of the relative stability of its annual power and transmission revenue requirements, as well as to align development of SN rate recovery methodologies with the development of the 2025 Power Marketing Plan, SN requested and received authority to extend its existing rate recovery methodologies for the next three years.

SN continues working with Reclamation and the Northern California Power Agency to identify opportunities to resolve a long standing issue related to the maximum annual assessment Reclamation can assign to preference power customers to fund the Central Valley Project Improvement Act’s Environmental Restoration Fund. Under the existing legislation, water user assessments are limited by price and actual deliveries. Any shortfalls between forecasted and actual assessments on the water users are automatically assigned to the preference power customers for recovery. SN is currently working with Reclamation and NCPA to determine if a mutually acceptable resolution to the issue is possible.
In preparing for the future, SN is working with customers to outline its vision for meeting customer need over a 10-year planning horizon, as well as ensuring continued provision of value added services. SN’s proposed 10-year plan contemplates significant new expenditure of funds between Fiscal Year 2016 and FY 2025 so that SN’s transmission system continues to be operated and maintained reliably. In this 10-year period, over $738 million in potential future expenditures have been identified. The majority of these costs (75 percent) are associated with three potential new projects: the San Luis Transmission Project; the Colusa-Sutter Transmission Project; and the Hurley-Tracy No. 1 and No. 2 Reconductoring Project. Should a decision to construct the proposed San Luis or Colusa-Sutter Transmission Projects go forward, neither will be funded using third-party sources, nor considered for the purposes of repayment. As a result, no rate impacts are anticipated for either proposal. Other remaining costs in the 10-Year Plan are associated with proposed new replacements, retirements and additions, or smaller-sized upgrades and modifications to existing transmission infrastructure. SN expects to work with customers to either seek federal appropriations or customer advanced funds under SN’s Customer Advanced Funding Program. During FY 2016, the total value planned for construction and replacements, retirements and additions program across the region exceeds $32 million for all funding sources and earmarks.

Under value-added services, SN continues to work with its customers to:

- Include potential new opportunities to provide reliability and critical infrastructure protection compliance support services
- Provide Planning Authority/Planning Coordinator NERC registered compliance support services to sub-balancing authority members
- Embark upon a collaborative effort with its customers to establish a real-time contingency analysis functional capability
- Explore alternative emerging market solutions to expand resource and business opportunities for SN’s host balancing authority area.

**UPPER GREAT PLAINS**

Upper Great Plains markets more than 9 million megawatt-hours generated at eight dams and powerplants in the Pick-Sloan Missouri Basin Program—Eastern Division to more than 360 preference customers in Montana, North Dakota, South Dakota, Nebraska, Iowa and Minnesota. UGP delivers enough hydropower to serve more than 3 million households, through more than 100 substations with 126 transformers and across 7,800 miles of federal power lines in its 378,000 square-mile service territory. UGP’s preference customers include rural electric cooperatives, cities and towns, public utility districts, irrigation districts, state and federal agencies and Native American tribes.

During 2015, UGP safely maintained and operated the system with no cascading outages. Western’s total recordable case rate of 1.1 and Days Away Restricted Transferred rate of 0.3 exceeded safety targets. UGP construction contractors worked 19,458 man hours with no recordable incidents or lost time. Most importantly, this past year each and every evening all UGP employees have been able to go home to their families and friends.

Following completion of the Pick-Sloan 2021 Power Marketing Initiative, UGP staff met with firm power customers and negotiated the framework for new contracts. As of Dec. 3, 2015, UGP offered 253 firm electric service contracts to preference customers with 221 of those contracts executed. In addition, UGP completed 38 interconnection agreements and 39 consolidated facility arrangements contracts. These contracts serve as the template for about 24 remaining preference customers that require these agreements in 2016. Once completed, these contracts ensure power
delivery to Pick-Sloan customers through Dec. 31, 2050, providing preference customers long-term stability and assurance.

Following completion of the Upper Great Plains Wind Energy Programmatic Environmental Impact Statement and issuance of the Record of Decision on Aug. 17, 2015, UGP anticipates completion of the first streamlined environmental reviews of wind farm interconnection requests in 2016. UGP is excited about the time and money savings wind developers, Western and Western’s customers will see by tiering environmental reviews from this EIS.

On Oct. 1, 2015, UGP, Basin Electric Power Cooperative and Heartland Consumers Power District successfully transferred functional control of the integrated transmission system to Southwest Power Pool and began operating in the regional transmission organization. This was the final step in achieving full membership in the RTO.

