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Summary:

Arizona Power Authority; Wholesale Electric

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Credit Profile

Arizona Pwr Auth WHLELC

Long Term Rating

AA/Stable

Affirmed

Rating Action

S&P Global Ratings affirmed its 'AA' long-term rating on the Arizona Power Authority's (APA) series 2014 power resource revenue bonds (federally taxable Hoover prepayment project bonds). The outlook is stable.

The bonds are direct, special obligations of APA and are payable from the proceeds of the sale of electric power and energy pursuant to the power sales contracts, the interest in and under the Western power sales contract, wheeling agreement and surplus agreement revenue, and funds established by resolutions permitting their use for that purpose.

Bond provisions for APA are adequate. Although, as a matter of policy, APA targets maintaining minimum debt service coverage of 1.1x to 1.2x, bond covenants require only 1.0x. The resolution permits APA to add back to the current year's debt service calculation any rebate stemming from the prior year. Before additional bonds may be issued, legal covenants mandate that net revenue for any 12 consecutive months of the 24 months preceding issuance be at least equal to the aggregate debt service for that period with respect to bonds outstanding. A debt service reserve fund must be funded at maximum annual debt service.

APA had \$25.5 million in total debt outstanding as of fiscal year-end (Sept. 30) 2020, with relatively high debt to capitalization of 94%, although this is not atypical for a wholesale power provider.

Credit overview

The rating reflects our view of:

- Extremely competitive wholesale, emission-free hydro power production from Hoover Dam that provides APA-contracted customers with very low wholesale power rates;
- Ratemaking autonomy that allows APA to set wholesale customer rates sufficient to cover costs, with a history of intrayear adjustments in addition to regular annual rate adjustments;
- Cost stability for APA in the form of annual rate setting by Western Area Power Administration (Western) for Hoover power, which allows APA, in turn, to set annual customer rates sufficient to meet obligations;
- Increased efficiency improvements at Hoover Dam, which have helped offset the decreases in generation resulting from reduced water levels;
- A solid customer base that includes 63 wholesale customers, with almost 34% of energy sold to the Salt River Project (SRP; AA+/Stable) and the Central Arizona Water Conservation District (CAWCD; AA+/Stable) in fiscal 2020;

- Take-or-pay power sales contracts for all of APA's hydro entitlement, where payment for power is an unconditional obligation; and
- Adequate-to-good cost recovery over the past several years, including debt service coverage of 1.2x and fixed-charge coverage of slightly more than 1.0x in 2020.

Partly offsetting the above strengths, in our view, are:

- Continued below-average hydrology conditions throughout the Colorado River Basin for the past 23 years that have resulted in reduced water storage at Lake Mead and power production at Hoover Dam, although the U.S. Bureau of Reclamation (the bureau), in concert with Western, has several tools at its disposal to manage lake levels, including adjusting upstream reservoir releases, and critical needs for water downstream result in stability in generation; and
- The overall credit quality of APA's customer base, with many customers small, rural, or irrigation-based and sensitive to power cost increases, although the high number of offtakers promotes diversity.

APA was established by state statute in 1944 to take title to Arizona's share of hydro power produced from Hoover Dam. Since 1977, Western has marketed power produced by the bureau at Hoover Dam to various contractors that receive power from the project, including APA. Under an energy service contract with Western, effective Oct. 1, 2016, through Sept. 30, 2067, APA is obligated to pay an annual base charge for power without regard to Hoover generation levels. APA's share of power is about 410 megawatts (MW), or 19.8% of total capacity. APA, in turn, pays this portion of the project's capacity obligations. APA sells its entitlement to 63 customers under long-term take-or-pay contracts, and these wholesale customers include electrical and irrigation districts, water conservation districts, power and water districts, and Arizona municipalities. Sales vary annually as a function of water conditions in the Lower Colorado River Basin, upon which Hoover Dam is located. In the event of a customer default, APA may terminate the associated power sales agreement within 60 days of nonpayment. Given Hoover power's very low cost and lack of carbon attributes, we believe the authority would likely successfully remarket the power to interested utilities, including nondefaulting customers.

In conjunction with the Hoover Power Allocation Act of 2011, which determined the allocation of power to APA and other contractors from Hoover Dam, APA's post-2017 power allocation process resulted in revised power sales contracts. These contracts, effective Oct. 1, 2017, extend to Sept. 30, 2067, the same termination date of APA's electric service contract with Western.

APA sells four classes of power to its customers: A, B, C, and D. Hoover A power is defined as energy sold under power sales contracts for the original capacity of Hoover Dam prior to the uprating program (under which generation capacity was increased). Hoover B power is defined as the additional capacity derived from the uprating program, and Hoover C Energy is defined as surplus or "excess energy." Hoover C energy results from high-water years of the Colorado River, but because of the drought no C energy has been available since 2002. Finally, Hoover D power, created under the Hoover Power Allocation Act of 2011 and marketed beginning Oct. 1, 2017, consists of new power allocations to customers in Arizona, California, and Nevada.

