

## CREDIT OPINION

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New Issue

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## American Municipal Power, Inc.

New Issue - Moody's assigns A3 to AMP Inc.'s Series 2016A Meldahl Hydro Revenue Bonds and revises outlook to positive

### Summary Rating Rationale

Moody's Investors Service has assigned an A3 rating to the American Municipal Power Inc. (AMP) sale of \$88 million Meldahl Hydroelectric Project Revenue Bonds, Series 2016A expected to be sold in July 2016. The outlook was revised from stable to positive to reflect the beginning commercial operation of the Meldahl Hydroelectric facility and our expectation of a sound operating record. The current offering will fund capital expenditures and repay a draw on the AMP line of credit used on the Meldahl project construction.

Moody's has also affirmed the A3 rating on the outstanding \$622.3 million Meldahl Hydroelectric Project Revenue Bonds Series 2010 A to E Revenue Bonds.

The A3 rating considers the strong bond security which includes the unconditional take-or-pay obligation of the 48 participants (weighted average credit quality of A3) in the project to pay O&M and debt service on the bonds. The 51% obligation share of the city of Hamilton, Ohio Electric Enterprise (Electric Revenue bonds rated A3/stable) represents an important factor in the rating. The obligation of the 48 participants is absolute and unconditional regardless whether the project is constructed, completed, operating or operable. The project has a fully funded maximum annual debt service reserve.

The positive outlook is due to the elimination of construction risk and that the Meldahl hydroelectric units began commercial operation on April 12, 2016. The hydro units still need to have an established operating record and there be a record of payment of debt service incorporated into participant utility rates (in particular Hamilton since they are 51% of the obligation) before the current rating level is reconsidered. Meldahl is expensive generation capacity but the rating assigned considers the environmental attributes of the hydro facility and the long-term economic value of the project, as well as the A1, stable outlook issuer rating assigned to AMP, Inc who has been an effective power supply agency to its members.

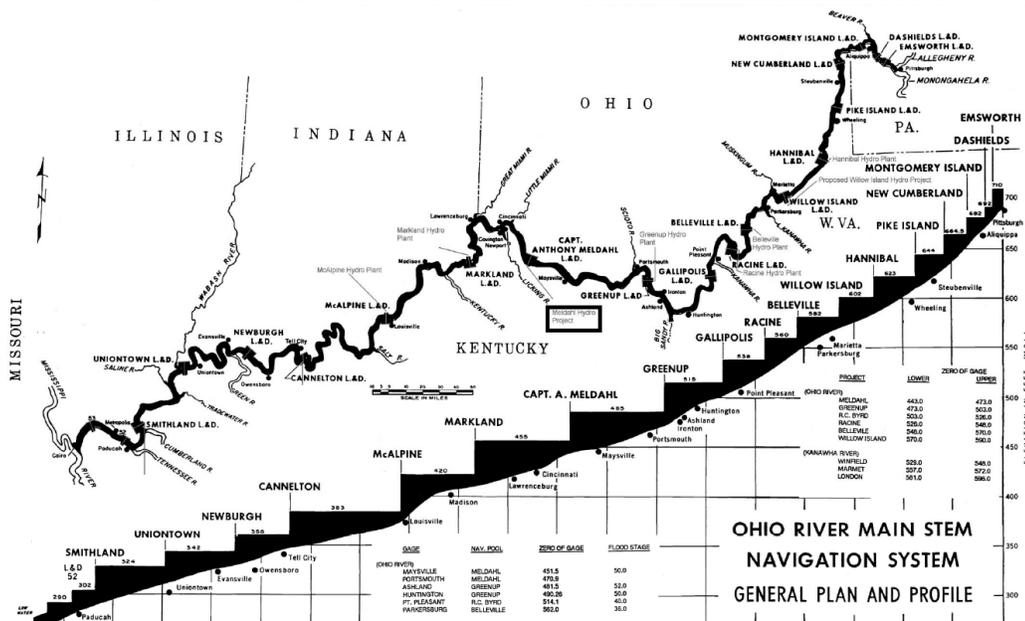
The levelized cost of energy and power from Meldahl is projected to be in the \$80/MWh range given the forecasted sound capacity factor. According to projections, the all-in cost is flat at least through 2038 due to level debt service and minor operating expense changes. While the all-in cost is above today's regional energy market price, the energy and capacity is a long term source of carbon neutral electricity which makes up a small percentage of most of the municipal participant's power supply mix. The US Army Corps of Engineers Ohio River lock and dams are required for commercial river transportation which is key to the

expected certainty of favorable capacity factors above the 50% range. The Meldahl Project has the highest expected capacity factor of any of the new hydroelectric projects AMP Inc. is undertaking.