With the inclusion of the integrated transmission system, SPP’s footprint spans almost 575,000 square miles in all or parts of 14 states in the central U.S. and includes more than 800 generating plants, nearly 5,000 substations and about 56,000 miles of high-voltage transmission lines. The integrated system will add about 5,000 megawatts of peak demand and 7,600 MW of generating capacity, including a threefold increase in SPP’s current hydroelectric capacity. Western also represents the first federal power marketing administration to become a full RTO member.

The integration is the culmination of years of discussions and public involvement between the IS members, SPP, the Federal Energy Regulatory Commission and customers. The IS owners have studied several forms of potential regional transmission organization participation since the 1990s. Beginning in 2001, integrated system participants began to evaluate potential options of joining SPP, joining the Midcontinent Independent System Operator or continuing operations on a stand-alone basis. These studies identified the option to join SPP as having the most benefit and the least risk. A public process began in November 2013 to hear comments from concerned parties, which resulted in approval to pursue membership in January 2014.

UGP markets Pick-Sloan Missouri Basin Program—Eastern Division power and energy to preference customers in Montana east of the Continental Divide, North Dakota, South Dakota, western Minnesota and Iowa and eastern Nebraska.
One of today’s biggest challenges for the energy industry, and especially those of us who deal in hydroelectric power, is water variability due to intermittent drought and flooding. Western has a natural interface with water. By definition, hydropower needs water to generate electricity. Without it, we are forced to buy power on the open market from other sources to meet our contractual obligation to our customers. This is referred to as purchase power.

In an ideal year, snowpack around the West is average, or above average, yielding snowmelt runoff to recharge reservoirs behind the dams and powerplants that provide the energy Western markets. Federal dam owners like Bureau of Reclamation, U.S. Army Corps of Engineers and the International Boundary and Water Commission, move water to federal hydropower plants. Western markets the power generated there to almost 700 preference customers. Our customers, in turn, sell that power to about 40 million Americans.

Water around Western in 2015

Drought in the desert and coastal West was a driving factor in Fiscal Year 2015. As a result, Western’s total generation was slightly below average at 88.9 percent for a total generation of 23,437 gigawatt-hours. For the same period, total purchase power was 3,904 GWh with actual purchase power expenses around $133,670,000, which equates to $34.24 per MWh.

The Colorado River Storage Project Management Center projected most probable purchase power expenses for FY 2015 to be $23,327,954. Actual purchase power expenses were slightly lower, due to drought conditions, $22,059,837. Lake Powell and Glen Canyon Dam, the largest hydropower facility in CRSP MC, finished FY 2015 at a water level elevation of 3,606 feet, about 94 feet below the maximum generation level and 116 feet above the minimum generation level.

In Desert Southwest region, the total most probable projected purchase power expenses were $2,998,530. Actual purchase power expenses were closer to $5,537,178. A contributing factor to the difference is DSW’s practice of developing its most probable projection of monthly purchase power expenses at the beginning of the fiscal year and retaining that projection throughout the year to serve as a hard baseline. However, the disparity mainly can be attributed to reduced head and power generation caused by Lake Mead beginning the fiscal year at a lower-than-average elevation and dry hydrology conditions in later months.

Editor’s Note: The following report summarizes Fiscal Year 2015 data from the Western Hydropower conditions webpage for straight power purchase costs, which are based solely upon hydrology, actual hydropower generation and related generation shortages.
Lake Mead and Hoover Dam make up the largest hydropower facility in DSW. At the close of the fiscal year, Lake Mead’s water level elevation was 1,078 feet, about 141 feet below full storage level and roughly 28 feet from the minimum generation level. High levels of precipitation in FY 2014 created good reservoir storage conditions for Rocky Mountain that carried over into FY 2015. As a result of that carryover storage and low demands for water until late in the irrigation season, actual power purchases were more than originally projected. However, due to lower than anticipated power prices, the actual purchase power expense of $13,766,444 was lower than the projection of $17,164,237. The overall reservoir content at the end of September and FY 2015 exceeded the annual average at 118 percent, largely due to a “miracle May” of heavy precipitation and low temperature.

Drought was a factor for Sierra Nevada in FY 2015 where California snowpack reached a historic low during the spring, typically a time of plenty. For the past three years, California drought conditions severely affected power production. This year was extremely low at 2,588 gigawatts of generation. However, due to SN’s proactive risk management power purchase strategies, Power Marketing was able to take advantage of the lower market prices and hedge power purchases to help ease the burden placed on customers due to the drought.