Under the electric service contract with Western effective Oct. 1, 2017, Hoover A power totaling 1,462 MW of contingent capacity is sold to nine contractors, including APA (191 MW). APA will also purchase 190 MW of Hoover B

power and receive Hoover C power to the extent available, as it does currently. The Hoover Allocation Act of 2011 also requires Western to establish a resource pool equal to 5% of the total amount of contingent capacity and firm energy of post-2017 Hoover A and B contingent capacity along with firm energy to be allocated to entities that receive neither Hoover A nor B power. Western's allocation of Hoover D power will first go to eligible American Indian tribes and then to nonprofit entities, with APA receiving an allocation of 29 MW. The obligation for APA's customers to pay for power is an unconditional, take-or-pay obligation. We view the contract provisions favorably given that they reduce the risk of declining demand.

APA customers Salt River Project and CAWCD (both AA+/Stable) represented about 34% of demand in fiscal 2020, relatively unchanged versus the prior two years. Although their significant purchases generally support the credit strength of APA's customers, reduced generation and higher power costs could weaken APA's customers by putting pressure on the margins of agricultural customers, and could make it difficult under stress scenarios for some of these customers to pay increased power rates, even if these rates are still well below market.

Water levels in the major reservoirs that supply Hoover continue to be low, with Lake Mead at just 50% of capacity. Lake Mead has a total capacity of 27.4 million acre-feet of the Colorado River Basin's total storage of 60.0 million acre-feet, and one of the key strengths of Hoover and APA is that all water must pass through Hoover to meet critical downstream deliveries to Arizona, California, and Mexico. The elevation of Mead hit its lowest point since 1938 in June 2016 at 1,072 feet, but has since slightly improved, rising to 1,087 feet as of February 2021. According to the bureau, the maximum elevation before water would spill through Hoover Dam spillways is 1,221 feet. In the past 30 years, the maximum elevation of Mead was 1,216 feet in 1998 and remained near that level until the drought began in 2000. The average elevation of Lake Mead since and including 1938 has been 1,157 feet, which is 71 feet above the current level. Drought level is considered 1,125 feet.

The elevation of Lake Mead and generation from Hoover tend to correlate, but the relationship is not direct given downstream water requirements. For example, generation could increase at Hoover during a dry water year in which Lake Mead's elevation declines, if water demand increases and more water passes through Hoover's turbines. In addition, efficiency improvements to the turbines have increased output. The correlation is more direct between capacity and elevation, with total Hoover capacity of 696 MW at an elevation of 950 feet, rising to more than 2,074 MW by 1,200 feet. Nonetheless, total Hoover generation was 3,337 gigawatt-hours (GWh) in 2020, slightly above the 3,315 GWh of 2017 but well below the 3,985 GWh in 2012. APA delivered 640,235 MWh of energy in 2020, slightly below the trailing five-year average but 13% below the 2012 level. This was significantly less than the average annual delivery over the past 50 years, which has been closer to 1 million MWh.

Hoover Dam is the highest and the third-largest concrete dam in the U.S. As part of the Lower Colorado River Basin (the majority of which is located in Arizona and Nevada), Lake Mead (the reservoir behind the dam) depends on snow and precipitation in the upper basin (predominantly encompassing the states of Wyoming, Colorado, and Utah) for its water elevation. The dam serves several purposes, including flood control, water storage, and power generation, and water flowing through Hoover's 17 turbines is critical to the Southwest's population of 40 million. Lake Mead can hold 27.4 million acre-feet, with current storage at about 11 million acre-feet, or about 40% of capacity. Hoover Dam continued to experience lower-than-optimal capacity and generation in 2020, and APA's capacity slice in operating

year 2020 also remained at reduced levels that averaged about 274 MW, compared with the 410 MW capacity to which it is entitled under the contract. The Hoover facility has been derated (because its generators are unable to operate at maximum capacity) since 2004; the derating occurs when Lake Mead's elevation reaches about 1,130 feet.

We believe that the extremely low-cost nature of Hoover power is a key credit strength for APA. APA's credit quality hinges on our anticipation that the rates it charges, even under adverse drought conditions, will remain below Southwest wholesale power prices. Hoover's cost of power per MW-hour (MWh) was just \$19.90 in 2020, with APA's customer cost for Hoover power, including debt service and administrative costs, at \$29.72 per MWh as of fiscal year-end 2020, not including transmission (which purchasers pay for separately). Whereas the pure Hoover power cost (without transmission) represents an increase from \$17.09 in 2008 and \$8.56 in 2003, it remains well below prices at major Southwest energy trading hubs such as Palo Verde (about \$44 per MWh). The cost advantage of energy at two cents per kilowatt-hour is significant and underpins APA's credit quality.