The Meldahl Project is part of AMP Inc's power resource diversity strategy to lessen the exposure of the participating municipal utilities to the regional wholesale energy markets. AMP has issued revenue bonds (Combined Hydroelectric Project rated A3) to finance three new hydroelectric facilities along the Ohio River ( Cannelton (88MW); Smithland (76MW); and Willow Island (44MW))

The Meldahl Project will be operated by Hamilton, OH Electric Enterprise (rated A3/stable), who has a 51.4% share interest in the project and share of the output. A management committee has been established with AMP and Hamilton representation. The AMP-Hamilton agreement also provided that AMP Inc. acquire 48.6% (34MW) of Hamilton-owned Greenup hydro facility. This transaction took place in April 2016. Moody's has an A1 rating on the AMP Inc. Greenup Hydroelectric Project Revenue Bonds, Series 2016 A. Hamilton used the proceeds it received from AMP to retire its related debt on the Greenup facility and also to build up its rate stabilization and capital improvement fund. Both actions were credit positive.

Exhibit 1  
Ohio River Navigational and Hydro System



Source: Sawvel & Associates

### Credit Strengths

- » Meldahl Hydro operation is being coordinated by AMP with five other nearby hydro projects on the Ohio River (see map) amounting to over 400 MW of power generation
- » FERC licensed Meldahl Hydroelectric Project has unique advantages including providing a 50-year or more renewable energy resource that is non-carbon based
- » Take-or-pay contracts with 48 municipalities with a weighted average credit quality of A3. Hamilton, which represents 51% of the obligation has a general obligation rating of Aa3 and its electric utility revenue bonds are rated A3, stable outlook. AMP has an A1 issuer rating based on its effective role as power supplier to a diverse group of municipal utilities located in a multi-state region

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on [www.moody's.com](http://www.moody's.com) for the most updated credit rating action information and rating history.

- » Power supply contract extensions by members and the signing on of various new members indicates strong support for AMP's role as a regional power supplier
- » Meldahl hydro generation will be a small percentage of the overall power supply of the participants which limits impact of any additional cost increases. Financial impact on Hamilton is larger since Meldahl Hydro generation will represent about 31% of its peak demand.
- » Meldahl Project has recorded water flow that would indicate a hydroelectric facility would have a 55% or greater capacity factor
- » Competitive member retail rates. Hamilton's rates are 30% below the neighboring major investor-owned utility
- » AMP has a well-regarded fiscal monitoring system including use of financial metrics to provide ongoing assessment of members' credit profiles

### Credit Challenges

- » High capital cost at \$7,000/KW (useful life in excess of 60 years)
- » US Army Corps of Engineers regulates water levels through lock and dam system which subjects water levels to administrative action
- » No assurances that environmental regulation will remain the same
- » Kentucky does not have specific statutory authority for electric plant boards to enter into long-term take-or-pay contracts but the Kentucky State Counsel has opined that KRS Chapter 96 provides sufficient authority for such contracts

### Rating Outlook

The outlook was revised to positive from stable to reflect the elimination of construction risk and the expected successful commercial operation of the Meldahl Hydroelectric facility.

### Factors that Could Lead to an Upgrade

- » Hamilton credit position improves
- » Meldahl has a sound operating record
- » Participants successfully incorporate the new debt service into their retail rates

### Factors that Could Lead to a Downgrade

- » Increased project costs to a level that participants considered unsupportable and they challenged their contracts
- » Credit quality of participants erodes

### Key Indicators

Project Description: 105 MW hydroelectric facility on Ohio River

Hamilton as % AMP Inc. Meldahl Project: 51.4%

Debt Outstanding, 6/1/2016: \$622 million and current offering is estimated to be \$88 million

### Recent Developments

\* AMP issuer rating was affirmed at A1 in 2016. See Moody's AMP Issuer Rating credit report dated April 4, 2016.

\*Meldahl Hydroelectric facility went into commercial operation April 12, 2016 and has had a satisfactory operating record thus far.

## Detailed Rating Considerations

### Revenue Generating Base

AMP participants subscribed for a share of the Meldahl project whose debt is secured by their take-or-pay obligation. The municipal electric utility subscription to a generation project is done after a comprehensive needs analysis is performed by AMP to determine forecasted demand and the resources that are required that would achieve the lowest cost. Assumptions incorporate energy efficiency programs; forecasted regional power prices; and expected greenhouse gas regulation and renewable energy requirements.

The non-coincident peak demand of AMP's 133 members for 2015 was 3,358 MW, almost 50% higher than in 2005 primarily due to new members joining the agency and partly due to load growth. AMP has supplied a part of that peak demand from generation that it owns with the balance coming from market purchases. AMP provides wholesale power services to over 645,000 customers in nine states.