The region began the fiscal year with a most probable projection of purchase power around $14,300,000 for the Full Load Service Customers, but ended FY 2015 closer to $22,128,080. The difference is the result of SN’s power purchase strategies based upon term purchases of 70-75 percent of anticipated power needs, with the remainder being purchased on the day-ahead and real-time market purchases after project pumping and generation have been scheduled. Customers other than Full Load Service Customers needed to purchase the difference in their portfolios on their own, increasing their purchase power budgets as well.

Upper Great Plains’ most probable projection for purchase power in FY 2015 was $52,068,767. Actual purchase power expenses were $70,487,479. Generation was slightly less than projected and the timing of water releases increased purchase power costs. Additionally, Joint Marketing activities were not included in the projections due to their variability, but are included in the actual amounts.

**Anticipating upcoming water year**

The Seasonal Drought Outlook provided by the National Weather Service’s Climate Prediction Center in early January 2016 showed some slight drought improvement or removal in parts of the western U.S. However, much of the existing drought in the nation is designated as long term.

It is anticipated that El Niño conditions favor improvement of drought across California by the end of March 2016. The Climate Prediction Center models show the most likely area for drought removal exists across northwestern California due to abnormal wetness during early to mid-December 2015 and what looks to be a continued wet pattern forecast.
Safety and Security

The threat from cyber and physical attack remains a paramount concern for the nation. The electric industry has seen an unprecedented surge in cyberattacks targeting sensitive cyberassets that are responsible for keeping the grid running. Western provides transmission services 24 hours a day, seven days a week, and 365 days a year. Similarly, open market trading requires access to our facilities at all times. For Western to continue protecting these assets and keep them continually operational, it is imperative we comply with growing standards set forth in NERC for physical security for critical infrastructure, cybersecurity and transmission operations. That compliance is just part of the robust state-of-the-art protective measures we employ for cyber and physical security. We manage risk by prioritizing protection of the most critical grid components against the most likely threats, a practice consistent with the electric industry.

Transmission Asset Management Program

Western is continuing to evolve its asset management activities under the Transmission Asset Management Program, called TAM for short, to develop a more mature, data-driven asset planning and investment program. Formally established as a program in 2015, TAM tracks, calculates and analyzes the risks to its core fleet of key equipment assets systemwide, including:

- Integrating asset management principles, practices and policies into Western’s day-to-day business practices.
- Producing reports that assess the risk, health and critical Western assets — initially transmission lines, circuit breakers and power transformers.
- Providing trending analysis on equipment assets to inform maintenance planning and assist with 10-year capital funding development.

Western uses the data-driven risk-based analysis to inform capital investment recommendations for management, customers and other stakeholders. Looking forward, TAM will develop a Strategic Asset Management Plan for future planning to guide long-term management activities. As part of that long-term vision, the program staff is working in 2016 on the following four key areas to:

1. **Maximize the value of Western’s transmission assets**

   Western staff will use the asset management program to determine the best timing for equipment replacement. The decisions will incorporate analysis that takes into account strategic replacements for increased reliability and to focus maintenance resources and effort.
on high-risk assets. Additionally, TAM staff will review and evaluate secondary factors to better support maintenance activities.

2. Improve the performance of transmission assets
Using the asset management baseline data, Western employees will work to reduce the chance of inadvertent outages and increase power system reliability by identifying particular assets and analyzing ways to reduce their probability of failure.

3. Ensure uniformity in the TAM Program
With the Transmission Asset Planning and Management Office providing oversight, Western staff will begin two new projects in FY 2016 to: 1) Develop Data Architecture; and,

2) Establish Data Governance and Stewardship Processes. As collaborative efforts between the TAM Program and Western's Information Technology staff, these projects will streamline the collection of data and ensure that consistent business rules and reports throughout the agency are developed and maintained.

4. Assess asset-related risk and develop mitigation strategies
Once formalized, the risk register data will enable regional asset management specialists to generate formal and ad hoc reports about asset risk. This will further enhance the communication flow to the 10-year capital plan committees, maintenance managers and Procurement in analyzing the severity of risks to assets to support decision-making.

