AMERICAN MUNICIPAL POWER, INC. MELDAHL HYDROELECTRIC PROJECT REVENUE BONDS SERIES 2016A GREEN BOND

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 Meldahl Hydroelectric Project Revenue Bond, Series 2016A Green Bond ("Green Bond") and provide an opinion. As part of this engagement, Sustainalytics held conversations with AMP's treasury and sustainability teams to understand the use of proceeds, management of proceeds and reporting aspects of its Green Bond as well as sustainability strategy of AMP. Sustainalytics also reviewed relevant public and internal documents and provided its opinion on the Green Bond. 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 from the approximately 100 million USD Green Bond to complete the financing of the Meldahl Hydroelectric Project. The Meldahl Project is a 105 MW run-of-river hydroelectric generating facility which went into commercial operation on April 12, 2016 at the Captain Anthony Meldahl Dam on the Ohio River. The Meldahl Project diverts water from the existing U.S. Army Corps of Engineers' Meldahl Locks and Dam through bulb turbines to generate an average gross annual output of approximately 555.562 million kWh. The site includes an intake approach channel, a reinforced concrete powerhouse, and a tailrace channel. The powerhouse houses three horizontal 35-MW bulb-type turbine and generating units with an FERC Licensed rated capacity of 105 MW at a gross head of 30 feet.[1]

3. FRAMEWORK OVERVIEW

For this green bond issued by AMP a framework has been created 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

The proceeds of the Green Bond will be allocated towards financing a run-of-river hydroelectric project.

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

[1] http://www.amppartners.org/generation/hydro.

generation technologies such as hydroelectric and other renewables. AMP states that it is mindful 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.[2]

Use of Proceeds: The proceeds of the Green Bond will be used to finance additional construction costs, repay draws on a line of credit and fund a deposit to the parity common reserve account of the Meldahl Project ("Meldahl Project"), a three-unit run-of-river hydroelectric generating facility constructed on the Captain Anthony Meldahl Locks and Dam, an existing dam on the Ohio River. The project produces GHG-emission-free renewable energy that will reduce the company's participating member's overall emissions profile.

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 allocated to grants or other bond issues.

3.3 Management of Proceeds

The proceeds from the AMP Green Bonds will be held in a trust account and used to i) repay AMP's line of credit for the costs of construction allocable to the completion of the Meldahl Project, ii) fund a reserve fund securing bonds issued for the Project, and iii) pay the costs of issuance for the bonds. Therefore, all the funds will be allocated immediately. Under the Master Trust Indenture securing the bond issued for the Project, including the Green Bonds, AMP must comply with various requirements in order for expenses related to the Meldahl Project 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 commits to provide reporting on the following KPIs for the Meldahl Project 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 (%)

[2] AMP Sustainability Principles 2013.

- Annual GHG emissions avoided (Tons)
- SO_2 emissions avoided (Tons)
- NOx emissions avoided (Tons)
- GHG emissions factor (lbs/MWh)
- SO_2 emissions factor (lbs/MWh)
- NOx emissions factor (lbs/MWh)
- Market power fuel breakdown (%)

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 adopted the company's Environmental Stewardship Principles. The principles were renamed the Sustainability Principles in 2011, and continue to be revised to maintain their relevance, with the last revision by the company's Board of Trustees 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 both providing a balanced and sustainable power supply portfolio and reducing the company's overall emissions profile. To adhere to these commitments, AMP describes a number of investments in renewable energy, including run-of-river hydroelectric, wind, solar, and landfill gas. In addition, AMP commits to publically reporting GHG emissions avoidance data on an annually basis, demonstrating a commitment to transparency.

Large-scale run-of-river hydro with overall positive impact: Sustainalytics recognizes that the Meldahl Project, which will result in electricity generation for AMP of 105 MW, does not fall within the generally accepted limit for small-scale run-of-river hydro of 15 MW. However, because the Meldahl Project is located at the existing Captain Anthony Meldahl Dam on the Ohio River, it 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 Meldahl Project offers clear environmental benefits and net positive impact. This view is in line with generally accepted standards.[3]

Alignment with Green Bond Principles 2016: Sustainalytics has determined that AMP's Green Bond aligns to 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 CO_2 emissions from fossil fuel burning electricity generating units amounts to roughly 31 percent of the United States' overall CO_2 emissions, the largest single source of CO_2 emissions for the country.[4] 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.

