

**AMERICAN MUNICIPAL
POWER, INC.
COMBINED HYDROELECTRIC
PROJECTS
REVENUE BONDS, SERIES
2016A (GREEN BONDS)**

**FRAMEWORK OVERVIEW AND SECOND OPINION BY
SUSTAINALYTICS**

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1. PREFACE

American Municipal Power, Inc. (“AMP”), a non-profit wholesale power supplier and services provider, has engaged Sustainalytics to review its planned Combined Hydroelectric Projects Revenue Bonds, Series 2016A (Green Bonds) (the “Bonds”) and provide an opinion as to the environmental benefits of the projects to be financed and the adherence of the bonds to the Green Bond Principles. As part of this engagement, Sustainalytics held conversations with AMP’s treasury and sustainability teams to understand the use and management of proceeds of the Bonds as well as sustainability strategy of AMP. Sustainalytics also reviewed relevant public and internal documents and provided its opinion on the Bonds. This document contains two sections: Framework Overview – a summary of AMP’s Green Bond framework; and Sustainalytics’ Opinion – an opinion on the framework.

2. INTRODUCTION

AMP was founded in 1971 and is headquartered in Columbus, Ohio. The company purchases, generates, manages, and sells electric capacity and energy to municipal communities in Ohio, Pennsylvania, Michigan, Virginia, Kentucky, West Virginia, Indiana, Maryland, and Delaware.

AMP will use the proceeds of the Bonds to finance, retire interim financing, fund a deposit to the Parity Common Reserve account, pay the costs of issuance, and/or refund a portion of its bonds previously issued to provide financing for three run-of-river hydroelectric projects (the “Projects”). The Projects consist of the Cannelton Project, an 88 MW project located on the Kentucky shore of the Cannelton Locks and Dam on the Ohio River; the Smithland Project, a 76 MW project located on the Kentucky shore of the Smithland Lock and Dam on the Ohio River; and the Willow Island Project, a 44 MW project located on the West Virginia shore of the Willow Island Locks and Dam on the Ohio River. The Willow Island and Cannelton Projects are currently in commercial operation, with the Smithland Project projected to be in commercial operation by February 2017.

3. FRAMEWORK OVERVIEW

For this Bond issue a framework has been created by AMP that follows the four key pillars of the Green Bond Principles (“GBP”):

- Use of Proceeds
- Selection Process
- Management of Proceeds
- Reporting

3.1 Use of Proceeds

Use of Proceeds: The proceeds of the Bonds will be used to finance the Projects additional construction costs, repay draws on a line of credit, refund a portion of AMP’s Combined Hydroelectric Projects Revenue Bonds, Series 2009C (Tax-Exempt) (the “2009C Bonds”) previously issued to finance a portion of the

construction costs of the Projects, fund a deposit to the parity common reserve account, and pay the costs of issuance of the Bonds. Please see project descriptions below for additional details.

The context: Reducing the company's overall emissions profile is among AMP's Sustainability Principles. AMP recognizes that reductions of airborne emissions can be achieved through investing in zero-emission generation technologies, such as hydroelectric and other renewable energy sources. AMP believes that greenhouse gas emissions will be limited at some point in the future, and therefore the company aims to prudently invest in projects to offset carbon dioxide and other GHG emissions from its fossil fuel generation resources.¹

Cannelton: The Cannelton Project is located on the Kentucky shore of the Cannelton Locks and Dam on the Ohio River. It is three miles upstream from Cannelton, Indiana. The Cannelton Project diverts water from the existing U.S. Army Corps of Engineers (the "Army Corps") Cannelton Locks and Dam through three 29.3 MW bulb turbines and has an estimated total rated capacity of 88 MW. The site includes an intake approach channel, a reinforced concrete powerhouse and a tailrace channel. The first unit of the Cannelton Project entered commercial operation in January 2016, the second unit entered commercial operation in March 2016 and the third and final unit entered commercial operation in June 2016.

Willow Island: The Willow Island Project is located on the West Virginia shore of the Willow Island Locks and Dam on the Ohio River, approximately 3.4 miles upstream from Waverly, West Virginia. The Willow Island Project diverts water from the existing Army Corps Willow Island Locks and Dam through two 22 MW bulb turbines and will have an estimated total rated capacity of 44 MW. The site includes an intake approach channel, a reinforced concrete powerhouse and a tailrace channel. The first unit at Willow Island entered commercial operation in January 2016 and the second and final unit at Willow Island entered commercial operation in February 2016.