Facilities Eligible for Review by TAM

- Wood poles and fixtures 3.89%
- Steel poles and fixtures 6.72%
- Overhead conductors and devices 12.94%
- Underground conduit 0.25%
- Roads and trails 0.84%
- Other structures or improvements - Service facilities 0.01%
- Fiber optics equipment -0.01%
- Buildings - Service facilities 0.00%
- Communication equipment 0.00%
- SCADA communications equipment 2.28%
- Microwave communication equipment 3.29%
- Communication equipment - MUX - WAPA 0.00%
- Telephone communication equipment 0.68%
- Carrier current communication equipment 0.09%
- Load and frequency control equipment 0.06%
- Fixed radio communication equipment 0.45%
- Fiber optics equipment 2.7%
- Miscellaneous installed equipment (fixed) 0.23%
- Load and land rights 3.38%
- Buildings 5.22%
- Other structures and improvements 8.39%
- Equipment critical security upgrade 0.00%
- Station equipment 35.77%
- Towers and fixtures 9.72%
- Poles and fixtures 3.11%
Looking ahead

Cost Containment

At Western, we are committed to keeping both our indirect and direct operational costs low. Costs rising in one part of Western have to be balanced by decreases in another. Continuous Process Improvements and program reorganization are tools for these types of accomplishments. For example, the new Budget Formulation Schedule is estimated to provide $1.8 million in cost avoidance by July 2016. Similarly, the Removing Access to the Active Directory project is estimated to provide $140,000 in cost avoidance over the course of three years. Through actions like these, Western is able to maintain overheads representing around 10 percent of costs found in rates, Westernwide.

<table>
<thead>
<tr>
<th>2015 Completions</th>
<th>2016 Targets</th>
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<tbody>
<tr>
<td>Budget Formulation</td>
<td>Federal Register Notice</td>
</tr>
<tr>
<td>Active Directory</td>
<td>UGP Heavy Equipment Scheduling</td>
</tr>
<tr>
<td>Finance System Planning</td>
<td>HQ Invoice Payment Processing</td>
</tr>
<tr>
<td>Information Technology</td>
<td>Recruitment Incentives</td>
</tr>
<tr>
<td>Power Billing Process</td>
<td>Revised 10 Year Capital Investment Plan prioritization</td>
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<td><strong>Total cost avoidance for FY 2015: $6.9M</strong></td>
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Rate Drivers

Rates are Western’s scorecard. After safety and reliability, we should be judged on the rate impacts for those things within our control. To minimize the impacts to rates, Westernwide, we are working hard to become even more efficient and improve processes across our organization. We are creating headroom in some areas in order to be able to afford needed human capital in other areas and create better resource allocation.
Markets

The emerging and evolving energy market is one of the best examples of change facing Western and the industry. The influx of renewable energy, joint tariffs and developing energy imbalance markets are just some of the topics driving the energy frontier.

Western recognizes the impact this has on our business and as an organization continues to pursue and develop collaborative paths forward to best benefit our customers. In doing so, we leverage sound business principles and the uniqueness of our legislated power projects in a manner consistent with Western’s statutory requirements, including our federal mission to provide reliable, low-cost hydropower to our preference customers.

Western’s decision to participate in the Southwest Power Pool market rose from the challenge of operating next to two different regional transmission organizations. To determine the most beneficial solution for all of our customers, we developed a detailed analytical and collaborative process. Two years ago, we deployed a similar methodology that resulted in our decision to not participate in the California Independent System Operator Energy Imbalance Market.

Organized energy markets like the CAISO EIM and the SPP are expanding. In 2015, several transmission owners within the Western Interconnection announced their plans to study or join the CAISO EIM including Nevada Energy, Arizona Public Service and Salt River Project. In 2016, DSW will refresh the work it did in 2013 to evaluate potential benefits to its customers participating in the CAISO EIM, working with those customers and Western’s other regions to explore areas of potential benefit such as a Joint or Common Transmission Tariff.

In late 2015, SN staff successfully developed and deployed an agencywide Transmission Outage Application and concluded negotiations to execute a new Market Efficiency and Enhancement Agreement with the CAISO. The new MEEA allows Central Valley Project generation exported into the CAISO to be priced at the Tracy price hub. Under the previous Interconnected Balancing Authority Area regulatory regime, CVP generation was priced at the lowest price hub, Captain Jack. As a result, whenever CVP generation was exported to the CAISO, Sierra Nevada preference power allottees incurred negative financial consequences because their power was valued at a price lower than its cost. With the MEEA, that is no longer the case.

Western is also exploring development of the Mountain West Tariff aimed at reducing pancaked transmission in the West. Seven utilities are involved in this process, including Tri-State Generation and Transmission, Xcel Energy and Western, through our CRSP MC and the DSW, RM, and UGP regions. The cooperative goal is to establish 80 percent of the market benefit at 20 percent of the cost. This is an active process and the group is anticipating a determination whether or not to move forward in early to mid-2016.
"We must remain organizationally excellent, open to mutually beneficial partnerships, and willing to evolve to meet the changing times. At Western we are laser focused on our mission of delivering clean, reliable hydroelectric power at the lowest possible cost consistent with sound business principles."

— Mark A. Gabriel