Rate competitiveness has been maintained with AMP members averaging retail rates in the 20% range lower than region's investor-owned utilities. We note that several AMP participant's retail rates are higher than the regional average.

AMP historically has been a wholesale power supplier using market purchases to resell to its participants. AMP has 24 Master Service Agreements in place with counterparties that allow energy trading. AMP has undertaken a significant shift in its power resource strategy from mostly market purchases to moving towards generation ownership. The main driver has been to mitigate the volatility that municipal electric utilities have had to face with the restructured wholesale power markets. AMP had derived over 70% of its energy from purchased power which fell to 46% as Prairie State came online. AMP forecasts it will move to reliance on purchased power for about 39% of its energy by 2017.

### Operational and Financial Performance

There are very limited operating results for the AMP Meldahl project since it just started commercial operation. It is expected that the debt service will be 1.10 times to reflect the bond covenants and take-or-pay nature of the power supply contract for Meldahl. All AMP members are in compliance with their take-or-pay contracts.

AMP Inc. has historically operated on a break-even basis as a non-profit wholesale power supplier with the bulk of its energy resources from market purchases resold to its municipal utility participants. AMP's move to be an owner of generation with operating risks has required a significant increase in operating liquidity. While AMP has an unregulated authority to set its rates to recover its costs, financial liquidity to manage changes in fuel prices and meet other immediate impacts has become more important. AMP took steps to mitigate the risks in the forecast period including adding increased bank lines (up to \$1 billion capacity through 2020) with stronger counterparties and a longer five-year tenor with no MAC clauses. AMP entered into an agreement with The Energy Authority (an entity owned by several public power utilities that has energy market trading; fuel purchase and risk management skills useful to mitigate operating risks).

### LIQUIDITY

AMP has negotiated a \$750 million revolving line of credit with 8 banks with ratings ranging from A3 to Aa2. The line was effective January 9, 2012 with a maturity date January 10, 2020. The LOC has an accordion feature to expand the line to \$1 billion.

AMP also has authorization to issue \$450 million of commercial paper notes(CP) . No letter of credit facility is currently outstanding. Previous projects were funded with CP and rated P-1 by Moody's.

### Debt and Other Liabilities

Series 2010 A,B,C,D and E and 2016 A are only bonds outstanding. No CIP related for Meldahl Hydroelectric Project

### DEBT STRUCTURE

Meldahl Hydroelectric Revenue bonds are all fixed rate debt. Debt service is level. AMP has about \$398.5 million outstanding on its line of credit related to all projects.

### DEBT-RELATED DERIVATIVES

None

## PENSIONS AND OPEB

The financial impact of unfunded pension and OPEB obligations of this issuer are minor and thus not currently a major factor in our assessment of its credit profile.

## Management and Governance

The Meldahl Project is owned by Meldahl ,LLC, which AMP Inc. is the sole member. There is a five member board; AMP appoints three members to manage Meldahl ; there are two independent directors that are appointed by the City of Hamilton.

AMP was established by state statute (Ohio Revised Code Chapter 1702) as a non-profit corporation in 1971 to provide its members, which are municipal electric utilities, to provide for a reliable and competitive power supply. AMP is governed by a 20-member Board of Trustees made up of officials from 19 member municipalities and DEMEC, each of which appoints an official to represent it. AMP operates like a joint powers agency and most of its members have home rule charters which permit retail rates to be set by the local governing boards with no external regulation. The Ohio members have their authorization to enter into power sales contracts derived from the state constitution. AMP has obtained a determination letter and qualifies as a Section 501(c) 12 corporation and has a private letter ruling that in effect permits it to issue tax-exempt bonds. AMP has a master services agreement with all its members that provides a legal framework for the relationship of the municipal electric utility and AMP as it relates to power pools, energy products, power supply arrangements and individual services. The AMP members from the other states have specific state statutes that govern their authority and participation in power sales contracts and take-or-pay obligations.

## Legal Security

Under the Master Trust Indenture, AMP pledges its net revenues, derived from a long-term project take-or-pay power sales contract with the Project's 48 municipal participants, payable monthly regardless of whether the project is completed, operating, or operable. The contracts are payable from the revenues of municipal utility enterprises, the funds of which are accounted for separately from city general government funds. Member payments are payable as O&M expenses of their respective electric systems.

The take-or-pay contracts have a 106% step-up provision. The master trust indenture includes a 1.10x rate covenant, 1.10x additional bonds test two years after commercial operation, and a fully funded maximum annual debt service reserve. There is also a six-month BABs and CREBs interest rate subsidy reserve. Should the federal government reduce the interest rate subsidy on BABs, AMP participants are required to pay their allocated share of cost increase.