AMP's Green Bond will finance the completion of the Meldahl Project which provides GHG-emission-free renewable energy to the municipalities that it serves. Although the Meldahl Project is considered large-scale hydro, the construction has occurred on an existing dam, and has therefore avoided any of the negative impacts that are often associated with large-scale hydroelectric development projects. Furthermore, the Meldahl Project has received the required environmental permitting under the Clean

[3] 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.

[4] EPA website https://www3.epa.gov/climatechange/ghgemissions/gases/co2.html.

Water Act and the Navigable Rivers and Harbors Act. Hence, investing in this Green Bond can be seen as investing in renewable energy generation that results in a positive environmental impact.

AMP's Green Bond follows the guidance provided by the Green Bond Principles 2016 and are in alignment with its four components: the use of proceeds, process of project evaluation and selection, management of proceeds and reporting.

The above two points should provide confidence to investors that AMP's Green Bond is robust and credible.

APPENDICES

Appendix A: AMP Meldahl Project: Projected Operations

	2016	2017	2018	2019	2020
Net Renewable Capacity (MW)	105	105	105	105	105
Net Annual Renewable Generation (MWh)	284,100	555,562	555,562	555,562	555,562
Capacity Factor (%)	61.8%	60.4%	60.4%	60.4%	60.4%
Emissions Avoidance					
Annual GHG emissions avoided (Tons)	144,039	276,114	273,337	273,337	275,003
SO2 emissions avoided (Tons)	229	422	411	411	417
NOx emissions avoided (Tons)	111	200	186	186	194

PJM Market Power Emissions Rate[5]	2016	2017	2018	2019	2020
GHG emissions Factor (lbs/MWh)	1014	994	984	984	990
SO2 emissions Factor (lbs/MWh)	1.61	1.52	1.48	1.48	1.50
NOx emissions Factor (lbs/MWh)	0.78	0.72	0.67	0.67	0.70

PJM Market Power Fuel Breakdown[6]	2016	2017	2018	2019	2020
Coal	41.0%	39.0%	38.0%	38.0%	38.5%
Oil	0.5%	0.5%	0.5%	0.5%	0.5%
Natural Gas	21.0%	23.0%	24.0%	24.0%	23.0%
Nuclear	33.0%	33.0%	33.0%	33.0%	33.0%
Renewables/Other*	4.5%	4.5%	4.5%	4.5%	5.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%

[5] PJM 2015 Emissions Report.
PJM Evolution of Supply Managing the Evolving Fuel Mix in Markets and Operations.
[6] PJM 2015 Emissions Report.
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.

Meldahl Hydroelectric Project Revenue Bonds Series 2016A Green Bond

Review provider's name: Sustainalytics

Completion date of this form: June 30th, 2016

Section 2. Review overview

SCOPE OF REVIEW

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

- ☒ Use of Proceeds
- ☒ Process for Project Evaluation and Selection
- ☒ Management of Proceeds
- ☒ Reporting

ROLE(S) OF REVIEW PROVIDER

- ☒ Consultancy (incl. 2nd opinion)
- ☐ Certification
- ☐ Verification
- ☐ Rating
- ☐ Other *(please specify)*:

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 public offering statement. Furthermore, renewable energy is one of the broad categories recognized by the GBP as offering clear environmental benefits.

Based on Sustainalytics' review, the Meldahl run-of-river hydroelectric project helps in mitigating climate change impacts by reducing GHG emissions reduction. In addition, the project has 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
- ☐ Energy efficiency
- ☐ Pollution prevention and control
- ☐ Sustainable management of living natural resources
- ☐ Terrestrial and aquatic biodiversity conservation
- ☐ Clean transportation
- ☐ Sustainable water management
- ☐ Climate change adaptation
- ☐ Eco-efficient products, production technologies and processes
- ☐ Other *(please specify)*:
- ☐ Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section:

The project selected for the bond has 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

- ☒ Defined and transparent criteria for projects eligible for Green Bond proceeds
- ☒ Documented process to determine that projects fit within defined categories
- ☐ Summary criteria for project evaluation and selection publicly available
- ☐ Other *(please specify):*

Information on Responsibilities and Accountability

- ☐ Evaluation / Selection criteria subject to external advice or verification
- ☒ In-house assessment
- ☐ Other *(please specify)*:

