MOODY'S RATINGS

CREDIT OPINION
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Arizona Power Authority

Update to credit analysis

Summary

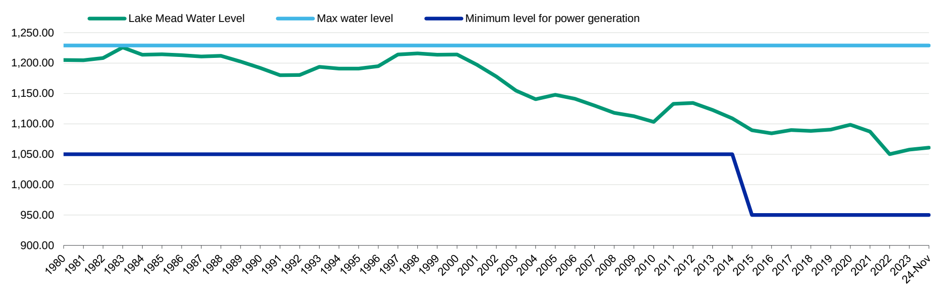
Arizona Power Authority's (APA or Authority, Aa1 stable) credit profile reflects the predictability of cash flows from long term take-or-pay contracts with a diverse group of 63 wholesale customers that are mandated to pay for all of APA's operating and capital costs. Contracts expire in 2067, well beyond APA's outstanding debt maturity in 2045. Arizona-based Salt River Agricultural Improvement and Power District (SRP, Aa1 stable) and Central Arizona Water Conservation District (CAWCD, Aa2 stable) comprise approximately 40% of the Authority's take-or-pay demand allocation obligation, underpinning APA's credit profile.

APA benefits from its strategic position as the sole entity responsible for acquiring and marketing Arizona's allocation of power generated from the Hoover Dam and from a low cost structure, both factors that help retain customers and incentivize regulatory support. In addition, APA's credit profile also reflects the authority's strong rate-setting record, low carbon transition exposure, consistently adequate financial performance and the quick ramp-up ability of the Hoover Dam's power generation, which is important to a regional power grid that is more reliant on intermittent renewable resources.

These credit positive factors are balanced by long-term drought conditions that constrain power generation and raise customer costs, partially offset by APA's take-or-pay contractual structure that provides for full cost recovery from its customers and government's ongoing support measures, including efforts to preserve water levels.

Exhibit 1

Risk that the Hoover Dam cannot generate power if Lake Mead water level drops below 950 feet is substantially mitigated by APA's take-or-pay contractual structure that provides for full cost recovery from its customers



Improvements have been made such that the minimum level of Lake Mead elevation for power generation has been reduced to 950 feet, from the previous 1,050 foot level

Source: Moody's Ratings, US Bureau of Reclamation

Credit strengths

- APA's take-or-pay contractual structure substantially mitigates hydrology and demand risk, a key credit consideration given the current severe drought conditions
- Strength of the take-or-pay wholesale supply contracts that are buttressed by highly-rated customers SRP and CAWCD
- APA's entitlement to Hoover Power extends through 2067, 22 years after maturity of the outstanding debt
- Hoover Power is favorably priced compared with regional spot market alternatives even during persistent drought conditions, with an all-in cost ranging between $28-35/MWh for carbon free power over the past 5 years
- Highly-rated SRP has historically purchased the bulk of excess Hoover Power that has been made available
- Hoover's quick ramp-up capability (100 MWs per minute) is becoming increasingly valuable in light of growing intermittency in the southwest power marketplace, being driven by base load plant retirements and increasing intermittent renewable resources

Credit challenges

- Drought conditions that have reduced water levels in Lake Mead could impact the plant's ability to produce favorably priced power as fixed costs are spread across reduced water throughput from Lake Mead into the Colorado River
- General customer concentration in Arizona irrigation and water conservation districts could impact the authority during a stressed environment for the agribusiness sector

Rating outlook

The stable outlook reflects our view that the authority will maintain steady financial performance, consistent with its historical track record, while continuing to provide competitively priced power to its wholesale customers.