Legal opinions have been issued that the take-or-pay contracts are valid and enforceable. On December 7, 2007, the Franklin County, Ohio Court of Common Pleas issued a non-appealable order validating the power sales contract relating to another hydroelectric project between AMP and the Ohio participants in that project, including the take-or-pay and step-up provisions exactly similar to the Meldahl provisions. Several of the participants are located in Michigan, Kentucky and Virginia. Michigan and Virginia have passed specific legislation authorizing take-or-pay contracts, including step-up provisions with out-of-state corporations. Kentucky does not have specific statutory authority for electric plant boards to enter into long-term take-or-pay contracts but the Kentucky State Counsel has opined that KRS Chapter 96 provides sufficient authority for such contracts. There are two Kentucky participants (Princeton and Paducah) that represent 5.14% of the project (which is why step-up is sized at 106%).

If there is a payment default of any participant, AMP has the power to suspend delivery, which in Moody's opinion creates a significant incentive for the municipal participant to pay given the essential nature of the service. Should such a default occur, AMP would first offer the power to other project participants, other AMP members , other entities that are not AMP members and then exercise the 106% step-up provision that requires non-defaulting participants to be legally responsible for any defaulted costs for up to 106% of their original entitlement.

Payment compliance is aided by a credit monitoring program that AMP manages which produces early warning signs should a member be in fiscal distress. This includes monthly evaluations of participant credit by monitoring a credit scorecard that includes financial metrics.

## Use of Proceeds

The current offering finances remaining capital improvements at the Meldahl Hydroelectric facility and to repay the AMP line of credit.

## Obligor Profile

AMP operates like a joint powers agency and most of its members have home rule charters which permit retail rates to be set by the local governing boards with no external regulation. The Meldahl Project is a generation project secured by take-or-pay contracts with 48 member participants.

### METHODOLOGY SCORECARD FACTORS

Joint Action Agency-take-or-pay Methodology Scorecard Factors For American Municipal Power Inc Meldahl Hydroelectric Revenue Bonds :

The final scorecard indicated rating from grid of A2 is one notch higher than the current A3 rating assigned to the American Municipal Power Inc Meldahl Hydroelectric Revenue Bonds. Moody's eliminated the one notch downward adjustment for construction risk that was contained in the prior rating grid since the hydro facility is in commercial operation, which improved the final scorecard indicated rating to A2 from A3. The hydro units still need to have an established operating record and the payment of debt service still has to be incorporated into participant utility rates before the current rating level is reconsidered. Our positive outlook speaks to the potential of a higher rating based on an expectation of a sound operating record in the next year and the satisfactory assumption of the new higher debt service by the participants. The grid is a reference tool that can be used to approximate credit profiles for the joint action agencies in the public power sector. However, the grid is a summary that does not include every rating consideration. Please see US Joint Action Agencies Methodology published in October 2012 for more information about the limitations inherent to grids.

Exhibit 2

## US Municipal Joint Action Agencies Methodology - Take-or-Pay Scorecard

Rating Factors	
<b>1 - Participant Credit Quality and Cost Recovery Framework</b>	
a) Participant credit quality. Cost recovery structure and governance (45%)	A3
<b>2 - Asset Quality</b>	
a) Asset diversity, complexity and history (15%)	Baa
<b>3 - Competitiveness</b>	
a) Cost competitiveness relative to market (15%)	Baa
<b>4 - Financial Strength and Liquidity</b>	
a) Adjusted days liquidity on hand (3-year avg) (10%)	150 days
b) Debt ratio (3-year avg) (5%)	100%
c) Fixed obligation charge coverage ratio (3-year avg) (10%)	1.1x
<b>Material Asset Event Risk</b>	
Does agency have event risk?	No
Notching Factors	
1- Contractual Structure and Legal Environment	0.5 notch(es)
2- Construction Risk	0.0 notch(es)
3- Offtaker Diversity	0.5 notch(es)
4- Financing Structure (rate covenant, DSR etc.)	0.0 notch(es)
5- Merchant/Other rating considerations	0.0 notch(es)
Output Summary	
Rating From Grid	A3
<b>Indicated Rating from Grid</b>	<b>A2</b>

Source: Moody's Investors Service

## Methodology

The principal methodology used in this rating was US Municipal Joint Action Agencies published in October 2012. Please see the Ratings Methodologies page on [www.moody.com](http://www.moody.com) for a copy of this methodology.

## Ratings

Exhibit 3

### AMP - Meldahl Hydroelectric Project, OH

<u>Issue</u>	<u>Rating</u>
Meldahl Hydroelectric Project Revenue Bonds Series 2016A	A3
Rating Type	Underlying LT
Sale Amount	\$88,000,000
Expected Sale Date	07/07/2016
Rating Description	Revenue: Government Enterprise

Source: Moody's Investors Service

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