APA is self-regulating and has the authority to set rates without the approval of the legislature or the state regulatory commission. APA is governed by a board of five commissioners who are appointed by Arizona's governor and approved by the state senate. Commissioners serve six-year overlapping terms, and this provides consistency. The chairman and vice chairman, who are elected by the commissioners, hold office for two years. The board meets at least monthly and may implement rate adjustments whenever it convenes. Rates are adjusted and set annually as part of the budget process. Intra-year rate adjustments are also made from time to time. The board has made rate decreases the past few years, but plans a 7% rate increase for fiscal 2022 given anticipated higher power costs related to planned capital spending by the Bureau of Reclamation. APA's rates include Hoover purchased power costs, administrative expenses, debt service, and collection of funds for the Lower Colorado River Basin Development Fund. Western's rates may be changed with the approval of the U.S. Assistant Secretary of Energy. We note that pursuant to state statute, APA's board is required to include in its ratemaking the amounts required to support working capital and depreciation as well as fund reserves, and may modify electric rates with just 24 hours' notice if it needs liquidity to comply with the statutory obligations, with revised rates to take effect the first of the following month at the earliest. Hoover power costs are set as part of an annual process that APA is a party to, and once rates are set they are kept in place for the year, precluding the need for APA to have a power adjustment mechanism in place. Since 1996, APA's cost of generation and transmission has consistently been well below the Palo Verde index for peaking power.

APA accounts for its funds in accordance with the Governmental Accounting Standards Board. APA's financial statements reflect the activities of two separate funds:

- The uprating fund, which is used to capture the business activities associated with the purchase and resale of Hoover power; and
- The general fund, which principally is engaged in the procurement and resale of supplemental power to APA's customers at their request to augment power available from the Hoover project.

Although APA's low-cost, valuable hydro power is the foundation of its credit quality, we also anticipate that APA will maintain cash and accrual policies that result in at least 1x debt service coverage. APA has put into place policies that help manage cash flow and maintain metrics within bond covenants. We note that these policies have resulted in debt service coverage that has been consistent and sufficient on both a cash and an accrual basis over the past several

years, including 1.2x debt service coverage (S&P Global Ratings-calculated) and slightly more than 1.0x fixed-charge coverage in fiscal 2020. We expected similar coverage ratios in future years.

APA's liquidity has been improving during the past five years. APA maintains cash balances in two funds--the Hoover uprating fund and the general fund--both of which are available to meet debt service. APA's Hoover uprating fund has adequate liquidity equal to about 96 days' cash, based on a year-end cash balance of \$4.7 million as of Sept. 30, 2020. At the discretion of the APA board or executive director, cash in APA's general fund may also be tapped without restrictions. General cash balances provided an additional \$6.4 million in fiscal 2020. APA's general fund need not be replenished following a draw on it by the Hoover uprating fund. APA's commission intends to maintain an adequate amount in the APA general fund (generally around \$3.0 million to \$3.5 million) for unanticipated expenditures. The inclusion of both cash accounts provides APA with about 228 days' cash, up from 108 days in 2015. A debt service reserve fund is also available that covers maximum annual debt service. This is adequate, given the limited functions of the Hoover project.

The stable outlook reflects our anticipation that Hoover Dam will continue to produce below-market, low-cost power under a wide range of water conditions, including a sustained drought.

Environmental, social, and governance factors

We believe APA's governance and social factors (including health and safety issues related to COVID-19) do not present elevated risk and are in line with those of other rated utilities. In our opinion, APA has strong governance factors, represented by good financial management and rate-setting practices, and maintenance of adequate coverage and ample liquidity. APA has not experienced meaningful operational or financial effects thus far from the COVID-19 pandemic, including sustained strong wholesale customer demand. However, the authority faces moderate environmental risk given continued drought conditions in the region that have reduced generation at Hoover over the past two decades. S&P Global Ratings will monitor this risk.

Stable Outlook

Downside scenario

While not anticipated, deterioration in the competitive advantage of APA's wholesale power resources relative to market prices for electricity could result in weakened credit quality. We could lower the rating if key financial metrics deteriorate to levels we believe are not commensurate with the rating, given APA's other credit strengths.

Upside scenario

We do not anticipate raising the rating, given our view of APA's merely adequate coverage and its hydrology challenges, and given our view of the customer base's overall credit quality.

Credit Opinion

Debt and capital

The recent series 2014 bond proceeds were used to prepay APA's share of the obligations incurred by the bureau for various improvements at Hoover Dam and to fund a debt service reserve fund. The financing resulted in substantial

cost savings in terms of the amounts that APA pays for power and energy from Hoover.

The bureau's capital improvement plan, reflected in Western's operating budget, generally includes turbine replacements, generator life extensions, generator breaker replacements, and other ancillary projects. Capital spending generally represents about 10% to 20% of Western's total annual revenue requirement, and will be captured in the all-in power cost from Hoover contractors. Contractors such as APA, in turn, will pass these costs onto customers.

Related Research

Through The ESG Lens 2.0: A Deeper Dive Into U.S. Public Finance Credit Factors, April 28, 2020

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