Factors that could lead to an upgrade

- Limited prospects exist for further upward rating pressure given the Aa1 rating

Factors that could lead to a downgrade

- Severe curtailment of Hoover hydroelectric production due to drought or other conditions
- Material increase in APA's leverage or the price of Hoover Power
- Decline in the credit quality of either SRP or CAWCD, the two largest take-or-pay obligation customers

Key indicators

Exhibit 2

	2019	2020	2021	2022	2023
Debt Outstanding ($'000)	26,025	25,475	24,915	24,335	23,740
Adjusted Debt Ratio (%)	85.8	86.5	83.4	79.1	78.2
Adjusted Days Liquidity on Hand (incl. Bank Lines)(days)	151	108	165	211	217
Adjusted Debt Service Coverage (x) (Post Transfers/PILOTs - All Debt)	1.08	1.03	1.01	1.03	1.24

Source: Moody's Ratings

Profile

Arizona Power Authority is a state agency responsible for the acquisition and marketing of Arizona's approximately 19% share of the electrical output from the federally owned and operated Hoover Dam power plant. The authority has been acting in this capacity since 1952. The Hoover Power Allocation Act of 2011 extended APA's entitlement to capacity and energy produced by the Hoover Dam through September 2067. APA is a not-for-profit entity with no taxing authority, however per state statutes, APA is required to set rates at levels sufficient to recover its total costs. The authority currently has 63 customers.

Detailed credit considerations

Revenue Generating Base - Take-or-pay power sales contracts provide for full cost recovery

APA's take-or-pay contractual structure and diverse customer base significantly reduces demand risk and hydrology risk owing to the drought. APA, as a not-for-profit wholesale electricity supplier, is able to pass along the benefits of Arizona's low-cost Hoover Power allocation to its wholesale contract customers in Arizona. APA has 63 customers with unregulated rate setting ability, with a majority of customers being relatively small, unrated Arizona irrigation districts and municipal utilities. However, SRP and CAWCD, both Aa-rated counterparties, account for close to 40% of the take-or-pay demand allocation obligation.

APA's customer base is relatively concentrated in Arizona's agribusiness industry, which along with the industry's unique vulnerabilities, contributes to potential demand volatility that is substantially mitigated by the take-or-pay contract. Annual agricultural sector electric power demand is shaped to a large extent by variable factors such as crop patterns, planted acreage, surface water availability, in addition to economic factors such as commodity prices. Despite the potential for demand volatility, we believe these risks are largely mitigated by the take-or-pay contractual structure that provides APA with full cost recovery protection.

Moreover, power from the authority generally represents APA's customers' lowest power cost option, as evidenced by the fact that APA has historically had little problem finding willing buyers of Hoover Power while operating under the previous take-or-pay contractual framework before 2017. Historically, SRP has purchased the bulk of any excess Hoover Power that has been made available and we believe this would continue to be the case in the unlikely event that a customer becomes unable to meet their take-or-pay contractual obligation. The Hoover Power marketing authorities, which includes APA, along with various other California and Nevada entities that have been granted an allocation of Hoover Power, must sell the power on a not-for-profit basis.

We view that the strengths of the contractual structure and customer base mitigate the long-term drought conditions that constrain power generation and raise customer costs. Long term the Colorado River basin has been experiencing a severe drought for the past two plus decades which has resulted in a reduction in Lake Mead's water elevation level from its maximum capacity of 1,250 feet in 2000 to currently around 1,050. although wetter winter conditions in 2022 and 2023 have gradually improved water elevation levels to approximately 1,070 feet in early December 2024.

Tepid water throughput into the Colorado River from Lake Mead drives increased costs for APA, as Hoover Power fixed costs are spread over less MWhs of energy generated. The composite rate increased to $33.36 in fiscal year 2023 from $30.43 in fiscal year 2022 due to a reduction of energy generated by the Hoover Dam in addition to an increase in the WAPA base charge. These cost increases are fully recoverable from APA's 63 wholesale customers.

We view that the essentiality of the asset and low cost structure provides incentives for government support, including direct financing of initiatives to address drought conditions and preserve water levels.

Financial Operations and Position - Take-or-pay power sales contracts provide for minimum of 1.0x debt service coverage

APA's consistently thin debt service coverage margins, on a net revenue basis, are offset by the authority's unique, low-cost, low-risk business profile. In fiscal 2023, Moody's calculated net revenue DSCR was 1.24x, a marginal improvement over 2022. This reflects APA's obligation to set rates at levels sufficient to recover the authority's total costs, in addition to the customers' take-or-pay obligation to cover all of APA's operating and debt service costs. Due to APA's not-for-profit nature and its ability for full cost recovery, the authority's debt service coverage ratio is intentionally kept at a minimum.