Smithland: The Smithland Project is located on the Kentucky shore of the Smithland Lock and Dam on the Ohio River, approximately 62.5 miles upstream of the confluence of the Ohio and Mississippi Rivers. The Smithland Project will divert water from the existing Army Corps Smithland Locks and Dam through three 25.3 MW bulb turbines and will have an estimated total rated capacity of 76 MW. The site will include an intake approach channel, a reinforced concrete powerhouse and a tailrace channel. AMP anticipates that the Smithland units will enter commercial operation as follows: the first unit in January 2017 and the second and third units in February 2017.

3.2 Project Evaluation and Selection Process

AMP's management sets guidelines and priorities for all projects, including renewable energy projects. The selection of projects is based on the following considerations:

- The time period in which the expenditures are to be made;
- Expenditures that are eligible for reimbursement. These expenditures include design, engineering and surveying that occur before the commencement of a project;
- Expenditures that have not been previously financed through other bond issues.

¹ AMP Sustainability Principles 2013.

3.3 Management of Proceeds

The proceeds from the Bonds will be held in a trust account and used (i) make a deposit to the Construction Account under the Indenture to finance capital expenditures, costs and expenses associated with the Projects; (ii) repay draws on a line of credit made to finance certain expenditures the proceeds of which were used to provide interim financing for certain capital expenditures, costs and expenses relating to the Projects; (iii) fund a deposit to the Parity Common Reserve Account; and (iv) refund a portion of the 2009C Bonds; and (v) pay the costs of issuance of the Bonds.

Under the Indenture securing the Bonds issued for the Projects, including the Bonds, AMP must comply with various requirements in order for expenses related to the Projects to be paid, including those pertaining to the verification of expenses, appropriate AMP signatories and the transfer of funds to a Depository, as well as to the Bond Trustee. Furthermore, accounts are reconciled on a monthly basis to the activity that occurred in the account.

3.4 Reporting

AMP hereby will provide reporting on the following Key Performance Indicators for the Projects within the company's annual sustainability report and through quarterly update reports, both published on the company's website.

- Net renewable capacity (MW)
- Net annual renewable generation (MWh)
- Capacity factor (%)
- GHG emissions avoided (Tons) (quarterly and annually)
- SO₂ emissions avoided (Tons) (quarterly and annually)
- NO_x emissions avoided (Tons) (quarterly and annually)
- GHG emissions factor (lbs/MWh)
- SO₂ emissions factor (lbs/MWh)
- NO_x emissions factor (lbs/MWh)
- Market power fuel breakdown assumptions (%)

For an example of this KPI reporting for projected operations, please see Appendix A.

4 SUSTAINALYTICS' OPINION

Commitment to renewable energy development: In 2005, AMP's Board of Trustees, (the "Board") adopted the company's Environmental Stewardship Principles. The principles were renamed the Sustainability Principles in 2011, and are periodically revised, with the last revision by the Board taking place in 2013. There are currently seven Sustainability Principles that AMP uses to guide its approach to sustainability. These principles include a commitment to providing a balanced and sustainable power supply portfolio and reducing the company's overall emissions profile. To adhere to these commitments, AMP has made significant investments in renewable energy, including run-of-river hydroelectric, wind, solar, and landfill gas. In addition, the company plans to publicly report GHG emissions avoidance data on an annual basis, demonstrating a commitment to transparency.

Large-scale run-of-river hydro with overall positive impact: Sustainalytics recognizes that the Projects do not fall within the generally accepted limit for small-scale run-of-river hydro of 15 MW. However, because the Projects are located at existing dams on the Ohio River, they will not result in the negative environmental impacts, such as loss of wildlife habitat and aquatic biodiversity, that are often associated with large-scale hydro development, which typically involves the construction of a new dam and reservoir. Sustainalytics is therefore of the opinion that the Projects offer clear environmental benefits and net positive impact. This view is in line with generally accepted standards.²

Alignment with Green Bond Principles 2016: Sustainalytics has determined that the Bonds align with the four pillars of the Green Bond Principles 2016. For detailed information, please refer to Appendix B: Green Bond Principles Green Bond/Green Bond Programme External Review Form.

Conclusion

The U.S. Environmental Protection Agency estimates that CO₂ emissions from fossil fuel burning electricity generating units amounts to roughly 31 percent of the United States' overall CO₂ emissions, the largest single source of CO₂ emissions for the country.³ By focusing on an area of such high environmental impact, AMP is targeting carbon reduction efforts in an industry that would benefit significantly from mitigating further negative environmental impacts.

The Projects financed with the proceeds of the Bonds provide GHG-emission-free renewable energy to the municipalities that AMP serves. Although the Projects are considered large-scale hydro, the construction has occurred on existing dams on the Ohio River, and has therefore avoided any of the negative impacts that are often associated with large-scale hydroelectric development projects. Furthermore, the Projects have received the required environmental permits under the Clean Water Act and the Navigable Rivers and Harbors Act. Hence, investing in the Bonds can be seen as investing in renewable energy generation that results in a positive environmental impact.