3. MANAGEMENT OF PROCEEDS

Overall comment on section:

The proceeds from the AMP Green Bonds will be held in a trust account and used to i) repay AMP's line of credit for the costs of construction allocable to the completion of the Meldahl Project, ii) fund a reserve fund securing bonds issued for the Project, and iii) pay the costs of issuance for the bonds. Therefore, all the funds will be allocated immediately. Under the Master Trust Indenture securing the bond issued for the Project, including the Green Bonds, AMP must comply with various requirements in order for expenses related to the Meldahl Project 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:

- ☒ Green Bond proceeds segregated or tracked by the issuer in a systematic manner
- ☐ Disclosure of intended types of temporary investment instruments for unallocated proceeds
- ☐ Other *(please specify)*:

Additional disclosure:

- ☐ Allocations to future investments only
- ☐ Allocations to both existing and future investments
- ☒ Allocation to individual disbursements
- ☐ Allocation to a portfolio of disbursements
- ☐ Disclosure of portfolio balance of unallocated proceeds
- ☐ Other *(please specify)*:

4. REPORTING

Overall comment on section:
The AMP Green Bond use of proceeds will be immediately allocated to i) repay AMP's line of credit for the costs of construction allocable to the completion of the Meldahl Project, ii) fund a reserve fund per the Master Trust Indenture, and iii) pay the costs of issuance for the Bonds, therefore no additional use of proceeds reporting will be provided. AMP will publish annual emissions avoidance data for the Meldahl Project on the company's website.

Impact reporting:

- ☒ Project-by-project
- ☐ On a project portfolio basis
- ☐ Linkage to individual bond(s)
- ☐ Other *(please specify):*

Frequency:

- ☒ Annual
- ☐ Semi-annual
- ☐ Other *(please specify):*

Information reported (expected or ex-post):

- ☒ GHG Emissions / Savings
- ☐ Energy Savings
- ☐ Other ESG indicators *(please specify):*

Means of Disclosure

- ☒ Information published in financial report
- ☒ Information published in sustainability report
- ☐ Information published in ad hoc documents
- ☒ Other *(please specify): Website*
- ☐ 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 Series 2016A, July 2016
2	AMP Draft 2015 Sustainability Report
3	AMP Internal Management of Funds Description
4	AMP Meldahl Project: Project Operations KPIs
5	AMP Sustainability Principles 2013

Disclaimer

The Opinion was drawn up with the aim to explain why the analyzed bond is considered sustainable and responsible. Consequently, this Opinion is for information purposes only and Sustainalytics will not accept any form of liability for the substance of the opinion and/or any liability for damage arising from the use of this Opinion and/or the information provided in it.

As the Opinion is based on information made available by the client, Sustainalytics does not warrant that the information presented in this Opinion is complete, accurate or up to date.

Nothing contained in this Opinion shall be construed as to make a representation or warranty, express or implied, regarding the advisability to invest in or include companies in investable universes and/or portfolios. Furthermore, this Opinion shall in no event be interpreted and construed as an assessment of the economic performance and credit worthiness of the bond, nor to have focused on the effective allocation of the funds' use of proceeds.

The client is fully responsible for certifying and ensuring its commitments` compliance, implementation and monitoring.

SUSTAINALYTICS

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.

Sustainalytics is headed by seasoned professionals in the field of business, finance, and sustainability, with a wealth of experience in the Responsible Investment area. After more than 20 years of local experience and expertise in the Responsible Investment (RI) market Sustainalytics has developed a comprehensive understanding of trends and best practices and a solid process to assist organisations in integrating ESG considerations into their policies and strategies. We have worked with some of the world's financial institutions including pension plans, investment managers and banks providing customised support to help them achieve their RI objectives. Clients include ABN AMRO, APG, BBVA, BNP Paribas, Deutsche Bank, ING Bank, Lombard Odier, Lloyds Bank, Triodos Bank, UBS and over 250 other financial institutions and organisations.

Sustainalytics now has a staff of 250 employees globally, including over 120 analysts, with operations in Amsterdam, Boston, Bucharest, Frankfurt, New York, Paris, London, Singapore, Sydney, Timisoara, and Toronto, and representation in Brussels and Washington DC.

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.