Historically, APA's management and board have been effective at keeping the authority's operating costs in check, while frequently revisiting the rates charged to customers to ensure the adequate recovery of total costs. The authority is able to pass-through cost increases on a monthly basis, and a minimum 24-hour notice is required for any rate changes, in the most extreme scenario.

Liquidity

The authority's liquidity position is adequate given APA's take-or-pay contractual structure ensures that all of APA's costs are recovered by customers. At fiscal year-end 2023, the authority had 217 days cash on hand, improved from 2021's 165 days and the highest since 2016. APA's cash to debt remained strong at 42.9% in fiscal 2023.

Debt and Other Liabilities

As of fiscal year 2023, the authority had a total debt outstanding of $23.7 million. APA’s leverage position, as measured by Moody's adjusted debt ratio, is analytically overstated as APA’s financial statements do not currently account for the value of APA’s roughly 19% entitlement to Hoover Power as a capital asset, along with the market value of the Hoover Dam's capital asset value. Despite this dynamic, APA's fiscal 2023 adjusted debt ratio was manageable at 78.2% and we anticipate leverage will decrease over time, as no new debt issuance is anticipated and outstanding principal will amortize.

Legal security

The authority's outstanding bonds are payable solely from net revenues derived from APA's sale of power generated by the Hoover power plant. Those sales are made under take-or-pay power sales contracts (which are authorized under Arizona law) with 63 Arizona irrigation districts and municipal utilities, which constitute APA's contract customers until contract expiration in 2067.

The revenue pledge extends to replacement contracts as well as any other revenue generated from the sale of Hoover Power. APA has a cash funded debt service reserve fund equal to maximum annual debt service, and an additional bonds test of one times historical (12 out of the past 24 months) and future (five years) debt service coverage. APA's obligation to pay WAPA for the costs associated with the Hoover Dam is on a take-or-pay basis.

In the event the revenues generated by WAPA's sale of power was insufficient to cover the federal Bureau of Reclamation's costs of operating the dam, APA and the other Hoover contractors would remain obligated to pay their proportionate share of these costs. This risk is mitigated by both the take-or-pay contractual structure and the engineering and construction of the dam, which includes 17 separate generation units relying on the natural flow of water through the Colorado River basin for the production of power. The Hoover Dam power plant has been in continuous operation since the first generating units were installed over 80 years ago.

Debt structure

The authority's debt structure is fixed rate, with a level debt service schedule for most of the life of the bonds. The only debt outstanding, the Series 2014 revenue bonds, mature in 2045 and annual debt service requirements total roughly $1.8 million from fiscal 2023 to maturity.

Debt-related derivatives

None.

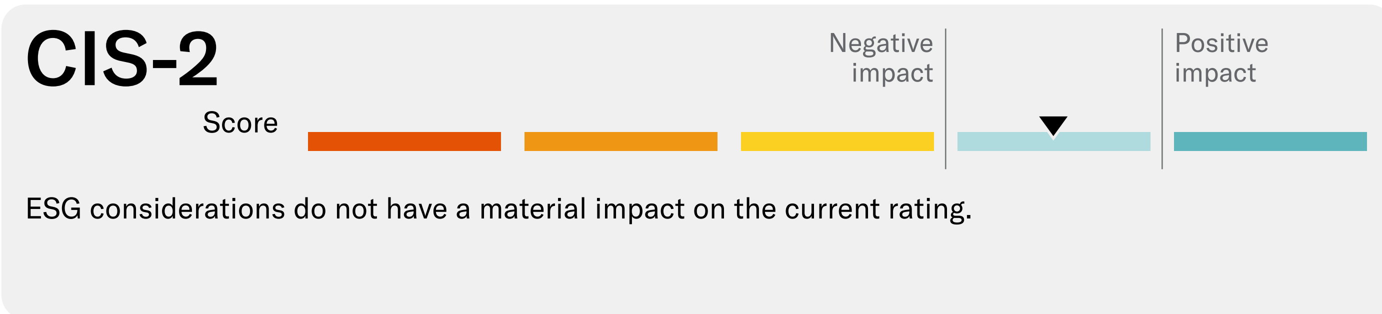
Pensions and OPEB

The authority contributes to the Arizona State Retirement System (ASRS), which administers a cost-sharing, multiple-employer defined benefit pension plan. At fiscal year-end 2023, APA's proportional net pension liability was $.704 million. Based on our calculations,the authority's Adjusted Net Pension Liability (ANPL) was $3.7 million in fiscal year 2023. Given the take-or-pay contractual structure, any increased future pension contributions would be considered operating expenses and would be paid by the authority's take-or-pay customers.