² For example, in the Climate Bond Standards large-scale hydroelectric projects greater than 20 MW are acceptable for green bonds if the construction involves modifying existing large-scale hydro in temperate zones or involves the re-powering of existing large-scale hydro.

³ EPA website <https://www3.epa.gov/climatechange/ghgemissions/gases/co2.html>.

The Bonds follow the guidance provided by the Green Bond Principles 2016 and are in alignment with its four components. Sustainalytics is therefore of the opinion that the Bonds are robust and credible.

APPENDICES

Appendix A: AMP Combined Hydro Projects: Projected Operations

As of August 1st, 2016

	2017	2018	2019	2020	2021
Net Renewable Capacity (MW)	208	208	208	208	208
Net Annual Renewable Generation (MWh)	1,056,846	1,056,846	1,056,846	1,056,846	1,056,846
Capacity Factor (%)	58.0%	58.0%	58.0%	58.0%	58.0%
Emissions Avoidance					
Annual GHG emissions avoided (Tons)	525,252	519,968	519,968	523,139	515,212
SO ₂ emissions avoided (Tons)	803	782	782	793	771
NO _x emissions avoided (Tons)	380	354	354	370	343

PJM Market Power Emissions Rate⁴	2017	2018	2019	2020	2021
GHG Emissions Factor (lbs/MWh)	994	984	984	990	975
SO ₂ Emission Factor (lbs/MWh)	1.52	1.48	1.48	1.50	1.46
NO _x Emissions Factor (lbs/MWh)	0.72	0.67	0.67	0.70	0.65

Market Power Fuel Breakdown⁵	2017	2018	2019	2020	2021
Coal	39.0%	38.0%	38.0%	38.5%	37.0%
Oil	0.5%	0.5%	0.5%	0.5%	0.5%
Natural Gas	23.0%	24.0%	24.0%	23.0%	24.0%
Nuclear	33.0%	33.0%	33.0%	33.0%	33.0%
Renewables/Other*	4.5%	4.5%	4.5%	5.0%	5.5%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%

⁴ PJM 2015 Emissions Report.

⁵ PJM Evolution of Supply: Managing the Evolving Fuel Mix in Markets and Operations.

Appendix B: Green Bond Principles Green Bond/Green Bond Programme External Review Form

Section 1. Basic Information

Issuer name: American Municipal Power, Inc.

Green Bond ISIN or Issuer Green Bond Framework Name: American Municipal Power, Inc.

Combined Hydro Projects Revenue Bonds, Series 2016A (Green Bonds)

Review provider's name: Sustainalytics

Completion date of this form: August 26th, 2016

Section 2. Review overview

SCOPE OF REVIEW

The review assessed the following elements and confirmed their alignment with the GBPs:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW (*if applicable*)

Please refer to Green Bond Framework and Second Opinion Document above.

Section 3. Detailed review

1. USE OF PROCEEDS

Overall comment on section:

The Use of Proceeds of this bond are clearly described in the preliminary official statement. Furthermore, renewable energy is one of the broad categories recognized by the Green Bond Principles as offering clear environmental benefits.

Based on Sustainalytics’ review, the three run-of-river hydroelectric Projects help mitigate climate change impacts by reducing GHG emissions reduction. In addition, the Projects have adhered to all environmental considerations and permitting requirements under the Clean Water Act and the Navigable Rivers and Harbors Act.

Use of proceeds categories as per GBP:

- Renewable energy
- Pollution prevention and control
- Terrestrial and aquatic biodiversity conservation
- Sustainable water management
- Eco-efficient products, production technologies and processes
- Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs
- Energy efficiency
- Sustainable management of living natural resources
- Clean transportation
- Climate change adaptation
- Other (*please specify*):

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section:

The Projects have undergone a comprehensive review by AMP’s management team which took into account the bond’s eligibility criteria and environmental sustainability objectives.

Evaluation and selection

- | | |
|--|---|
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond proceeds | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (<i>please specify</i>): |

Information on Responsibilities and Accountability

- | | |
|---|---|
| <input type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input checked="" type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section: The proceeds from the Bonds will be held in a trust account and used (i) make a deposit to the Construction Account under the Indenture to finance capital expenditures, costs and expenses associated with three run-of-the-river hydroelectric facilities located on the Ohio River (the "Projects"); (ii) repay draws on a line of credit made to finance certain expenditures the proceeds of which were used to provide interim financing for certain capital expenditures, costs and expenses relating to the Projects; (iii) fund a deposit to the Parity Common Reserve Account; and (iv)) refund a portion of the 2009C Bonds; and (v) pay the costs of issuance of the Bonds.