ESG considerations

Arizona Power Authority's ESG credit impact score is CIS-2

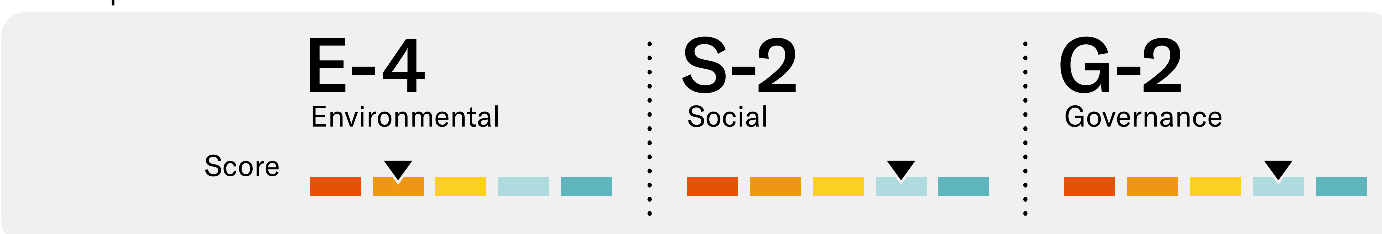
Exhibit 3
ESG credit impact score



Source: Moody's Ratings

Arizona Power Authority's ESG credit impact score of **CIS-2** indicates that ESG considerations have a neutral-to-low impact on the Authority's ratings. The score reflects highly negative exposure to environmental considerations, neutral-to-low exposure to social risk and neutral-to-low governance risks.

Exhibit 4
ESG issuer profile scores



Source: Moody's Ratings

Environmental

Arizona Power Authority is highly exposed to physical climate risks mostly in the form of volatile weather patterns and moderately exposed to water management risks that stem from relying on hydroelectric power for its power supply. As its power output is subject to regional hydrology conditions. These are partially offset by positive carbon transition exposure since the authority has its power supplies coming from carbon emissions free resources. These considerations are balanced by neutral-to-low risk for waste & pollution and natural capital.

Social

Arizona Power Authority's exposure to social risks is neutral-to-low (**S-2**) which considers neutral-to-low risk scores across customer relations, human capital, demographic & societal trends, health & safety, and responsible production.

Governance

Arizona Power Authority's exposure to governance risk is neutral-to-low (**G-2**), reflecting moderately negative board structures and policies that stems from full government control. The authority is run by a 5 commissioner board. Each commissioner is appointed by the Arizona governor to serve 6 year nonconcurrent terms. These considerations are balanced by neutral-to-low risk scores for financial strategy and risk management, management credibility & track record, organizational structure, and compliance & reporting. The commission determines rate adjustments without any other approval process, and monitors revenue requirements on a monthly basis.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Rating methodology and scorecard factors

The APA scorecard indicated outcome is Aa2, one notch below APA's Aa1 rating. This difference reflects APA's adjusted debt ratio, which is analytically overstated as the authority's primary asset, its entitlement to power from the Hoover Dam capital asset, does not appear on APA's balance sheet.

The scorecard is a reference tool that can be used to approximate credit profiles in the public power electric utility sector in most cases. However, the scorecard is a summary that does not include every rating consideration. Please see the US Public Power Electric Utilities with Generation Ownership Exposure Methodology published in August 2019 for more information about the limitations inherent to scorecards.

Exhibit 5
Arizona Power Authority Scorecard

Factor	Subfactor	Score	Metric
1. Cost Recovery Framework Within Service Territory		Aaa	
2. Willingness and Ability to Recover Costs with Sound Financial Metrics		Aaa	
3. Generation and Power Procurement Risk Exposure(1)		A	
4.Competitiveness		Aaa	
5. Financial Strength and Liquidity	a) Adjusted Days Liquidity on Hand(3) (three-year average)	Aa	198
	b) Adjusted Debt Ratio(4) (three-year average)(%)	Baa	80.2%
	c) Adjusted Debt Service Coverage Ratio(5) OR Fixed Obligation Charge Coverage Ratio(6) (three-year average) (x)	Ba	1.09
Preliminary Grid outcome rating from Grid factors 1-5		**Aa3**	
		Notch	
6. Operational Considerations		0.0	
7. Debt Structure and Reserves		0.0	
8. Revenue Stability and Diversity		1.0	
Grid Indicated Outcome:		**Aa2**	

Source: Moody's Investors Service

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