Under the Master Trust Indenture securing the bonds issued for the Projects, including the Bonds, AMP must comply with various requirements in order for expenses related to the Projects to be paid, including those pertaining to the verification of expenses, appropriate AMP signatories and the transfer of funds to a Depository, as well as to the Bond Trustee. Furthermore, accounts are reconciled on a monthly basis to the activity that occurred in the account.

Tracking of proceeds:

- | |
|--|
| <input checked="" type="checkbox"/> Green Bond proceeds segregated or tracked by the issuer in a systematic manner |
| <input type="checkbox"/> Disclosure of intended types of temporary investment instruments for unallocated proceeds |
| <input type="checkbox"/> Other (<i>please specify</i>): |

Additional disclosure:

- | | |
|---|--|
| <input type="checkbox"/> Allocations to future investments only | <input type="checkbox"/> Allocations to both existing and future investments |
|---|--|

- | | |
|--|---|
| <input checked="" type="checkbox"/> Allocation to individual disbursements | <input type="checkbox"/> Allocation to a portfolio of disbursements |
| <input type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other <i>(please specify)</i> : |

4. REPORTING

Overall comment on section:

The proceeds of the Bonds will be utilized as set forth above. No additional use of proceeds reporting will be provided. AMP will publish annual emissions avoidance data for the Projects on the company's website.

Impact reporting:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Project-by-project | <input type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other <i>(please specify)</i> : |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other <i>(please specify)</i> : | |

Information reported (expected or ex-post):

- | | |
|---|---|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input type="checkbox"/> Energy Savings |
| <input type="checkbox"/> Other ESG indicators <i>(please specify)</i> : | |

Means of Disclosure

- | | |
|---|--|
| <input checked="" type="checkbox"/> Information published in financial report | <input checked="" type="checkbox"/> Information published in sustainability report |
| <input type="checkbox"/> Information published in ad hoc documents | <input checked="" type="checkbox"/> Other <i>(please specify)</i> : Website |
| <input type="checkbox"/> Reporting reviewed | |

USEFUL LINKS

<http://www.amppartners.org/investors/annual-reports>
<http://www.amppartners.org/sustainability>

ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP

- (i) **Consultant Review:** An issuer can seek advice from consultants and/or institutions with recognized expertise in environmental sustainability or other aspects of the issuance of a Green Bond, such as the establishment/review of an issuer's Green Bond framework. "Second opinions" may fall into this category.
- (ii) **Verification:** An issuer can have its Green Bond, associated Green Bond framework, or underlying assets independently verified by qualified parties, such as auditors. In contrast to certification, verification may focus on alignment with internal standards or claims made by the issuer. Evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria.
- (iii) **Certification:** An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against an external green assessment standard. An assessment standard defines criteria, and alignment with such criteria is tested by qualified third parties / certifiers.
- (iv) **Rating:** An issuer can have its Green Bond or associated Green Bond framework rated by qualified third parties, such as specialised research providers or rating agencies. Green Bond ratings are separate from an issuer's ESG rating as they typically apply to individual securities or Green Bond frameworks / programmes.

Appendix C: Documents Reviewed

Sustainalytics reviewed the following documents for the purposes of writing this report

Number	Document Name
1	AMP DRAFT POS Combined Hydroelectric Projects Revenue Bonds Series 2016A (Green Bonds), Sept 2016
2	AMP 2015 Sustainability Report
3	AMP Internal Management of Funds Description
4	AMP Combined Hydro Project: Project Operations KPIs
5	AMP Sustainability Principles 2013

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Sustainalytics is the largest independent provider of sustainability research, analysis, and services to investors. We serve over 250 institutional investors which include some of the world's largest asset owners and asset managers. Through over 20 years of experience serving the responsible investment (RI) market, we have gained a reputation for providing high-quality ESG research solutions and excellent client service.

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In 2015, Sustainalytics was named the Best SRI or Green Bond Research Firm by GlobalCapital. In December 2014, for the third year in a row, Sustainalytics was named best sustainable and responsible investment research firm in the Independent Research in Responsible Investment (IRRI) Survey, conducted by Thomson Reuters and SRI-CONNECT.



SUSTAINALYTICS
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- Company ESG Research
4,500 Issuers
- Corporate Governance Research
4,000 Issuers
- Global Compact Research
20,000+ Issuers
- Product Involvement
40,000 Issuers
- Controversial Weapons Radar
40,000 Issuers
- Sector Research
42 Peer Groups

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